

2021 CATAHOULA PARISH MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

UNINCORPORATED CATAHOULA
PARISH, HARRISONBURG,
JONESVILLE, SICILY ISLAND



CATAHOULA PARISH MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE

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Catahoula Parish



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Catahoula Parish
Village of Harrisonburg
Town of Jonesville
Village of Sicily Island

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

- Catahoula Parish
- Village of Harrisonburg
- Town of Jonesville
- Village of Sicily Island

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

Geography, Population and Economy

Geography

Catahoula Parish is in east central Louisiana (*Figure 1-1*). It is bound by Caldwell and Franklin Parishes to the north and by Avoyelles Parish to the south. To the west is LaSalle Parish. Concordia and Tensas Parishes border it to the east. Catahoula Parish consists of a land area of 703 square miles (450,375 acres) and water area of 35 square miles (22,904 acres). The main transportation arteries through Catahoula Parish are U.S. Highway 84, and State Highways 8, 15, 124, 126, 914, and 921. U.S. Highway 84 runs eastward through Jonesville and continues to the Mississippi River. State Highway 124 runs north and south along the Black River, which is also the parish boundary. Both highways are well used and are maintained for commercial traffic. Some of these roadways are significant evacuation routes for Catahoula Parish, as well as surrounding parishes during states of emergency. Alexandria International Airport, 66 miles to the southwest from Harrisonburg, serves Catahoula Parish. It is served by four commercial carriers with 21 flights daily on two runways. The local airport is the Jonesville Municipal Airport, which only has one runway.

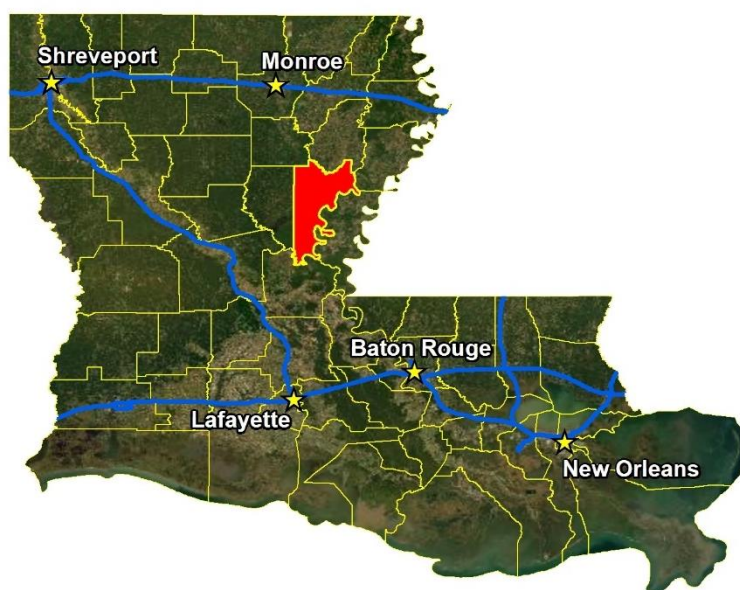


Figure 1-1: Location of Catahoula Parish in the State of Louisiana

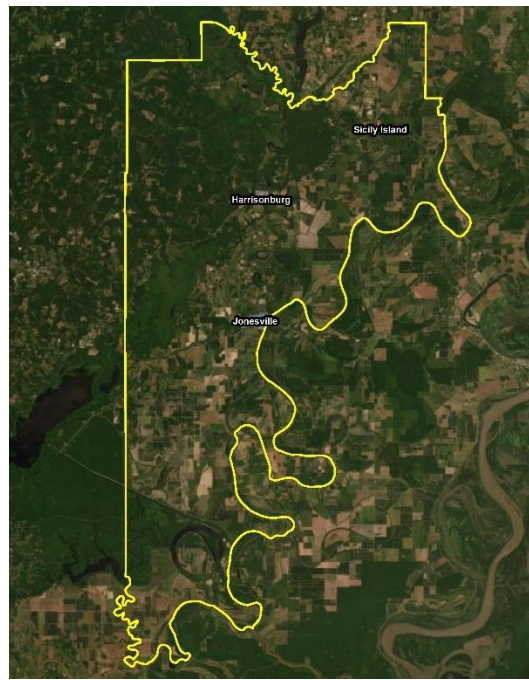


Figure 1-2: Incorporated Jurisdictions within Catahoula Parish

Catahoula Parish lies primarily within the Ouachita Basin. A relatively small portion along the northeast boundary of the parish falls within the Tensas Basin. The parish has two prominent hill masses in the northern portion separated by the Ouachita River Valley. The remainder of the parish has little topographic relief, as elevations range only from approximately 40 feet to about 55 feet southward of the Chalk Hills-Sicily Islands escarpments.

Approximately 70% of the total land area of Catahoula Parish is located within FEMA's 100-year floodplain. Most of the flood plain is found along the Black, Ouachita, Red, Tensas, Boeuf, and Little Rivers, as well as Larto Lake and Saline Bayou.

Catahoula Parish weather is typically warm and humid. Variations in daily temperature are determined by distance from the Gulf of Mexico and, to a much lesser degree, by differences in elevation. The average annual temperature for the state 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 Catahoula Parish in particular, the summer months are usually quite warm, with an average daily maximum temperature in July and August of 92°F. Winters are typically relatively mild. Snowfall averages less than one inch per year. Average annual rainfall for the area is 58 inches.

Catahoula Parish is located in Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) Region 6 (*Figure 1-3*).

As noted above, Catahoula Parish is located in the east-central region of Louisiana.



Figure 1-3: Louisiana Homeland Security Regions

Population

The population of Catahoula Parish is estimated at 8,906 (2020 Census) with a population percent change from April 1, 2010 – April 1, 2020 of -16.85%.

*Table 1-1: Catahoula Parish Population
(Source: US Census)*

	2010 Census	2013 Estimate	2020 Census	Percent Change 2010 - 2020
Total Population	10,407	10,266	8,906	-16.85%
Population Density (Pop/Sq. Mi.)	14.7	-----	-----	-----
Total Households	3,767	3,767	3,364	-11.98%
Persons Per Household	-----	-----	2.52	-----

Economy

This area has seen growth primarily in manufacturing and distribution. Primary industry includes timber and logging. Principal crops of Catahoula Parish include corn, timber, and soybeans, as well as the raising of livestock. Industry data for business patterns in Catahoula Parish can be found in the table on the next page

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

Business Description	Number of Establishments	Number of Employees	Annual Payroll (\$1,000)
Retail Trade	31	275	6,438
Health Care and Social Assistance	16	396	9,408
Mining, Quarrying, Oil and Gas Extraction	4	18	804
Transportation and Warehousing	3	3	93
Construction	6	152	7,058
Wholesale Trade	10	60	3,423
Other Services (except Public Administration)	27	82	1,560
Accommodation and Food Services	7	87	958
Financial and Insurance	14	96	3,581
Professional, Scientific, and Technical Services	40	88	4,339
Agriculture, Forestry, Fishing and Hunting	4	29	1,857

Hazard Mitigation

To fully understand hazard mitigation efforts in Catahoula 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 Catahoula Parish Hazard Mitigation Plan (HMP) maintains much of the information from the 2016 plan version, but it now incorporates the order and methodologies of the 2019 Louisiana State Hazard Mitigation Plan.

The sections in the 2016 Catahoula 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 Catahoula 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 Catahoula Parish Hazard Mitigation Plan. The current goals are as follows:

1. Reduce the impact of future flooding
2. Ensure the delivery of critical services to the community in the case of a hazard event
3. Improve the ability of structures to withstand high wind and storm events
4. Engage and inform the community on the subject of hazard mitigation

This plan update makes a number of textual changes throughout, but the most obvious changes are data related and structural edits. First, the National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information's (NCEI) Storm Events Database was used in the analysis, which provides historical hazard data from 1950 to 2020. The steering committee was also instrumental

in providing detailed data where appropriate to more accurately reflect hazard impacts on the parish and jurisdictions. Furthermore, all of the sections were updated to reflect the most current information and the most current vision of the plan update. The most significant changes are the newly developed hazard profiles and risk assessments, as well as the removal of much repetition between sections from the previous plan updates.

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

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

Table 1-3: 2021 Plan Update Crosswalk

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

Despite numerous changes in this plan update, the plan remains consistent in its emphasis on the types of hazards that pose the most risk to loss of life, injury, and property in Catahoula Parish and its communities. The extent of this risk is dictated primarily by its geographic location. Most significantly, Catahoula 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 Catahoula 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 Catahoula 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 Catahoula Parish Hazard Mitigation Plan published in 2016, as well as the hazards that were identified in the state's 2019 Hazard Mitigation Plan that were of high or medium risk for the parish by the state. Those hazards identified as high or medium risk by the state or previously identified as a risk by the parish, have been determined to provide a risk to the parish and will be profiled in this section.

Table 2-1: Hazard Profile Summary.

Hazard	Profiled in Last Plan	Considered Medium or High Risk in the State's HM Plan	Profiled in the 2021 Update
Drought	X		X
Flooding	X	X	X
Thunderstorms (Hail, Lightning, & Wind)	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) Drought
- b) Flooding
- 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, rainstorms, tropical cyclones, and hurricanes in the following forms:
 - a) Riverine
 - b) Stormwater
 - c) Surge
 - d) Backwater flooding (as the result of river flooding and surge)
 - e) Coastal

- High wind damage most commonly resulting from hurricanes, thunderstorms, and tornadoes
- Property damage resulting from all profiled natural hazards

The potential destructive power of tropical cyclones and floods were determined to be the most prevalent hazard to the parish. Twenty-seven of the twenty-nine disaster declarations Catahoula Parish has received resulted from either flooding (17) or tropical cyclones (10), which validates these as the most significant hazards. Therefore, the issues of hurricanes and flooding 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 Catahoula Parish is included in the hurricane risk assessment.

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

Table 2-2: Catahoula Parish Major Disaster Declarations.

Disaster Number	Year	Declaration
208	9/10/1965	Tropical Cyclone – Hurricane Betsy
374	4/27/1973	Severe Storms, Flooding
418	2/23/1974	Severe Storms, Flooding
3011	4/12/1975	Severe Storms, Flooding
470	6/6/1975	Tornadoes, Flooding
584	5/2/1979	Severe Storms, Flooding
675	1/11/1983	Severe Storms, Flooding
804	11/30/1987	Tornadoes and Flooding
902	4/23/1991	Severe Storm, Flooding
904	5/3/1991	Severe Storms, Tornadoes, and Flooding
1264	1/21/1999	Severe Ice Storm
1437	10/3/2002	Tropical Cyclone – Hurricane Lili

Disaster Number	Year	Declaration
1603	8/29/2005	Tropical Cyclone – Hurricane Katrina
1607	9/24/2005	Tropical Cyclone – Hurricane Rita
1668	11/2/2006	Severe Storms, Flooding
1786	9/2/2008	Tropical Cyclone – Hurricane Gustav
1863	12/10/2009	Sever Storms, Tornadoes, and Flooding
3322	5/6/2011	Severe Storms, Flooding
4015	8/18/2011	Severe Storms, Flooding
4080	8/29/2012	Tropical Cyclone – Hurricane Isaac
4102	2/22/2013	Severe Storm, Flooding
3376	2/15/2016	Severe Storm, Flooding
4277	8/14/2016	Severe Storm, Flooding
3413	5/29/2019	Flooding
4458	8/27/2019	Tropical Cyclone – Hurricane Barry
4484	3/24/2020	COVID-19 Pandemic
3527	6/7/2020	Tropical Cyclone – Tropical Storm Cristobal
3538	8/23/2020	Tropical Cyclone – Tropical Storms Laura and Marco
4559	8/28/2020	Tropical Cyclone – Hurricane Laura

Probability of Future Hazard Events

The probability of a hazard event occurring in Catahoula Parish is estimated in the table on the following page. The percent chance of an event happening during any given year was calculated by posting past events and dividing by the time period. Unless otherwise indicated, the time period used to access probability followed the method used in the State of Louisiana’s most current Hazard Mitigation Plan. The primary source for historical data used throughout the plan is the National Oceanic and Atmospheric Administration’s (NOAA) National Centers for Environmental Information’s (NCEI) Storm Events Database, which provides historical hazard data from 1950 to 2020. In staying consistent with the state plan, the Storm Events Database was evaluated for the last thirty years (1990 – 2020) to determine future probability of a hazard occurring. While the 30-year record used by the State was adopted for the purpose of determining the overall probability, to assist with determining estimated losses, unless otherwise stated, the full 70-year record was used when Hazus was not available to determine losses. This full record was used to provide a more extensive record to determine losses. All assessed damages were adjusted for inflation in order to reflect the equivalent amount of damages with the value of the U.S. dollar today.

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

Table 2-3: Probability of Future Hazard Reoccurrence.

Hazard	Probability			
	Catahoula Parish (Unincorporated)	Harrisonburg	Jonesville	Sicily Island
Drought	17%	17%	17%	17%
Flooding	30%	30%	37%	37%
Thunderstorms - Hail	100%	100%	100%	100%
Thunderstorms - Lightning	3%	3%	3%	3%
Thunderstorms - Winds	100%	100%	100%	100%
Tornadoes	100%	100%	100%	100%
Tropical Cyclones	39%	39%	39%	39%
Winter Storms	3%	3%	3%	3%

As shown in the above tables, hailstorms, thunderstorm winds, and tornadoes have the highest chance of occurrence in the parish (100%). These are followed by tropical cyclones (39%), flooding for the incorporated areas of Jonesville and Sicily Island (37%), flooding for the incorporated area of Harrisonburg and the unincorporated area of the parish (30%), drought (17%), and lightning and winter storms (3%).

Inventory of Assets for the Entire Parish

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

Within the entire planning area, there is an estimated value of \$1,556,597,000 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 Catahoula Parish.

Occupancy	Catahoula Parish	Unincorporated Area	Harrisonburg	Jonesville	Sicily Island
Agricultural	\$17,342,000	\$11,784,000	\$0	\$5,558,000	\$0
Commercial	\$185,832,000	\$63,122,000	\$7,687,000	\$107,524,000	\$7,499,000
Government	\$23,675,000	\$9,307,000	\$8,426,000	\$5,942,000	\$0
Industrial	\$24,914,000	\$15,656,000	\$552,000	\$8,706,000	\$0
Religion	\$56,206,000	\$31,170,000	\$5,528,000	\$16,712,000	\$2,796,000
Residential	\$1,225,930,000	\$925,999,000	\$28,576,000	\$218,746,000	\$52,609,000
Education	\$22,698,000	\$14,168,000	\$1,726,000	\$6,804,000	\$0
Total	\$1,556,597,000	\$1,071,206,000	\$52,495,000	\$369,992,000	\$62,904,000

Essential Facilities of the Parish

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

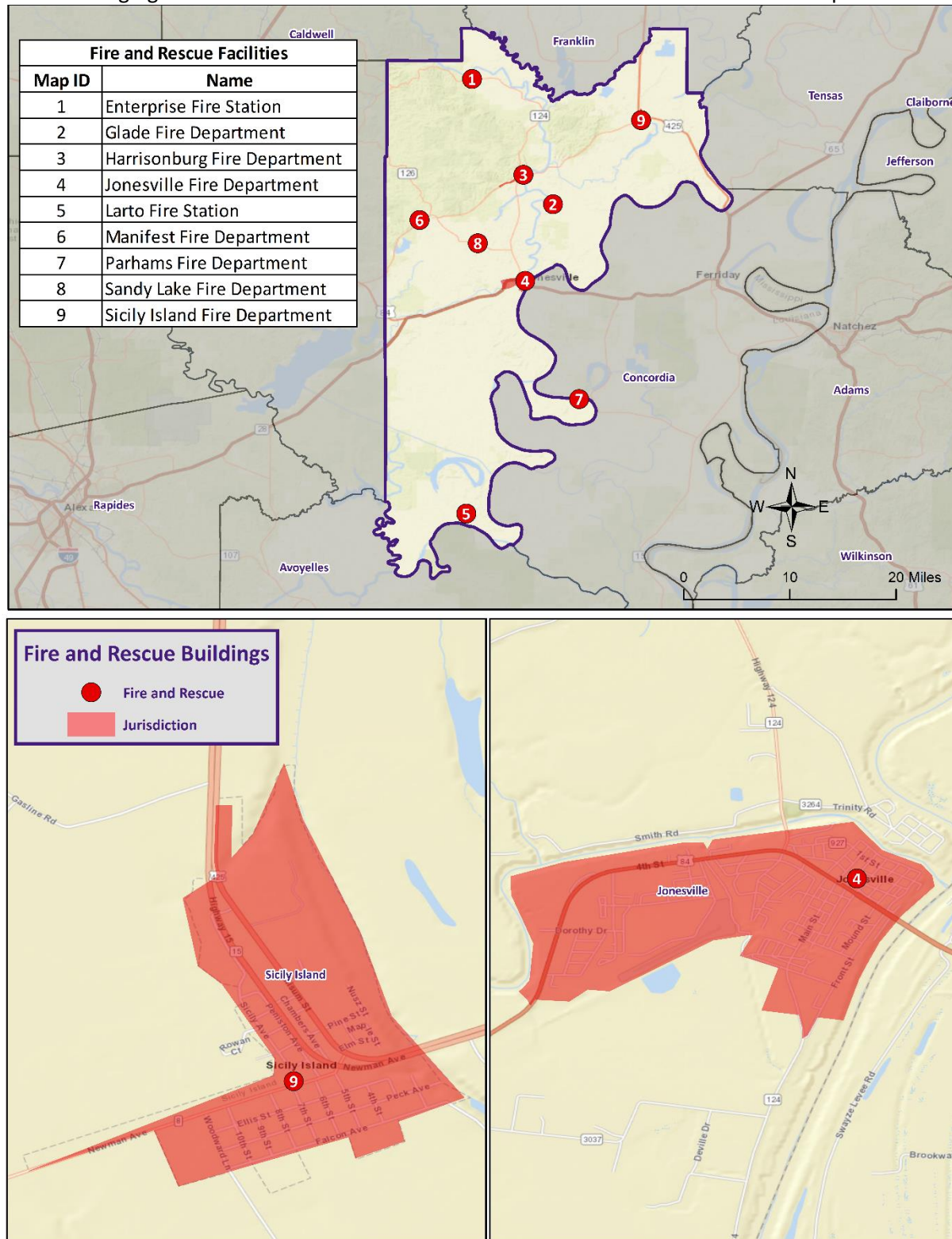


Figure 2-1: Fire and Rescue Facilities in Catahoula Parish.

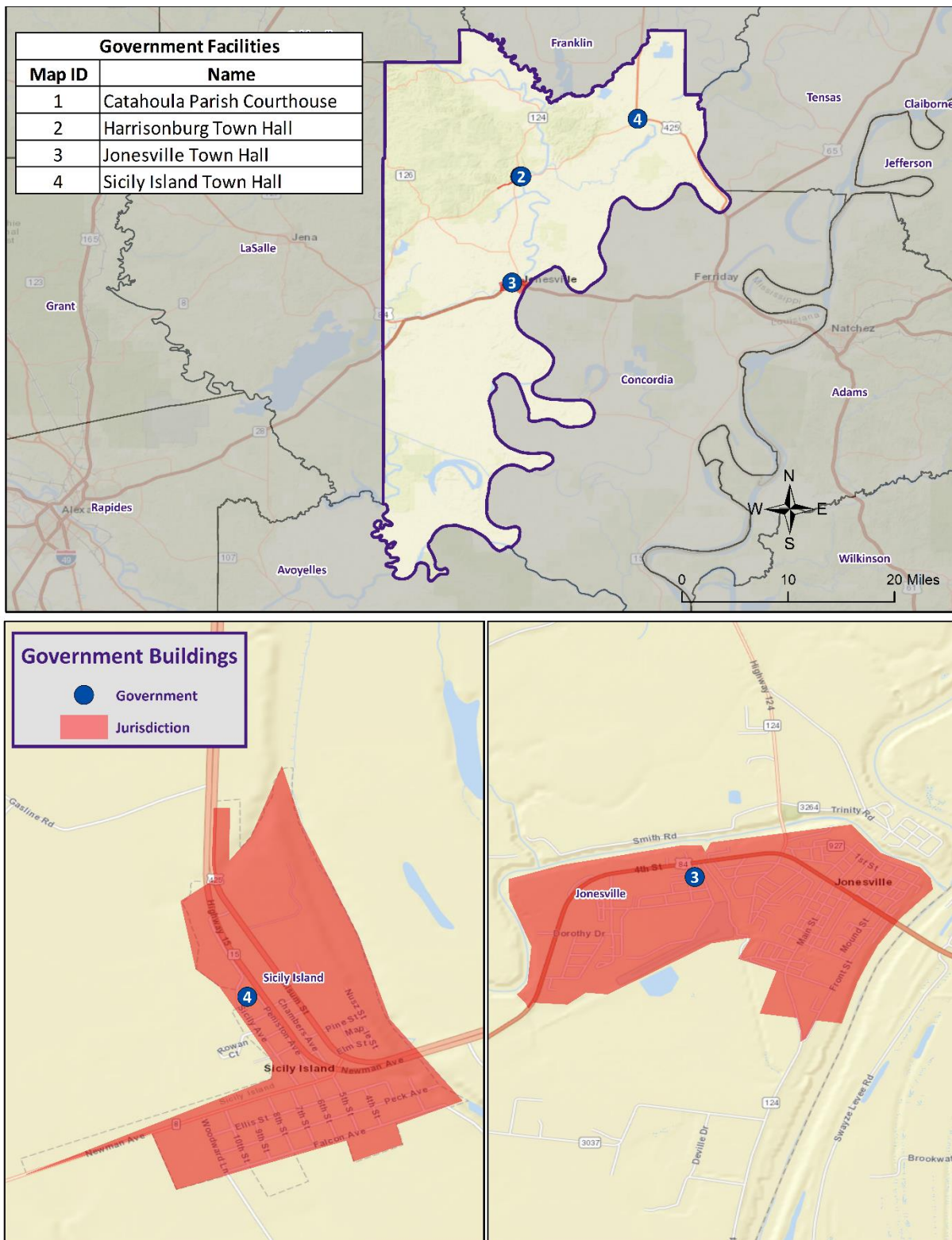


Figure 2-2: Government Buildings in Catahoula Parish.

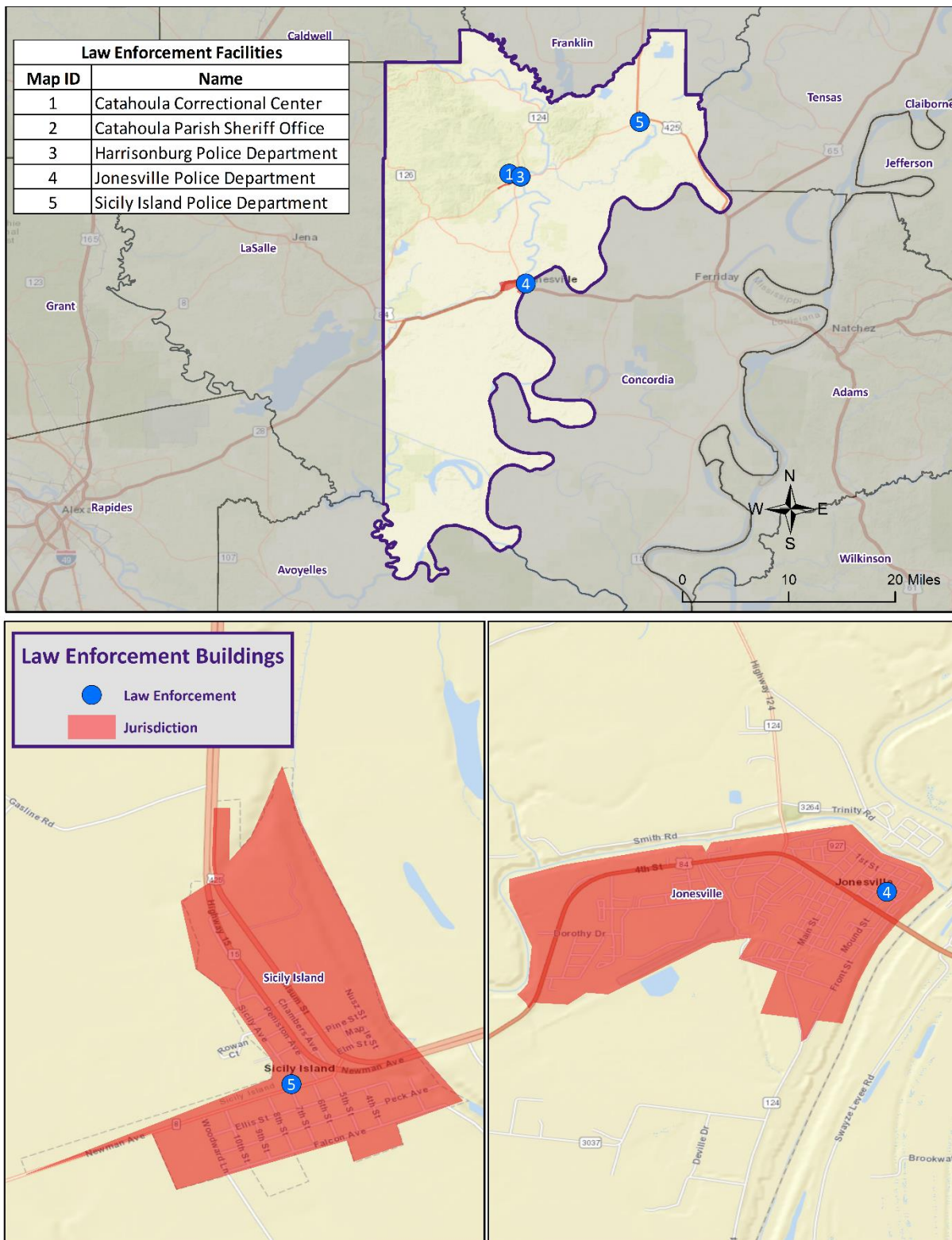


Figure 2-3: Law Enforcement in Catahoula Parish.

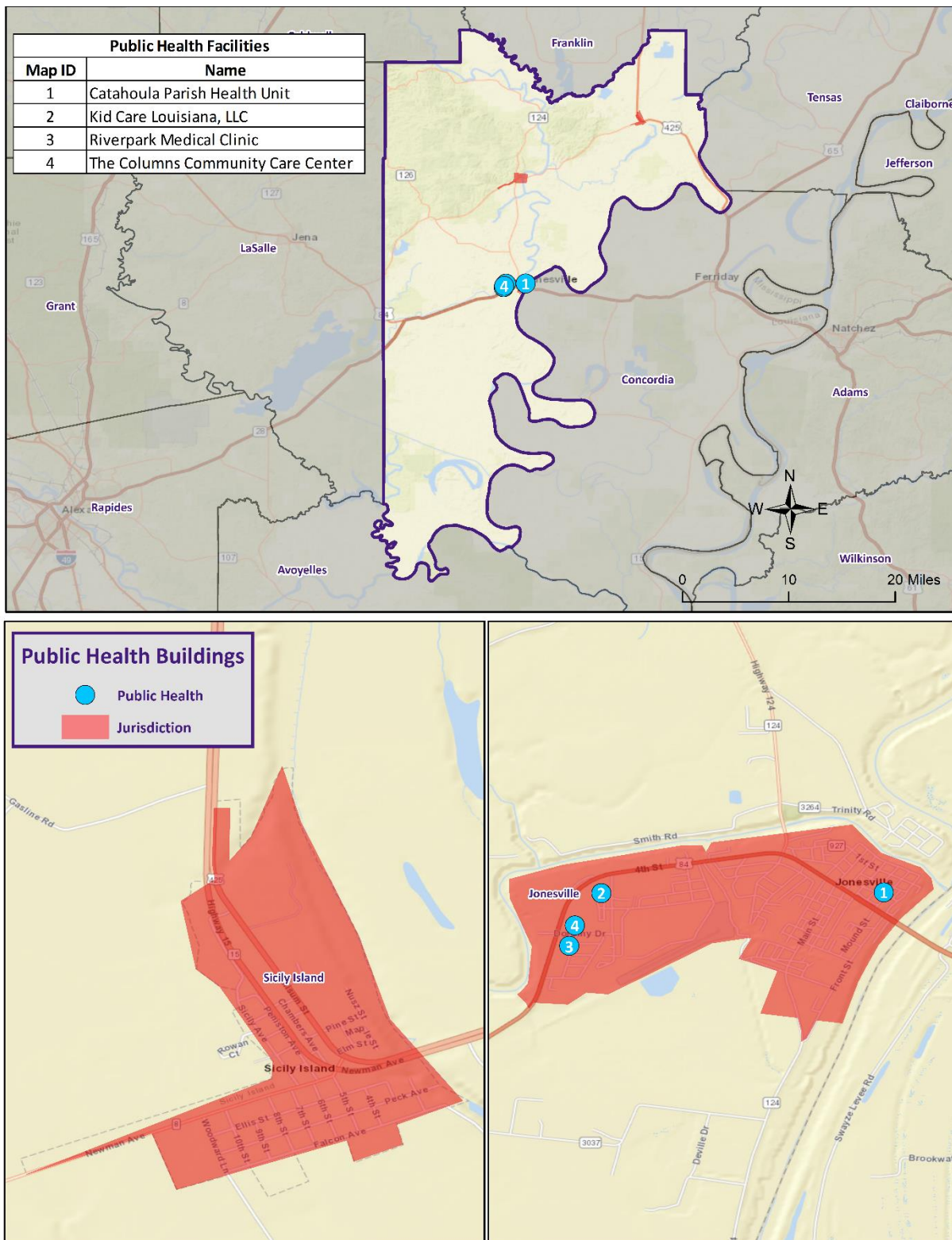
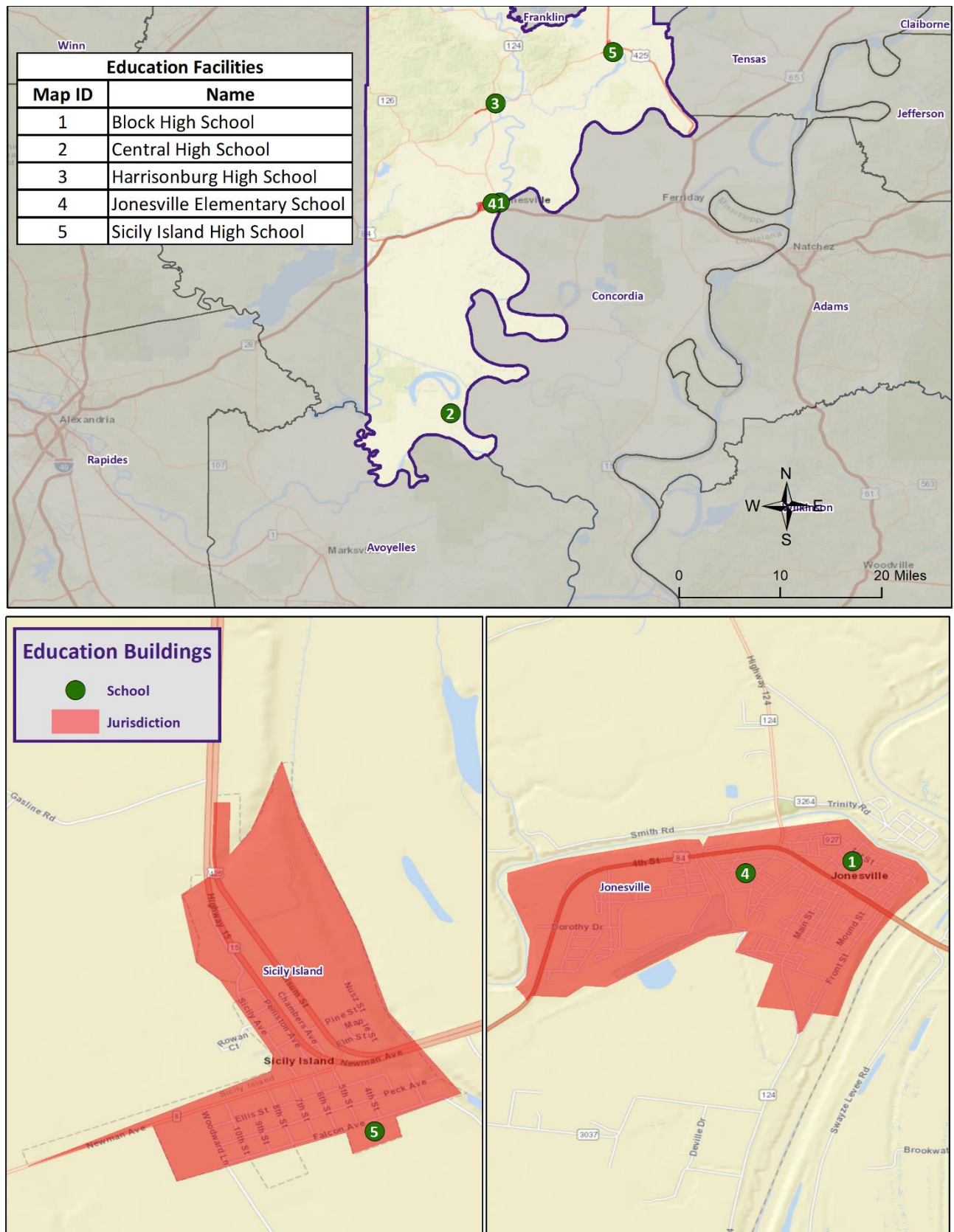


Figure 2-4: Public Health Facilities in Catahoula Parish.



Future Development Trends

Catahoula Parish experienced a decline in population and housing between the years of 2000 and 2019, declining in population from 10,882 with 5,351 housing units in the year 2000 to a population of 9,494 with 5,043 housing units in the year 2019. The incorporated area of Jonesville experienced the largest population decline within the parish falling from a populace of 2,259 in 2010 to 2,000 in 2019 (11.5% overall decline) which is then followed by the incorporated area of Sicily Island (11.5% overall decline), the incorporated area of Harrisonburg (8.6% overall decline), and the unincorporated area of the parish (7.8% overall decline).

Harrisonburg experienced the largest growth of housing units from 2010 to 2019 growing from 171 in 2010 to 189 in 2019. The incorporated area of Jonesville experienced the second largest growth in housing units during this time period with a 0.6% annual growth rate followed by the unincorporated area of the parish with a 0.3% annual growth rate. The incorporated area of Sicily Island remained stagnant during this same time period. 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 Catahoula Parish.

Total Population	Catahoula Parish	Unincorporated Area	Harrisonburg	Jonesville	Sicily Island
1-Apr-00	10,882	7,565	395	2,471	451
1-Apr-10	10,407	7,276	347	2,259	525
1-Jul-19	9,494	6,712	317	2,000	465
Population Growth between 2000 – 2010	-4.4%	-3.8%	-12.2%	-8.6%	16.4%
Average Annual Growth Rate between 2000 – 2010	-0.4%	-0.4%	-1.2%	-0.9%	1.6%
Population Growth between 2010 – 2019	-8.8%	-7.8%	-8.6%	-11.5%	-11.4%
Average Annual Growth Rate between 2010 – 2019	-0.97%	-0.86%	-0.96%	-1.27%	-1.27%

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

Total Housing Units	Catahoula Parish	Unincorporated Area	Harrisonburg	Jonesville	Sicily Island
1-Apr-00	5,351	3,917	157	1,032	245
1-Apr-10	4,877	3,457	171	988	261
1-Jul-19	5,043	3,549	189	1,044	261
Housing Growth between 2000 – 2010	-8.9%	-11.7%	8.9%	-4.3%	6.5%
Average Annual Growth Rate between 2000 – 2010	-0.9%	-1.2%	0.9%	-0.4%	0.7%
Housing Growth between 2010 – 2019	3.4%	2.7%	10.5%	5.7%	0.0%
Average Annual Growth Rate between 2010 – 2019	0.4%	0.3%	1.2%	0.6%	0.0%

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 Catahoula Parish from the present until 2030. A summary of estimated future impacts is shown in the table below. Dollar values are expressed in future costs and assume an annual rate of inflation of 1.02%.

Table 2-7: Estimated Future Impacts, 2018-2030.

(Source: Hazus, US Census Bureau)

Hazard / Impact	Total in Parish (2019)	Hazard Area (2018)	Hazard Area (2025)	Hazard Area (2030)
Flood Damage				
Structures	5,062	1,459	1,487	1,521
Value of Structures	\$1,578,421,268	\$455,007,572	\$487,811,797	\$530,313,532
# of People	9,503	2,740	2,753	2,770
Tropical Cyclone Damage				
Structures	5,062	5,062	5,159	5,277
Value of Structures	\$1,578,421,268	\$1,578,421,268	\$1,692,219,124	\$1,839,657,641
# of People	9,503	9,503	9,551	9,609

While the population has declined within the parish, housing numbers have remained relatively steady throughout since the last update to the Catahoula Parish Hazard Mitigation Plan. With that in mind, Catahoula 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 Catahoula Parish. Strict enforcement of building codes for all new development is an additional step taken by the parish in its effort to decrease its vulnerability and increase the resiliency of the parish against natural hazards. The small amount of development that has occurred since 2016 has not in any knowing way altered the jurisdiction's vulnerability to natural hazards.

Assessing Vulnerability Overview

The purpose of assessing vulnerability is to quantify and/or qualify exposure and determine how various threats and hazards impact life, property, the environment, and critical operations in Catahoula 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 Catahoula 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 Catahoula Parish. A summary of the PRI is found in the following table. The conclusions drawn from the qualitative and quantitative assessments are fitted into three categories based on High, Moderate, or Low designations. Hazards identified as high risk have risk factors of 2.5 or greater. Risk Factors ranging from 2.0 to 2.4 are deemed moderate risk hazards. Hazards with Risk Factors less than 2.0 are considered low risk.

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

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

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

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

Table 2-10: Risk Assessment for Catahoula Parish.

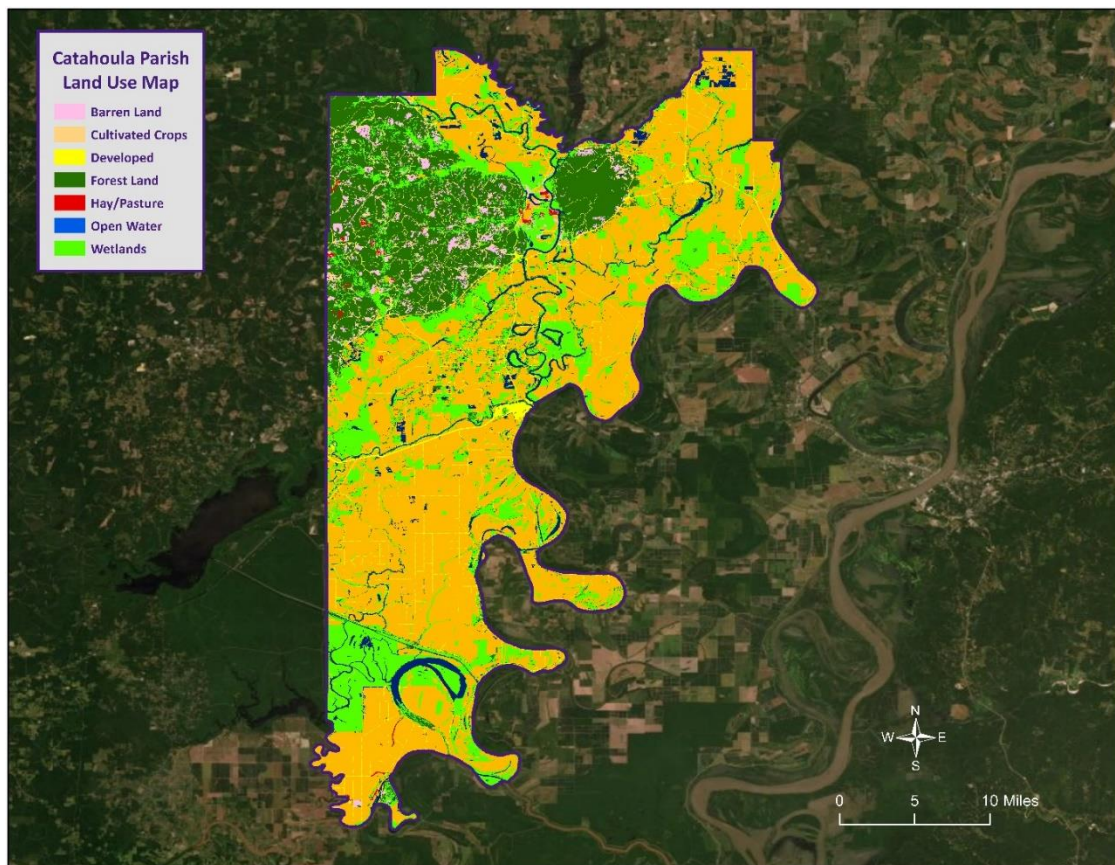
Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	Overall Risk
Drought	3	2	4	2	3	2.8
Flooding	3	4	3	4	3	3.4
Thunderstorms – Hail	4	2	3	3	1	2.7
Thunderstorms – Lightning	2	2	2	3	1	2
Thunderstorms – Wind	4	2	3	3	1	2.7
Tornadoes	4	3	2	4	3	3.2
Tropical Cyclones	3	4	4	1	4	3.3
Winter Storms	2	2	2	4	2	2.3

Land Use

The Catahoula Parish Land Use table is provided below. Residential, commercial, and industrial areas account for only 4% of the parish's land use. Agricultural land at 242,233 acres is the largest category accounting for 53% of land in the parish. The parish also consists of wetlands (21%), forested areas (18%), and water areas (5%).

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

Land Use	Acres	Percentage
Agricultural Land, Cropland, and Pasture	242,233	53%
Wetlands	94,756	21%
Forest Land (Not including forested wetlands)	84,228	18%
Urban/Development	17,880	4%
Water	20,984	5%



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

Hazard Identification

Drought

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

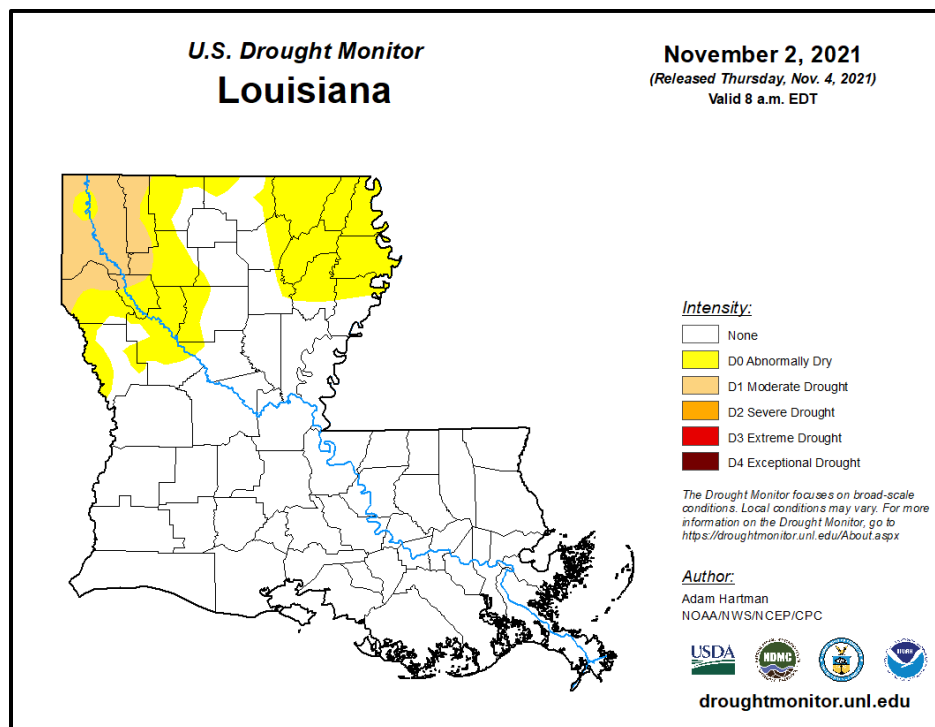
Drought is a unique and insidious hazard. Unlike other natural hazards, no specific threshold of “dryness” exists for declaring a drought. In addition, the definition of drought depends on stakeholder needs. For instance, the onset (and demise) of agricultural drought is quick, as crops need water every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

This hazard is often measured using the Palmer Drought Severity Index (PDSI, also known operationally as the Palmer Drought Index). The PDSI, first developed by Wayne Palmer in a 1965 paper for the U.S. Weather Bureau, measures drought through recent precipitation and temperature data with regard to a basic supply-and-demand model of soil moisture. It is most effective in long-term calculations. Three other indices used to measure drought are the Palmer Hydrologic Drought Index (PHDI), the Crop Moisture Index (CMI), which is derived from the PDSI, and the Keetch-Byram Drought Index (KBDI), created by John Keetch and George Byram in 1968 for the U.S. Forest Service. The KBDI is used mainly for predicting the likelihood of wildfire outbreaks. As a compromise, the PDSI is used most often for droughts since it is a medium-response drought indicator. The objective of the PDSI is to provide measurements of moisture conditions that are standardized so that comparisons using the index can be made between locations and between months. [Table 2-12](#) displays the range and Palmer classifications of the PDSI index while [Figure 2-7](#) displays the current drought monitor for the state of Louisiana and its parishes.

Table 2-12: Palmer Drought Severity Index Classification and Range

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

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



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

Location

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

Previous Occurrences / Extent

Historically, there have been five drought incidents in Catahoula Parish. Drought events have ranged from Mild to Extreme per the National Climatic Data Center. Since the last update in 2016, there have been two drought events within the boundaries of Catahoula Parish. Below is a brief synopsis of those events:

Table 2-13: Historical Droughts in Catahoula Parish since the 2016 Catahoula Parish HMP Update.

Date	Extents	Drought Magnitude	Estimated Damages
November to December 2016	Very dry conditions continued into December, which resulted in an area of severe drought (D2). Crops were put under more stress from the dry conditions. The drought eased by the middle of the month.	D2	\$0
October 2019	Lack of rainfall across the region has led to a severe drought across portions of Louisiana. This includes severe drought (D2) level in Catahoula Parish.	D2	\$50,000

Frequency / Probability

Based on five drought events since 1990, the annual chance of occurrence of a drought event occurring within a given year is calculated at 17% for Catahoula Parish.

Estimated Potential Losses

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

*Table 2-14: Agricultural Exposure by Crop Type for Droughts in Catahoula Parish.
(Source: LSU AG Center 2018 Parish Totals)*

Agricultural Exposure by Type for Drought				
Cotton	Hay	Rice	Soybeans	Wheat
\$21,841,122	\$423,544	\$2,334,182	\$59,711,490	\$2,947,291

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

Vulnerability

See [Appendix C: Critical Facilities](#) for parish and municipality buildings that are susceptible to drought.

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 Catahoula 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 2-8](#).

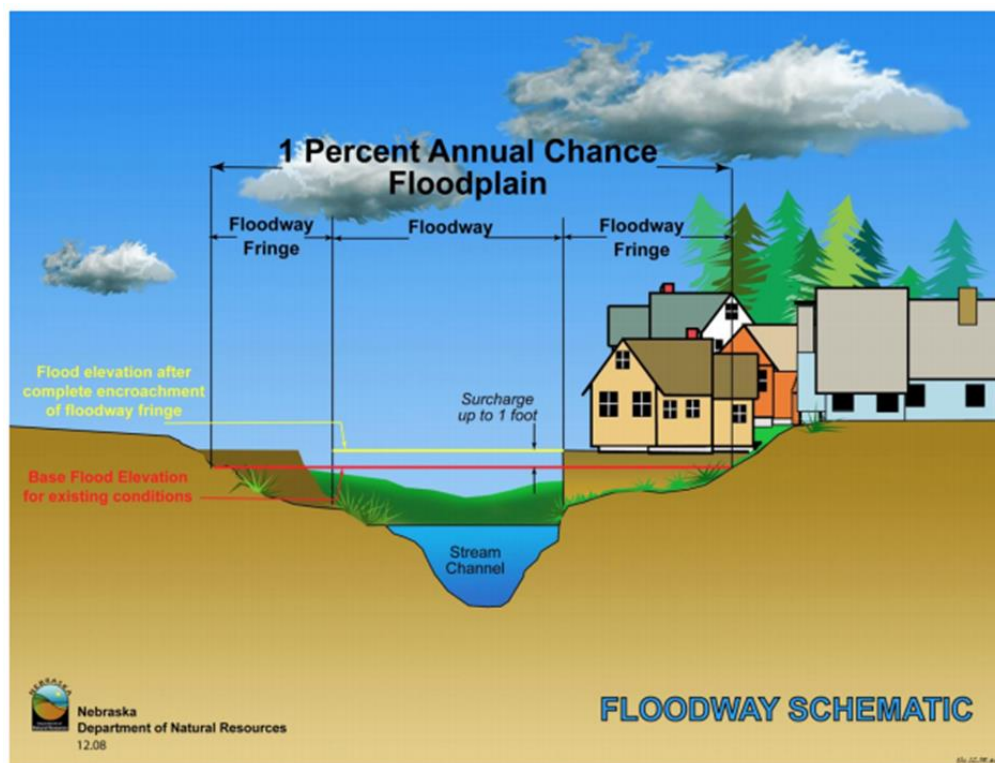


Figure 2-8: Schematic of 100-year Floodplain. The Special Flood Hazard Area (SFHA) extends to the end of the floodway fringe.

(Source: Nebraska Department of Natural Resources)

A SFHA is the land area covered by the floodwaters of the base flood (red line in [Figure 2-8](#)), 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:

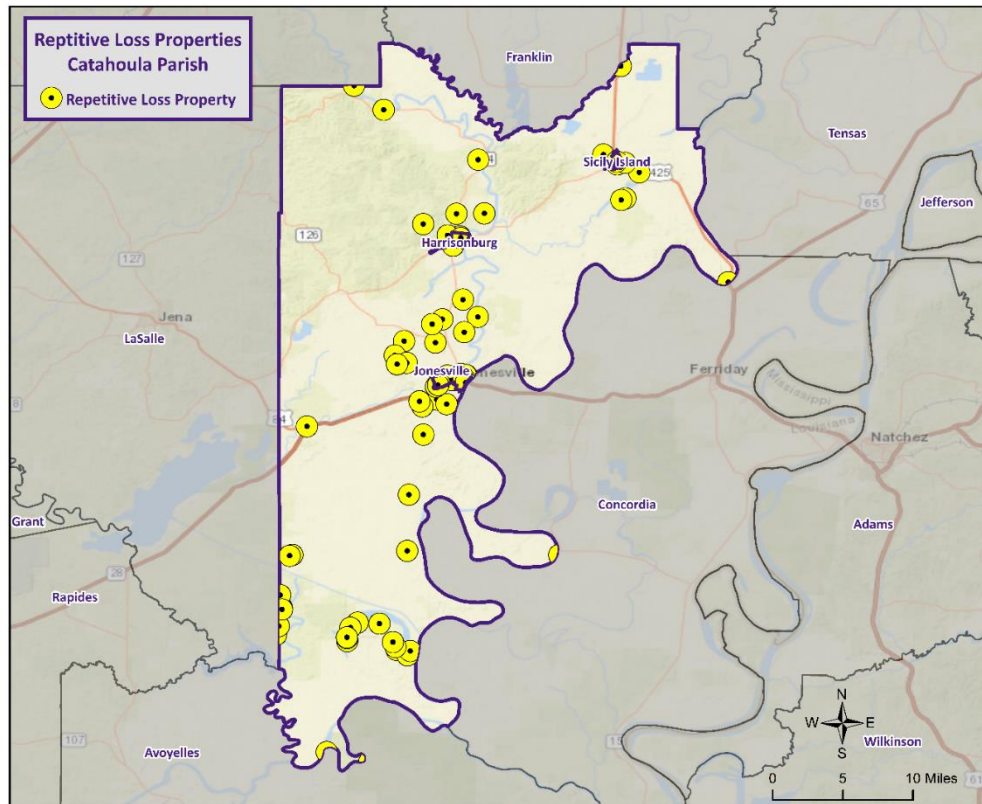
- a. It is covered under a contract for flood insurance made available under the NFIP; and
- b. It has incurred flood related damage –
 - 1) For which four or more separate claims payments have been made under flood insurance coverage with the amount of each claim exceeding \$5,000 and with the cumulative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

Table 2-15: Repetitive Loss Structures for West Baton Rouge Parish.

Jurisdiction	Number of Structures	Residential	Commercial	Government	Total Claims	Total Claims Paid	Average Claim Paid
Catahoula Parish (Unincorporated)	292	285	7	0	1,093	11,497,064	\$10,519
Harrisonburg	0	0	0	0	0	\$0	\$0
Jonesville	6	6	0	0	13	\$186,533	\$14,349
Sicity Island	0	0	0	0	0	\$0	\$0
Total	298	291	7	0	1,106	\$11,683,597	\$10,564

All 298 repetitive loss structure was geocoded in order to provide an overview of where the repetitive loss structure was located. [Figure 2-9](#) shows the approximate location of the structure, while [Figure 2-10](#) shows where the highest concentration of repetitive loss structures is located. Through the repetitive loss map, it is clear the primary concentrated area of repetitive loss structures is focused in and around the incorporated areas of Jonesville and in the southern unincorporated areas of the parish.

*Figure 2-9: Repetitive Loss Properties in Catahoula Parish.*

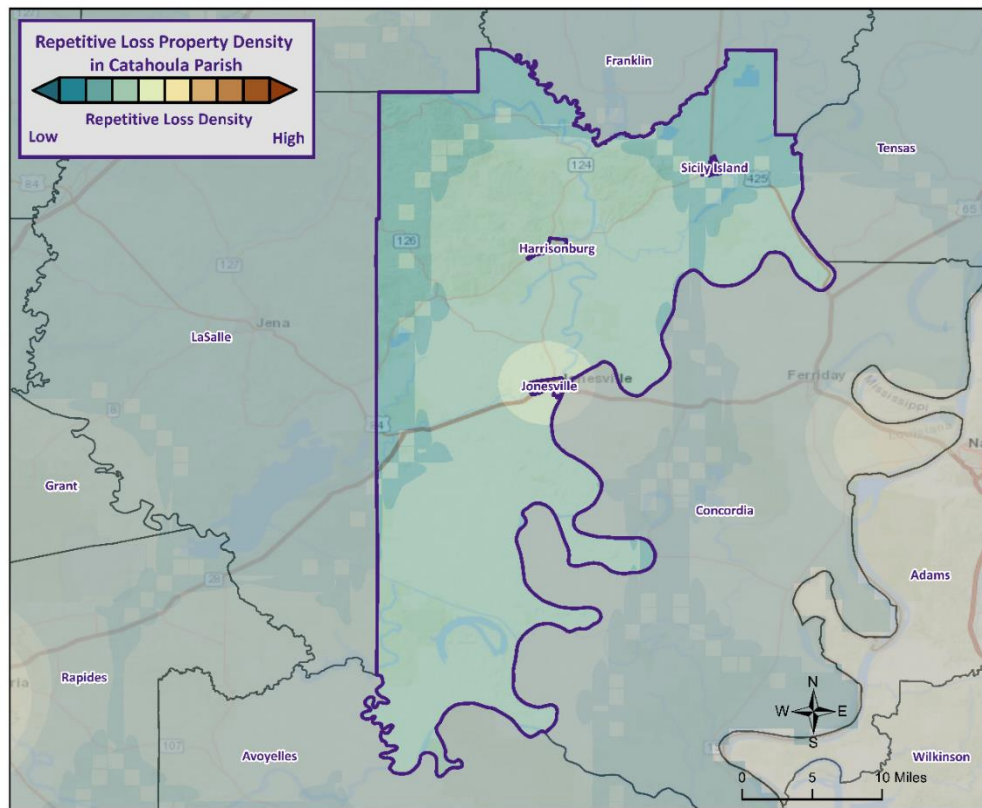


Figure 2-10: Repetitive Loss Property Densities in Catahoula Parish.

National Flood Insurance Program

Flood insurance statistics indicate that Catahoula Parish has 805 flood insurance policies with the NFIP, with total annual premiums of \$101,461,300. Catahoula Parish and the jurisdictions of Harrisonburg, Jonesville, and Sicily Island are all participants in the NFIP. Catahoula Parish and all of its jurisdictions will continue to adopt and enforce floodplain management requirements, including regulating new construction Special Flood Hazard Areas, and will continue to monitor activities including local requests for new map updates. Flood insurance statistics and additional NFIP participation details for Catahoula Parish and its jurisdictions is provided in the tables to follow.

Table 2-16: Summary of NFIP Policies for Catahoula Parish.

Location	No. of Insured Structures	Total Insurance Coverage Value	Annual Premiums Paid	Insurance Claims Filed Since 1978	Total Loss Payments
Catahoula Parish	715	\$82,649,300	\$566,540	2,576	\$15,352,816
Harrisonburg	74	\$16,911,900	\$34,997	56	\$566,024
Jonesville	15	\$1,550,100	\$12,391	14	\$64,839
Sicily Island	1	\$350,000	\$414	0	\$0
Total	805	\$101,461,300	\$614,342	2,646	\$15,983,679

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

CID	Community Name	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Date Joined the NFIP	Tribal
220047	Catahoula Parish	11/29/1977	4/5/1988	4/19/2005	4/5/1998	No
220048	Harrisonburg	12/21/1973	4/5/1988	4/5/1988	4/5/1988	No
220049	Jonesville	12/17/1973	3/1/1978	4/19/2005	3/1/1978	No
220050	Sicily Island	12/28/1973	4/5/1988	NSFHA	1/20/2011	No

According to the Community Rating System (CRS) list of eligible communities dated October 1, 2021, Catahoula Parish and incorporated areas of Harrisonburg, Jonesville, and Sicily Island do not 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 Catahoula 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 Catahoula 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.

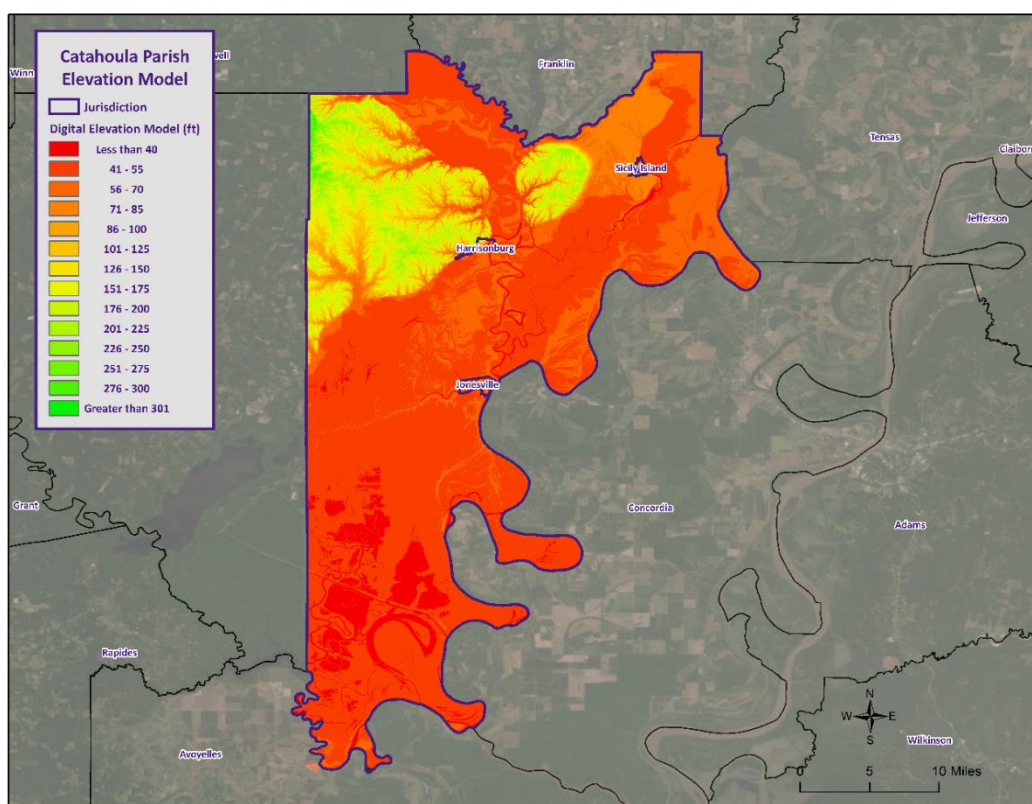


Figure 2-11: Elevation throughout Catahoula Parish.

The digital elevation model (DEM) in the figure below for Catahoula Parish is instructive in visualizing where the low-lying and high-risk areas are for the parish. Elevations in the parish range from less than 40 feet (NAVD88) to approximately 300 feet (NAVD88). The highest elevations in the parish are approximately 320 feet (NAVD88), located in the northwest unincorporated areas of the parish. The incorporated areas of Catahoula Parish have average elevations ranging from 59 feet (NAVD88) to 79 feet (NAVD88). The incorporated area of Jonesville has an average elevation of approximately 59 feet (NAVD88), Sicily Island has an average elevation of 75 feet (NAVD88), and Harrisonburg has an average elevation of 79 feet (NAVD88).

Location

Catahoula Parish has experienced significant flooding in its history and can expect more in the future. Approximately 80% of the parish is located in the 100-year floodplain. Catahoula Parish lies primarily within the Ouachita Basin. Major flood problems within Catahoula Parish result from the inability of the natural gravity drainage systems to move heavy rainfall rapidly enough to prevent flooding, particularly during the high water stages of the Black and Red Rivers. Backwater flooding from the Ouachita, Red, and Black Rivers occurs primarily in the spring. Most of the damages incurred parish wide are agricultural damages, since much clearing of low woodland areas has taken place to allow for agricultural activity.

Based on previous flood events, the worst-case scenarios are based on several different types of flooding events. Storm water excesses and riverine flooding primarily affect the low-lying areas of the parish, and flood depths of up to four feet can be expected in the unincorporated areas of the parish and the incorporated areas of Harrisonburg, Jonesville, and Sicily Island.

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

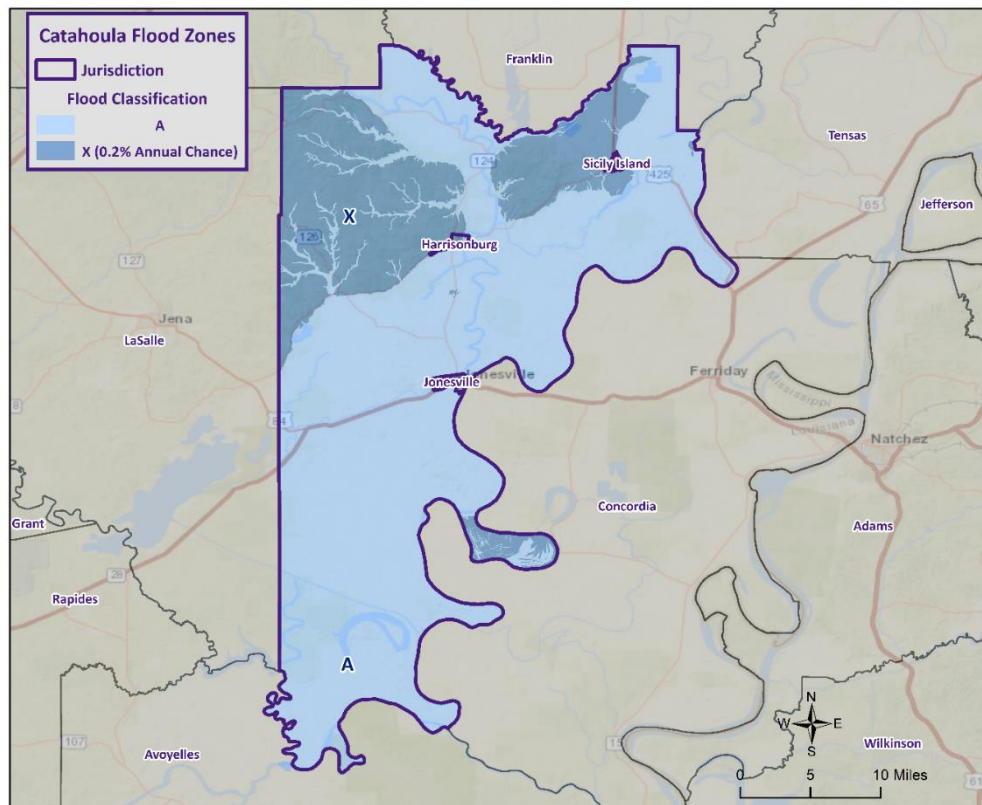


Figure 2-12: Catahoula Parish Areas within the Flood Zones.

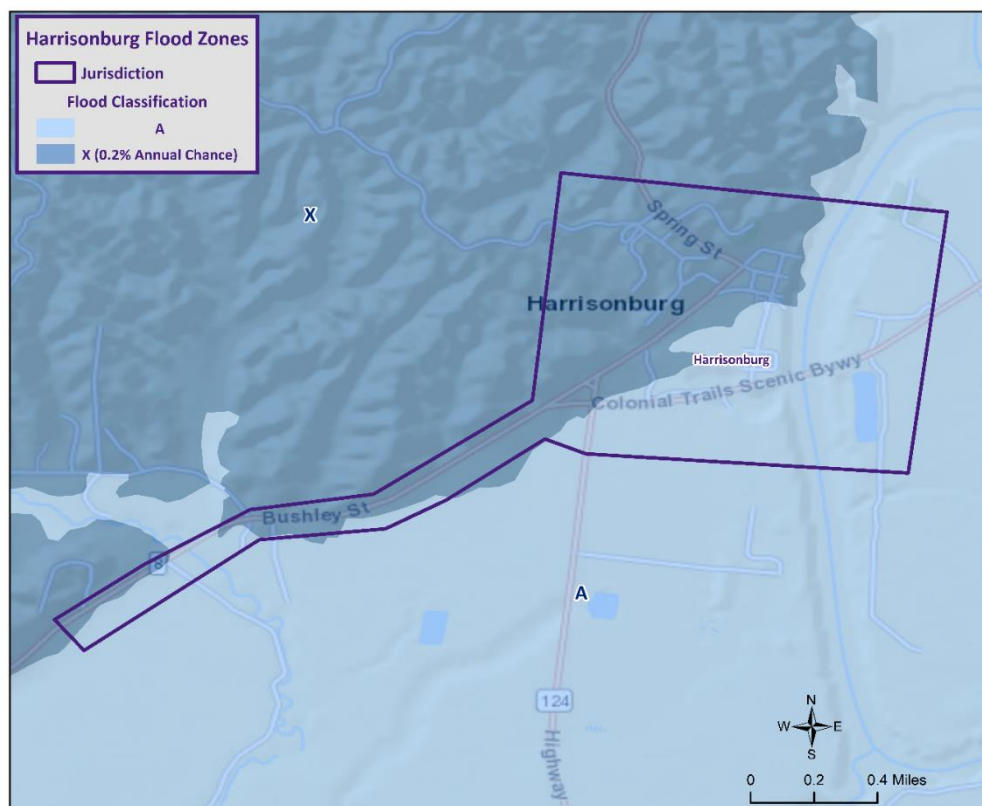


Figure 2-13: Harrisonburg Areas within the Flood Zones.

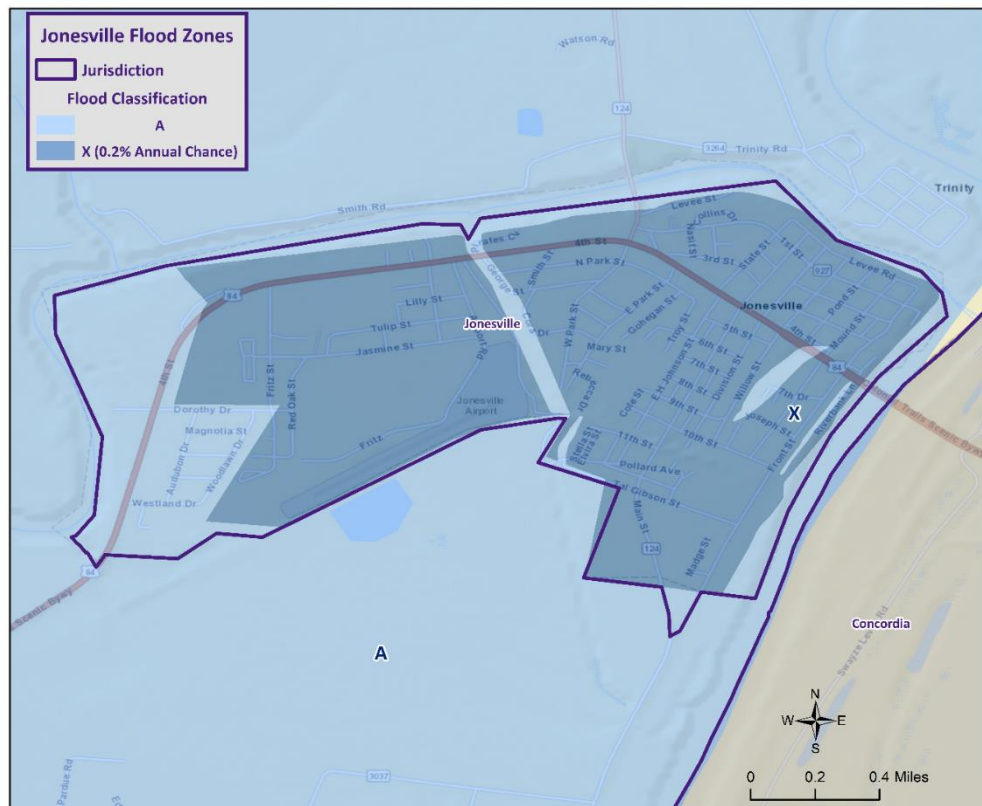


Figure 2-14: Jonesville Areas within the Flood Zones.



Figure 2-15: Sicily Island Areas within the Flood Zones.

Previous Occurrences / Extents

Historically, there have been 26 flooding events that have caused significant flooding in Catahoula Parish and its jurisdictions between 1990 and 2020. Below is a brief synopsis of the flooding events which occurred since the last Catahoula Parish HMP Update in 2016.

Table 2-18: Historical Floods in Catahoula Parish with Locations since the 2016 Catahoula Parish HMP Update.

Date	Extents	Type of Flooding	Estimated Damages	Location
April 2, 2017	Multiple roads were flooded across the parish.	Flash Flood	\$80,000	HARRISONBURG
January 3, 2019	Ponding water from several rounds of rainfall caused flooding along Ratcliff Road near Sicily Island.	Flood	\$2,000	FOULES
January 14, 2020	Streets near Block High School were flooded.	Flash Flood	\$5,000	TRINITY
January 14, 2020	Flooding occurred on a portion of Highway 3101. Additionally, Highway 124 at Brooks Road was also flooded.	Flash Flood	\$5,000	WALLACE
October 9, 2020	Persistent heavy rainfall from Hurricane Delta caused flash flooding in portions of Catahoula Parish especially in a corridor from near Jonesville to near Sicily Island. Fifteen homes in Jonesville took on floodwaters, and several roadways were either flooded over or washed out between Harrisonburg and Sicily Island.	Flash Flood	\$500,000	HARRISONBURG

Frequency / Probability

The NCEI Storm Events Database identified 26 flooding events within the Catahoula Parish planning area since 1990. The table below shows the probability and return frequency for each jurisdiction.

Table 2-19: Annual Flood Probabilities for Catahoula Parish.

Jurisdiction	Annual Probability	Return Frequency
Catahoula Parish (Unincorporated)	30%	1 event every 3 to 4 years
Harrisonburg	30%	1 event every 3 to 4 years
Jonesville	37%	1 event every 2 to 3 years
Sicily Island	37%	1 event every 2 to 3 years

Based on historical record, the overall flooding probability for the entire Catahoula Parish Planning area is 87% with 26 events occurring over a 30-year period.

Estimated Potential Losses

Using the Hazus Flood Model, the 100-year flood scenario, along with the Parish DFIRM, was analyzed to determine losses from this worst-case scenario. [Table 2-20](#) shows the total economic losses that would result from this occurrence.

*Table 2-20: Estimated Losses in Catahoula Parish from a 100-year Flood Event.
(Source: Hazus)*

Jurisdiction	Estimated Total Losses from 100-Year Flood Event
Catahoula Parish (Unincorporated Area)	\$9,460,000
Harrisonburg	\$290,000
Jonesville	\$521,000
Sicily Island	\$675,000
Total	\$10,946,000

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

*Table 2-21: Estimated 100-year Flood Losses for Catahoula Parish by Sector.
(Source: Hazus)*

Catahoula Parish (Unincorporated)	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$55,000
Commercial	\$670,000
Government	\$8,000
Industrial	\$115,000
Religious / Non-Profit	\$253,000
Residential	\$8,359,000
Schools	\$0
Total	\$9,460,000

*Table 2-22: Estimated 100-year Flood Losses for Harrisonburg by Sector.
(Source: Hazus)*

Harrisonburg	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$0
Commercial	\$0
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$290,000
Schools	\$0
Total	\$290,000

*Table 2-23: Estimated 100-year Flood Losses for Jonesville by Sector.
(Source: Hazus)*

Jonesville	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$0
Commercial	\$0
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$521,000
Schools	\$0
Total	\$521,000

*Table 2-24: Estimated 100-year Flood Losses for Sicily Island by Sector.
(Source: Hazus)*

Sicily Island	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$0
Commercial	\$106,000
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$94,000
Residential	\$475,000
Schools	\$0
Total	\$675,000

Threat to People

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

*Table 2-25: 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
Catahoula Parish (Unincorporated)	7,268	2,719	37.4%
Harrisonburg	2,265	101	4.5%
Jonesville	348	90	25.9%
Sicily Island	526	90	17.1%
Total	10,407	3,000	28.8%

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

*Table 2-26: Vulnerable Populations Susceptible to a 100-year Flood Event in Catahoula Parish.
(Source: Hazus)*

Catahoula Parish (Unincorporated)		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	2,719	37.4%
Persons Under 5 Years	170	6.3%
Persons Under 18 Years	614	22.6%
Persons 65 Years and Over	393	14.4%
White	1,825	67.1%
Minority	894	32.9%

*Table 2-27: Vulnerable Populations Susceptible to a 100-year Flood Event in Harrisonburg.
(Source: Hazus)*

Harrisonburg		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	90	25.9%
Persons Under 5 Years	4	4.9%
Persons Under 18 Years	21	23.0%
Persons 65 Years and Over	13	14.7%
White	65	71.8%
Minority	25	28.2%

*Table 2-28: Vulnerable Populations Susceptible to a 100-year Flood Event in Jonesville.
(Source: Hazus)*

Jonesville		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	101	4.5%
Persons Under 5 Years	8	7.8%
Persons Under 18 Years	29	28.5%
Persons 65 Years and Over	15	14.7%
White	31	30.9%
Minority	70	69.1%

*Table 2-29: Vulnerable Populations Susceptible to a 100-year Flood Event in Sicily Island.
(Source: Hazus)*

Sicily Island		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	90	17.1%
Persons Under 5 Years	6	6.5%
Persons Under 18 Years	24	26.4%
Persons 65 Years and Over	11	12.6%
White	31	34.2%
Minority	59	65.8%

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.

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 following tables display the TORRO Hailstorm Intensity Scale along with a spectrum of hailstone diameters and their everyday equivalents.

Table 2-30: 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 2-31: Spectrum of Hailstone Diameters and their Everyday Description.

(Source: National Weather Service)

Spectrum of Hailstone Diameters	
Hail Diameter Size	Description
$\frac{1}{4}$ "	Pea
$\frac{1}{2}$ "	Plain M&M
$\frac{3}{4}$ "	Penny
$\frac{7}{8}$ "	Nickle
1" (severe)	Quarter
$1 \frac{1}{4}$ "	Half Dollar
$1 \frac{1}{2}$ "	Ping Pong Ball / Walnut
$1 \frac{3}{4}$ "	Golf Ball
2"	Hen Egg / Lime
$2 \frac{1}{2}$ "	Tennis Ball
$2 \frac{3}{4}$ "	Baseball
3"	Teacup / Large Apple
4"	Softball
$4 \frac{1}{2}$ "	Grapefruit
$4 \frac{3}{4}$ – 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 2-32](#).

Table 2-32: High Winds Categorized by Source, Frequency, and Duration.

(Source: Making Critical Facilities Safe from High Wind, FEMA)

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

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

Table 2-33 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 2-33: Beaufort Wind Scale.
(Source: NOAA's SPC)*

Beaufort Wind Scale			
Force	Wind (MPH)	WMO Classification	Appearance of Wind Effects on Land
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 2-34: 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 reaches 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 Catahoula Parish and its jurisdictions are equally at risk for hailstorms. The worst-case scenario for hailstorms is hail up to a 4.25" diameter.

Previous Occurrences / Extents

Historically, there have been 60 hail incidents in Catahoula Parish. Hailstorm diameters have ranged from 0.75 inches to 4.25 inches per the National Climatic Data Center since 1990. The most frequently recorded hail sizes have been 0.75-inch in diameter. There have been four significant hailstorm events in Catahoula Parish since the 2016 Catahoula Parish HMP update. Below is a brief synopsis of those events.

*Table 2-35: Previous Occurrences for Hailstorm Events since the 2016 Hazard Mitigation Plan Update.
(Source: NCEI Storm Events Database)*

Date	Hail Size (inches)	Property Damage	Crop Damage
January 21, 2017	3.5	\$0	\$0
April 25, 2019	0.88	\$0	\$0
December 16, 2019	1.25	\$0	\$0
April 23, 2021	1.75	\$0	\$0

Frequency

Hailstorms occur frequently within Catahoula Parish with an annual chance of occurrence calculated at 100% based on the records for the past 30 years (1990 – 2020). [Figure 2-16](#) displays the density of hailstorm events in Catahoula Parish, while [Figure 2-17](#) provides an overview of hailstorm size based on location.

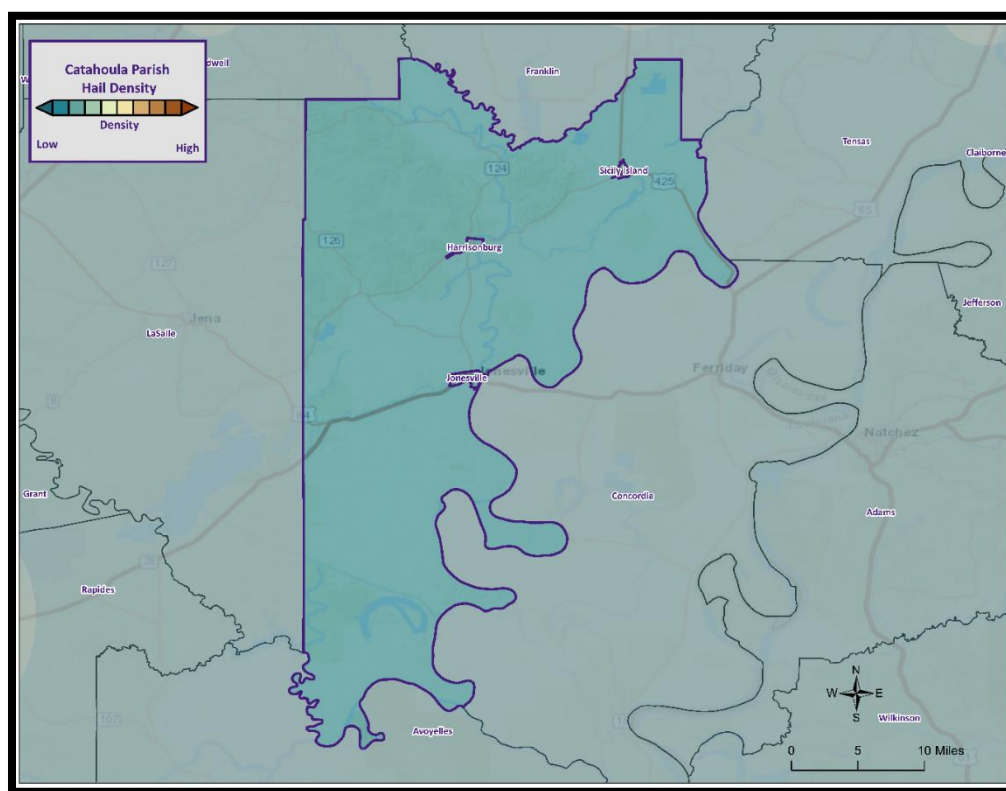


Figure 2-16: Density of Hailstorms by Diameter from 1950-2019.

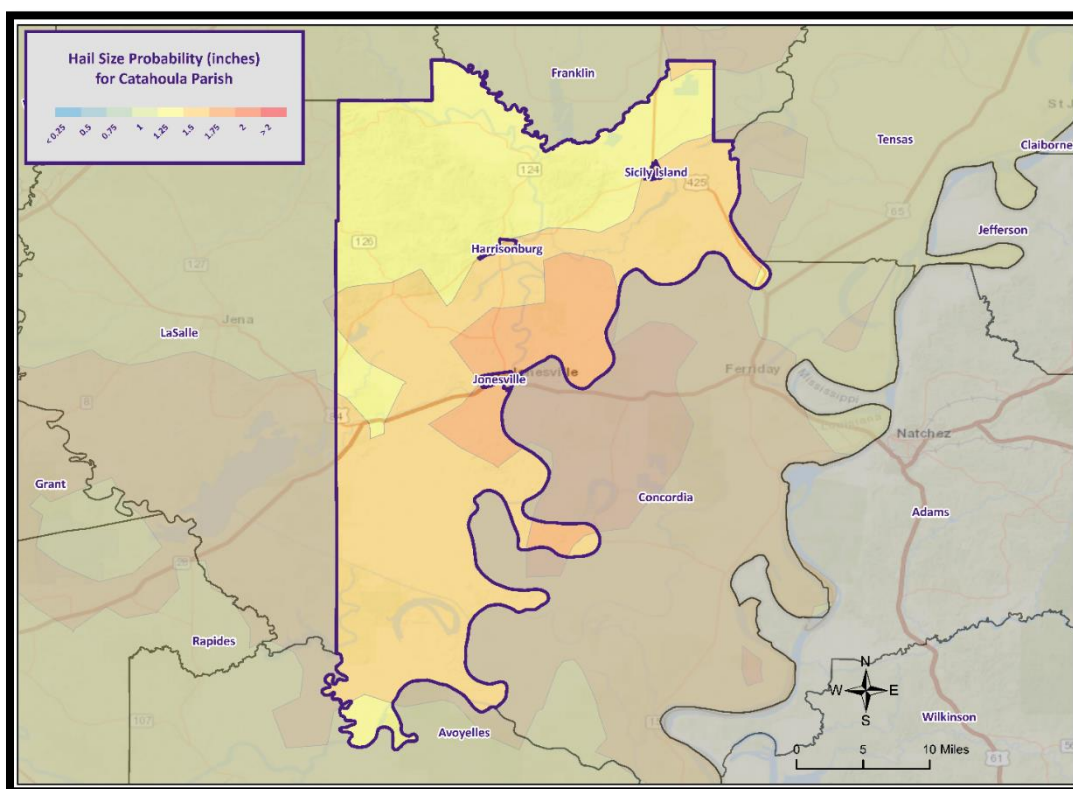


Figure 2-17: Hail Size Probability in Inches for Catahoula Parish.

Estimated Potential Losses

Since 1990, there have been 60 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 \$762,500. 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 (1989 – 2019). This provides an annual estimated potential loss of \$25,417 and \$12,708 per event. The following table provides an estimate of potential property losses for Catahoula Parish:

Table 2-36: Estimated Annual Losses Catahoula Parish and its Jurisdictions Resulting from Hailstorms.

Estimated Annual Potential Losses From Hailstorms			
Unincorporated Area	Harrisonburg	Jonesville	Sicily Island
\$17,750	\$850	\$5,532	\$1,285

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 Catahoula Parish is equally at risk from high winds. The worst-case scenario for thunderstorm high wind is wind speeds of approximately 88 mph.

Previous Occurrences / Extents

Historically, there have been 131 thunderstorm high wind events in Catahoula Parish. The high wind events ranged in windspeeds between 43 mph and 88 mph per the National Climatic Data Center since 1990. There have been 18 high wind speed events which impacted the Catahoula Parish Planning area since the 2016 Catahoula Parish HMP update. Below is a brief synopsis of those events.

Table 2-37: Previous Occurrences for Thunderstorm High Wind Events since the 2016 Hazard Mitigation Plan Update.

(Source: NCEI Storm Events Database)

Date	Wind Speed (mph)	Property Damage	Crop Damage
January 2, 2017	55	\$20,000	\$0
March 28, 2018	59	\$10,000	\$0
November 1, 2018	55	\$15,000	\$0
January 19, 2019	55	\$3,000	\$0
April 6, 2019	55	\$5,000	\$0
April 13, 2019	57	\$20,000	\$0
April 18, 2019	55	\$5,000	\$0
April 25, 2019	55	\$10,000	\$0
April 25, 2019	55	\$10,000	\$0
May 8, 2019	55	\$10,000	\$0
May 9, 2019	55	\$5,000	\$0
May 9, 2019	55	\$5,000	\$0
June 24, 2019	61	\$25,000	\$0
April 22, 2020	55	\$5,000	\$0
April 22, 2020	57	\$75,000	\$0
August 15, 2020	55	\$5,000	\$0
December 13, 2020	55	\$1,000	\$0
May 4, 2021	55	\$2,000	\$0

Frequency

High winds are a fairly common occurrence within Catahoula Parish and its jurisdictions with an annual chance of occurrence calculated at 100% based on the records for the past 30 years (1990 – 2020). [Figure 2-18](#) displays the thunderstorm wind speed probability for Catahoula Parish and its jurisdictions.

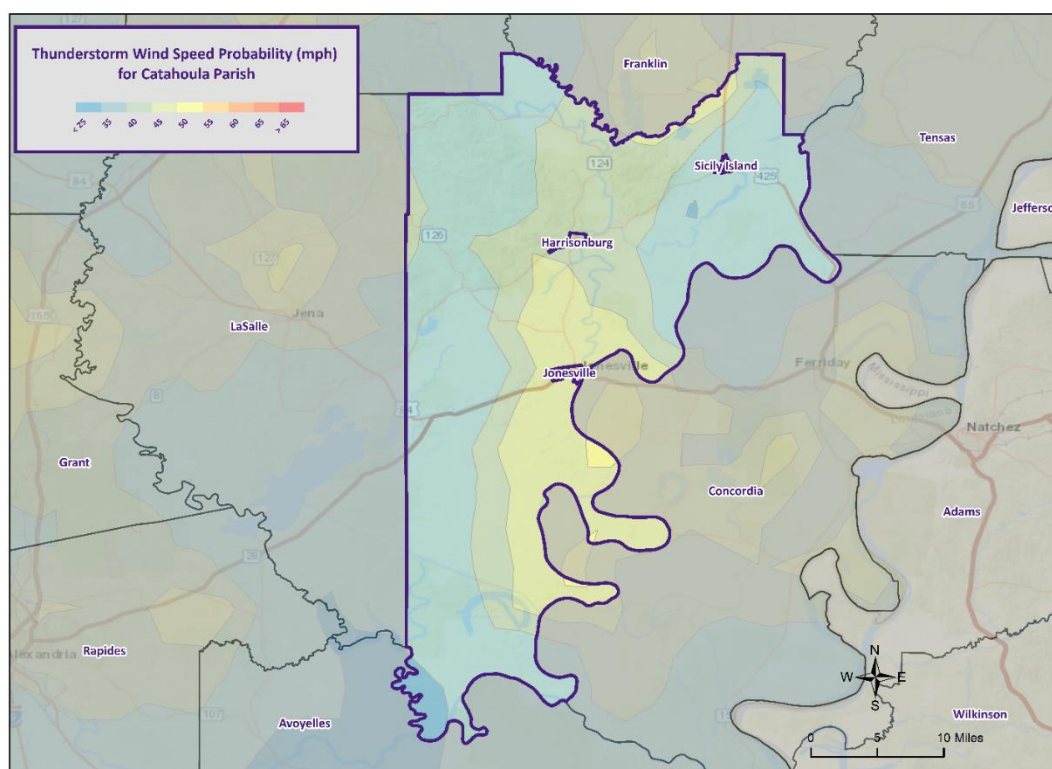


Figure 2-18: Thunderstorm High Wind Speed Probability in Miles Per Hour for Catahoula Parish.

Estimated Potential Losses

Since 1990, there have been 131 significant wind events that have resulted in property damages according to NCEI Storm Events Database. The total property damage associated with these storms totaled approximately \$1,000. To estimate the potential losses of a wind event on an annual basis, the total damages recorded for wind events were 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 \$62,233 and \$14,252 per event. The following table provides an estimate of potential property losses for Catahoula Parish:

Table 2-38: Estimated Annual Property Losses in Catahoula Parish resulting from Wind Damage.

Estimated Annual Potential Losses From High Winds			
Unincorporated Area	Harrisonburg	Jonesville	Sicily Island
\$43,462	\$2,081	\$13,545	\$3,145

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

Vulnerability

See [Appendix C: Critical Facilities](#) for parish and municipality buildings that are susceptible to thunderstorm high winds.

Lightning

Location

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

Previous Occurrences / Extent

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

Frequency

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

Estimated Potential Losses

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

Table 2-39: Estimated Annual Property Losses in Catahoula Parish resulting from Lightning Damage.

Estimated Annual Potential Losses From Lightning			
Unincorporated Area	Harrisonburg	Jonesville	Sicily Island
\$23	\$1	\$7	\$2

Per the NCEI Storm Events Database, there have been no fatalities or injuries as a result of lightning in Catahoula 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 2-40](#) 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 2-40: 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 2-41: 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 off 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 Catahoula Parish with actual locations, tornadoes in general are a climatological based hazard and have the same approximate probability of occurring in Catahoula Parish as all of its jurisdictions. Because a tornado has a similar probability of striking anywhere within the planning area for Catahoula Parish, all areas in the parish are equally at risk for tornadoes.

Previous Occurrences / Extent

The NCEI Storm Events Database reports a total of 30 tornadoes or waterspouts occurring within the boundaries of Catahoula Parish since 1990 ranging in extent from F0 to F3 under the Fujita Scale and EF0 to EF2 on the Enhanced Fujita Scale. Catahoula 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 Catahoula Parish was a F3 tornado which occurred on November 21, 1992. The tornado was responsible for over \$2 million in damage and three injuries. There have been no fatalities in Catahoula Parish as a result of tornadoes. Since the 2016 HMP Update, nine tornadoes

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

Table 2-42: Historical Tornadoes in Catahoula Parish with Locations since the 2016 Update.

Date	Impacts	Property Damage	Location	Magnitude
April 2, 2017	<p>10.52 mile path with a width of 880 yards. This tornado started in La Salle Parish and crossed over into Catahoula Parish near Grady Road where it snapped and uprooted an extensive amount of softwood and hardwood trees. This tornado also caused roof damage to a few homes in the area.</p> <p>This tornado continued northeast and caused some structural damage to a church, a home and a couple of other buildings in the Aimwell community. The tornado also flipped a mobile home, where the one injury occurred. This tornado also snapped and uprooted a numerous amount of trees in this area also. This tornado continued northeast through a logging area just west of Fire Tower Road, snapping numerous trees and also caused some damage to some hunting club homes. The tornado continued northeast along Spring Ridge Road and Catahoula Church Road, snapping more trees along the way. The tornado ended near the intersection of Catahoula Church Road and Highway 124, snapping a couple of more trees. Maximum winds were 115 mph.</p>	\$300,000	AIMWELL	EF2
November 1, 2018	<p>2.59 mile path with a width of 300 yards. This tornado touched down near the intersection of Lana Lane and Peachland Lane, where numerous hardwood trees were snapped or uprooted and resulted in minor damage to a single family home and large shed/carport. As the tornado tracked northeastward along Peachland Lane, it caused widespread major damage to a pecan orchard and a few large farm buildings. The owner of the orchard stated that he is facing significant losses to his pecan crop and had to hire temporary help to salvage as much as he can before the beginning of rainy season. From there, the tornado continued northeast through mostly open farmland, eventually crossing Highways 124, 565 and 84, where additional hardwood tree damage was sustained, along with a couple of snapped wooden power poles. The most significant damage occurred with a cluster of homes located north of Highway 84 in the Chevey Chase community, along Loop Road and at the intersection of Gregory and Grisby roads. In this area, two mobile homes sustained significant damage with one well-anchored home being shifted off of its foundation, while another well-anchored home was lifted up and then rolled over on its side. A family was inside the latter home, and one member interviewed by the survey team</p>	\$200,000	UTILITY	EF1

Date	Impacts	Property Damage	Location	Magnitude
	described a harrowing experience that resulted in another family member fracturing their arm. Other injuries were limited to minor scrapes and bruises. Other single family homes in the area had minor roof damage and significant damage to sheds. The highest rating of high-end EF-1 with an estimated maximum wind speed of 110 mph was based on the mobile home damage, and this was generally consistent with the degree of tree damage along the entire track. While the wooden power poles could technically fit EF-2 strength, their age and integrity did not impress the survey team. The maximum path width of the tornado was 900 yards in Concordia Parish along with the highest wind speeds of 110 mph.			
November 1, 2018	1.12 mile path with a width of 100 yards. This tornado touched down in Avoyelles Parish and moved northeast through the Lake Ophelia NWR. Many trees were downed along the path. The NWS survey team concluded this tornado crossed the Red River just southwest of Acme, LA where it briefly entered Catahoula Parish.	\$2,000	BOOK	EFO
November 1, 2018	0.2 mile pat with a width of 50 yards. This brief, weak tornado touched down along Herbert Crouch Road where it brought down large limbs. It uprooted a few hardwood trees as it tracked east-northeast across Highway 3203 and into Catahoula Parish, and this is where it is estimated that the maximum winds of 90 mph occurred resulting in an EF-1 rating. The tornado finally crossed Buddy Tims Road and produced roof damage to a single family home along with additional tree damage before lifting. The total path length was around 1.1 miles and the total width was 150 yards, in Concordia Parish. The maximum wind speed was 90 mph.	\$20,000	GLADE	EFO
November 1, 2018	2.4 mile path with a width of 500 yards. This tornado touched down near the intersection of Lana Lane and Peachland Lane, where numerous hardwood trees were snapped or uprooted and resulted in minor damage to a single family home and large shed/carport. As the tornado tracked northeastward along Peachland Lane, it caused widespread major damage to a pecan orchard and a few large farm buildings.	\$10,000	TRINITY	EFO
April 22, 2020	0.2 mile path with a width of 50 yards. This tornado began in far southern Catahoula Parish near the Red River Lock. It traveled along the Catahoula Parish /Avoyelles Parish border, where it damaged trees and mobile homes along Lula Willey Road. It then crossed the Lake Ophelia National Wildlife Refuge before crossing back into Catahoula Parish and ended before reaching Moody Road. The maximum estimated wind speed was 110 mph with an overall rating of EF1.	\$3,000	LARTO	EFO

Date	Impacts	Property Damage	Location	Magnitude
April 22, 2020	0.85 mile path with a width of 75 yards. This tornado began in far southern Catahoula Parish near the Red River Lock. It traveled along the Catahoula Parish /Avoyelles Parish border, where it damaged trees and mobile homes along Lula Willey Road. It then crossed the Lake Ophelia National Wildlife Refuge where it caused considerable tree damage before crossing back into Catahoula Parish and ended before reaching Moody Road. The maximum estimated wind speed was 110 mph with an overall rating of EF1.	\$12,000	BOOK	EF1
April 22, 2020	1.19 mile path with a width of 75 yards. This tornado began in far southern Catahoula Parish near the Red River Lock. It traveled along the Catahoula Parish /Avoyelles Parish border, where it damaged trees and mobile homes along Lula Willey Road. It then crossed the Lake Ophelia National Wildlife Refuge where it caused considerable tree damage before crossing back into Catahoula Parish and ended before reaching Moody Road. The maximum estimated wind speed was 110 mph with an overall rating of EF1.	\$12,000	BOOK	EF1
April 22, 2020	1.28 mile path with a width of 300 yards. The tornado began in far southeastern Catahoula Parish south of Larto Lake. It snapped several hardwood trees along Moody Road before crossing the Black River into Concordia Parish. Here it continued to snap hardwood trees along the banks of the river as well as when it crossed Red River Levee Road and Louisiana Highway 909. A mobile home also suffered minor roof damage, siding damage and loss of a metal awning. The tornado moved across a field before it ended along Louisiana Highway 129. Total path length was 4.01 miles. Maximum width of the tornado was one half of a mile. The maximum estimated winds were 110 mph.	\$8,000	ACME	EF1

Frequency / Probability

Tornadoes occur frequently within Catahoula Parish and its jurisdictions with an annual chance of occurrence calculated at 100% based on the records for the past 30 years (1990 – 2020). On the next page, *Figure 2-19* displays the density of tornado touchdowns in Catahoula Parish and neighboring parishes.

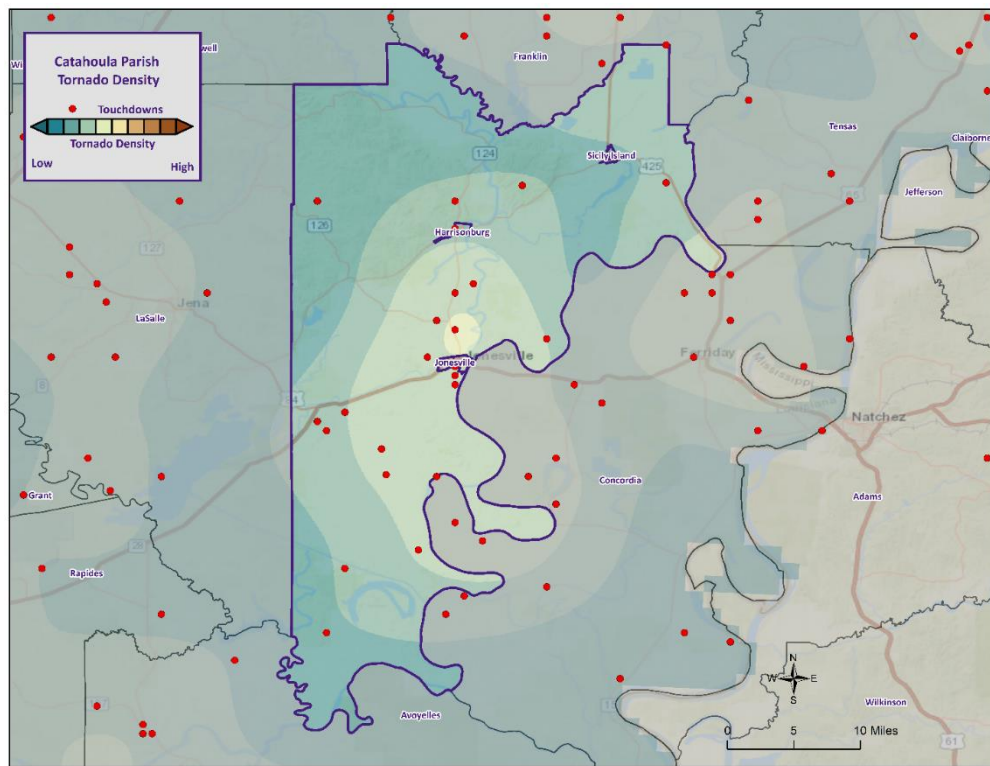


Figure 2-19: Location and Density of Tornadoes to Touchdown in Catahoula Parish.
(Source: NOAA/SPC Severe Weather Database)

Estimated Potential Losses

According to the NCEI Storm Events Database, there have been 30 tornadoes that have caused some level of property damage. The total damage from the actual claims for property is approximately \$5,505,000 with an average cost of \$183,500 per tornado event. When annualizing the total cost over the 30-year record, total annual losses based on tornadoes are estimated to be \$183,500. The following tables provide an annual estimate of potential losses for Catahoula Parish.

Table 2-43: Estimated Annual Losses from Tornadoes in Catahoula Parish.

Estimated Annual Potential Losses From Tornadoes			
Unincorporated Area	Harrisonburg	Jonesville	Sicily Island
\$128,512	\$6,136	\$39,937	\$9,275

Table 2-44 presents an analysis of building exposure that are susceptible to tornadoes by general occupancy type for Catahoula Parish along with the percentage of building stock that are mobile homes.

Table 2-44: Building Exposure by General Occupancy Type for Tornadoes in Catahoula Parish.
(Source: Hazus)

Building Exposure by General Occupancy Type for Tornadoes (\$1,000)							
Residential	Commercial	Industrial	Agricultural	Religion	Government	Education	Mobile Homes (%)
1,225,930	185,832	24,914	17,342	56,206	23,675	22,698	22.2%

The Parish has suffered through a total of 30 events in which tornadoes or waterspouts have accounted for five injuries and no fatalities during this 30-year period.

In accessing the overall risk to population, the most vulnerable population throughout the parish are those residing in manufacturing housing. Approximately 22.2% of all housing in Catahoula Parish consists of manufactured housing. The location and density of manufactured houses can be seen in *Figure 2-20*.

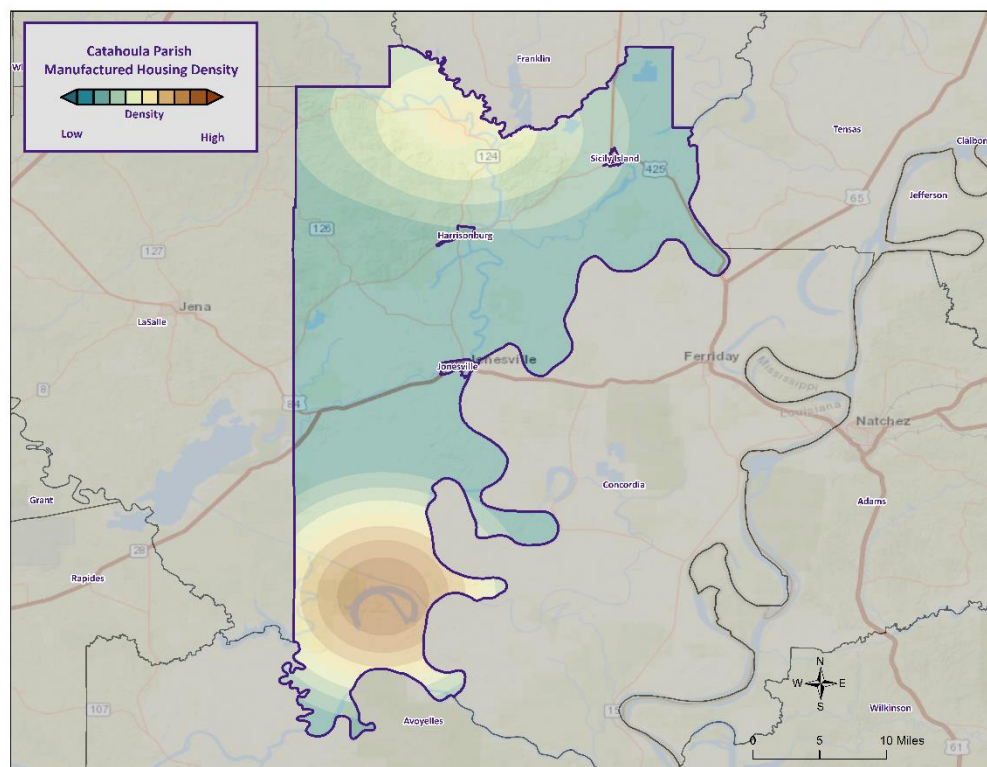


Figure 2-20: Location and Approximate Number of Units in Manufactured Housing Locations throughout Catahoula Parish.

Vulnerability

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

Tropical Cyclones

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

Table 2-45: 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 Catahoula Parish planning area. The worst-case scenario for a tropical cyclone event in Catahoula Parish is a Category 1 Hurricane.

Previous Occurrences / Extents

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

Table 2-46: Historical Tropical Cyclone Events in Catahoula Parish from 2002 – 2020.

Date	Name	Storm Type at Time of Impact
2005	Katrina	Hurricane
2005	Rita	Hurricane
2007	Humberto	Tropical Depression
2008	Gustav	Tropical Storm
2012	Isaac	Tropical Storm
2020	Laura	Tropical Storm
2020	Delta	Tropical Storm

Since the last Catahoula Parish HMP update in 2016, there have been two tropical cyclone events which have impacted the parish. Below is a brief description of the events and the impact they had on Catahoula Parish.

Tropical Storm Laura (2020)

Laura began as a large tropical wave that emerged off the west coast of Africa on August 16th. The wave traversed the tropical Atlantic for the next several days with little additional organization. On August 19th, the system became better organized, closed off a low-level circulation, and subsequently the National Hurricane Center began issuing advisories on Tropical Depression Thirteen late that evening.

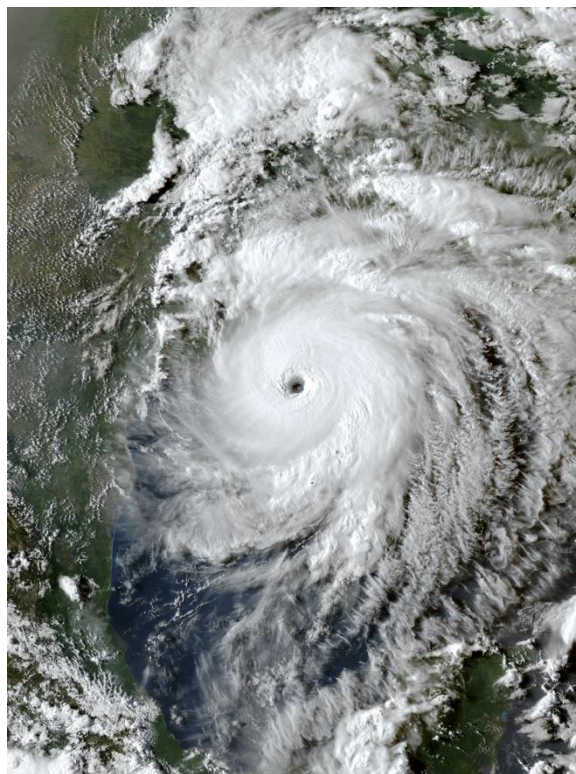
On the morning of August 21st, Tropical Depression Thirteen strengthened into Tropical Storm Laura, which was the earliest twelfth named Atlantic storm, beating the previous record of Hurricane Luis of 1995 by eight days. As Laura moved westward, little additional strengthening took place as the center moved over the northern Lesser Antilles later that evening, and south of Puerto Rico on August 22nd. Early on August 23rd, Tropical Storm Laura made landfall across Hispaniola, traversed the entire island, and made landfall across Eastern Cuba later that evening. Tropical Storm Laura continued west northwestward, traveling just south of the island with a second landfall across Western Cuba late on August 24th.

On August 25th, Laura entered the Gulf of Mexico and became a Category 1 hurricane at 10 AM CDT. Laura began to explosively intensify on August 26th, reaching category 2 by 1 AM CDT, category 3 by 7 AM CDT, and category 4 by 1 PM CDT. Laura reached a peak intensity of 150 mph (130 knots) and a minimum central pressure of 937 millibars (27.67 inches of mercury) by 8 PM CDT.

With little change in strength, Laura made landfall at Cameron, Louisiana around 1 AM CDT August 27th, with sustained winds of 150 mph (130 knots) and a minimum central pressure of 938 millibars (27.70 inches of mercury). Laura was the strongest hurricane to strike Southwest Louisiana since records began in 1851. Laura slowly weakened after landfall but maintained major hurricane status throughout its passage across Cameron, Calcasieu, and southern Beauregard Parishes, and category 2 status across northern Beauregard and Vernon parishes as daybreak approached on August 27th. Laura finally weakened below hurricane strength by Noon as it was crossing I-20 in North Louisiana. With this being the strongest hurricane to affect Southwest Louisiana, wind damage to buildings and trees was major to catastrophic across Cameron and Calcasieu parishes, with considerable damage across Beauregard and Vernon parishes where the core of the hurricane passed.

The National Weather Service in Lake Charles, Louisiana recorded a station record highest peak wind gust of 116 knots (133 mph) at 1:42 AM CDT before the Automated Surface Observing System (ASOS) wind

equipment failed. However, the ASOS barometer sensor that was safely within the NWS building (which received very little damage) recorded a station record minimum sea level pressure of 956 millibars (28.23 inches of mercury) at 2:20 AM CDT when the eye of Hurricane Laura passed nearly overhead.



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

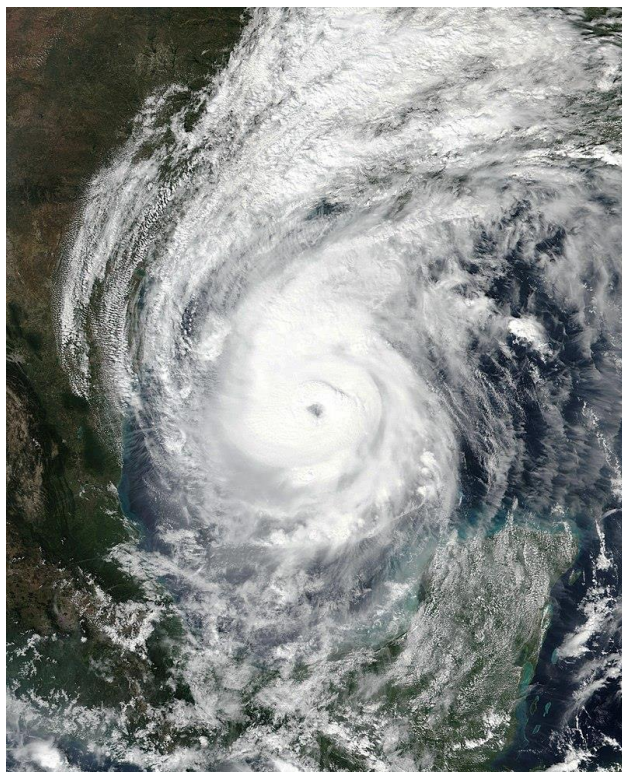
A total of 33 fatalities occurred throughout the state with four of them coming from falling trees. They included a 14-year-old girl in Vernon Parish, a 68-year-old man in Acadia Parish, a 51-year-old man in Jackson Parish, and a 64-year-old man in Allen Parish. Carbon monoxide poisoning from generators being inside homes, which is strongly discouraged, led to the deaths of twelve people in Calcasieu Parish and two people in Allen Parish. Another man died of drowning while aboard a sinking boat during the storm. Finally, one person died in Calcasieu Parish in a house fire, four people died in Calcasieu Parish, Natchitoches Parish, and Rapides Parish during the cleanup process, and eight others died in Beauregard Parish, Grant Parish, Rapides Parish, and Vernon Parish due to heat-related illnesses following the loss of electricity.

In Catahoula Parish, damage surveys observed sporadic to scattered tree damage throughout the parish with a few incidents of structural damage. Widespread power outages were experienced throughout the parish.

Tropical Storm Delta (2020)

Hurricane Delta was the record-tying fourth named storm of 2020 to strike Louisiana, as well as the record-breaking tenth named storm to strike the United States in that year. The twenty-sixth tropical cyclone, twenty-fifth named storm, ninth hurricane, and third major hurricane of the record breaking 2020 Atlantic hurricane season, Delta formed from a tropical wave which was first monitored by the National Hurricane Center on October 1. As it tracked across the western Caribbean, it rapidly intensified into a Category 4 hurricane. In fact, intensifying from tropical depression to Category strength in 40 hours is the fastest rate

of intensification of any storm on record in the Atlantic Basin and accomplished by Delta. Delta quickly weakened to a category 1 hurricane after making its first landfall on the Yucatan Peninsula. It gradually recurved north towards the Louisiana coastline, fluctuating in intensity between category 2 and 3.



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

Hurricane Delta made landfall around 5 pm as a category 2 storm east of Cameron, Louisiana or about 15 miles east of where category 4 Hurricane Laura made landfall just a couple of months earlier of the same year. Local impacts included 50 to 70 mph wind gusts across the area, storm surge of 2 to 3 feet above ground, and widespread tree and structural damage. There were six injuries due to Hurricane Delta. In addition, outer bands of Delta produced a significant amount of rainfall on the north side of Baton Rouge Metro. Upwards of five to 10 inches of rain fell, causing street flooding in Baton Rouge and moderate river flooding in the region. Delta caused approximately \$100 million worth of damage across southeast Louisiana.

In Catahoula Parish, scattered trees were blown down across the parish by tropical storm force winds, and some roads were blocked by fallen trees. Rainfall amounts of up to 11 to 12 inches were measured in the parish, and several roads were flooded or washed out. Fifteen homes in the Jonesville area took on water.

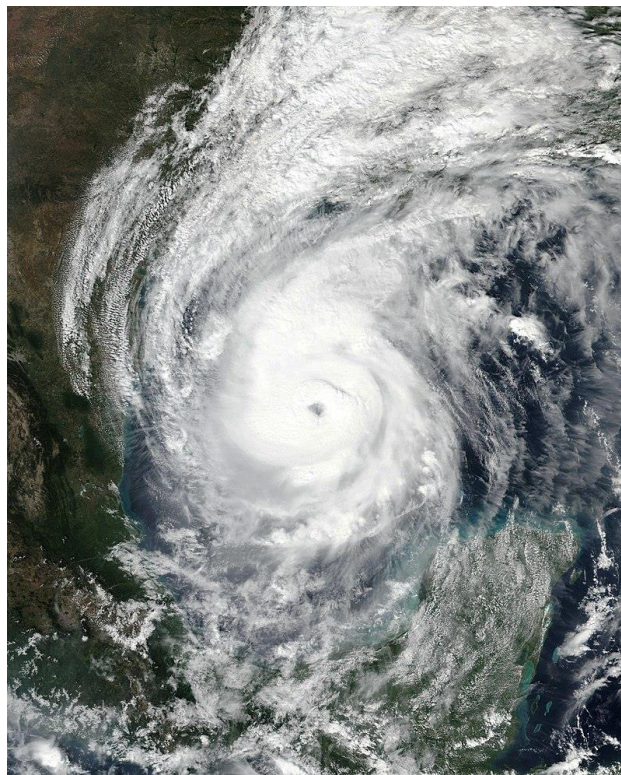


Figure 2-23: Hurricane Delta in the Gulf Coast Area.
(Source: NOAA)

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

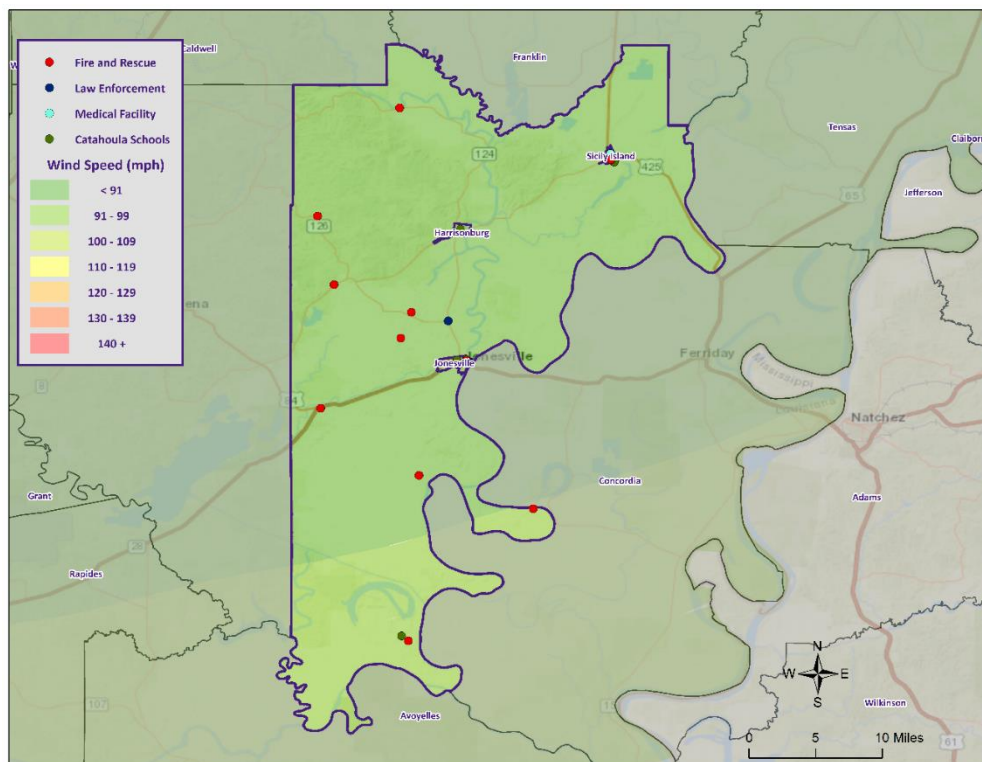


Figure 2-24: Winds Zones for Catahoula Parish in Relation to Critical Facilities

Frequency / Probability

Tropical cyclones are large natural hazard events that regularly impact Catahoula Parish. The annual chance of occurrence for a tropical cyclone is estimated at 39% for Catahoula Parish with 7 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 Catahoula Parish and its jurisdictions are highly vulnerable to tropical cyclones. This area has experienced several tropical cyclone events in the past and can expect more in the future.

Estimated Potential Losses

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

*Table 2-47: Total Estimated Losses for a 100-Year Hurricane Event
(Source: Hazus)*

Jurisdiction	Estimated Total Losses from 100-Year Hurricane Event
Catahoula Parish (Unincorporated)	\$1,603,879
Harrisonburg	\$76,796
Jonesville	\$499,833
Sicily Island	\$116,076
Total	\$2,296,584

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

*Table 2-48: Ratio of Total Losses to Total Estimated Value of Assets for Catahoula Parish
(Source: Hazus)*

Jurisdiction	Estimated Total Losses from 100-Year Hurricane Event	Total Estimated Value of Assets	Ratio of Estimated Losses to Total Value
Catahoula Parish (Unincorporated)	\$1,603,879	\$1,071,206,000	0.1%
Harrisonburg	\$76,796	\$52,495,000	0.1%
Jonesville	\$499,833	\$369,992,000	0.1%
Sicily Island	\$116,076	\$62,904,000	0.2%

Based on the Hazus Hurricane Model, estimated total losses for Catahoula Parish and its jurisdictions ranged from 0.1% to 0.2% 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 Catahoula Parish by sector are listed in the table below.

*Table 2-49: Estimated Losses in Unincorporated Catahoula Parish for a 100-Year Hurricane Event
(Source: Hazus)*

Catahoula Parish (Unincorporated)	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$991
Commercial	\$13,221
Government	\$1,460
Industrial	\$1,180
Religious / Non-Profit	\$3,336
Residential	\$1,582,269
Schools	\$1,422
Total	\$1,603,879

*Table 2-50: Estimated Losses in Harrisonburg for a 100-Year Hurricane Event
(Source: Hazus)*

Harrisonburg	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$47
Commercial	\$633
Government	\$70
Industrial	\$57
Religious / Non-Profit	\$160
Residential	\$75,761
Schools	\$68
Total	\$76,796

*Table 2-51: Estimated Losses in Jonesville for a 100-Year Hurricane Event
(Source: Hazus)*

Jonesville	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$309
Commercial	\$4,120
Government	\$455
Industrial	\$368
Religious / Non-Profit	\$1,040
Residential	\$493,098
Schools	\$443
Total	\$499,833

*Table 2-52: Estimated Losses in Sicily Island for a 100-Year Hurricane Event
(Source: Hazus)*

Sicily Island	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$72
Commercial	\$957
Government	\$106
Industrial	\$85
Religious / Non-Profit	\$241
Residential	\$114,512
Schools	\$103
Total	\$116,076

Threat to People

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

*Table 2-53: Number of People Susceptible to a 100-Year Hurricane Event in Catahoula Parish
(Source: Hazus)*

Number of People Exposed to Hurricane Hazards			
Location	# in Community	# in Hazard Area	% in Hazard Area
Catahoula Parish (Unincorporated)	7,268	7,268	100%
Harrisonburg	348	348	100%
Jonesville	2,265	2,265	100%
Sicily Island	526	526	100%
Total	10,407	10,407	100%

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

*Table 2-54: Vulnerable Populations in Unincorporated Catahoula Parish for a 100-Year Hurricane Event
(Source: Hazus)*

Catahoula Parish (Unincorporated)		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	7,268	100.0%
Persons Under 5 Years	456	6.3%
Persons Under 18 Years	1,642	22.6%
Persons 65 Years and Over	1,049	14.4%
White	4,878	67.1%
Minority	2,390	32.9%

*Table 2-55: Vulnerable Populations in Harrisonburg for a 100-Year Hurricane Event
(Source: Hazus)*

Harrisonburg		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	348	100.0%
Persons Under 5 Years	17	4.9%
Persons Under 18 Years	80	23.0%
Persons 65 Years and Over	51	14.7%
White	250	71.8%
Minority	98	28.2%

*Table 2-56: Vulnerable Populations in Jonesville for a 100-Year Hurricane Event
(Source: Hazus)*

Jonesville		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	2,265	100.0%
Persons Under 5 Years	176	7.8%
Persons Under 18 Years	645	28.5%
Persons 65 Years and Over	332	14.7%
White	699	30.9%
Minority	1,566	69.1%

*Table 2-57: Vulnerable Populations in Sicily Island for a 100-Year Hurricane Event
(Source: Hazus)*

Sicily Island		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	526	100.0%
Persons Under 5 Years	34	6.5%
Persons Under 18 Years	139	26.4%
Persons 65 Years and Over	66	12.6%
White	180	34.2%
Minority	346	65.8%

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 table on the next page 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 2-58: 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 Catahoula Parish as all of the adjacent parishes, the entire planning area for Catahoula Parish is equally at risk for winter storms. The worse-case scenario for Catahoula Parish and all of its jurisdictions is a level 2 on the Sperry-Piltz Ice Accumulation Index.

Previous Occurrences / Extents

The NCEI Storm Events Database reports one winter weather event occurring within the boundaries of Catahoula Parish between the years 1990 and 2020. Below is a brief synopsis of the winter weather event which occurred since the last Catahoula Parish HMP Update in 2016.

Table 2-59: Previous Occurrences for Winter Storm Events

Date	Synopsis	Property Damage	Crop Damage
January 16, 2018	Accumulating snow impacted the ArkLaMiss on January 16, 2018 with accumulations ranging from 1 - 3 inches across much of the area. Up to 1.0 inches of light snow fell across the county.	\$1,000	\$0

Frequency / Probability

Based on historical records, there has been one significant winter weather events within the boundaries of Catahoula Parish and the jurisdictions of Harrisonburg, Jonesville, and Sicily Island; 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 \$33 and \$1,000 per event. The following table provides an estimate of potential property losses for Catahoula Parish:

Table 2-60: Estimated Annual Losses Catahoula Parish and its Jurisdictions Resulting from Winter Weather.

Estimated Annual Potential Losses From Winter Weather			
Unincorporated Area	Harrisonburg	Jonesville	Sicily Island
\$23	\$7	\$1	\$2

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

Vulnerability

See [Appendix C: Critical Facilities](#) for parish and municipality building exposure to winter weather.

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3. Capability Assessment

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

Through this assessment, Catahoula 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 Catahoula 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.					
	Catahoula Unincorporated	Village of Harrisonburg	Town of Jonesville	Village of Sicily Bland	Comments
Plans	Yes / No				
Comprehensive / Master Plan	No	No	No	No	
Capital Improvements Plan	No	No	No	No	
Economic Development Plan	No	No	No	No	
Local Emergency Operations Plan	Yes	Yes	Yes	Yes	
Continuity of Operations Plan	Yes	Yes	Yes	Yes	
Transportation Plan	No	No	Yes	No	
Stormwater Management Plan	No	No	No	No	
Community Wildfire Protection Plan	Yes	Yes	No	Yes	
Other plans (redevelopment, recovery, coastal zone management)	No	No	No	No	
Building Code, Permitting and Inspections	Yes / No				
Building Code	Yes	Yes	Yes	No	
Score	No	No	No	No	
Fire Department ISO/PIAL rating	Yes	Yes	Yes	Yes	
Site plan review requirements	Yes	No	No	No	
Land Use Planning and Ordinances	Yes / No				
Zoning Ordinance	No	No	Yes	No	
Subdivision Ordinance	No	No	No	No	
Floodplain Ordinance	Yes	Yes	Yes	Yes	
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	No	No	No	No	
Flood Insurance Rate Maps	Yes	Yes	Yes	Yes	
Acquisition of land for open space and public recreation	No	No	No	No	
Other	No	No	No	No	

All jurisdictions within the Catahoula 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

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

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

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

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

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

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

Education and Outreach

A key element in hazard mitigation is promoting a safer, more disaster resilient community through education and outreach activities and/or programs. Successful outreach programs provide data and information that improves overall quality and accuracy of important information for citizens to feel better prepared and educated with mitigation activities. These programs enable the 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 Catahoula 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. 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.					
	Catahoula Unincorporated	Village of Harrisonburg	Town of Jonesville	Village of Sicily Island	Comments
Program / Organization	Yes / No				
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Yes	Yes	No	Yes	
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	Yes	Yes	Yes	Yes	
Natural Disaster or safety related school program	Yes	No	Yes	Yes	
Storm Ready certification	No	No	No	No	
Firewise Communities certification	No	No	No	No	
Public/Private partnership initiatives addressing disaster-related issues	No	No	No	No	
Other	No	No	No	No	

As reflected with the above existing regulatory mechanisms, programs and resources within the parish, the jurisdictions within the Catahoula Parish planning area remain committed to expanding and improving on the existing capabilities within the parish. Communities will work together along with Catahoula Parish 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 Catahoula 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 neither Catahoula Parish nor its incorporated jurisdictions are participants 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 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

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

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](#).

4. Mitigation Strategy

Introduction

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

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

An online public opinion survey of Catahoula Parish residents was conducted between March 2021 and November 2021. The survey was designed to capture public perceptions and opinions regarding natural hazards in the Catahoula 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 Catahoula 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 Catahoula Parish survey can be found at the following link:

<https://www.surveymonkey.com/results/SM-YJYYVN7C9/>

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 Cat 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, Catahoula 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 Catahoula 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. Ensure the delivery of critical services to the community in the case of a hazard event
3. Improve the ability of structures to withstand high wind and storm events
4. Engage and inform the community on the subject of hazard mitigation

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

After the adoption of the 2016 Catahoula Parish Hazard Mitigation Plan, large portions of the state were impacted by a flooding event whose ramifications are still being felt by the population. Because of this event, Catahoula Parish and its jurisdictions reprioritized its efforts and became much more aggressive in seeking funding for flood mitigation efforts, particularly related to drainage.

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 Catahoula Parish Hazard Mitigation Plan Steering Committee identified new actions that would reduce and/or prevent future damage within the Catahoula 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 Catahoula Parish with a solid mitigation strategy through which risk and losses will be reduced throughout the parish and its communities.

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

- **Local Plans and Regulations** – These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built.
- **Structure and Infrastructure Projects** – These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area, and also includes projects to construct manmade structures to reduce the impact of hazards.

- **Natural System Protection** – These actions minimize the damage and losses and also preserve or restore the functions of natural systems.
- **Education and Awareness Programs** – These actions inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them.

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

Unincorporated Catahoula Parish Mitigation Actions

Previous Action Update

Unincorporated Catahoula Parish							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
C1: Drainage Projects	Investigate and implement a localized interior drainage project to reduce repetitive losses, increase drainage capacity, and reduce flooding	CDBG, FMA Project Funds, HMGP Funds, SBA, U.S. Army Corps of Engineers - Section 205, and State Capital Outlay, Local Drainage Funds	As funding is available	Parish and City Floodplain Managers/ Public Works Director	Flooding, Tropical Cyclones	1, 3, 4	Not Started/ Carried Over from 2016 Plan
C2: Flood Proofing Projects	Inform the public of elevation/ acquisition/ flood proofing projects to reduce repetitive flooding properties.	Parish and/or City Budgets and Grants	As funding is available	Building Permit Director/ Emergency Manager	Flooding, Tropical Cyclones	1, 3, 4	Not Started/ Carried Over from 2016 Plan
C3: Master Drainage Plan	Develop a master drainage plan to evaluate drainage projects to increase drainage capacity and reduce flood losses. Implement recommended projects resulting from drainage plan.	Parish and/or City Budgets and Grants	As funding is available	Parish Engineer	Flooding, Tropical Cyclones	1, 3, 4	Not Started/ Carried Over from 2016 Plan
C4: Harden Critical Facilities	Harden critical facilities to reduce damages from hazard events.	HMGP	As funding is available	Catahoula OHSEP	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Storms	1, 4	Not Started/ Carried Over from 2016 Plan
C5: Communication Systems	Communication system upgrades and improvements, including but not limited to enhancing network capability and management of information flow.	Grant	As funding is available	Parish and Fire Rescue	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Storms	1, 2	Not Started/ Carried Over from 2016 Plan
C6: Road Elevation	Elevate roads in vulnerable locations prone to flooding and drainage problems.	As funds become available	As funding is available	Parish, Parish Engineer/ Public Works Director	Flooding, Tropical Cyclones	1, 4	Not Started/ Carried Over from 2016 Plan

C7: Generator Installation	Add back up power supply/generators at the Parish shelters, critical facilities, and governmental buildings.	Parish and /or City Budgets and Grants	As funding is available	Parish Department of Public Works	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1, 4	Not Started/ Carried Over from 2016 Plan
C8: Mitigation Outreach and Education	Increase public awareness of hazards and hazardous areas. Distribute public awareness information regarding all hazards as well as information regarding potential mitigation measures by using the following methods and outlets local newspaper, utility bill inserts, inserts in the phone book, and parish hazards awareness website, and educational programs for school age children. Integrate "Disaster Resistance Education" into the public school curriculum. Provide public education on the importance of maintaining the ditches. Sponsor a "Multi-Hazard Awareness Week", to educate the public on all hazards. Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	Parish and /or City Budgets and Grants	As funding is available	Parish School Board and Parish Emergency Manager	Drought, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1, 2, 4	Not Started/ Carried Over from 2016 Plan
C9: 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	Parish and /or City Budgets and Grants	As funding is available	Parish Engineer/ Public Works Director	Flooding, Tropical Cyclones	1, 4	Not Started/ Carried Over from 2016 Plan
C10: Lightning Mitigation	Procurement and Installation of lightning rods and surge protectors for public buildings to preserve life and property.	Parish and /or City Budgets and Grants	As funding is available	Parish Government	Thunderstorms	1, 4	Not Started/ Carried Over from 2016 Plan
C11: Construction of Safe Rooms	Construction of Safe Rooms for First Responders located in Catahoula Parish. Other locations will be identified based on funding availability.	Parish and /or City Budgets and Grants	As funding is available	Parish Engineer/ Public Works Director	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1, 3, 4	Not Started/ Carried Over from 2016 Plan

C12: Water Conservation Measures	Adopt ordinance requiring water-saving measures in time of drought.	Parish and /or City Budgets and Grants	As funding is available	Parish Engineer/ Public Works Director	Drought	1, 2, 4	Not Started/ Carried Over from 2016 Plan
C13: CRS	Review the existing floodplain ordinance and evaluate and implement ways to improve the Parish's "Community Rating System" (CRS) rating to reduce the flood insurance premium.	Parish and /or City Budgets and Grants	As funding is available	Parish Floodplain Manager	Drought, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1,2,3,4	Ongoing
C14: Network Capability	Funding has been approved through a grant to acquire a vendor to enhance the networks capability and better manage information flow.	Parish and /or City Budgets and Grants	As funding is available	Catahoula OHSEP	Flooding, Thunderstorms, Tropical Cyclones, Drought, Tornadoes, Winter Weather	1,3	Deleted (Duplicate of Action C5)
C15: Commercial Building Regulations	Adopt additional commercial building regulations, which include stricter building standards and incorporate dry flood proofing techniques.	Parish and /or City Budgets and Grants	As funding is available	Parish Permit Director	Flooding, Tropical Cyclones	1,3,4	Ongoing
C16: Subdivision Guidelines	Develop additional subdivision guidelines to reduce flooding, such as requiring proper drainage with adequate sloping; storm water retention ponds; dikes; levees and floodwalls if appropriate, and requiring freeboard above the Base Flood Elevation (BFE) in flood prone areas. Encourage new subdivision developments to install underground utilities, which would help reduce the chances of power outages.	Parish and /or City Budgets and Grants	As funding is available	Parish Permit Director	Flooding, Tropical Cyclones	1,3,4	Ongoing
C17: Public Awareness	Increase public awareness of hazards and hazardous areas. Distribute public awareness information regarding Flooding, Thunderstorms, Tropical Cyclones, Drought, Tornadoes, Winter Weather, SFHA's, and potential mitigation measures using the local newspaper, utility bill inserts, inserts in the phone book, and parish hazards awareness website, and an educational program for school age children or	Parish and /or City Budgets and Grants	As funding is available	Catahoula OHSEP	Flooding, Thunderstorms, Tropical Cyclones, Drought, Tornadoes, Winter Weather	1,2	Deleted (Duplicate of Action C8)

	"how to" classes in retrofitting by local merchants. Integrate "Disaster Resistance Education" into the public school curriculum. Provide public education on the importance of maintaining the ditches.						
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New Mitigation Actions

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CATAHOULA PARISH	
DESCRIPTION	
CATAHOULA PARISH MITIGATION ACTION 1	Drainage Projects
LEAD AGENCY	Catahoula Parish Public Works
SUPPORTING AGENCIES	Catahoula Parish Police Jury
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	CDBG, FMA Project Funds, HMGP Funds, SBA, U.S. Army Corps of Engineers - Section 205, and State Capital Outlay, Local Drainage Funds
ASSOCIATED GOALS	1. Reduce the impact of future flooding 3. Improve the ability of structures to withstand high wind and storm events 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	High
Action Description	Investigate and implement a localized interior drainage project to reduce repetitive losses, increase drainage capacity, and reduce flooding
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Improving the drainage system in Catahoula Parish would reduce flood damage by allowing water to drain efficiently rather than rise and cause structure damage.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CATAHOULA PARISH	
DESCRIPTION	
CATAHOULA PARISH MITIGATION ACTION 2	Flood Proofing Projects
LEAD AGENCY	Catahoula Parish Public Works
SUPPORTING AGENCIES	Catahoula OHSEP
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish and/or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 3. Improve the ability of structures to withstand high wind and storm events 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	High
Action Description	Inform the public of elevation/ acquisition/ flood proofing projects to reduce repetitive flooding properties.
Type of Mitigation Action	Structure and Infrastructure Projects Education and Awareness Programs
How Action Aligns with Risk Reduction	Performing flood proofing projects such as elevating structures would reduce flood damage by raising the level floodwaters would have to reach before causing damage.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CATAHOULA PARISH	
DESCRIPTION	
CATAHOULA PARISH MITIGATION ACTION 3	Master Drainage Plan
LEAD AGENCY	Catahoula Parish Police Jury
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish and/or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 3. Improve the ability of structures to withstand high wind and storm events 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	High
Action Description	Develop a master drainage plan to evaluate drainage projects to increase drainage capacity and reduce flood losses. Implement recommended projects resulting from drainage plan.
Type of Mitigation Action	Local Plans and Regulation Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Developing a plan for improving drainage will increase cooperation within the parish and incorporated jurisdictions. The plan would also minimize unnecessary spending when performing structural improvements.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CATAHOULA PARISH	
DESCRIPTION	
CATAHOULA PARISH MITIGATION ACTION 4	Harden Critical Facilities
LEAD AGENCY	Catahoula OHSEP
SUPPORTING AGENCIES	Catahoula Parish Police Jury
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Harden critical facilities to reduce damages from hazard events.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Hardening critical facilities would reduce the damage caused by major weather/hazardous events. Structures could be made to withstand debris, wind, and other hazards.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Storms

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CATAHOULA PARISH	
DESCRIPTION	
CATAHOULA PARISH MITIGATION ACTION 5	Communications Systems
LEAD AGENCY	Catahoula Parish Police Jury
SUPPORTING AGENCIES	Parish Fire Departments
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP
ASSOCIATED GOALS	<ol style="list-style-type: none"> 1. Reduce the impact of future flooding 2. Ensure the delivery of critical services to the community in the case of a hazard event
PRIORITY	Medium
Action Description	Communication system upgrades and improvements, including but not limited to enhancing network capability and management of information flow.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Improving communication systems within the parish could reduce injury during major hazard events. It could increase trust between the public and government officials and allow critical functions to continue during major events.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Storms

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CATAHOULA PARISH	
DESCRIPTION	
CATAHOULA PARISH MITIGATION ACTION 6	Road Elevation
LEAD AGENCY	Catahoula Parish Police Jury
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Federal Grants, Local
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Low
Action Description	Elevate roads in vulnerable locations prone to flooding and drainage problems.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Elevating roads would allow emergency vehicles to travel freely within the parish during a flood event and allow for late evacuations during flooding.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CATAHOULA PARISH	
DESCRIPTION	
CATAHOULA PARISH MITIGATION ACTION 7	Generator Installation
LEAD AGENCY	Catahoula Parish Police Jury
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Add back up power supply/generators at the Parish shelters, critical facilities, and governmental buildings.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Adding backup generators to critical facilities will ensure that essential practices remain operational during extreme hazardous events.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CATAHOULA PARISH	
DESCRIPTION	
CATAHOULA PARISH MITIGATION ACTION 8	Mitigation Outreach and Education
LEAD AGENCY	Catahoula OHSEP
SUPPORTING AGENCIES	Catahoula Parish Police Jury
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	<ol style="list-style-type: none"> 1. Reduce the impact of future flooding 2. Ensure the delivery of critical services to the community in the case of a hazard event 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Increase public awareness of hazards and hazardous areas. Distribute public awareness information regarding all hazards as well as information regarding potential mitigation measures by using the following methods and outlets local newspaper, utility bill inserts, inserts in the phone book, and parish hazards awareness website, and educational programs for school age children. Integrate "Disaster Resistance Education" into the public school curriculum. Provide public education on the importance of maintaining the ditches. Sponsor a "Multi-Hazard Awareness Week", to educate the public on all hazards. Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Increasing education and public awareness of hazards could decrease injuries during a major hazardous event because parish residents will know the necessary precautions to take prior to an event.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Drought, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CATAHOULA PARISH	
DESCRIPTION	
CATAHOULA PARISH MITIGATION ACTION 9	Flood Mitigation of Repetitive Loss Properties and Other Flood Prone Structures
LEAD AGENCY	Catahoula Parish Police Jury
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flood prone properties. Benefits: Relieves property owners of the continual flooding
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	By relocating or reconstruction residences that are prone to flooding, residents could be relieved of continuous flood damage, and it would also reduce the likelihood of flood related injuries.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CATAHOULA PARISH	
DESCRIPTION	
CATAHOULA PARISH MITIGATION ACTION 10	Lightning Mitigation
LEAD AGENCY	Catahoula Parish Police Jury
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
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	Installing lightning rods and surge protectors could reduce the likelihood of power outages for critical facilities during a hazard event.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Thunderstorms

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CATAHOULA PARISH	
DESCRIPTION	
CATAHOULA PARISH MITIGATION ACTION 11	Construction of Safe Rooms
LEAD AGENCY	Catahoula Parish Police Jury
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 3. Improve the ability of structures to withstand high wind and storm events 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Construction of safe rooms for first responders located in Catahoula Parish. Other locations will be identified based on funding availability.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	The construction of safe rooms would provide shelter and reduce the risk of injury during a hazard event.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CATAHOULA PARISH	
DESCRIPTION	
CATAHOULA PARISH MITIGATION ACTION 12	Water Conservation Measures
LEAD AGENCY	Catahoula Parish Police Jury
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 2. Ensure the delivery of critical services to the community in the case of a hazard event 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Low
Action Description	Adopt ordinance requiring water-saving measures in time of drought.
Type of Mitigation Action	Education and Awareness Programs
How Action Aligns with Risk Reduction	Water-saving measures in time of drought could protect essential crops and protect human life.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Drought

Additional Supporting Information:

Village of Harrisonburg Mitigation Actions

Previous Action Update

Village of Harrisonburg							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
H1: Drainage Projects	Investigate and implement a localized interior drainage project to reduce repetitive losses, increase drainage capacity, and reduce flooding	CDBG, FMA Project Funds, HMGP Funds, SBA, U.S. Army Corps of Engineers - Section 205, and State Capital Outlay, Local Drainage Funds	As funding is available	Parish and City Floodplain Managers/ Public Works Director	Flooding, Tropical Cyclones	1, 3, 4	Not Started/ Carried Over from 2016 Plan
H2: Flood Proofing Projects	Inform the public of elevation/ acquisition/ flood proofing projects to reduce repetitive flooding properties.	Parish and/or City Budgets and Grants	As funding is available	Building Permit Director/ Emergency Manager	Flooding, Tropical Cyclones	1, 3, 4	Not Started/ Carried Over from 2016 Plan
H3: Master Drainage Plan	Develop a master drainage plan to evaluate drainage projects to increase drainage capacity and reduce flood losses. Implement recommended projects resulting from drainage plan.	Parish and/or City Budgets and Grants	As funding is available	Parish Engineer	Flooding, Tropical Cyclones	1, 3, 4	Not Started/ Carried Over from 2016 Plan
H4: Harden Critical Facilities	Harden critical facilities to reduce damages from hazard events.	HMGP	As funding is available	Catahoula SEP	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Storms	1, 4	Not Started/ Carried Over from 2016 Plan
H5: Communication Systems	Communication system upgrades and improvements, including but not limited to enhancing network capability and management of information flow.	Grant	As funding is available	Parish and Fire Rescue	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Storms	1, 2	Not Started/ Carried Over from 2016 Plan
H6: Road Elevation	Elevate roads in vulnerable locations prone to flooding and drainage problems.	As funds become available	As funding is available	Parish Engineer/ Public Works Director	Flooding, Tropical Cyclones	1, 4	Not Started/ Carried Over from 2016 Plan
H7: Generator Installation	Add back up power supply/generators at shelters, critical facilities, and governmental buildings.	Parish and /or City Budgets and Grants	As funding is available	Parish Department of Public Works	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1, 4	Not Started/ Carried Over from 2016 Plan

H8: Mitigation Outreach and Education	Increase public awareness of hazards and hazardous areas. Distribute public awareness information regarding all hazards as well as information regarding potential mitigation measures by using the following methods and outlets: local newspaper, utility bill inserts, inserts in the phone book, and parish hazards awareness website, and educational programs for school age children. Integrate "Disaster Resistance Education" into the public school curriculum. Provide public education on the importance of maintaining the ditches. Sponsor a "Multi-Hazard Awareness Week", to educate the public on all hazards. Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	Parish and /or City Budgets and Grants	As funding is available	Parish School Board and Parish Emergency Manager	Drought, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1, 2, 4	Not Started/ Carried Over from 2016 Plan
H9: 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	Parish and /or City Budgets and Grants	As funding is available	Parish Engineer/ Public Works Director	Flooding, Tropical Cyclones	1, 4	Not Started/ Carried Over from 2016 Plan
H10: Lightning Mitigation	Procurement and Installation of lightning rods and surge protectors for public buildings to preserve life and property.	Parish and /or City Budgets and Grants	As funding is available	Parish Emergency Manager	Thunderstorms	1, 4	Not Started/ Carried Over from 2016 Plan
H11: Construction of Safe Rooms	Construction of a safe room for first responders located in Harrisonburg. Other locations will be identified based on funding availability.	Parish and /or City Budgets and Grants	As funding is available	Parish Engineer/ Public Works Director	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1, 3, 4	Not Started/ Carried Over from 2016 Plan
H12: Water Conservation Measures	Adopt ordinance requiring water-saving measures in time of drought.	Parish and /or City Budgets and Grants	As funding is available	Parish Engineer/ Public Works Director	Drought	1, 2, 4	Not Started/ Carried Over from 2016 Plan

H13: CRS	Review the existing floodplain ordinance and evaluate and implement ways to improve the Parish's "Community Rating System" (CRS) rating to reduce the flood insurance premium.	Parish and /or City Budgets and Grants	As funding is available	Parish Floodplain Manager	Drought, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1,2,3,4	Ongoing
H14: Network Capability	Funding has been approved through a grant to acquire a vendor to enhance the networks capability and better manage information flow.	Parish and /or City Budgets and Grants	As funding is available	Catahoula OHSEP	Flooding, Thunderstorms, Tropical Cyclones, Drought, Tornadoes, Winter Weather	1,3	Deleted (Duplicate of Action H5)
H15: Commercial Building Regulations	Adopt additional commercial building regulations, which include stricter building standards and incorporate dry flood proofing techniques.	Parish and /or City Budgets and Grants	As funding is available	Parish Permit Director	Flooding, Tropical Cyclones	1,3,4	Ongoing
H16: Subdivision Guidelines	Develop additional subdivision guidelines to reduce flooding, such as requiring proper drainage with adequate sloping; storm water retention ponds; dikes; levees and floodwalls if appropriate, and requiring freeboard above the Base Flood Elevation (BFE) in flood prone areas. Encourage new subdivision developments to install underground utilities, which would help reduce the chances of power outages.	Parish and /or City Budgets and Grants	As funding is available	Parish Permit Director	Flooding, Tropical Cyclones	1,3,4	Ongoing
H17: Public Awareness	Increase public awareness of hazards and hazardous areas. Distribute public awareness information regarding flood hazards, winter storms, drought, tornadoes, thunderstorms and hailstorms, SFHA's, and potential mitigation measures using the local newspaper, utility bill inserts, inserts in the phone book, and parish hazards awareness website, and an educational program for school age children or "how to" classes in retrofitting by local merchants. Integrate "Disaster Resistance Education" into the public	Parish and /or City Budgets and Grants	As funding is available	Catahoula OHSEP	Flooding, Thunderstorms, Tropical Cyclones, Drought, Tornadoes, Winter Weather	1,2	Deleted (Duplicate of Action H8)

	school curriculum. Provide public education on the importance of maintaining the ditches.						
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New Mitigation Actions

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF HARRISONBURG	
DESCRIPTION	
VILLAGE OF HARRISONBURG MITIGATION ACTION 1	Drainage Projects
LEAD AGENCY	Harrisonburg Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Police Jury, Parish and City Floodplain Managers/ Public Works Director
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	CDBG, FMA Project Funds, HMGP Funds, SBA, U.S. Army Corps of Engineers - Section 205, and State Capital Outlay, Local Drainage Funds
ASSOCIATED GOALS	1. Reduce the impact of future flooding 3. Improve the ability of structures to withstand high wind and storm events 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	High
Action Description	Investigate and implement a localized interior drainage project to reduce repetitive losses, increase drainage capacity, and reduce flooding
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Improving the drainage system in Catahoula Parish would reduce flood damage by allowing water to drain efficiently rather than rise and cause structure damage.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF HARRISONBURG	
DESCRIPTION	
VILLAGE OF HARRISONBURG MITIGATION ACTION 2	Flood Proofing Projects
LEAD AGENCY	Harrisonburg Mayor's Office
SUPPORTING AGENCIES	Catahoula OHSEP, Building Permit Director/ Emergency Manager
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish and/or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 3. Improve the ability of structures to withstand high wind and storm events 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	High
Action Description	Inform the public of elevation/ acquisition/ flood proofing projects to reduce repetitive flooding properties.
Type of Mitigation Action	Structure and Infrastructure Projects Education and Awareness Programs
How Action Aligns with Risk Reduction	Performing flood proofing projects such as elevating structures would reduce flood damage by raising the level floodwaters would have to reach before causing damage.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF HARRISONBURG	
DESCRIPTION	
VILLAGE OF HARRISONBURG MITIGATION ACTION 3	Master Drainage Plan
LEAD AGENCY	Harrisonburg Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works, Parish Engineer
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish and/or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 3. Improve the ability of structures to withstand high wind and storm events 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	High
Action Description	Develop a master drainage plan to evaluate drainage projects to increase drainage capacity and reduce flood losses. Implement recommended projects resulting from drainage plan.
Type of Mitigation Action	Local Plans and Regulation Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Developing a plan for improving drainage will increase cooperation within the parish and incorporated jurisdictions. The plan would also minimize unnecessary spending when performing structural improvements.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF HARRISONBURG	
DESCRIPTION	
VILLAGE OF HARRISONBURG MITGATION ACTION 4	Harden Critical Facilities
LEAD AGENCY	Harrisonburg Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Police Jury, Catahoula OHSEP
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Harden critical facilities to reduce damages from hazard events.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Hardening critical facilities would reduce the damage caused by major weather/hazardous events. Structures could be made to withstand debris, wind, and other hazards.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Storms

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF HARRISONBURG	
DESCRIPTION	
VILLAGE OF HARRISONBURG MITIGATION ACTION 5	Communications Systems
LEAD AGENCY	Harrisonburg Mayor's Office
SUPPORTING AGENCIES	Parish Fire Departments
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP
ASSOCIATED GOALS	<ol style="list-style-type: none"> 1. Reduce the impact of future flooding 2. Ensure the delivery of critical services to the community in the case of a hazard event
PRIORITY	Medium
Action Description	Communication system upgrades and improvements, including but not limited to enhancing network capability and management of information flow.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Improving communication systems within the parish could reduce injury during major hazard events. It could increase trust between the public and government officials and allow critical functions to continue during major events.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Storms

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF HARRISONBURG	
DESCRIPTION	
VILLAGE OF HARRISONBURG MITIGATION ACTION 6	Road Elevation
LEAD AGENCY	Harrisonburg Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Federal Grants, Local
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Low
Action Description	Elevate roads in vulnerable locations prone to flooding and drainage problems.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Elevating roads would allow emergency vehicles to travel freely within the parish during a flood event and allow for late evacuations during flooding.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF HARRISONBURG	
DESCRIPTION	
VILLAGE OF HARRISONBURG MITIGATION ACTION 7	Generator Installation
LEAD AGENCY	Harrisonburg Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Add back up power supply/generators at the Parish shelters, critical facilities, and governmental buildings.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Adding backup generators to critical facilities will ensure that essential practices remain operational during extreme hazardous events.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF HARRISONBURG	
DESCRIPTION	
VILLAGE OF HARRISONBURG MITIGATION ACTION 8	Mitigation Outreach and Education
LEAD AGENCY	Harrisonburg Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Police Jury, Parish School Board and Parish Emergency Manager
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	<ol style="list-style-type: none"> 1. Reduce the impact of future flooding 2. Ensure the delivery of critical services to the community in the case of a hazard event 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Increase public awareness of hazards and hazardous areas. Distribute public awareness information regarding all hazards as well as information regarding potential mitigation measures by using the following methods and outlets local newspaper, utility bill inserts, inserts in the phone book, and parish hazards awareness website, and educational programs for school age children. Integrate "Disaster Resistance Education" into the public school curriculum. Provide public education on the importance of maintaining the ditches. Sponsor a "Multi-Hazard Awareness Week", to educate the public on all hazards. Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Increasing education and public awareness of hazards could decrease injuries during a major hazardous event because parish residents will know the necessary precautions to take prior to an event.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Drought, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF HARRISONBURG	
DESCRIPTION	
VILLAGE OF HARRISONBURG MITIGATION ACTION 9	Flood Mitigation of Repetitive Loss Properties and Other Flood Prone Structures
LEAD AGENCY	Harrisonburg Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works, Parish Engineer/ Public Works Director
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flood prone properties. Benefits: Relieves property owners of the continual flooding
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	By relocating or reconstruction residences that are prone to flooding, residents could be relieved of continuous flood damage, and it would also reduce the likelihood of flood related injuries.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF HARRISONBURG	
DESCRIPTION	
VILLAGE OF HARRISONBURG MITIGATION ACTION 10	Lightning Mitigation
LEAD AGENCY	Harrisonburg Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
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	Installing lightning rods and surge protectors could reduce the likelihood of power outages for critical facilities during a hazard event.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Thunderstorms

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF HARRISONBURG	
DESCRIPTION	
VILLAGE OF HARRISONBURG MITIGATION ACTION 11	Construction of Safe Rooms
LEAD AGENCY	Harrisonburg Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 3. Improve the ability of structures to withstand high wind and storm events 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Construction of safe rooms for first responders located in Catahoula Parish. Other locations will be identified based on funding availability.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	The construction of safe rooms would provide shelter and reduce the risk of injury during a hazard event.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF HARRISONBURG	
DESCRIPTION	
VILLAGE OF HARRISONBURG MITIGATION ACTION 12	Water Conservation Measures
LEAD AGENCY	Harrisonburg Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 2. Ensure the delivery of critical services to the community in the case of a hazard event 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Low
Action Description	Adopt ordinance requiring water-saving measures in time of drought.
Type of Mitigation Action	Education and Awareness Programs
How Action Aligns with Risk Reduction	Water-saving measures in time of drought could protect essential crops and protect human life.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Drought

Additional Supporting Information:

Town of Jonesville Mitigation Actions

Previous Action Update

Town of Jonesville							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
J1: Drainage Projects	Investigate and implement a localized interior drainage project to reduce repetitive losses, increase drainage capacity, and reduce flooding	CDBG, FMA Project Funds, HMGP Funds, SBA, U.S. Army Corps of Engineers - Section 205, and State Capital Outlay, Local Drainage Funds	As funding is available	Parish and City Floodplain Managers/ Public Works Director	Flooding, Tropical Cyclones	1, 3, 4	Not Started/ Carried Over from 2016 Plan
J2: Flood Proofing Projects	Inform the public of elevation/ acquisition/ flood proofing projects to reduce repetitive flooding properties.	Parish and/or City Budgets and Grants	As funding is available	Building Permit Director/ Emergency Manager	Flooding, Tropical Cyclones	1, 3, 4	Not Started/ Carried Over from 2016 Plan
J3: Master Drainage Plan	Develop a master drainage plan to evaluate drainage projects to increase drainage capacity and reduce flood losses. Implement recommended projects resulting from drainage plan.	Parish and/or City Budgets and Grants	As funding is available	Parish Engineer	Flooding, Tropical Cyclones	1, 3, 4	Not Started/ Carried Over from 2016 Plan
J4: Harden Critical Facilities	Harden critical facilities to reduce damages from hazard events.	HMGP	As funding is available	Catahoula SEP	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Storms	1, 4	Not Started/ Carried Over from 2016 Plan
J5: Communication Systems	Communication system upgrades and improvements, including but not limited to enhancing network capability and management of information flow.	Grant	As funding is available	Parish and Fire Rescue	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Storms	1, 2	Not Started/ Carried Over from 2016 Plan
J6: Road Elevation	Elevate roads in vulnerable locations prone to flooding and drainage problems.	As funds become available	As funding is available	Parish Engineer/ Public Works Director	Flooding, Tropical Cyclones	1, 4	Not Started/ Carried Over from 2016 Plan
J7: Generator Installation	Add back up power supply/generators at shelters, critical facilities, and governmental buildings.	Parish and /or City Budgets and Grants	As funding is available	Parish Department of Public Works	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1, 4	Not Started/ Carried Over from 2016 Plan

J8: Mitigation Outreach and Education	Increase public awareness of hazards and hazardous areas. Distribute public awareness information regarding all hazards as well as information regarding potential mitigation measures by using the following methods and outlets: local newspaper, utility bill inserts, inserts in the phone book, and parish hazards awareness website, and educational programs for school age children. Integrate "Disaster Resistance Education" into the public school curriculum. Provide public education on the importance of maintaining the ditches. Sponsor a "Multi-Hazard Awareness Week", to educate the public on all hazards. Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	Parish and /or City Budgets and Grants	As funding is available	Parish School Board and Parish Emergency Manager	Drought, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1, 2, 4	Not Started/ Carried Over from 2016 Plan
J9: 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	Parish and /or City Budgets and Grants	As funding is available	Parish Engineer/ Public Works Director	Flooding, Tropical Cyclones	1, 4	Not Started/ Carried Over from 2016 Plan
J10: Lightning Mitigation	Procurement and Installation of lightning rods and surge protectors for public buildings to preserve life and property.	Parish and /or City Budgets and Grants	As funding is available	Parish Emergency Manager	Thunderstorms	1, 4	Not Started/ Carried Over from 2016 Plan
J11: Construction of Safe Rooms	Construction of a safe room for first responders located in Jonesville. Other locations will be identified based on funding availability.	Parish and /or City Budgets and Grants	As funding is available	Parish Engineer/ Public Works Director	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1, 3, 4	Not Started/ Carried Over from 2016 Plan
J12: Water conservation Measures	Adopt ordinance requiring water-saving measures in time of drought.	Parish and /or City Budgets and Grants	As funding is available	Parish Engineer/ Public Works Director	Drought	1, 2, 4	Not Started/ Carried Over from 2016 Plan

J13: Pumping Stations	Addition Pumping Station	Parish and /or City Budgets and Grants	As funding is available	Parish Engineer/ Public Works Director	Drought, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1,3,4	Not Started/ Carried Over from 2016 Plan
J14: CRS	Review the existing floodplain ordinance and evaluate and implement ways to improve the Parish's "Community Rating System" (CRS) rating to reduce the flood insurance premium.	Parish and /or City Budgets and Grants	As funding is available	Parish Floodplain Manager	Flooding, Thunderstorms, Tropical Cyclones, Drought, Tornadoes, Winter Weather	1,2,3,4	Ongoing
J15: Network Capability	Funding has been approved through a grant to acquire a vendor to enhance the networks capability and better manage information flow.	Parish and /or City Budgets and Grants	As funding is available	Catahoula OHSEP	Flooding, Tropical Cyclones	1,3	Deleted (Duplicate of Action J5)
J16: Commercial Building Regulations	Adopt additional commercial building regulations, which include stricter building standards and incorporate dry flood proofing techniques.	Parish and /or City Budgets and Grants	As funding is available	Parish Permit Director	Flooding, Tropical Cyclones	1,3,4	Ongoing
J17: Subdivision Guidelines	Develop additional subdivision guidelines to reduce flooding, such as requiring proper drainage with adequate sloping; storm water retention ponds; dikes; levees and floodwalls if appropriate, and requiring freeboard above the Base Flood Elevation (BFE) in flood prone areas. Encourage new subdivision developments to install underground utilities, which would help reduce the chances of power outages.	Parish and /or City Budgets and Grants	As funding is available	Parish Permit Director	Flooding, Thunderstorms, Tropical Cyclones, Drought, Tornadoes, Winter Weather	1,3,4	Ongoing
J18: Public Awareness	Increase public awareness of hazards and hazardous areas. Distribute public awareness information regarding flood hazards, winter storms, drought, tornadoes, thunderstorms and hailstorms, SFHA's, and potential mitigation measures using the local newspaper, utility bill inserts, inserts in the phone book, and parish hazards awareness website, and an educational program for school age children or	Parish and /or City Budgets and Grants	As funding is available	Catahoula OHSEP	Flooding, Thunderstorms, Tropical Cyclones, Drought, Tornadoes, Winter Weather	1,2	Deleted (Duplicate of Action J8)

	"how to" classes in retrofitting by local merchants. Integrate "Disaster Resistance Education" into the public school curriculum. Provide public education on the importance of maintaining the ditches.						
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New Mitigation Actions

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF JONESVILLE	
DESCRIPTION	
TOWN OF JONESVILLE MITIGATION ACTION 1	Drainage Projects
LEAD AGENCY	Jonesville Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Police Jury, Parish and City Floodplain Managers/ Public Works Director
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	CDBG, FMA Project Funds, HMGP Funds, SBA, U.S. Army Corps of Engineers - Section 205, and State Capital Outlay, Local Drainage Funds
ASSOCIATED GOALS	1. Reduce the impact of future flooding 3. Improve the ability of structures to withstand high wind and storm events 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	High
Action Description	Investigate and implement a localized interior drainage project to reduce repetitive losses, increase drainage capacity, and reduce flooding
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Improving the drainage system in Catahoula Parish would reduce flood damage by allowing water to drain efficiently rather than rise and cause structure damage.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF JONESVILLE	
DESCRIPTION	
TOWN OF JONESVILLE MITIGATION ACTION 2	Flood Proofing Projects
LEAD AGENCY	Jonesville Mayor's Office
SUPPORTING AGENCIES	Catahoula OHSEP, Building Permit Director/ Emergency Manager
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish and/or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 3. Improve the ability of structures to withstand high wind and storm events 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	High
Action Description	Inform the public of elevation/ acquisition/ flood proofing projects to reduce repetitive flooding properties.
Type of Mitigation Action	Structure and Infrastructure Projects Education and Awareness Programs
How Action Aligns with Risk Reduction	Performing flood proofing projects such as elevating structures would reduce flood damage by raising the level floodwaters would have to reach before causing damage.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF JONESVILLE	
DESCRIPTION	
TOWN OF JONESVILLE MITIGATION ACTION 3	Master Drainage Plan
LEAD AGENCY	Jonesville Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish and/or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 3. Improve the ability of structures to withstand high wind and storm events 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	High
Action Description	Develop a master drainage plan to evaluate drainage projects to increase drainage capacity and reduce flood losses. Implement recommended projects resulting from drainage plan.
Type of Mitigation Action	Local Plans and Regulation Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Developing a plan for improving drainage will increase cooperation within the parish and incorporated jurisdictions. The plan would also minimize unnecessary spending when performing structural improvements.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF JONESVILLE	
DESCRIPTION	
TOWN OF JONESVILLE MITIGATION ACTION 4	Harden Critical Facilities
LEAD AGENCY	Jonesville Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Police Jury, Catahoula SEP
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Harden critical facilities to reduce damages from hazard events.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Hardening critical facilities would reduce the damage caused by major weather/hazardous events. Structures could be made to withstand debris, wind, and other hazards.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Storms

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF JONESVILLE	
DESCRIPTION	
TOWN OF JONESVILLE MITIGATION ACTION 5	Communications Systems
LEAD AGENCY	Jonesville Mayor's Office
SUPPORTING AGENCIES	Parish Fire Departments
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP
ASSOCIATED GOALS	<ol style="list-style-type: none"> 1. Reduce the impact of future flooding 2. Ensure the delivery of critical services to the community in the case of a hazard event
PRIORITY	Medium
Action Description	Communication system upgrades and improvements, including but not limited to enhancing network capability and management of information flow.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Improving communication systems within the parish could reduce injury during major hazard events. It could increase trust between the public and government officials and allow critical functions to continue during major events.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Storms

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF JONESVILLE	
DESCRIPTION	
TOWN OF JONESVILLE MITGATION ACTION 6	Road Elevation
LEAD AGENCY	Jonesville Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Federal Grants, Local
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Low
Action Description	Elevate roads in vulnerable locations prone to flooding and drainage problems.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Elevating roads would allow emergency vehicles to travel freely within the parish during a flood event and allow for late evacuations during flooding.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF JONESVILLE	
DESCRIPTION	
TOWN OF JONESVILLE MITIGATION ACTION 7	Generator Installation
LEAD AGENCY	Jonesville Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Add back up power supply/generators at the Parish shelters, critical facilities, and governmental buildings.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Adding back up generators to critical facilities will ensure that essential practices remain operational during extreme hazardous events.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF JONESVILLE	
DESCRIPTION	
TOWN OF JONESVILLE MITIGATION ACTION 8	Mitigation Outreach and Education
LEAD AGENCY	Jonesville Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Police Jury
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	<ol style="list-style-type: none"> 1. Reduce the impact of future flooding 2. Ensure the delivery of critical services to the community in the case of a hazard event 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Increase public awareness of hazards and hazardous areas. Distribute public awareness information regarding all hazards as well as information regarding potential mitigation measures by using the following methods and outlets local newspaper, utility bill inserts, inserts in the phone book, and parish hazards awareness website, and educational programs for school age children. Integrate "Disaster Resistance Education" into the public school curriculum. Provide public education on the importance of maintaining the ditches. Sponsor a "Multi-Hazard Awareness Week", to educate the public on all hazards. Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Increasing education and public awareness of hazards could decrease injuries during a major hazardous event because parish residents will know the necessary precautions to take prior to an event.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Drought, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF JONESVILLE	
DESCRIPTION	
TOWN OF JONESVILLE MITIGATION ACTION 9	Flood Mitigation of Repetitive Loss Properties and Other Flood Prone Structures
LEAD AGENCY	Jonesville Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flood prone properties. Benefits: Relieves property owners of the continual flooding
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	By relocating or reconstruction residences that are prone to flooding, residents could be relieved of continuous flood damage, and it would also reduce the likelihood of flood related injuries.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF JONESVILLE	
DESCRIPTION	
TOWN OF JONESVILLE MITIGATION ACTION 10	Lightning Mitigation
LEAD AGENCY	Jonesville Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
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	Installing lightning rods and surge protectors could reduce the likelihood of power outages for critical facilities during a hazard event.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Thunderstorms

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF JONESVILLE	
DESCRIPTION	
TOWN OF JONESVILLE MITIGATION ACTION 11	Construction of Safe Rooms
LEAD AGENCY	Jonesville Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 3. Improve the ability of structures to withstand high wind and storm events 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Construction of safe rooms for first responders located in Catahoula Parish. Other locations will be identified based on funding availability.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	The construction of safe rooms would provide shelter and reduce the risk of injury during a hazard event.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF JONESVILLE	
DESCRIPTION	
TOWN OF JONESVILLE MITIGATION ACTION 12	Water Conservation Measures
LEAD AGENCY	Jonesville Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 2. Ensure the delivery of critical services to the community in the case of a hazard event 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Low
Action Description	Adopt ordinance requiring water-saving measures in time of drought.
Type of Mitigation Action	Education and Awareness Programs
How Action Aligns with Risk Reduction	Water-saving measures in time of drought could protect essential crops and protect human life.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Drought

Additional Supporting Information:

Village of Sicily Island Mitigation Actions

Previous Action Update

Village of Sicily Island							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
S1: Drainage Projects	Investigate and implement a localized interior drainage project to reduce repetitive losses, increase drainage capacity, and reduce flooding	CDBG, FMA Project Funds, HMGP Funds, SBA, U.S. Army Corps of Engineers - Section 205, and State Capital Outlay, Local Drainage Funds	As funding is available	Parish and City Floodplain Managers/ Public Works Director	Flooding, Tropical Cyclones	1, 3, 4	Not Started/ Carried Over from 2016 Plan
S2: Flood Proofing Projects	Inform the public of elevation/ acquisition/ flood proofing projects to reduce repetitive flooding properties.	Parish and/or City Budgets and Grants	As funding is available	Building Permit Director/ Emergency Manager	Flooding, Tropical Cyclones	1, 3, 4	Not Started/ Carried Over from 2016 Plan
S3: Master Drainage Plan	Develop a master drainage plan to evaluate drainage projects to increase drainage capacity and reduce flood losses. Implement recommended projects resulting from drainage plan.	Parish and/or City Budgets and Grants	As funding is available	Parish Engineer	Flooding, Tropical Cyclones	1, 3, 4	Not Started/ Carried Over from 2016 Plan
S4: Harden Critical Facilities	Harden critical facilities to reduce damages from hazard events.	HMGP	As funding is available	Catahoula SEP	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Storms	1. 4	Not Started/ Carried Over from 2016 Plan
S5: Communication Systems	Communication system upgrades and improvements, including but not limited to enhancing network capability and management of information flow.	Grant	As funding is available	Parish and Fire Rescue	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Storms	1, 2	Not Started/ Carried Over from 2016 Plan
S6: Road Elevation	Elevate roads in vulnerable locations prone to flooding and drainage problems.	As funds become available	As funding is available	Parish Engineer/ Public Works Director	Flooding, Tropical Cyclones	1, 4	Not Started/ Carried Over from 2016 Plan
S7: Generators Installation	Add back up power supply/generators at shelters, critical facilities, and governmental buildings.	Parish and /or City Budgets and Grants	As funding is available	Parish Department of Public Works	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1, 4	Not Started/ Carried Over from 2016 Plan

S8: Mitigation Outreach and Education	Increase public awareness of hazards and hazardous areas. Distribute public awareness information regarding all hazards as well as information regarding potential mitigation measures by using the following methods and outlets: local newspaper, utility bill inserts, inserts in the phone book, and parish hazards awareness website, and educational programs for school age children. Integrate "Disaster Resistance Education" into the public school curriculum. Provide public education on the importance of maintaining the ditches. Sponsor a "Multi-Hazard Awareness Week", to educate the public on all hazards. Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	Parish and /or City Budgets and Grants	As funding is available	Parish School Board and Parish Emergency Manager	Drought, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1, 2, 4	Not Started/Carried Over from 2016 Plan
S9: 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	Parish and /or City Budgets and Grants	As funding is available	Parish Engineer/ Public Works Director	Flooding, Tropical Cyclones	1, 4	Not Started/Carried Over from 2016 Plan
S10: Lightning Mitigation	Procurement and Installation of lightning rods and surge protectors for public buildings to preserve life and property.	Parish and /or City Budgets and Grants	As funding is available	Parish Emergency Manager	Thunderstorms	1, 4	Not Started/Carried Over from 2016 Plan
S11: Construction of Safe Rooms	Construction of a safe room for first responders located in Sicily Island. Other locations will be identified based on funding availability.	Parish and /or City Budgets and Grants	As funding is available	Parish Engineer/ Public Works Director	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1, 3, 4	Not Started/Carried Over from 2016 Plan
S12: Water Conservation Measures	Adopt ordinance requiring water-saving measures in time of drought.	Parish and /or City Budgets and Grants	As funding is available	Parish Engineer/ Public Works Director	Drought	1, 2, 4	Not Started/Carried Over from 2016 Plan

S13: CRS	Review the existing floodplain ordinance and evaluate and implement ways to improve the Parish's "Community Rating System" (CRS) rating to reduce the flood insurance premium.	Parish and /or City Budgets and Grants	As funding is available	Parish Floodplain Manager	Drought, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1,2,3,4	Ongoing
S14: Network Capability	Funding has been approved through a grant to acquire a vendor to enhance the networks capability and better manage information flow.	Parish and /or City Budgets and Grants	As funding is available	Catahoula OHSEP	Flooding, Thunderstorms, Tropical Cyclones, Drought, Tornadoes, Winter Weather	1,3	Deleted (Duplicate of Action S5)
S15: Commercial Building Regulations	Adopt additional commercial building regulations, which include stricter building standards and incorporate dry flood proofing techniques.	Parish and /or City Budgets and Grants	As funding is available	Parish Permit Director	Flooding, Tropical Cyclones	1,3,4	Ongoing
S16: Subdivision Guidelines	Develop additional subdivision guidelines to reduce flooding, such as requiring proper drainage with adequate sloping; storm water retention ponds; dikes; levees and floodwalls if appropriate, and requiring freeboard above the Base Flood Elevation (BFE) in flood prone areas. Encourage new subdivision developments to install underground utilities, which would help reduce the chances of power outages.	Parish and /or City Budgets and Grants	As funding is available	Parish Permit Director	Flooding, Tropical Cyclones	1,3,4	Ongoing
S17: Public Awareness	Increase public awareness of hazards and hazardous areas. Distribute public awareness information regarding flood hazards, winter storms, drought, tornadoes, thunderstorms and hailstorms, SFHA's, and potential mitigation measures using the local newspaper, utility bill inserts, inserts in the phone book, and parish hazards awareness website, and an educational program for school age children or "how to" classes in retrofitting by local merchants. Integrate "Disaster Resistance Education" into the public	Parish and /or City Budgets and Grants	As funding is available	Catahoula OHSEP	Flooding, Thunderstorms, Tropical Cyclones, Drought, Tornadoes, Winter Weather	1,2	Deleted (Duplicate of Action S8)

	school curriculum. Provide public education on the importance of maintaining the ditches.						
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New Mitigation Actions

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF SICILY ISLAND	
DESCRIPTION	
VILLAGE OF SICILY ISLAND MITIGATION ACTION 1	Drainage Projects
LEAD AGENCY	Sicily Island Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Police Jury, Parish and City Floodplain Managers/ Public Works Director
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	CDBG, FMA Project Funds, HMGP Funds, SBA, U.S. Army Corps of Engineers - Section 205, and State Capital Outlay, Local Drainage Funds
ASSOCIATED GOALS	1. Reduce the impact of future flooding 3. Improve the ability of structures to withstand high wind and storm events 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	High
Action Description	Investigate and implement a localized interior drainage project to reduce repetitive losses, increase drainage capacity, and reduce flooding
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Improving the drainage system in Catahoula Parish would reduce flood damage by allowing water to drain efficiently rather than rise and cause structure damage.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF SICILY ISLAND	
DESCRIPTION	
VILLAGE OF SICILY ISLAND MITIGATION ACTION 2	Flood Proofing Projects
LEAD AGENCY	Sicily Island Mayor's Office
SUPPORTING AGENCIES	Catahoula OHSEP, Building Permit Director/ Emergency Manager
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish and/or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 3. Improve the ability of structures to withstand high wind and storm events 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	High
Action Description	Inform the public of elevation/ acquisition/ flood proofing projects to reduce repetitive flooding properties.
Type of Mitigation Action	Structure and Infrastructure Projects Education and Awareness Programs
How Action Aligns with Risk Reduction	Performing flood proofing projects such as elevating structures would reduce flood damage by raising the level floodwaters would have to reach before causing damage.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF SICILY ISLAND	
DESCRIPTION	
VILLAGE OF SICILY ISLAND MITIGATION ACTION 3	Master Drainage Plan
LEAD AGENCY	Sicily Island Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish and/or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 3. Improve the ability of structures to withstand high wind and storm events 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	High
Action Description	Develop a master drainage plan to evaluate drainage projects to increase drainage capacity and reduce flood losses. Implement recommended projects resulting from drainage plan.
Type of Mitigation Action	Local Plans and Regulation Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Developing a plan for improving drainage will increase cooperation within the parish and incorporated jurisdictions. The plan would also minimize unnecessary spending when performing structural improvements.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF SICILY ISLAND	
DESCRIPTION	
VILLAGE OF SICILY ISLAND MITIGATION ACTION 4	Harden Critical Facilities
LEAD AGENCY	Sicily Island Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Police Jury
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Harden critical facilities to reduce damages from hazard events.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Hardening critical facilities would reduce the damage caused by major weather/hazardous events. Structures could be made to withstand debris, wind, and other hazards.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Storms

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF SICILY ISLAND	
DESCRIPTION	
VILLAGE OF SICILY ISLAND MITIGATION ACTION 5	Communications Systems
LEAD AGENCY	Sicily Island Mayor's Office
SUPPORTING AGENCIES	Parish Fire Departments
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP
ASSOCIATED GOALS	<ol style="list-style-type: none"> 1. Reduce the impact of future flooding 2. Ensure the delivery of critical services to the community in the case of a hazard event
PRIORITY	Medium
Action Description	Communication system upgrades and improvements, including but not limited to enhancing network capability and management of information flow.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Improving communication systems within the parish could reduce injury during major hazard events. It could increase trust between the public and government officials and allow critical functions to continue during major events.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Storms

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF SICILY ISLAND	
DESCRIPTION	
VILLAGE OF SICILY ISLAND MITIGATION ACTION 6	Road Elevation
LEAD AGENCY	Sicily Island Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Federal Grants, Local
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Low
Action Description	Elevate roads in vulnerable locations prone to flooding and drainage problems.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Elevating roads would allow emergency vehicles to travel freely within the parish during a flood event and allow for late evacuations during flooding.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF SICILY ISLAND	
DESCRIPTION	
VILLAGE OF SICILY ISLAND MITIGATION ACTION 7	Generator Installation
LEAD AGENCY	Sicily Island Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Add back up power supply/generators at the Parish shelters, critical facilities, and governmental buildings.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Adding backup generators to critical facilities will ensure that essential practices remain operational during extreme hazardous events.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF SICILY ISLAND	
DESCRIPTION	
VILLAGE OF SICILY ISLAND MITIGATION ACTION 8	Mitigation Outreach and Education
LEAD AGENCY	Sicily Island Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Police Jury
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	<ol style="list-style-type: none"> 1. Reduce the impact of future flooding 2. Ensure the delivery of critical services to the community in the case of a hazard event 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Increase public awareness of hazards and hazardous areas. Distribute public awareness information regarding all hazards as well as information regarding potential mitigation measures by using the following methods and outlets local newspaper, utility bill inserts, inserts in the phone book, and parish hazards awareness website, and educational programs for school age children. Integrate "Disaster Resistance Education" into the public school curriculum. Provide public education on the importance of maintaining the ditches. Sponsor a "Multi-Hazard Awareness Week", to educate the public on all hazards. Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Increasing education and public awareness of hazards could decrease injuries during a major hazardous event because parish residents will know the necessary precautions to take prior to an event.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Drought, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF SICILY ISLAND	
DESCRIPTION	
VILLAGE OF SICILY ISLAND MITIGATION ACTION 9	Flood Mitigation of Repetitive Loss Properties and Other Flood Prone Structures
LEAD AGENCY	Sicily Island Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flood prone properties. Benefits: Relieves property owners of the continual flooding
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	By relocating or reconstruction residences that are prone to flooding, residents could be relieved of continuous flood damage, and it would also reduce the likelihood of flood related injuries.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF SICILY ISLAND	
DESCRIPTION	
VILLAGE OF SICILY ISLAND MITIGATION ACTION 10	Lightning Mitigation
LEAD AGENCY	Sicily Island Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 4. Engage and inform the community on the subject of hazard mitigation
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	Installing lightning rods and surge protectors could reduce the likelihood of power outages for critical facilities during a hazard event.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Thunderstorms

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF SICILY ISLAND	
DESCRIPTION	
VILLAGE OF SICILY ISLAND MITIGATION ACTION 11	Construction of Safe Rooms
LEAD AGENCY	Sicily Island Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 3. Improve the ability of structures to withstand high wind and storm events 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Medium
Action Description	Construction of safe rooms for first responders located in Catahoula Parish. Other locations will be identified based on funding availability.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	The construction of safe rooms would provide shelter and reduce the risk of injury during a hazard event.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF SICILY ISLAND	
DESCRIPTION	
VILLAGE OF SICILY ISLAND MITIGATION ACTION 12	Water Conservation Measures
LEAD AGENCY	Sicily Island Mayor's Office
SUPPORTING AGENCIES	Catahoula Parish Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Parish and /or City Budgets and Grants
ASSOCIATED GOALS	1. Reduce the impact of future flooding 2. Ensure the delivery of critical services to the community in the case of a hazard event 4. Engage and inform the community on the subject of hazard mitigation
PRIORITY	Low
Action Description	Adopt ordinance requiring water-saving measures in time of drought.
Type of Mitigation Action	Education and Awareness Programs
How Action Aligns with Risk Reduction	Water-saving measures in time of drought could protect essential crops and protect human life.
Current Status of Action	New (Not Started – Carried over from 2016 Plan)
Hazard Addressed	Drought

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.

Catahoula 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 Catahoula Parish Hazard Mitigation Plan Update

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

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

Date	Meeting or Outreach	Location	Public Invited	Purpose
2/24/2021	Kick Off Email	Email	No	Schedule kick off call with Parish OHSEP and SDMI Staff.
5/3/2021	Kick Off Meeting	Phone Conference	No	Discuss with the Parish OHSEP Director expectations and requirements of the project. Discuss meeting schedules, committee make up, and next steps.
6/3/2021	Steering Committee Meeting (Planning Process)	Harrisonburg, LA	No	Discussion with Catahoula Parish Hazard Mitigation Steering Committee the process and expectations of plan participants. Discuss timeline and action items of each jurisdiction and parish.
11/16/2021	Risk Assessment Review with Steering Committee	Harrisonburg, LA	Yes	Presentation of Risk Assessment Hazards and maps to Steering Committee.
11/16/2021	Public Meeting	Harrisonburg, LA	Yes	Presentation of Risk Assessment Hazards and maps to Public. Presentation also includes current mitigation project highlights within communities and public survey discussion.
5/3/2021 – 11/30/2021	Public Opinion Survey	Online	Yes	This survey asked participants about public perceptions and opinions regarding natural hazards in Catahoula 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-YJYYVN7C9/

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	Month 12
Plan Revision												
Data Collection												
Risk Assessment												
Public Input												
Mitigation Strategy												
Plan Review by GOHSEP and FEMA												
FEMA APA												
Plan Adoptions												
Final Plan Approval												

Coordination

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

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

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

Neighboring Community, Local and Regional Planning Process Involvement

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

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

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

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

Catahoula Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Ellis Boothe	Parish Director	Catahoula Parish OHSEP	catahoulaohsep@att.net
Patti Mizell	Sec./Treasurer	Catahoula Parish Police Jury	catppj@bellsouth.net
Anlynn Gardner	Town Clerk	Town of Jonesville	agardnertoj@outlook.com
Patricia Hefner	Town Clerk	Village of Harrisonburg	villageofharrisonburg@yahoo.com
Walter Krause	Mayor	Village of Sicily Island	walterkrause@yahoo.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 Catahoula 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.

Catahoula 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 Catahoula Parish Hazard Mitigation Steering Committee will remain charged with ensuring that the goals and strategies of new and updated local planning documents for their communities or agencies are consistent with the goals and actions of the Hazard Mitigation Plan and will not contribute to increased hazard vulnerability in the parish. Existing plans, studies, and technical information were incorporated in the planning process. Examples include flood data from FEMA and the U. S. Geological Survey. Much of this data was incorporated into the Risk Assessment component of the plan relative to plotting historical events and the magnitude of damages that occurred. The parish's 2016 Hazard Mitigation Plan was also used in the planning process. Other existing data and plans used in the planning process include those listed below.

- Parish Emergency Operations 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: May 3, 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:

Catahoula Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Ellis Boothe	Parish Director	Catahoula Parish OHSEP	catahoulaohsep@att.net
Patti Mizell	Sec./Treasurer	Catahoula Parish Police Jury	catppj@bellsouth.net
Anlynnne Gardner	Town Clerk	Town of Jonesville	agardnertoj@outlook.com
Patricia Hefner	Town Clerk	Village of Harrisonburg	villageofharrisonburg@yahoo.com
Walter Krause	Mayor	Village of Sicily Island	walterkrause@yahoo.com

Meeting #2: Steering Committee Meeting (Planning Process)

Date: June 3 2021

Location: Harrisonburg, LA

Purpose: Discussion with Catahoula Parish Hazard Mitigation Steering Committee the process and expectations of plan participants. Discuss timeline and action items of each jurisdiction and parish.

Public Invitation: No

Meeting Invitees:

Catahoula Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Ellis Boothe	Parish Director	Catahoula Parish OHSEP	catahoulaohsep@att.net
Patti Mizell	Sec./Treasurer	Catahoula Parish Police Jury	catppj@bellsouth.net
Anlynnne Gardner	Town Clerk	Town of Jonesville	agardnertoj@outlook.com
Patricia Hefner	Town Clerk	Village of Harrisonburg	villageofharrisonburg@yahoo.com
Walter Krause	Mayor	Village of Sicily Island	walterkrause@yahoo.com

Meeting #3: Risk Assessment Review with Steering Committee

Date: November 16, 2021

Location: Harrisonburg, LA

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

Public Invitation: No

Meeting Invitees:

Catahoula Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Ellis Boothe	Parish Director	Catahoula Parish OHSEP	catahoulaohsep@att.net
Patti Mizell	Sec./Treasurer	Catahoula Parish Police Jury	catppj@bellsouth.net
Anlynnne Gardner	Town Clerk	Town of Jonesville	agardnertoj@outlook.com
Patricia Hefner	Town Clerk	Village of Harrisonburg	villageofharrisonburg@yahoo.com
Walter Krause	Mayor	Village of Sicily Island	walterkrause@yahoo.com

Meeting #4: Public Meeting

Date: November 16, 2021

Location: Harrisonburg, LA

Purpose: Presentation of Risk Assessment Hazards and maps to Public. Presentation also includes current mitigation project highlights within communities and public survey discussion.

Public Invitation: Yes

Meeting Invitees:

Catahoula Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Ellis Boothe	Parish Director	Catahoula Parish OHSEP	catahoulaohsep@att.net
Patti Mizell	Sec./Treasurer	Catahoula Parish Police Jury	catppj@bellsouth.net
Anlynnne Gardner	Town Clerk	Town of Jonesville	agardnertoj@outlook.com
Patricia Hefner	Town Clerk	Village of Harrisonburg	villageofharrisonburg@yahoo.com
Walter Krause	Mayor	Village of Sicily Island	walterkrause@yahoo.com

Outreach Activity #1: Public Opinion Survey

Date: Ongoing throughout planning process

Location: Web Survey

Public Invitation: Yes

As referenced in the Mitigation Strategy section of this document, an online public opinion survey of Catahoula Parish residents was conducted between March and November 2021. This survey asked participants about public perceptions and opinions regarding natural hazards in Catahoula Parish. In addition, questions covered the methods and techniques preferred for reducing the risks and losses associated with these hazards. However, because there were no responses to the survey, this public feedback could not be incorporated into the plan. Survey Results:

<https://www.surveymonkey.com/results/SM-YJYYVN7C9/>

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 Catahoula 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

Catahoula 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

Catahoula 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 Catahoula 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 Catahoula 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.

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

- Ordinances, Resolutions, Regulations
- Floodplain Ordinances
- Emergency Operations Plans
- Continuity of Operations Plans
- Transportation Plan
- Community Wildfire Protection Plan

Opportunities to integrate the requirements of this plan into other local planning mechanisms will continue to be identified through future meetings of the Catahoula Parish Hazard Mitigation Steering Committee and through the five-year review process described herein. The primary means for integrating mitigation strategies into other local planning mechanisms will be through the revision, update and implementation of each jurisdiction's individual plans that require specific planning and administrative tasks (e.g. risk assessment, plan amendments, ordinance revisions, capital improvement projects, etc.). While there have been no instances of the mitigation strategy being incorporated into other planning documents since the adoption of the 2016 Catahoula 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 Catahoula 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 Harrisonburg, Town of Jonesville, and Village of Sicily Island, the Catahoula Parish Police Jury 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:

Catahoula Parish			
<i>Continuity of Operations Plan</i>	Updated as needed	Catahoula Parish OHSEP	✓
<i>Local Emergency Operations Plan</i>	Updated as needed	Catahoula Parish OHSEP	✓
<i>Community Wildfire Protection Plan</i>	Updated as needed	Catahoula Parish OHSEP	✓
Village of Harrisonburg			
<i>Continuity of Operations Plan</i>	Updated as needed	Village of Harrisonburg Mayor's Office	✓
<i>Local Emergency Operations Plan</i>	Updated as needed	Village of Harrisonburg Mayor's Office	✓
<i>Community Wildfire Protection Plan</i>	Updated as needed	Village of Harrisonburg Mayor's Office	✓
Town of Jonesville			
<i>Continuity of Operations Plan</i>	Updated annually	Town of Jonesville Mayor's Office	✓
<i>Local Emergency Operations Plan</i>	Updated as needed	Town of Jonesville Mayor's Office	✓
<i>Transportation Plan</i>	Updated as needed	Town of Jonesville Mayor's Office	✓
Village of Sicily Island			
<i>Continuity of Operations Plan</i>	Updated annually	Village of Sicily Island Mayor's Office	✓
<i>Local Emergency Operations Plan</i>	Updated as needed	Village of Sicily Island Mayor's Office	✓
<i>Community Wildfire Protection Plan</i>	Updated as needed	Village of Sicily Island 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 Catahoula Parish Planning Area

Catahoula Parish Planning Area Critical Facilities							
Type	Name	Drought	Flooding	Thunderstorms	Tornadoes	Tropical Cyclones	Winter Weather
Government	Harrisonburg Town Hall			X	X	X	X
	Jonesville Town Hall			X	X	X	X
	Sicily Island Town Hall			X	X	X	X
	Catahoula Parish Courthouse			X	X	X	X
Fire & SAR	Parhams Fire Department			X	X	X	X
	Jonesville Fire Department			X	X	X	X
	Sandy Lake Fire Department		X	X	X	X	X
	Manifest Fire Department			X	X	X	X
	Harrisonburg Fire Department			X	X	X	X
	Enterprise Fire Station		X	X	X	X	X
	Larto Fire Station		X	X	X	X	X
	Sicily Island Fire Department			x	x	x	x
	Glade Fire Department		X	X	X	X	X
Law Enforcement	Jonesville Police Department			X	X	X	X
	Catahoula Parish Sheriff Office			X	X	X	X
	Harrisonburg Police Department			X	X	X	X
	Sicily Island Police Department			X	X	X	X
	Catahoula Correctional Center			x	x	x	x
Public Health	Kid Care Louisiana, LLC			X	X	X	X
	Riverpark Medical Clinic		X	X	X	X	X
	The Columns Community Care Center			X	X	X	X
	Catahoula Parish Health Unit			X	X	X	X
Schools	Block High School			X	X	X	X
	Central High School		X	X	X	X	X
	Harrisonburg Elementary School			x	x	x	x
	Harrisonburg High School			X	X	X	X
	Jonesville Elementary School			X	X	X	X
	Sicily Island High School			X	X	X	X

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Appendix D: Plan Adoption

Catahoula Parish

Telephone: 318-744-5435

Fax: 318-744-0205

CATAHOULA PARISH POLICE JURYP. O. BOX 258
HARRISONBURG, LOUISIANA 71340*"Catahoula Cur - The Official State Dog"*HAROLD SONES
PRESIDENT**RESOLUTION 02-14-2022**JERELA A. EVANS
VICE-PRESIDENT**A RESOLUTION ADOPTING THE CATAHOULA PARISH MULTI-JURISDICTION
HAZARD MITIGATION PLAN DATED DECEMBER 8, 2021**PATTI C. MIZELL
SECRETARY-TREASURER

WHEREAS, the Catahoula Parish Police Jury recognizes the threat that natural hazards pose to people and property within Catahoula Parish, LA; and

WARD 1 BRADY NELSON
P. O. BOX 5
SICILY ISLAND, LA 71368

WHEREAS, the Catahoula Parish Police Jury has prepared a multi-hazard mitigation plan, hereby known as the 2021 Catahoula Parish Multi-Jurisdiction Hazard Mitigation Plan dated December 8, 2021 in accordance with the Disaster Mitigation Act of 2000; and

WARD 2 JERELA A. EVANS
P. O. BOX 411
SICILY ISLAND, LA 71368


WHEREAS, the 2021 Catahoula Parish Multi-Jurisdiction Hazard Mitigation Plan dated December 8, 2021 identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property within Catahoula Parish, LA from the impacts of future hazards and disasters; and

WARD 3 DEBORAH MCCORMACK
3816 HIGHWAY 124
ENTERPRISE, LA 71425WARD 4 HAROLD SONES
P. O. BOX 162
HARRISONBURG, LA 71340

WHEREAS, adoption by the Catahoula Parish Police Jury demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2021 Catahoula Parish Multi-Jurisdiction Hazard Mitigation Plan dated December 8, 2021;

WARD 5 RODNEY SONES
946 HIGHWAY 923
JONESVILLE, LA 71343WARD 6 JEFFERY ESTES
247 PONDEROSA ROAD
JONESVILLE, LA 71343

NOW THEREFORE BE IT RESOLVED by the Catahoula Parish Police Jury, Louisiana, that in accordance with the Catahoula Parish Police Jury's procedures, a motion was made by Jeffery Estes and seconded by Deborah McCormack to adopt the 2021 Catahoula Parish Multi-Jurisdiction Hazard Mitigation Plan dated December 8, 2021.

WARD 7 RICKIE CRUMPTON
512 MOUND STREET
JONESVILLE, LA 71343Resolution adopted by a vote of 8 yeas, 0 nays and 1 absent, this 14th day of February 2022.WARD 8 DEBRA JONES-HAWKINS
703 FRITZ STREET
JONESVILLE, LA 71343
Harold Sones, President
Catahoula Parish Police Jury
Patti C. Mizell, Secretary
Catahoula Parish Police JuryWARD 9 JOHNNIE ADAMS
538 BLUE CANE ROAD
JONESVILLE, LA 71343*****
Regular Monthly
Meetings 2nd & 4th
Mondays each Month
at 6:00 p.m.*"This institution is an equal opportunity provider."*

Village of Harrisonburg

VILLAGE OF HARRISONBURG

STATE OF LOUISIANA

RESOLUTION NO. 20220214A HAZARD MITIGATION PLAN

A RESOLUTION OF THE VILLAGE OF HARRISONBURG, PARISH OF CATAHOULA, STATE OF LOUISIANA: ADOPTING THE 2021-CATAHOULA PARISH MULT-JURISDICTION HAZARD MITIGATION PLAN, DATED DECEMBER 8TH, 2021.

WHEREAS, the Village of Harrisonburg recognizes the threat that natural hazards pose to people and property within Harrisonburg, Louisiana and

WHEREAS, the Catahoula Parish Hazard Mitigation Plan Update Steering Committee, in collaboration with the participating jurisdictions as well as community stakeholders and the general public, have prepared a multi-hazard mitigation plan, hereby known as Catahoula Parish Multi-Jurisdiction Hazard Mitigation Plan, Dated December 8th, 2021 in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, Catahoula Parish Multi-Jurisdiction Hazard Mitigation Plan, Dated December 8th, 2021 identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Harrisonburg, Louisiana from the impacts of future hazards and disasters; and

WHEREAS, adoption of the plan by the Village of Harrisonburg demonstrates their commitment to hazard mitigation and achieving the goals outlined in the Catahoula Parish Multi-Jurisdiction Hazard Mitigation Plan, Dated December 8th 2021.

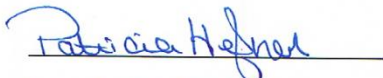
NOW THEREFORE BE IT RESOLVED, by the Village of Harrisonburg, Parish of Catahoula, State of Louisiana, that the "2021 CATAHOULA PARISH MULT-JURISDICTION HAZARD MITIGATION PLAN, DATED DEC 08, 2021" is hereby adopted.

Passed, approved, and adopted by the Village of Harrisonburg, Parish of Catahoula, State of Louisiana, on the 14th day of February 2022.

ATTEST:



Michael Tubre, Mayor



Patricia Hefner, Town Clerk

Town of Jonesville

**TOWN OF JONESVILLE**

Village - December 16, 1903 - Town - October 18, 1916
104 Lilly Street - P O Box 428 - Jonesville, LA 71343
Phone. (318) 339-8596 - Fax: (318) 339-9942
townhallTOJ@outlook.com
IN GOD WE TRUST!

Mayor:
Hiram Evans

Municipal Clerk:
Anlynnne Gardner

Council Members:

Benny Vault, Sr.
Bruce Lofton
Josie Bullitts
Loria Hollins
Catina Branch

TOWN OF JONESVILLE,
LOUISIANA
RESOLUTION NO. 0208-22

RESOLUTION
OF
THE TOWN OF JONESVILLE

2021 CATAHOULA PARISH MULTI-JURISDICTION HAZARD MITIGATION PLAN, Dated-December 8, 2021

WHEREAS the TOWN OF JONESVILLE, LA. recognizes the threat that hazards pose to people and property within Jonesville, Louisiana; and

WHEREAS the TOWN OF JONESVILLE, LA has prepared a multi-hazard mitigation plan, hereby known as the 2021-CATAHOULA PARISH MULTI-JURISDICTION HAZARD MITIGATION PLAN, Dated-Dec. 8, 2021, in accordance with the Disaster Mitigation Act of 2000; and


WHEREAS the 2021 CATAHOULA PARISH MULTI-JURISDICTION HAZARD MITIGATION PLAN, Dated- Dec. 8, 2021, identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Town of Jonesville, LA. From the impacts of future hazards and disasters; and

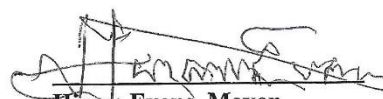
WHEREAS adoption by the TOWN OF JONESVILLE, LA. Demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the 2021 CATAHOULA PARISH MULTI-JURISDICTION HAZARD MITIGATION PLAN, Dated Dec. 8, 2021; and

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


Section 1. In accordance with the TOWN OF JONESVILLE's COUNCIL Procedure's a Motion by Council Member Bruce Lofton and seconded by Council Member Catina Branch was made by THE TOWN COUNCIL of JONESVILLE LA. February 8, 2022, hereby adopts the 2021 CATAHOULA PARISH JURISDICTION HAZARD MITIGATION PLAN, Dec. 8, 2021.

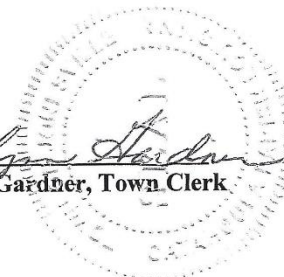
ADOPTED by a vote of 5(five) in favor and (0 zero) against, and 0 (zero) abstaining, this 8th day of February 2022.


Anlynn Gardner, Town Clerk


Hiram Evans, Mayor

ATTEST BY:


Anlynn Gardner, Town Clerk



Village of Sicily Island

**RESOLUTION
FOR
VILLAGE OF SICILY ISLAND**

2021 CATAHOULA PARISH MULTI-JURISDICTION HAZARD MITIGATION PLAN, DEC. 08, 2021

WHEREAS, the Village of Sicily Island, La., recognizes the threat that natural hazards pose to the people and properties within the Village of Sicily Island, La; and

WHEREAS, the Village of Sicily Island, La. Has prepared a multi-hazard mitigation plan, hereby known as the, **2021-CATAHOULA PARISH MULTI-JURISDICTION HAZARD MITIGATION PLAN**, dated DEC. 08, 2021 in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, the **2021 CATAHOULA PARISH MULTI-JURISDICTION HAZARD MITIGATION PLAN**, Dated DEC. 08,2021, identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Village of Sicily Island, La., from the impact of future hazards and disasters; and

WHEREAS, adoption by the Village of Sicily Island, La., demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the, **2021 CATAHOULA PARISH MULTI-JURISDICTION HAZARD MITIGATION PLAN**, Dated DEC.08,2021; and

NOW THEREFORE BE IT RESOLVED, THAT THE Village of Sicily Island, hereby adopts the, **2021 CATAHOULA PARISH MULTI-JURISDICTION HAZARD MITIGATION PLAN**, Dated DEC. 08, 2021

A Motion To Adopt the above resolution was made by Alderman Krause, seconded by Alderswoman Hilliard and resulted in the following vote:

Yeas: 02

Nays: 0

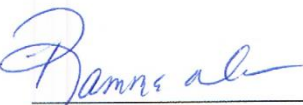
Absent: 01

Abstaining: 0

We the undersigned do certify that the foregoing resolution is a true and correct copy of a resolution adopted at a meeting on the 10th day of February, 2022, at which meeting quorum was present and voting.

Village of Sicily Island


WALTER M. KRAUSE, MAYOR


RAMONA DUNBAR, TOWN CLERK

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Appendix E: State Required Worksheets

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

Mitigation Planning Team

Catahoula Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Ellis Boothe	Parish Director	Catahoula Parish OHSEP	catahoulaohsep@att.net
Patti Mizell	Sec./Treasurer	Catahoula Parish Police Jury	catppj@bellsouth.net
Anlynnne Gardner	Town Clerk	Town of Jonesville	agardnertoj@outlook.com
Patricia Hefner	Town Clerk	Village of Harrisonburg	villageofharrisonburg@yahoo.com
Walter Krause	Mayor	Village of Sicily Island	walterkrause@yahoo.com

Capability Assessment

Unincorporated Catahoula Parish

Capability Assessment Worksheet – Unincorporated Catahoula Parish		
Local mitigation capabilities are existing authorities, policies 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	n/a
Capital Improvements Plan	No	n/a
Economic Development Plan	No	n/a
Local Emergency Operations Plan	Yes	2015
Continuity of Operations Plan	Yes	2015
Transportation Plan	No	n/a
Stormwater Management Plan	No	n/a
Community Wildfire Protection Plan	Yes	Fire Dept. Mutual Aid
Other plans (redevelopment, recovery, coastal zone management)	No	n/a
Building Code, Permitting and Inspections	Yes / No	Comments
Building Code	Yes	Uses State Codes
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	n/a
Fire Department ISO/PIAL rating	Yes	various rating 4-10
Site plan review requirements	Yes	Uses State Codes
Land Use Planning and Ordinances	Yes / No	Comments
Zoning Ordinance	No	n/a
Subdivision Ordinance	No	n/a
Floodplain Ordinance	Yes	n/a
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	No	n/a
Flood Insurance Rate Maps	Yes	n/a
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	n/a
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	n/a
Staff	Yes / No	Comments
Chief Building Official	No	Catahoula Parish Police Jury
Floodplain Administrator	Yes	Catahoula Parish Police Jury
Emergency Manager	Yes	Catahoula Parish OHSEP
Community Planner	No	n/a
Civil Engineer	No	n/a
GIS Coordinator	No	n/a
Grant Writer	No	n/a
Other	No	n/a
Technical	Yes / No	Comments
Warning Systems / Service (Reverse 911, outdoor warning signals)	Yes	Public Early Warning System
Hazard Data & Information	Yes	Public Early Warning System
Grant Writing	No	n/a
Hazus Analysis	No	n/a
Other	No	n/a

Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes / No	Comments
Capital Improvements project funding	Yes	n/a
Authority to levy taxes for specific purposes	Yes	n/a
Fees for water, sewer, gas, or electric services	No	n/a
Impact fees for new development	No	n/a
Stormwater Utility Fee	No	n/a
Community Development Block Grant (CDBG)	Yes	n/a
Other Funding Programs	No	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)	Yes	n/a
Natural Disaster or safety related school program	Yes	School Board
Storm Ready certification	No	n/a
Firewise Communities certification	No	n/a
Public/Private partnership initiatives addressing disaster-related issues	No	n/a
Other	No	n/a

Capability Assessment Worksheet – Village of Harrisonburg

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	n/a
Capital Improvements Plan	No	n/a
Economic Development Plan	No	n/a
Local Emergency Operations Plan	Yes	Use Parish Plan
Continuity of Operations Plan	Yes	Use Parish Plan
Transportation Plan	No	n/a
Stormwater Management Plan	No	n/a
Community Wildfire Protection Plan	Yes	Mutual Aid Agreements
Other plans (redevelopment, recovery, coastal zone management)	No	n/a
Building Code, Permitting and Inspections	Yes / No	Comments
Building Code	Yes	n/a
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	n/a
Fire Department ISO/PIAL rating	Yes	10
Site plan review requirements	No	n/a
Land Use Planning and Ordinances	Yes / No	Comments
Zoning Ordinance	No	n/a
Subdivision Ordinance	No	n/a
Floodplain Ordinance	Yes	n/a
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	No	n/a
Flood Insurance Rate Maps	Yes	n/a
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	Uses Parish Plan
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	when funding is available
Staff	Yes / No	Comments
Chief Building Official	No	n/a
Floodplain Administrator	Yes	n/a
Emergency Manager	No	n/a
Community Planner	No	n/a
Civil Engineer	Yes	n/a
GIS Coordinator	No	n/a
Grant Writer	Yes	n/a
Other	No	n/a
Technical	Yes / No	Comments
Warning Systems / Service (Reverse 911, outdoor warning signals)	Yes	Parish Provided
Hazard Data & Information	No	n/a
Grant Writing	No	n/a
Hazus Analysis	No	n/a
Other	No	n/a

Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes / No	Comments
Capital Improvements project funding	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	No	n/a
Stormwater Utility Fee	No	n/a
Community Development Block Grant (CDBG)	Yes	n/a
Other Funding Programs	No	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)	Yes	Fire Dept. Town Officials
Natural Disaster or safety related school program	No	n/a
Storm Ready certification	No	n/a
Firewise Communities certification	No	n/a
Public/Private partnership initiatives addressing disaster-related issues	No	n/a
Other	No	n/a

Town of Jonesville

Capability Assessment Worksheet – Town of Jonesville		
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	n/a
Capital Improvements Plan	No	n/a
Economic Development Plan	No	n/a
Local Emergency Operations Plan	Yes	Use Parish Plan
Continuity of Operations Plan	Yes	Use Parish Plan
Transportation Plan	Yes	Use Parish Plan
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	n/a
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	n/a
Fire Department ISO/PIAL rating	Yes	6; Fire department undergoing new rating
Site plan review requirements	No	n/a
Land Use Planning and Ordinances	Yes / No	Comments
Zoning Ordinance	Yes	n/a
Subdivision Ordinance	No	n/a
Floodplain Ordinance	Yes	n/a
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	No	n/a
Flood Insurance Rate Maps	Yes	n/a
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	No	n/a
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	When Funding is available
Staff	Yes / No	Comments
Chief Building Official	No	n/a
Floodplain Administrator	Yes	n/a
Emergency Manager	No	n/a
Community Planner	No	n/a
Civil Engineer	Yes	n/a
GIS Coordinator	No	n/a
Grant Writer	Yes	n/a
Other	No	n/a
Technical	Yes / No	Comments
Warning Systems / Service (Reverse 911, outdoor warning signals)	Yes	Uses Parish's Warning System
Hazard Data & Information	No	n/a
Grant Writing	Yes	n/a
Hazus Analysis	No	n/a
Other	No	n/a

Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes / No	Comments
Capital Improvements project funding	No	n/a
Authority to levy taxes for specific purposes	Yes	n/a
Fees for water, sewer, gas, or electric services	Yes	n/a
Impact fees for new development	No	n/a
Stormwater Utility Fee	No	n/a
Community Development Block Grant (CDBG)	Yes	n/a
Other Funding Programs	No	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.	No	n/a
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	Yes	Fire Department, Town Officials
Natural Disaster or safety related school program	Yes	OHSEP. School Board
Storm Ready certification	No	n/a
Firewise Communities certification	No	n/a
Public/Private partnership initiatives addressing disaster-related issues	No	n/a
Other	No	n/a

Village of Sicily Island

Capability Assessment Worksheet – Village of Sicily Island

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	n/a
Capital Improvements Plan	No	n/a
Economic Development Plan	No	n/a
Local Emergency Operations Plan	Yes	Use Parish EOP
Continuity of Operations Plan	Yes	Use Parish EOP
Transportation Plan	No	n/a
Stormwater Management Plan	No	n/a
Community Wildfire Protection Plan	Yes	Mutual Aid Agreements
Other plans (redevelopment, recovery, coastal zone management)	No	n/a
Building Code, Permitting and Inspections	Yes / No	Comments
Building Code	No	n/a
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	n/a
Fire Department ISO/PIAL rating	Yes	7
Site plan review requirements	No	n/a
Land Use Planning and Ordinances	Yes / No	Comments
Zoning Ordinance	No	n/a
Subdivision Ordinance	No	n/a
Floodplain Ordinance	Yes	n/a
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	No	n/a
Flood Insurance Rate Maps	Yes	Uses NFIP Rate Map
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	Uses Parish Plan
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	n/a
Staff	Yes / No	Comments
Chief Building Official	No	n/a
Floodplain Administrator	Yes	n/a
Emergency Manager	No	n/a
Community Planner	No	n/a
Civil Engineer	No	n/a
GIS Coordinator	No	n/a
Grant Writer	No	n/a
Other	No	n/a
Technical	Yes / No	Comments
Warning Systems / Service (Reverse 911, outdoor warning signals)	Yes	Provide by Parish OHSEP
Hazard Data & Information	No	n/a
Grant Writing	No	n/a
Hazus Analysis	No	n/a
Other	No	n/a

Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes / No	Comments
Capital Improvements project funding	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	No	n/a
Stormwater Utility Fee	No	n/a
Community Development Block Grant (CDBG)	Yes	n/a
Other Funding Programs	No	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	Volunteer Fire Dept.
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	Yes	City Hall, Volunteer Fire Dept., Police Dept.
Natural Disaster or safety related school program	Yes	n/a
Storm Ready certification	No	n/a
Firewise Communities certification	No	n/a
Public/Private partnership initiatives addressing disaster-related issues	No	n/a
Other	No	n/a

Building Inventory

Catahoula Parish Owned Building Information

Catahoula Unincorporated

Name of Building	Purpose of Building	Address	City	Latitude	Longitude	Assessed Value	Date Built	Construction Type
Parish Courthouse	Parish Government Office	301 Bushley St.	Harrisonburg			\$30,000,000	1938	
Public Works Dept. Headquarters	Parish Public Works	15846 Hwy 124	Jonesville			\$250,000	1972	
Parish EOC Building	Parish Government Office	109 Pine St.	Harrisonburg			\$150,000	2003	
Parish Health Unit	Public Health	200 Third St.	Jonesville			\$250,000	2003	
Parish Library (Main Office)	Public Education	300 Bushley St.	Harrisonburg			\$750,000	1971	
Parish Library (Jonesville)	Public Education	205 Pond St.	Harrisonburg			\$500,000	1971	
Parish Library (Sicily Island)	Public Education	308 Newman St.	Sicily Island			\$500,000	1971	
Fire Dist. #1 (Enterprise)	Fire Protection	4800 Hwy 124	Harrisonburg			\$75,000		
Fire Dist. #2 (Larto)	Fire Protection	440 Moody Rd.	Jonesville			\$50,000		
Fire Dist. # 2 (Parhams)	Fire Protection	1674 Parhams Rd.	Jonesville			\$75,000		
Fire Dist. #3 (Harrisonburg)	Fire Protection	105 Sicily St.	Harrisonburg			\$150,000		
Fire Dist. #4 (Main Station)	Fire Protection	23350 Hwy 923	Jonesville			\$150,000		
Fire Dist. #5 (Main Station)	Fire Protection	11425 Hwy 8	Jonesville			\$150,000		
Leland Fire Dept.	Fire Protection	151 Leland Loop	Sicily Island			\$75,000		
Maitland Fire Dept.	Fire Protection	121 Nelsonville Rd.	Sicily Island			\$75,000		
Central High School	Public Education	244 Larto Bayou Rd.	Jonesville			\$2,000,000		
US COE Jonesville Lock & Dam	Transportation and Flood Control	25059 Hwy 124	Jonesville			Unknown	1972	
US COE Red River Lock & Dam #1	Transportation and Flood Control	Vick Rd.	Jonesville			Unknown	1988	

Village of Harrisonburg

Name of Building	Purpose of Building	Address	City	Latitude	Longitude	Assessed Value	Date Built	Construction Type
Harrisonburg Town Hall	Municipal Office	108 Sicily St.	Harrisonburg					
Harrisonburg Fire Station	Fire Protection	108 Sicily St.	Harrisonburg					
Catahoula Parish School Board	Public Education	200 Bushley St.	Harrisonburg					
Harrisonburg High School	Public Education	505 Bushley St.	Harrisonburg					
Northeast Ambulance	Medical Response	504 Bushley St.	Harrisonburg					
LaSalle Community Action	Public Services	204 Sicily St.	Harrisonburg					

Town of Jonesville								
Name of Building	Purpose of Building	Address	City	Latitude	Longitude	Assessed Value	Date Built	Construction Type
Jonesville Town Hall	Municipal Government	104 Lilly St	Jonesville			\$250,000		
Jonesville Police Station	Law Enforcement	304 Mound St.	Jonesville			\$200,000		
Jonesville Fire Station	Fire Protection	304 Third St.	Jonesville			\$150,000		
Jonesville Airport	Public Transportation	600 Airport Rd.	Jonesville			\$5,000,000		
Jonesville Public Works	Municipal Government	700 Airport Rd.	Jonesville			\$200,000		
Old National Guard Armory	Municipal Government	610 Dorothy St.	Jonesville			\$1,000,000		
Block High School	Public Education	300 Division St.	Jonesville			\$3,000,000		
Jonesville Elem. School	Public Education	1219 Cora Dr.	Jonesville			\$3,000,000		
La. Dept. of Agri. And Forestry	Agriculture Support	1685 Martin Luther King Blvd.	Jonesville			\$250,000		
USDA Service Center	Agriculture Support	3545 Fourth St.	Jonesville			\$300,000		
Senior Citizens Center	Senior Citizens Services	900 First St.	Jonesville			\$200,000		
La. Dept. of Social Services	Public Services Support	124 Airport Rd.	Jonesville			\$200,000		
Head Start	Public Education	802 E H Johnson St.	Jonesville			\$1,000,000		
Village of Sicily Island								
Name of Building	Purpose of Building	Address	City	Latitude	Longitude	Assessed Value	Date Built	Construction Type
Sicily Island Town Hall	City Government	101 Sicily St.	Sicily Island			\$100,000		
Sicily Island Fire Station	Fire Protection	101 Sicily St.	Sicily Island			\$100,000		
Sicily Island High School	Education	300 Falcon St.	Sicily Island			\$5,000,000		
Sicily Island Medical Center	Medical Facility	307 Chisum St.	Sicily Island			\$1,000,000		

Vulnerable Populations

Vulnerable Populations Worksheet					
Catahoula Parish Planning Area					
All Hospitals (Private or Public)	Address	City	Zip Code	Latitude	Longitude
None					
Nursing Homes (Private or Public)	Address	City	Zip Code	Latitude	Longitude
Columns Nursing and Rehab	3025 Fourth Street	Jonesville	71343		
Mobile Home Parks	Address	City	Zip Code	Latitude	Longitude
Browns Trailor Park	Trailor Park Rd	Jonesville	71343		
7-Oaks Park	Hwy 124	Jonesville	71343		
Uncle Bud's Campgrounds	2435 Hwy 3102	Jonesville	71343		
Larto Lake Campground	1813 Hwy 3102	Jonesville	71343		
La. Delta Campground	200 Delta Gin Rd.	Jonesville	71343		
Deer Creek Campgrounds	400 Shirt Tail Est. Rd	Sicity Island	71358		
Bayou Louis Campgrounds	1500 Rock Rd.	Sicity Island	71358		
Cross Bayou Campgrounds	200 Phils Landing Rd.	Jonesville	71343		
Cassels RV Park	5022 Hwy 124	Harrisonburg	71340		
Riverview RV Park	4801 Hwy 124	Harrisonburg	71340		
Youngs Trailor Park	200 Willard Street	Jonesville	71343		
White Mobile Home Park	1500 Cora Street	Jonesville	71343		
Smith's	700 Bushley Street	Harrisonburg	71340		

National Flood Insurance Program (NFIP)

National Flood Insurance Program (NFIP)				
	Catahoula Unincorporated	Village of Harrisonburg	Town of Jonesville	Village of Sicily Island
Insurance Summary				
How many NFIP policies are in the community? What is the total premium and coverage?	732 Policies, \$84,480,100 coverage	10	57	16 policies, \$1,521.400 coverage, \$12,264 Premiums
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?	Filed Claims: 2,576; Total Loss Paid: \$15,352,816	1 claim, \$10,443/ unknown	65 Claims; \$572,071/ unknown	0
How many structures are exposed to flood risk with in the community?	N/A	27	27 SFHA Structures	N/A
Describe any areas of flood risk with limited NFIP policy coverage.	Areas outside the unprotected levee system	N/A	N/A	N/A
Staff Resources				
Is the Community FPA or NFIP Coordinator certified?	Yes	No	No	No
Is flood plain management an auxiliary function?	Yes	Yes	Yes	Yes
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Yes	N/A	N/A	N/A
What are the barriers to running an effective NFIP program in the community, if any?	Lack of personal funding	Lack of personal funding	Funding Source	Financial
Compliance History				
Is the community in good standing with the NFIP?	Yes	Yes	Yes	Yes
Are there any outstanding compliance issues(i.e., current violations)?	No	No	No	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact(CAC)?	2015	N/A	N/A	N/A
Is a CAV or CAC scheduled or needed? If so when?	No	No	No	No
Regulation				
When did the community enter the NFIP?	4/5/1988	5/25/1905	5/26/1905	1/20/2011
Are the FIRMs digital or paper?	Yes	Paper	Paper	Paper
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	Meet	Meet	Meet	Meet
Community Rating System (CRS)				
Does the community participate in CRS?	No	No	No	No
What is the community's CRS Class Ranking?	N/A	N/A	N/A	N/A
Does the plan include CRS planning requirements?	N/A	N/A	N/A	N/A

