

2021 WASHINGTON PARISH MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

UNINCORPORATED
WASHINGTON PARISH, ANGIE,
BOGALUSA, FRANKLINTON,
VARNADO



WASHINGTON PARISH MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE

Prepared for:

Washington Parish



Prepared by:

Stephenson Disaster Management Institute

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

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



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

This Page Left Intentionally Blank

ACKNOWLEDGMENTS

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

Unincorporated Washington Parish

Village of Angie

City of Bogalusa

Town of Franklinton

Village of Varnado

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

Bobbi Jo Breland	Washington Parish Homeland Security
Jordan Dykes	Washington Parish Homeland Security
Richard Thomas	Washington Parish Government
JoAnna Thomas	Washington Parish Communication District
James Hall	City of Bogalusa
Ken Wheat	Washington Parish Government
Reginald McMasters	Town of Franklinton
Wendy Oquin Perrette	City of Bogalusa
Roxie Fornea	Village of Angie
Parish Sumrall	Village of Varnado
Greg Route	Town of Franklinton
Richard Moody	Bogalusa Fire Department
Dustin Wascom	Franklinton Fire Department
Kendall Bullen	Bogalusa Police Department
Justin Brown	Franklinton Police Department
Nancy McBeth	Washington Parish Council on Aging
Ryan Seal	Washington Parish Economic Development
Lisa Tanner	Bogalusa City Schools
Frances Varnado	Washington Parish Schools
Alban Bush	International Paper
Randy Seal	Washington Parish Sheriff Office

The 2021 Washington Parish Hazard Mitigation Plan Update was written by the Stephenson Disaster Management Institute, Louisiana State University. Further comments should be directed to the Washington Parish Office of Homeland Security and Emergency Preparedness: 901 Pearl St., Franklinton, LA 70438.

Contents

1. Introduction	1-1
Geography, Population and Economy	1-2
Geography.....	1-2
Population.....	1-3
Economy.....	1-3
Hazard Mitigation	1-5
General Strategy	1-6
2021 Plan Update.....	1-7
2. Hazard Identification and Parish-Wide Risk Assessment	2-1
Prevalent Hazards to the Community.....	2-1
Previous Occurrences	2-2
Probability of Future Hazard Events	2-3
Inventory of Assets for the Entire Parish	2-4
Essential Facilities of the Parish	2-5
Future Development Trends	2-10
Future Hazard Impacts	2-11
Assessing Vulnerability Overview	2-11
Quantitative Methodology	2-12
Qualitative Methodology	2-12
Priority Risk Index and Hazard Risk.....	2-13
Land Use.....	2-14
Hazard Identification.....	2-16
Flooding.....	2-16
Thunderstorms.....	2-32
Tornadoes	2-42
Tropical Cyclones	2-47
Wildfires	2-58
Winter Weather	2-67
3. Capability Assessment	3-1
Policies, Plans and Programs	3-1
Building Codes, Permitting, Land Use Planning and Ordinances.....	3-2
Administration, Technical, and Financial	3-2
Education and Outreach	3-4
Flood Insurance and Community Rating System	3-4

NFIP Worksheets.....	3-7
4. Mitigation Strategy.....	4-1
Introduction	4-1
Goals	4-4
2021 Mitigation Actions and Update on Previous Plan Actions	4-4
Washington Parish Mitigation Actions.....	4-5
Village of Angie	4-17
City of Bogalusa.....	4-29
Town of Franklinton.....	4-38
Village of Varnado.....	4-47
Action Prioritization	4-59
Appendix A: Planning Process.....	A-1
Purpose	A-1
The Washington Parish Hazard Mitigation Plan Update	A-1
Planning	A-2
Coordination	A-2
Neighboring Community, Local and Regional Planning Process Involvement	A-3
Program Integration.....	A-4
Meeting Documentation and Public Outreach Activities	A-5
Meeting #1: Hazard Mitigation Plan Update Kick-Off.....	A-5
Meeting #2: Hazard Mitigation Plan Update Planning Meeting – Planning Process.....	A-5
Meeting #3: Hazard Mitigation Plan Steering Committee Meeting – Mitigation Actions.....	A-6
Meeting #4: Risk Assessment Presentation to Steering Committee	A-7
Meeting #5: Public Meeting #1.....	A-8
Meeting #6: Public Meeting #2.....	A-9
Outreach Activity #1: Public Opinion Survey	A-11
Outreach Activity #2: Incident Questionnaire	A-11
Outreach Activity #3: 2021 Washington Parish Hazard Mitigation Plan Public Review	A-12
Appendix B: Plan Maintenance.....	B-1
Purpose	B-1
Monitoring, Evaluating, and Updating the Plan.....	B-1
Responsible Parties	B-1
Methods for Monitoring and Evaluating the Plan and Plan Evaluation Criteria.....	B-1
2021 Plan Version Plan Method and Schedule Evaluation	B-3
Incorporation into Existing Planning Programs	B-3

Continued Public Participation	B-5
Appendix C: Critical Facilities	C-1
Critical Facilities within the Washington Parish Planning Area	C-1
Appendix D: Plan Adoption	D-1
Unincorporated Washington Parish	D-1
Village of Angie	D-3
City of Bogalusa.....	D-4
Town of Franklinton.....	D-5
Village of Varnado.....	D-6
Appendix E: State Required Worksheets	E-1
Mitigation Planning Team	E-1
Capability Assessment	E-2
Washington Parish	E-2
Village of Angie	E-5
City of Bogalusa.....	E-8
Town of Franklinton.....	E-11
Village of Varnado.....	E-14
Building Inventory.....	E-17
Vulnerable Populations.....	E-21
National Flood Insurance Program (NFIP)	E-23

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

Unincorporated Washington Parish
Village of Angie
City of Bogalusa
Town of Franklinton
Village of Varnado

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

Geography, Population and Economy

Geography

Washington Parish is located in the eastern region of Louisiana known as the Florida Parishes. Although the parish is “in-land”, it is only 78 miles from the Gulf of Mexico. Washington Parish is bordered to the west by Tangipahoa Parish and to the south by St. Tammany Parish. To the north are Pike, Walthall, and Marion Counties across the Mississippi state line, and to the east is Pearl River County, Mississippi.



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

Washington Parish contains four incorporated communities: the Villages of Angie and Varnado, the Town of Franklinton, and the City of Bogalusa. Franklinton is located in the central part of the parish and is the parish seat. Bogalusa, the industrial heart of the parish, lies on the Pearl River, at the eastern border of the state.

Washington Parish covers an area of 669.6 square miles, or 428,550 acres. The topography is gently rolling with an average elevation of 129 feet above sea level. The Pearl River is the largest river in the parish and forms the eastern border with the State of Mississippi. Several lakes in the parish are oxbows created by the Pearl River. The Bogue Chitto River is a major tributary of the Pearl and flows near Franklinton.

More than 60% of the land covered in the parish is forest land, consisting of pine forests and hardwood timber. A little more than a quarter of the parish is agricultural and croplands, and less than 3% is considered developed or built up as of 1998.

The main transportation routes through Washington Parish are Louisiana State Highways 10, 16, 21, 25, 38, 60, and 430. No interstate highways run through Washington Parish. Franklinton is 25 miles east of I-55 and

41 miles west of I-59. Bogalusa is 46 miles east of I-55 and 20 miles west of I-59. During states of emergency, some of these roadways are significant evacuation routes for Washington Parish.

Washington Parish is also served by the Illinois Central Railroad. The railroad track runs north through Bogalusa, Varnado, and Angie. Rail rates in Louisiana tend to be lower than those in the other states because of competition from barge carriers. Illinois Central Railroad handles a significant volume of containers, trailers of flat cars, and carload traffic between Louisiana and other parts of America.



Figure 1-2: Louisiana Homeland Security Regions

Bogalusa-Carr Memorial Airport, a 5,000 foot paved, lighted runway, accommodates corporate jets. It is located within the Bogalusa Industrial Park, just north of the city. Franklinton Airport is located approximately three miles southeast of town limits. The runway is 3,000 feet in length with an asphalt surface. It is illuminated for night flying. Automobile rentals are offered by Franklinton auto dealers, however, fueling is not available on the premises.

Washington Parish is located in Louisiana Governor’s Office of Homeland Security and Emergency Preparedness (GOHSEP) Region 9.

Population

The population of Washington Parish is estimated at 46,194 (2019 estimate) with a population percent change from April 1, 2010 – April 1, 2020 of -2.05%.

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

	2010 Census	2013 Estimate	2020 Census	Percent Change 2010 - 2020
Total Population	47,140	46,384	46,194	-2.05%
Population Density (Pop/Sq. Mi.)	70.4	-----	-----	-----
Total Households	-----	17,599	17,613	-----
Persons Per Household	-----	-----	2.53	-----

Economy

In the midst of economic growth, Washington Parish has managed to retain its traditional community spirit and easygoing lifestyle. Residents continue to look forward to and participate in Festival in the Park, the Washington Parish Fair, Christmas in the Park, and other events that strengthen the fabric of the community.

The Washington Economic Development Foundation (WEDF) serves Washington Parish to facilitate an intensive program of economic and industrial development in an effort to create new job opportunities for the people of the parish. WEDF was established on May 8, 1981, and is supported by the residents of

Washington Parish, Louisiana, through membership subscriptions. WEDF serves as the principal business recruitment and economic development agency for Washington Parish.¹

Washington Economic Development Foundation Services:

1. Site location assistance
2. Assistance obtaining incentives, grants and support from local and state sources
3. Partnerships with Greater New Orleans Inc., and Louisiana Economic Development
4. Workforce recruitment
5. Permitting assistance
6. Demographic and labor Information
7. Partnerships with local utility companies

Washington Parish is known for its agriculture, particularly watermelons, as well as its timber and paper industry. Bogalusa is home to the paper mill and other related businesses in the area.

Washington Parish's part in target industry determination remarks on plenty of affordable and available land, labor, and housing, timber and paper production, an excellent quality of life, and recreational and living opportunities.

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

Business Description	Number of Establishments	Number of Employees	Annual Payroll (\$1,000)
Retail Trade	143	1,385	31,263
Manufacturing	28	1,294	91,427
Health Care and Social Assistance	82	1,772	65,986
Mining, Quarrying, Oil and Gas Extraction	7	109	6,226
Transportation and Warehousing	21	98	5,114
Construction	42	548	20,611
Administration/Support and Waste Management/Remediation Services	12	82	2,719
Real Estate and Rental and Leasing	10	26	565
Wholesale Trade	18	114	4,655
Other Services (except Public Administration)	67	349	7,252
Accommodation and Food Services	61	824	9,849
Financial and Insurance	59	315	15,525
Professional, Scientific, and Technical Services	42	825	21,376
Information	8	70	3,648
Arts, Entertainment, and Recreation	7	15	318
Utilities	7	94	8,074
Educational Services	6	146	4,192

¹ Source: Washington Parish Economic Development Foundation

Hazard Mitigation

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

As *Figure 1-3* demonstrates, mitigation relies on updating in the wake of disaster. This can give the appearance that mitigation is only reactive rather than proactive. In reality, post-disaster revision is a vital component of improving mitigation. Each hazardous event affords an opportunity to reduce the consequences of future occurrences.



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

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. Hurricane’s Laura and Delta again battered the State of Louisiana with far reaching impacts.

The catastrophic events of 2005 and the years to follow with record breaking storms, 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 Washington 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 Washington 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 Washington 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 Washington Parish Hazard Mitigation Plan. The current goals are as follows:

- Goal 1:** Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive flood losses in the parish and municipalities.
- Goal 2:** Enhance public awareness and understanding of hazard mitigation.
- Goal 3:** Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards.
- Goal 4:** Enhance local capability and improve data collection as relates to 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 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 Washington Parish and its communities. The extent of this risk is dictated primarily by its geographic location. Most significantly, Washington 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, and the 2021 Winter Storm and localized spring flooding events were all felt heavily in all parts of Washington 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.

2. Hazard Identification and Parish-Wide Risk Assessment

This section assesses the various hazard risks that Washington 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 Washington 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
Flooding	X	X	X
Thunderstorms	X	X	X
Tornadoes	X	X	X
Tropical Cyclones	X	X	X
Wildfires	X		X
Winter Weather	X		X

Prevalent Hazards to the Community

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

- a) Flooding
- b) Thunderstorms
- c) Tornadoes
- d) Tropical Cyclones
- e) Wildfires
- f) Winter Weather

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

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

The potential destructive power of tropical cyclones was determined to be the most prevalent hazard to the parish. Fifteen of the twenty-three disaster declarations Washington Parish has received resulted from tropical cyclones, which validates this as the most significant hazard. Therefore, the issue of hurricanes will serve as the main focus during the mitigation planning process. Hurricanes present risks from the potential for flooding, primarily resulting from storm surge, and high wind speeds. While storm surge is considered the hazard with the most destructive potential, the risk assessment will also assess non-storm surge flooding as well. Flooding can also occur from non-hurricane events, as flash floods are a common occurrence due to heavy rainfall.

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

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

Previous Occurrences

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

Table 2-2: Washington Parish Major Disaster Declarations.

Disaster Number	Year	Declaration
208	9/10/1965	Tropical Cyclone – Betsy
272	8/18/1969	Tropical Cyclone - Camille
374	4/27/1973	Severe Storm, Flood
3031	2/22/1977	Drought, Flood
616	4/9/1980	Severe Storm, Flood
679	4/20/1983	Severe Strom, Flood
956	8/25/1992	Tropical Cyclone – Hurricane Andrew
1246	9/23/1998	Tropical Cyclone – TS Frances and Hurricane Georges
1380	6/5/2001	Tropical Cyclone – TS Allison
1437	10/3/2002	Tropical Cyclone – Hurricane Lili
1603	8/29/2005	Tropical Cyclone – Hurricane Katrina
1607	9/24/2005	Tropical Cyclone – Hurricane Rita
1786	9/2/2008	Tropical Cyclone – Hurricane Gustav
4015	8/17/2011	Severe Storm, Flood
3347	8/27/2012	Tropical Cyclone – Hurricane Isaac
4263	3/13/2016	Severe Storm, Flood
4277	8/14/2016	Severe Storm, Flood
3392	10/6/2017	Tropical Cyclone – TS Nate
3416	7/11/2019	Tropical Cyclone – TS Barry
4484	3/24/2020	COVID-19 Pandemic
3527	6/7/2020	Tropical Cyclone – TS Cristobal
3538	8/23/2020	Tropical Cyclone – TSs Laura and Marco
4559	8/28/2020	Tropical Cyclone – Hurricane Laura

Probability of Future Hazard Events

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

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

Table 2-3: Probability of Future Hazard Reoccurrence.

Hazard	Probability				
	Washington Parish (Unincorporated)	Angie	Bogalusa	Franklinton	Varnado
Flooding	36%	20%	24%	16%	16%
Thunderstorms - Hail	100%	100%	100%	100%	100%
Thunderstorms - Lightning	7%	7%	7%	7%	7%
Thunderstorms – Winds	100%	100%	100%	100%	100%
Tornadoes	70%	70%	70%	70%	70%
Tropical Cyclones	50%	50%	50%	50%	50%
Wildfires	< 1%	< 1%	< 1%	< 1%	< 1%
Winter Weather	7%	7%	7%	7%	7%

As shown in the table above, hailstorms and high winds have the highest chance of occurrence in the parish (100%). These are followed by tornadoes (70%), tropical cyclones (50%), flooding for all of the incorporated and unincorporated areas, and lightning and hail (7%). Winter storms have an annual chance of occurrence of less than 1%.

Inventory of Assets for the Entire Parish

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

Within the entire planning area, there is an estimated value of \$5,727,831,000 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 Washington Parish.

Occupancy	Washington Parish	Unincorporated Area	Angie	Bogalusa	Franklinton	Varnado
Agricultural	\$40,604,000	\$37,300,000	\$0	\$1,644,000	\$1,660,000	\$0
Commercial	\$679,122,000	\$197,371,000	\$4,784,000	\$285,652,000	\$187,405,000	\$3,910,000
Government	\$52,159,000	\$17,966,000	\$4,430,000	\$14,915,000	\$10,419,000	\$4,429,000
Industrial	\$187,863,000	\$110,852,000	\$1,456,000	\$52,438,000	\$23,117,000	\$0
Religion	\$237,306,000	\$115,722,000	\$592,000	\$79,412,000	\$32,364,000	\$9,216,000
Residential	\$4,460,217,000	\$2,777,206,000	\$18,263,000	\$1,258,593,000	\$354,362,000	\$51,793,000
Education	\$70,560,000	\$21,824,000	\$1,142,000	\$28,814,000	\$18,624,000	\$156,000
Total	\$5,727,831,000	\$3,278,241,000	\$30,667,000	\$1,721,468,000	\$627,951,000	\$69,504,000

Essential Facilities of the Parish

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

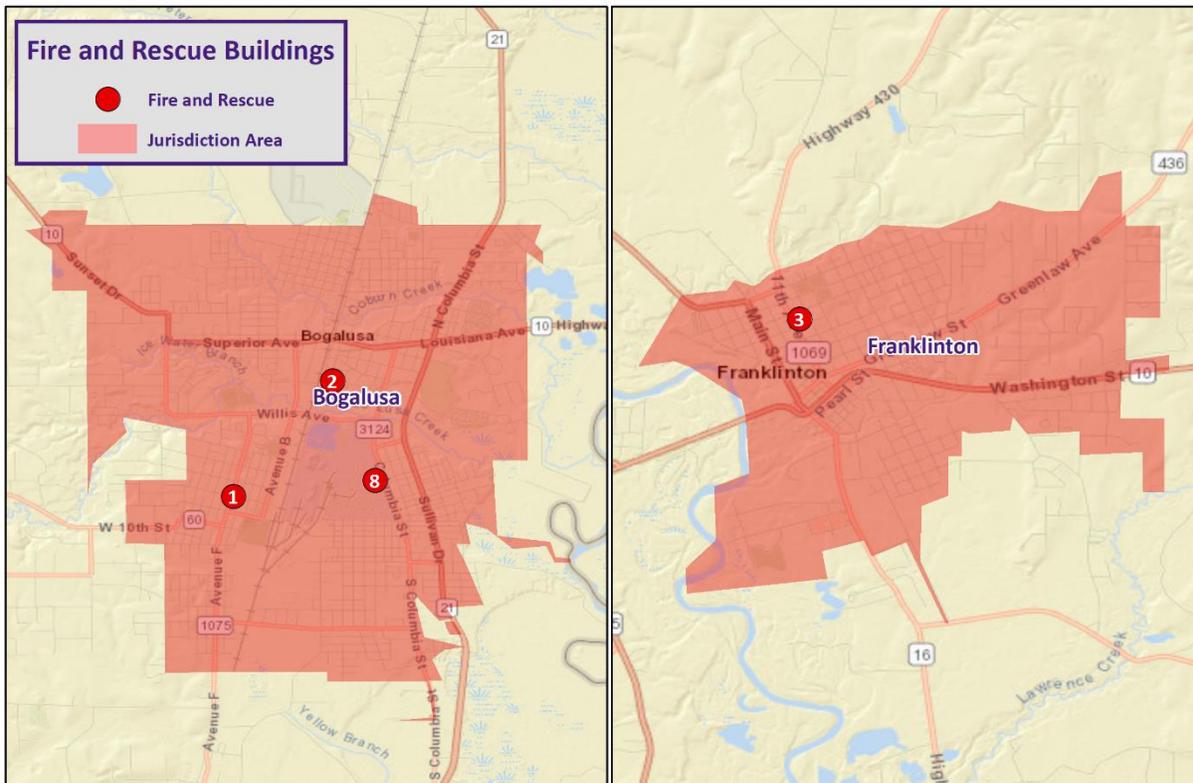
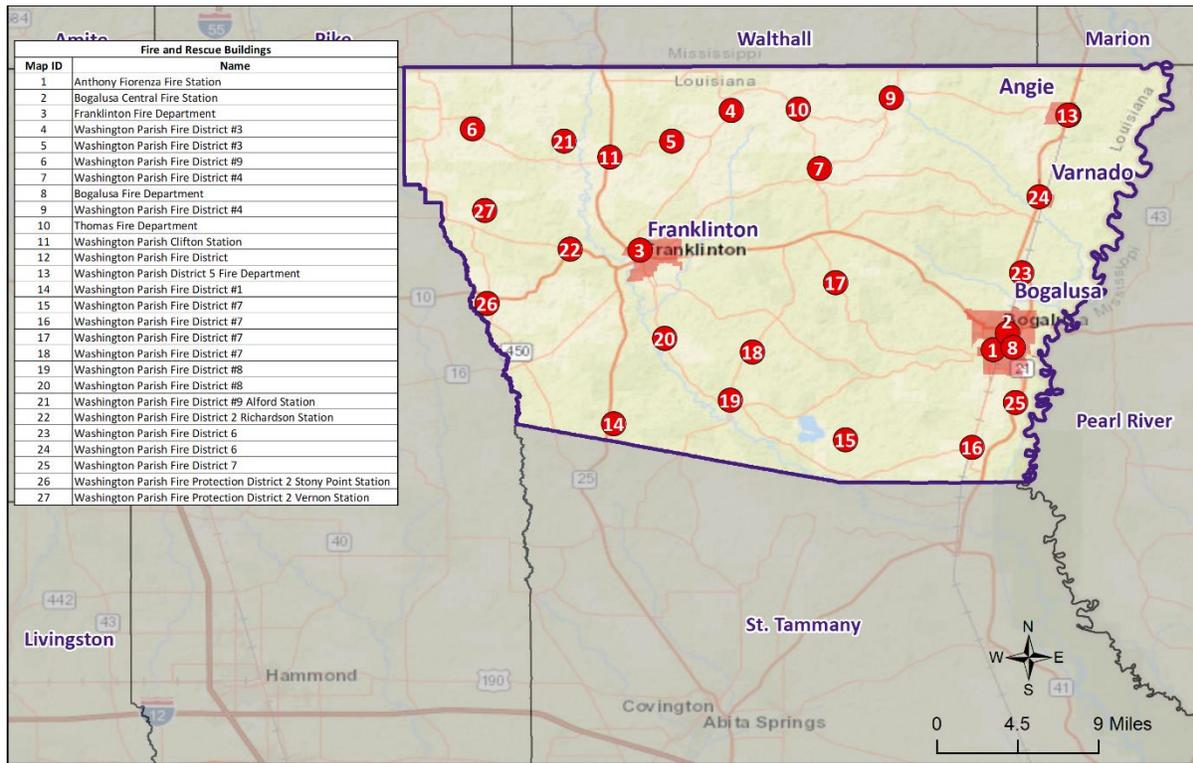


Figure 2-1: Fire and Rescue Facilities in Washington Parish.

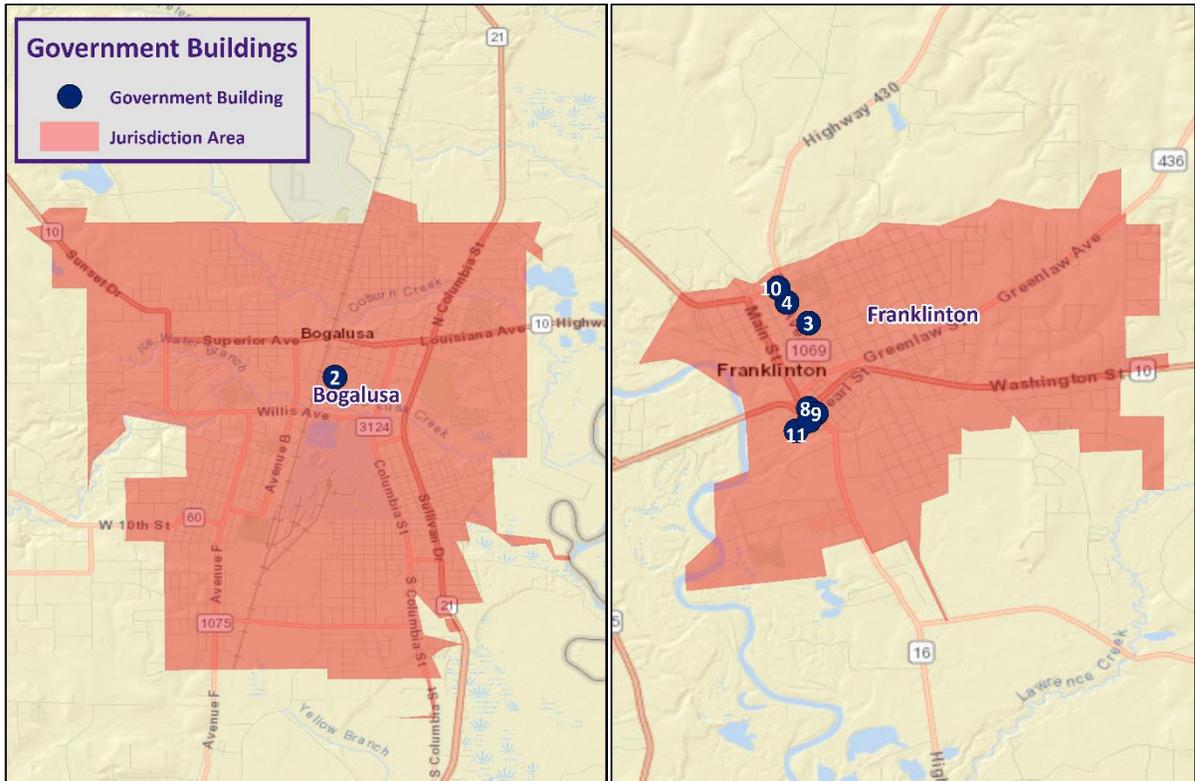
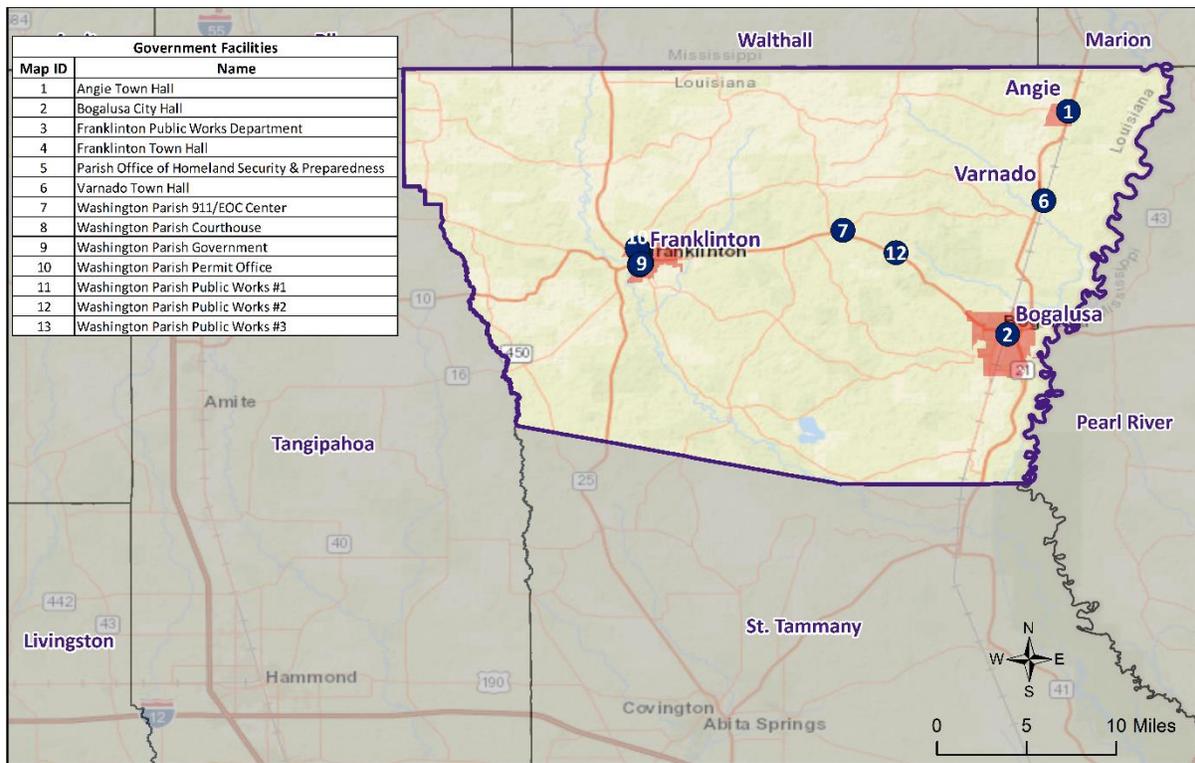


Figure 2-2: Government Buildings in Washington Parish.

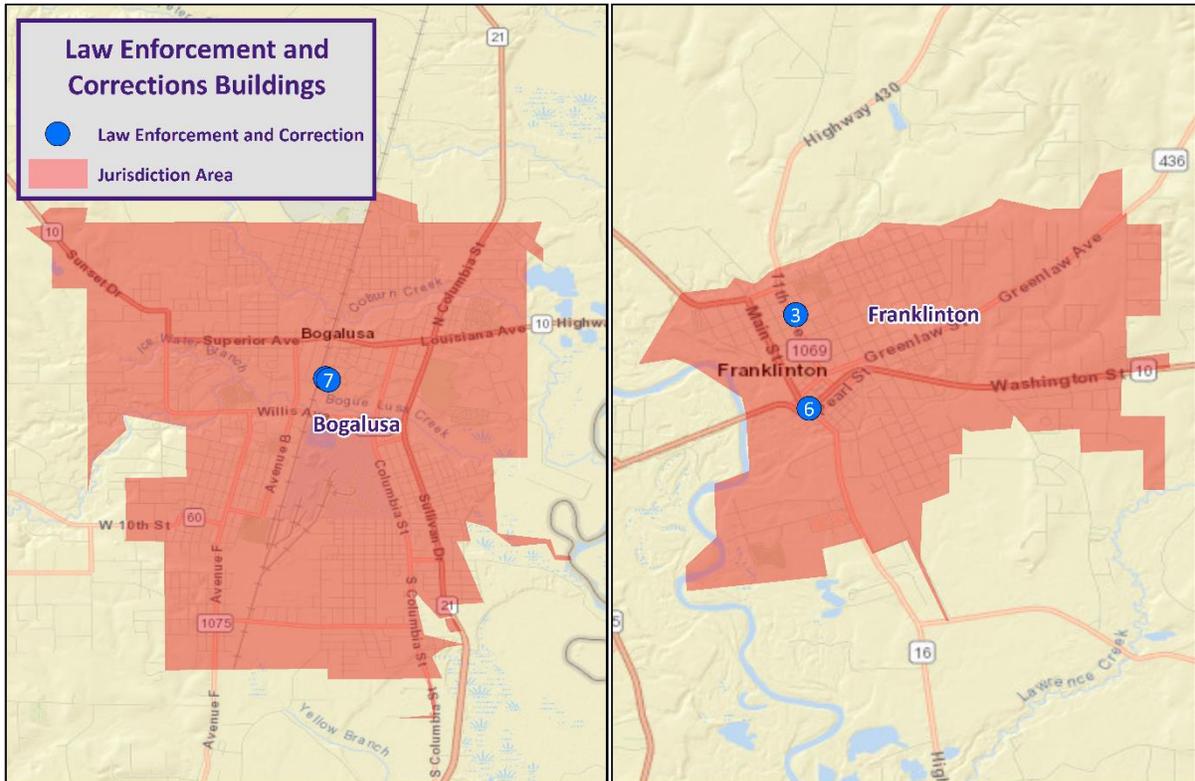
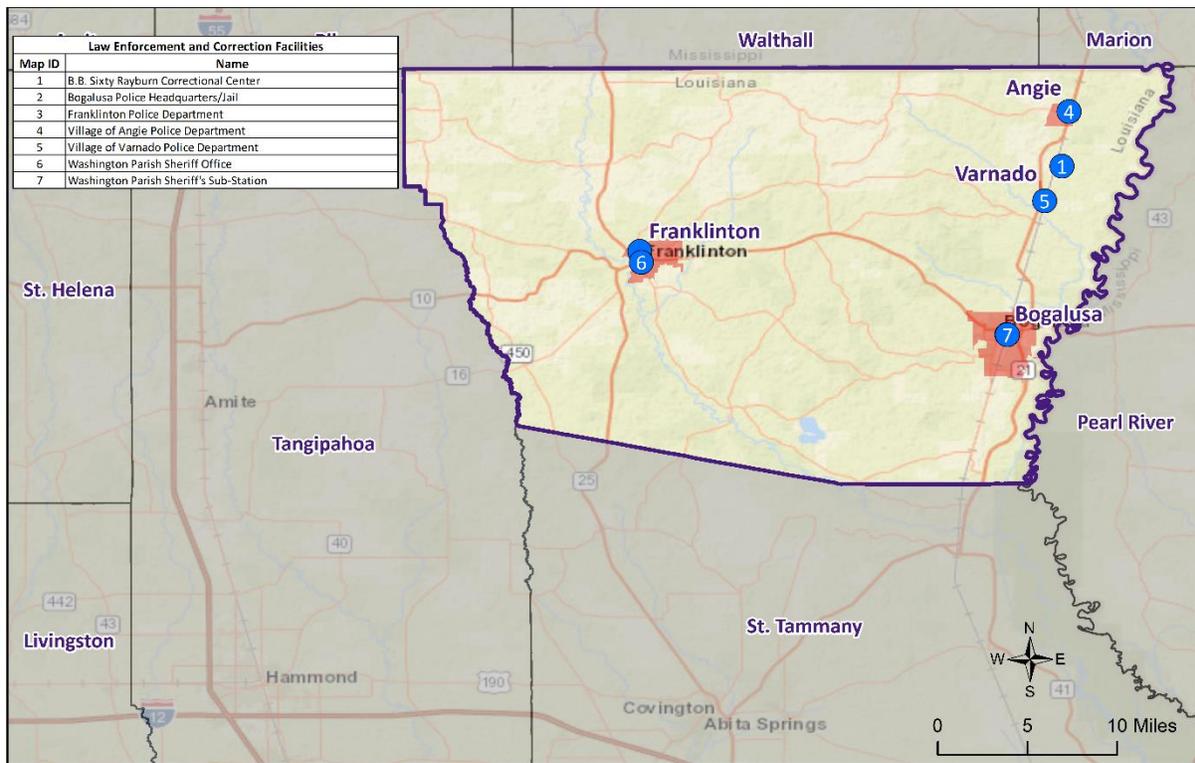


Figure 2-3: Law Enforcement in Washington Parish.

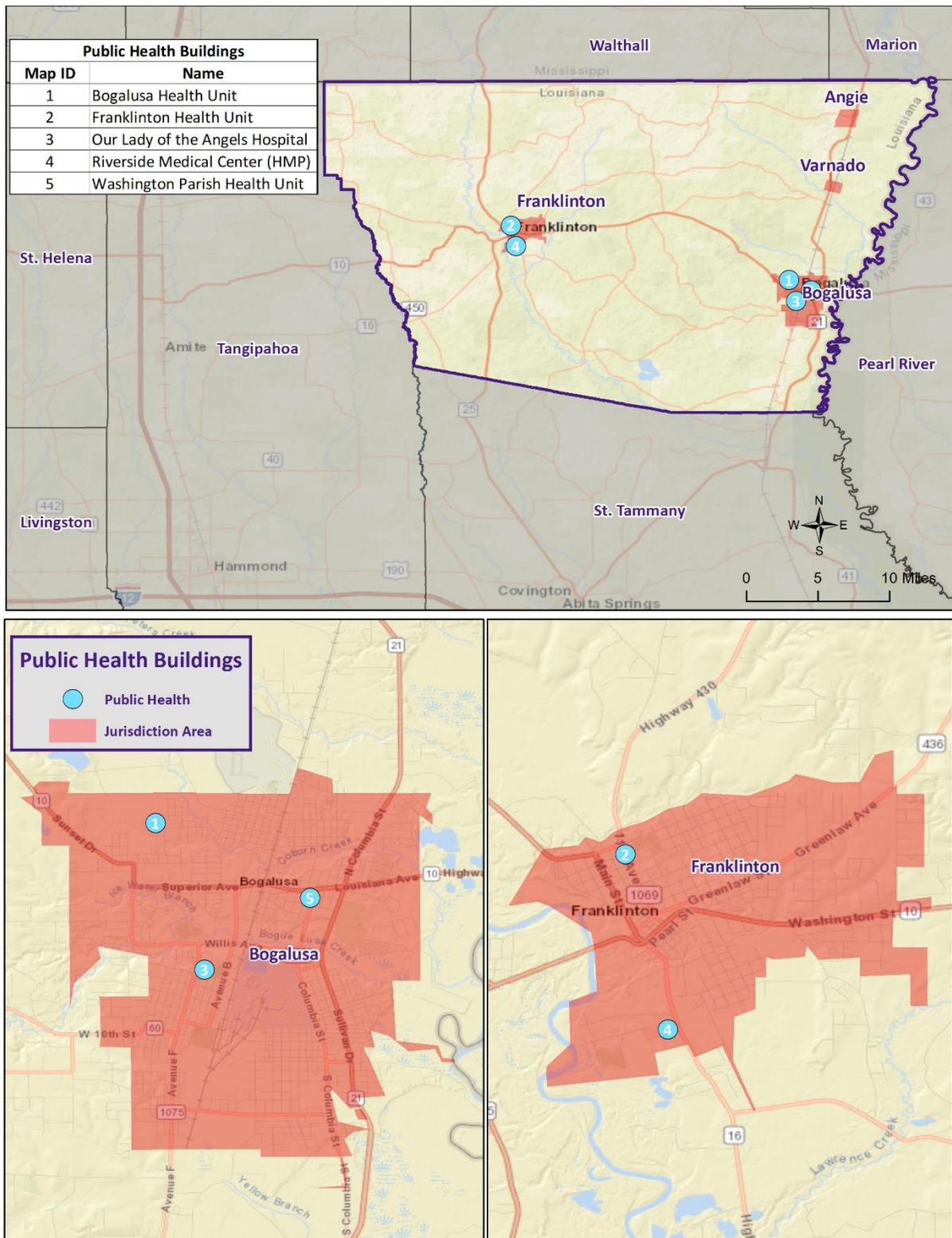


Figure 2-4: Public Health Facilities in Washington Parish.

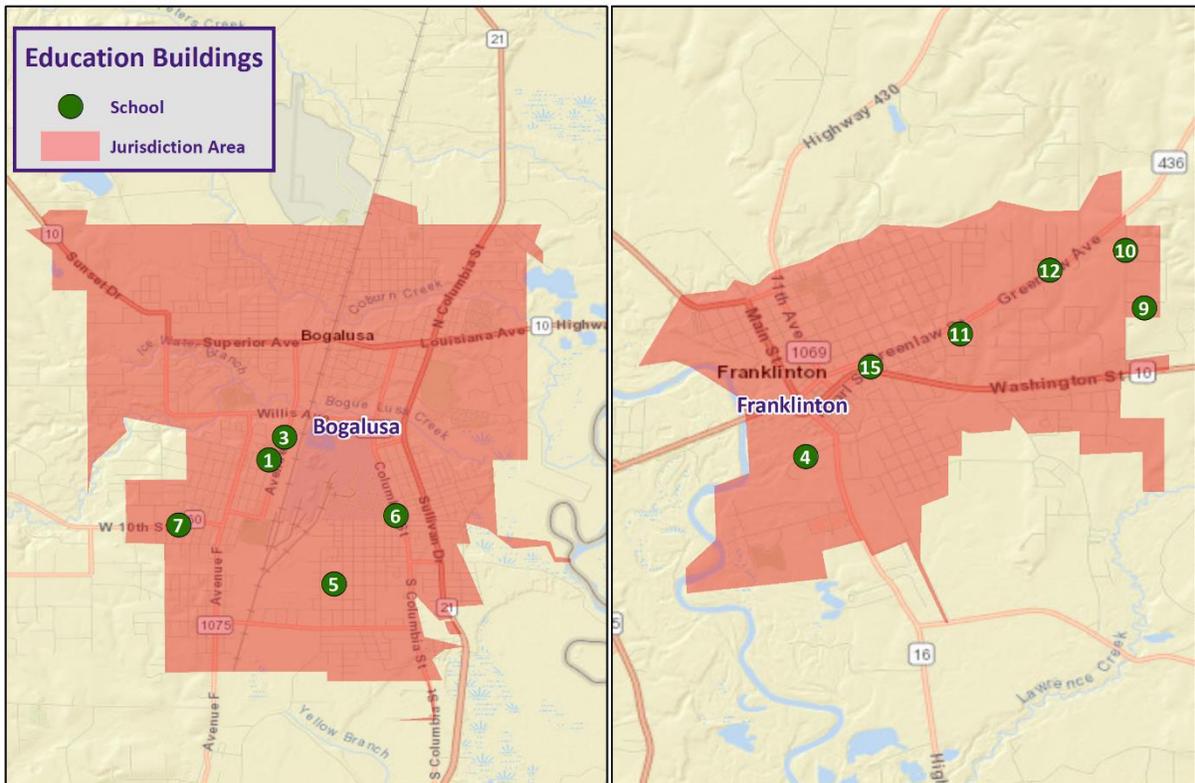
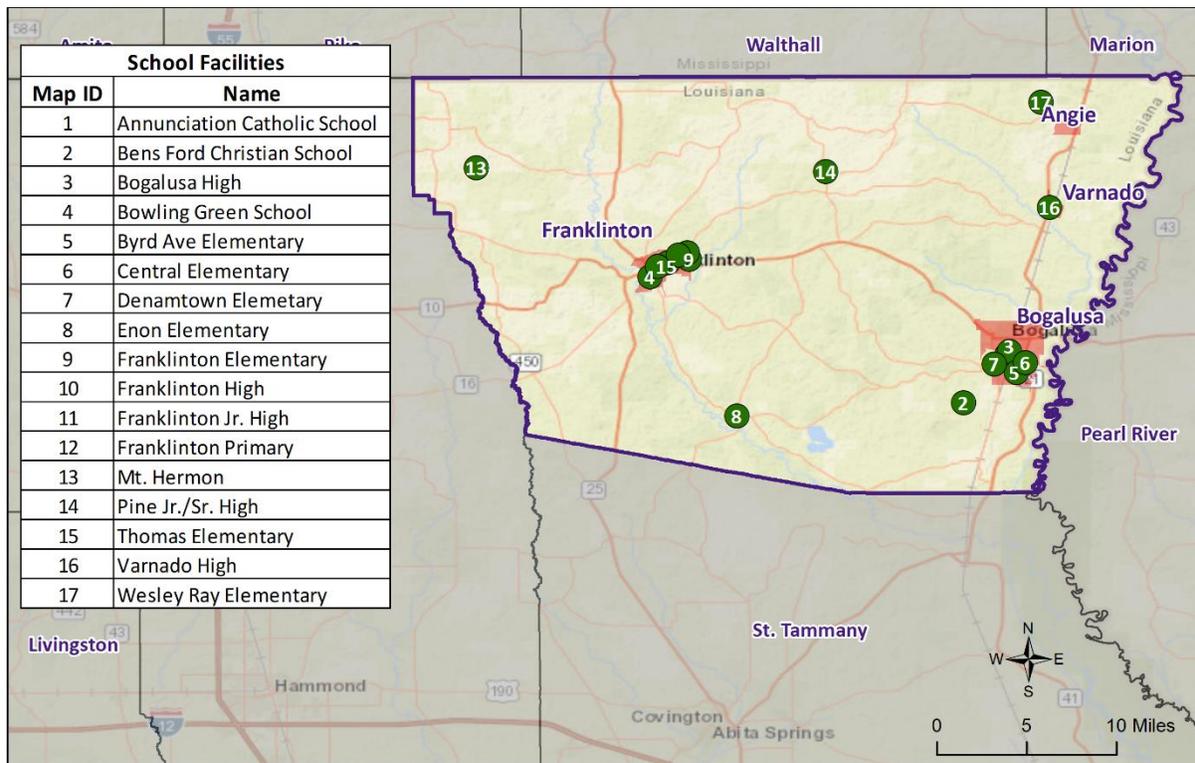


Figure 2-5: Educational Facilities in Washington Parish.

Future Development Trends

Washington Parish experienced growth in population and in housing between the years of 2000 and 2019, increasing in population from 43,926 with 19,106 housing units in the year 2000 to a population of 46,194 with 21,962 housing units in the year 2019. From 2010 to 2019, all of the areas in the parish experienced a decline in population. Bogalusa experienced the largest decline in population falling from a populace of 12,232 in 2010 to 11,504 in 2019 (6% overall decline). This is followed by Franklinton at 2.9% overall decline, Angie at 0.8% overall decline, the unincorporated area of Washington Parish at 0.4% overall decline, and Varnado at 0.3% overall decline.

The incorporated area of Varnado experienced the largest growth of housing units from 2010 to 2019 growing from 171 in 2010 to 265 in 2019. The incorporated area of Franklinton experienced the second largest growth in housing units during this time period with a 2.9% annual growth rate, followed by the incorporated area of Angie with a 0.9% annual growth rate, and then the incorporated area of Bogalusa with a 0.7% annual growth rate. The unincorporated area of Washington Parish witnessed an overall growth rate of approximately 0.2% 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 Washington Parish.

Total Population	Washington Parish	Unincorporated Area	Angie	Bogalusa	Franklinton	Varnado
1-Apr-00	43,926	26,322	240	13,365	3,657	342
1-Apr-10	47,168	30,492	251	12,232	3,857	336
1-Jul-19	46,194	30,361	249	11,504	3,745	335
Population Growth between 2000 – 2010	7.4%	15.8%	4.6%	-8.5%	5.5%	-1.8%
Average Annual Growth Rate between 2000 – 2010	0.7%	1.6%	0.5%	-0.8%	0.5%	-0.2%
Population Growth between 2010 – 2019	-2.1%	-0.4%	-0.8%	-6.0%	-2.9%	-0.3%
Average Annual Growth Rate between 2010 – 2019	-0.23%	-0.05%	-0.09%	-0.66%	-0.32%	-0.03%

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

Total Housing Units	Washington Parish	Unincorporated Area	Angie	Bogalusa	Franklinton	Varnado
1-Apr-00	19,106	10,993	114	6,300	1,536	163
1-Apr-10	21,039	13,290	123	5,798	1,657	171
1-Jul-19	21,962	13,322	133	6,154	2,088	265
Housing Growth between 2000 – 2010	10.1%	20.9%	7.9%	-8.0%	7.9%	4.9%
Average Annual Growth Rate between 2000 – 2010	1.0%	2.1%	0.8%	-0.8%	0.8%	0.5%
Housing Growth between 2010 – 2019	4.4%	0.2%	8.1%	6.1%	26.0%	55.0%
Average Annual Growth Rate between 2010 – 2019	0.5%	0.0%	0.9%	0.7%	2.9%	6.1%

Future Hazard Impacts

Hazard impacts were estimated for five years and ten years in the future (2025 and 2030). Yearly population and housing growth rates were applied to parish inventory assets for composite flood and tropical cyclones. Based on a review of available information, it is assumed that population and housing units will grow within Washington 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 (2018)	Hazard Area (2018)	Hazard Area (2025)	Hazard Area (2030)
Flood Damage				
Structures	22,069	15,999	16,393	16,878
Value of Structures	\$5,814,460,237	\$4,215,261,783	\$4,543,814,545	\$4,972,054,187
# of People	46,425	33,656	34,506	35,554
Tropical Cyclone Damage				
Structures	22,069	22,069	22,612	23,282
Value of Structures	\$5,814,460,237	\$5,000,435,803.72	\$5,390,187,871.00	\$5,898,195,426.86
# of People	46,425	46,425	47,597	49,043

Both population and housing numbers have remained relatively steady throughout the parish since the last update to the Washington Parish Hazard Mitigation Plan. With that in mind, Washington 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 Washington 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 Washington 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 Washington 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 Washington 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 Washington Parish.

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	Overall Risk
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	3	3	2	4	3	2.95
Tropical Cyclones	3	4	4	1	4	3.3
Wildfires	1	3	4	1	2	2.25
Winter Storms	2	3	4	1	2	2.5

Land Use

The Washington Parish Land Use table is provided below. Residential, commercial, and industrial areas account for only 8% of the parish's land use. Forested land at 212,898 acres is the largest category accounting for 49% of land in the parish. The parish also consists of wetlands (27%), agricultural land (15%), and water areas (1%).

Table 2-11: Washington Parish Land Use.

(Source: USGS Land Use Map)

Land Use	Acres	Percentage
Agricultural Land, Cropland, and Pasture	64,794	15%
Wetlands	115,297	27%
Forest Land (Not including forested wetlands)	212,898	49%
Urban/Development	34,323	8%
Water	5,146	1%

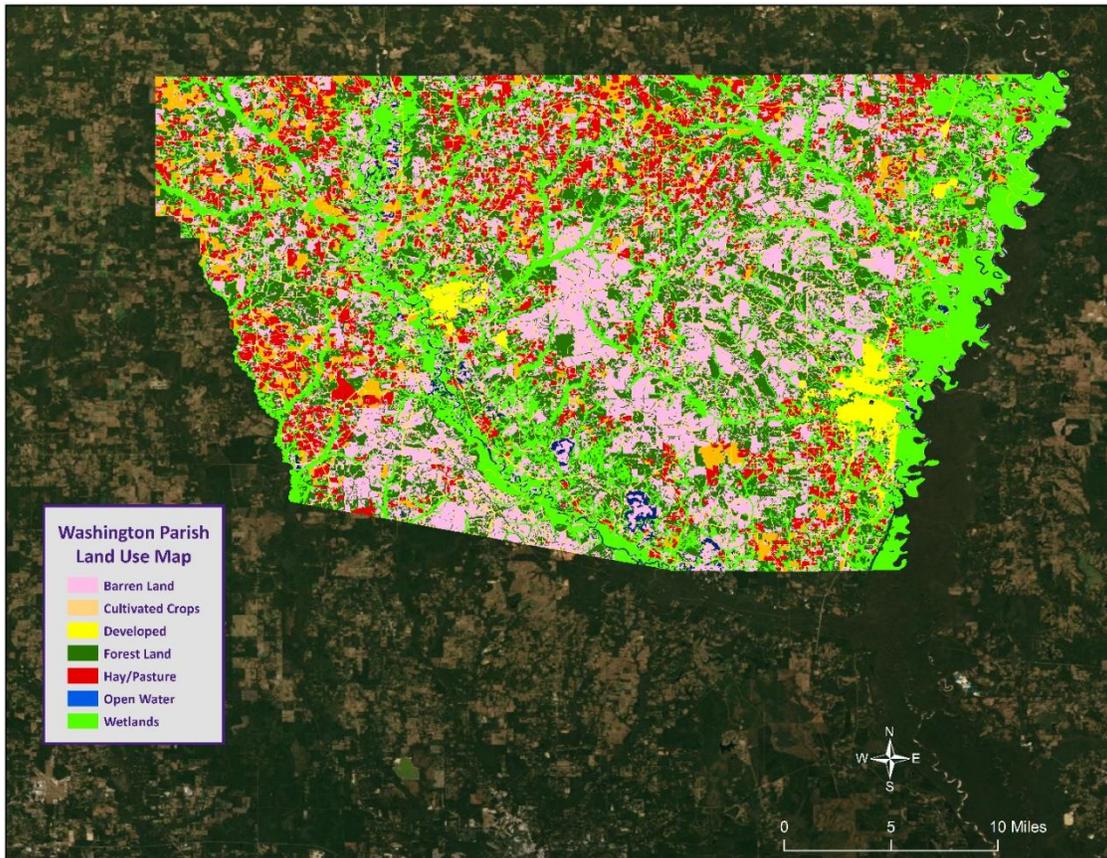


Figure 2-6: Washington Parish Land Use Map.
(Source: USGS Land Use Map)

Hazard Identification

Flooding

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

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

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

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

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

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

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

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

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

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

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

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

expressions of flood probability. As such, the ASFPM also expresses the 100-year flood event as having a 25% chance of occurring over the life of a 30-year mortgage.

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

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

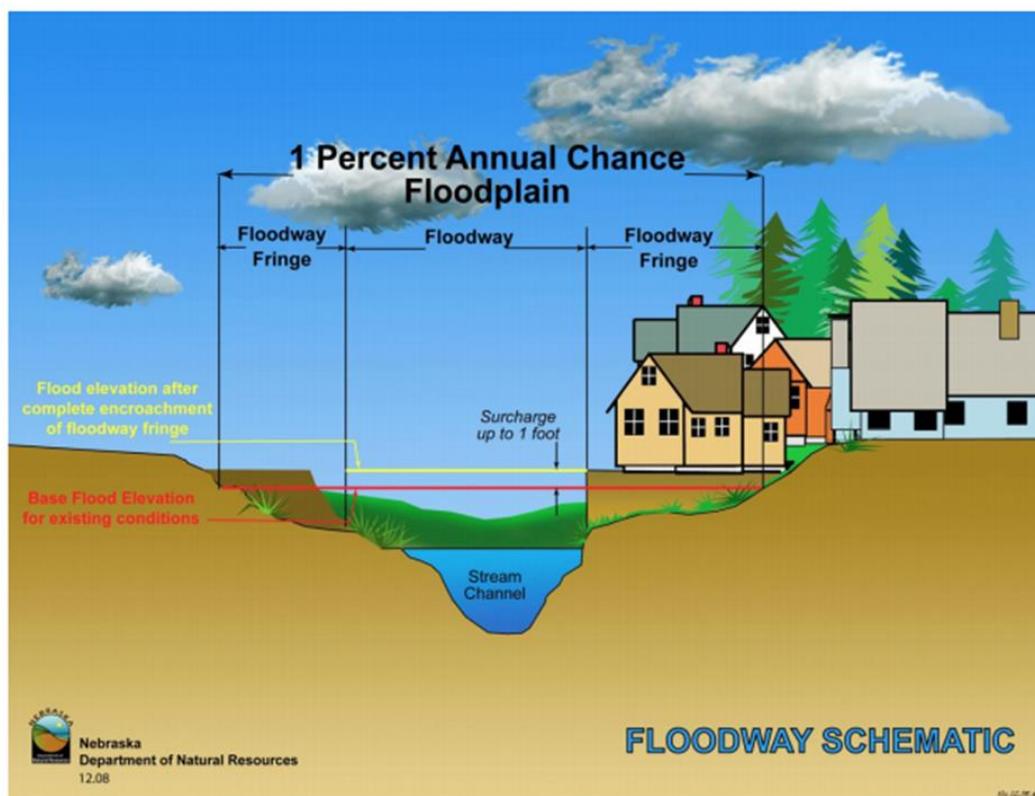


Figure 2-7: Schematic of 100-year Floodplain. The Special Flood Hazard Area (SFHA) extends to the end of the floodway fringe.

(Source: Nebraska Department of Natural Resources)

A SFHA is the land area covered by the floodwaters of the base flood (red line in *Figure 2-7*), where the NFIP's floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies.

Property Damage

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

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

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

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

Repetitive Loss Properties

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

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

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

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

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

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

Jurisdiction	Number of Structures	Residential	Commercial	Government	Total Claims	Total Claims Paid	Average Claim Paid
Washington Parish (Unincorporated)	62	0	4	0	146	\$4,465,105	\$30,583
Angie	0	0	0	0	0	\$0	\$0
Bogalusa	21	0	2	0	58	\$1,694,424	\$29,214
Franklinton	16	0	0	0	67	\$1,474,207	\$22,003
Varnado	0	0	0	0	0	\$0	\$0
Total	99	0	6	0	271	\$7,633,735	\$28,169

All 99 repetitive loss structures were geocoded in order to provide an overview of where the repetitive loss structures are located throughout the parish. Figure 2-8 shows the approximate location of the structures, while Figure 2-9 shows where the highest concentration of repetitive loss structures is located. Through the repetitive loss map, it is clear the primary concentrated area of repetitive loss structures is focused in and around the incorporated areas of Bogalusa and Franklinton.

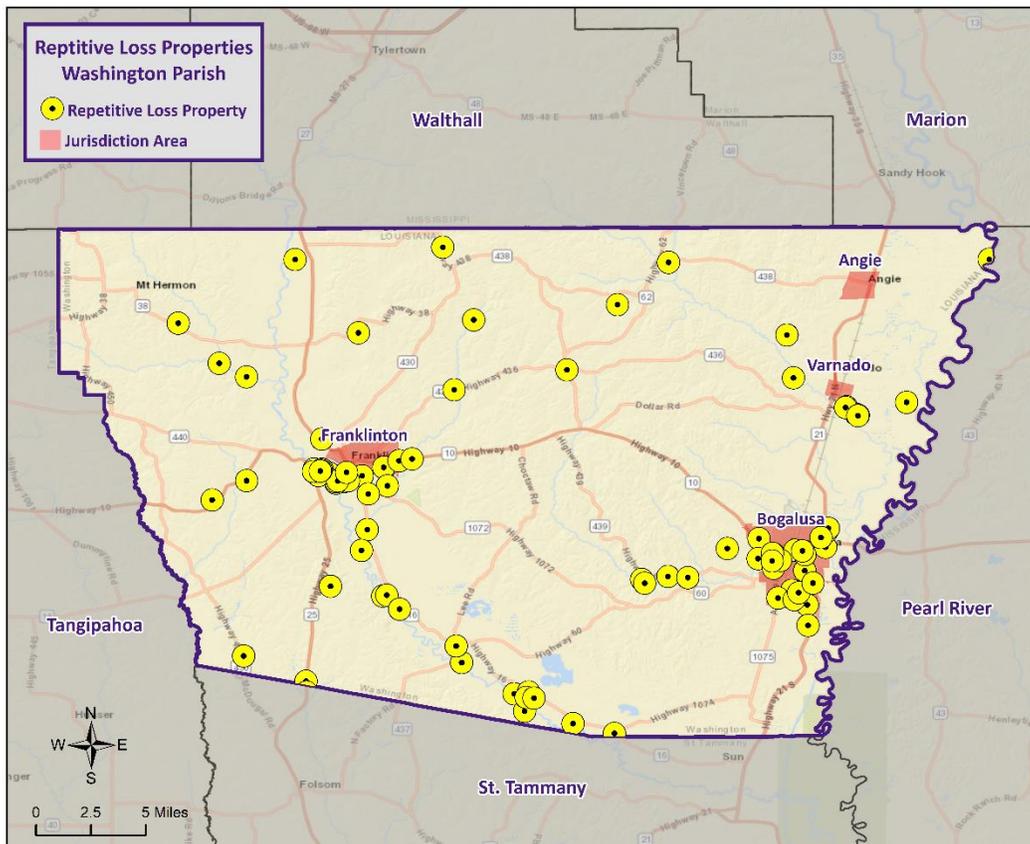


Figure 2-8: Repetitive Loss Properties in Washington Parish.

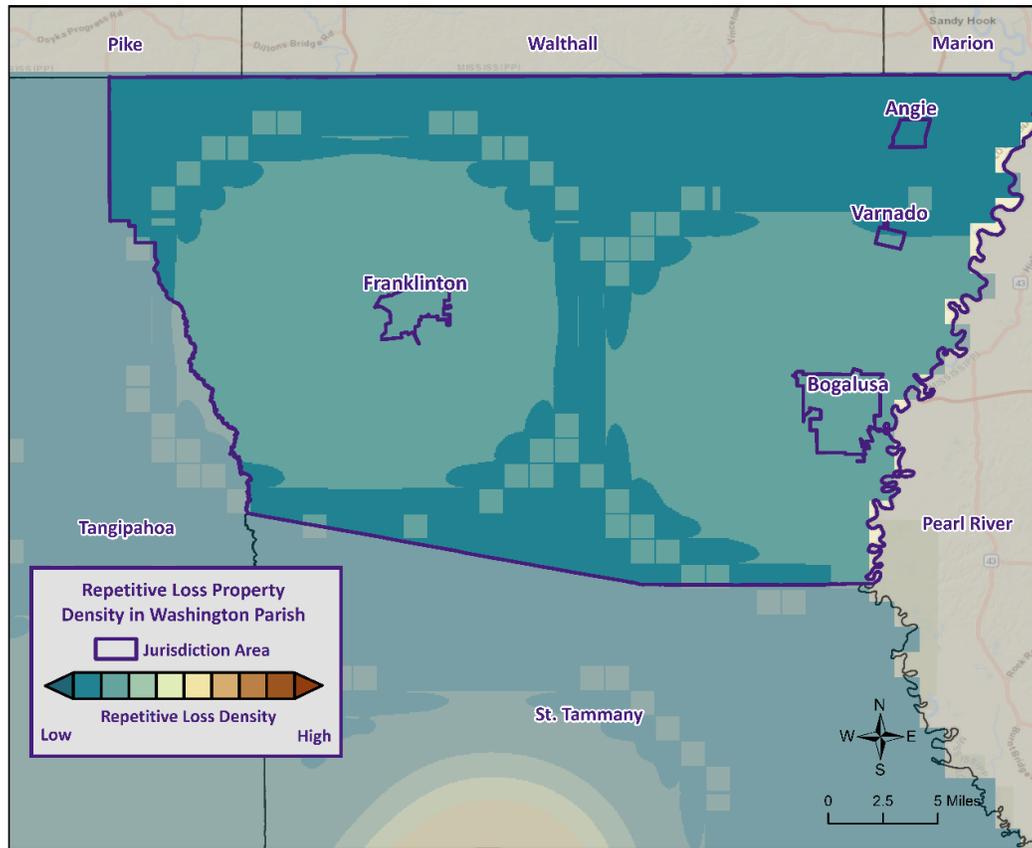


Figure 2-9: Repetitive Loss Property Densities in Washington Parish.

National Flood Insurance Program

Flood insurance statistics indicate that Washington Parish has 685 flood insurance policies with the NFIP, with total annual premiums of \$536,959. Washington Parish and the jurisdictions of Angie, Bogalusa, Franklinton, and Varnado are all participants in the NFIP. Washington 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 Washington Parish and its jurisdictions is provided in the tables to follow.

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

Location	No. of Insured Structures	Total Insurance Coverage Value	Annual Premiums Paid	Insurance Claims File Since 1978	Total Loss Payments
Washington Parish	459	\$93,172,200	\$346,951	365	\$8,502,746
Angie	3	\$980,000	\$1,235	0	\$0
Bogalusa	160	\$36,019,200	\$143,185	159	\$4,737,406
Franklinton	60	\$12,003,600	\$44,107	99	\$1,686,117
Varnado	3	\$595,000	\$1,481	0	\$0
Total	685	\$142,770,000	\$536,959	623	\$14,926,269

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

CID	Community Name	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Date Joined the NFIP	Tribal
220230	Washington Parish	1/10/1975	5/4/1988	12/3/2009	5/4/1988	No
220231A	Angie	1/3/1975	12/3/2009	12/3/2009 (M)	12/3/2009	No
220232	Bogalusa	5/6/1977	5/4/1988	12/3/2009	5/4/1988	No
220233	Franklinton	11/9/1973	9/28/1979	12/3/2009	9/28/1979	No
220234	Varnado	10/25/1974	2/17/1989	12/3/2009	4/5/1989	No

According to the Community Rating System (CRS) list of eligible communities dated April 1, 2021, Washington Parish and the jurisdictions of Angie, Bogalusa, Franklinton, and Varnado 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 Washington 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 Washington 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.

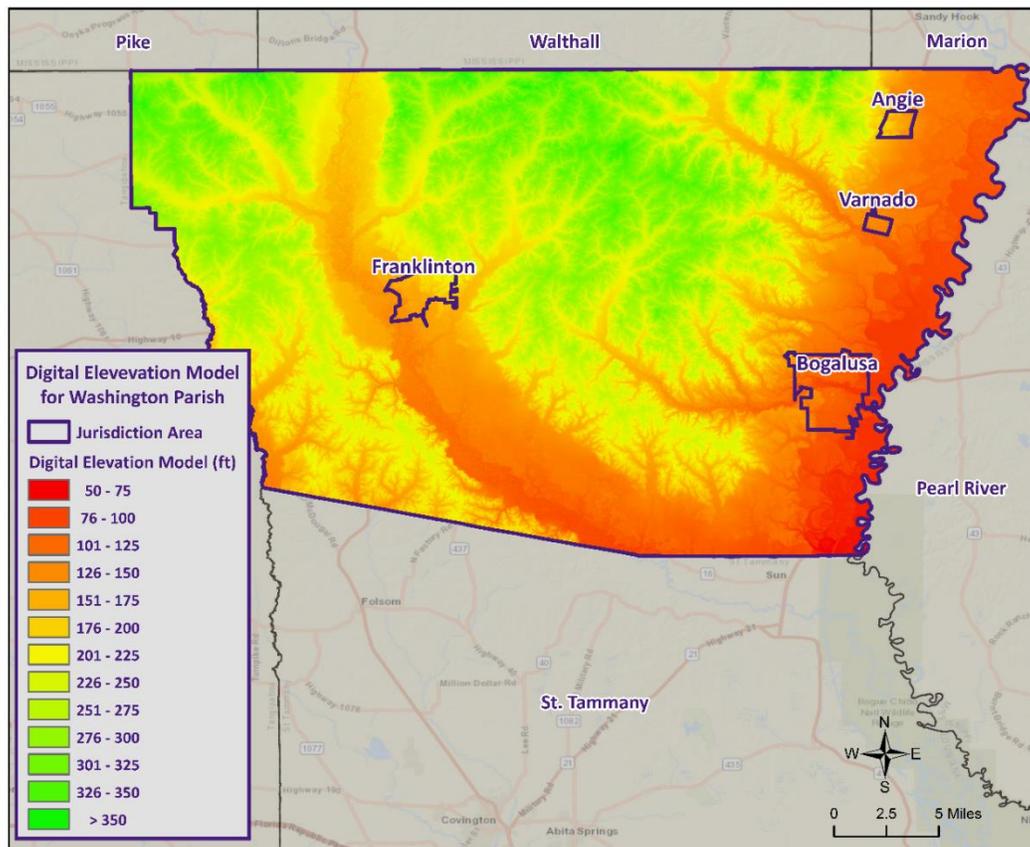


Figure 2-10: Elevation throughout Washington Parish.

The digital elevation model (DEM) in the figure above for Washington Parish is instructive in visualizing where the low-lying and high-risk areas are for the parish. The highest elevations in the parish are over 350 feet. These higher elevations are located along the northern and western borders of Washington Parish. The lowest elevations in the parish are located along the Pearl River floodplain in the southeast section of Washington Parish. The incorporated areas of Franklinton and Angie have some of the higher elevations of the incorporated areas. Elevation in Franklinton ranges from approximately 130 feet (NAVD88) in the southwest to 260 feet (NAVD88) in the northeast while elevations in Angie range from 120 feet (NAVD88) in the west to 85 feet (NAVD88) in the east. Bogalusa and Varnado have elevations that average approximately 55 feet (NAVD88).

Location

Washington Parish has experienced significant flooding in its history and can expect more in the future. Washington Parish is situated in the floodplains of the Bogue Chitto River, Pearl River, and Pushepatapa Creek. Currently, no flood protection structures are located within Washington Parish, but the parish does maintain ditches and canals throughout the parish to promote unimpeded surface flow of precipitation.

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

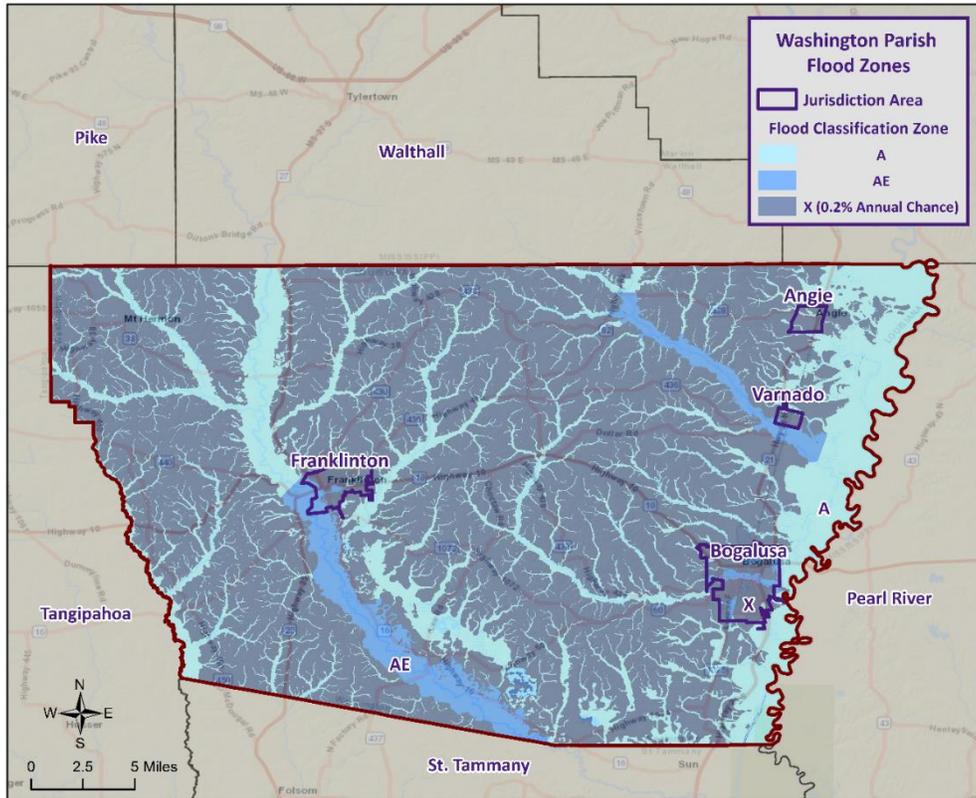


Figure 2-11: Washington Parish Areas within the Flood Zones.



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

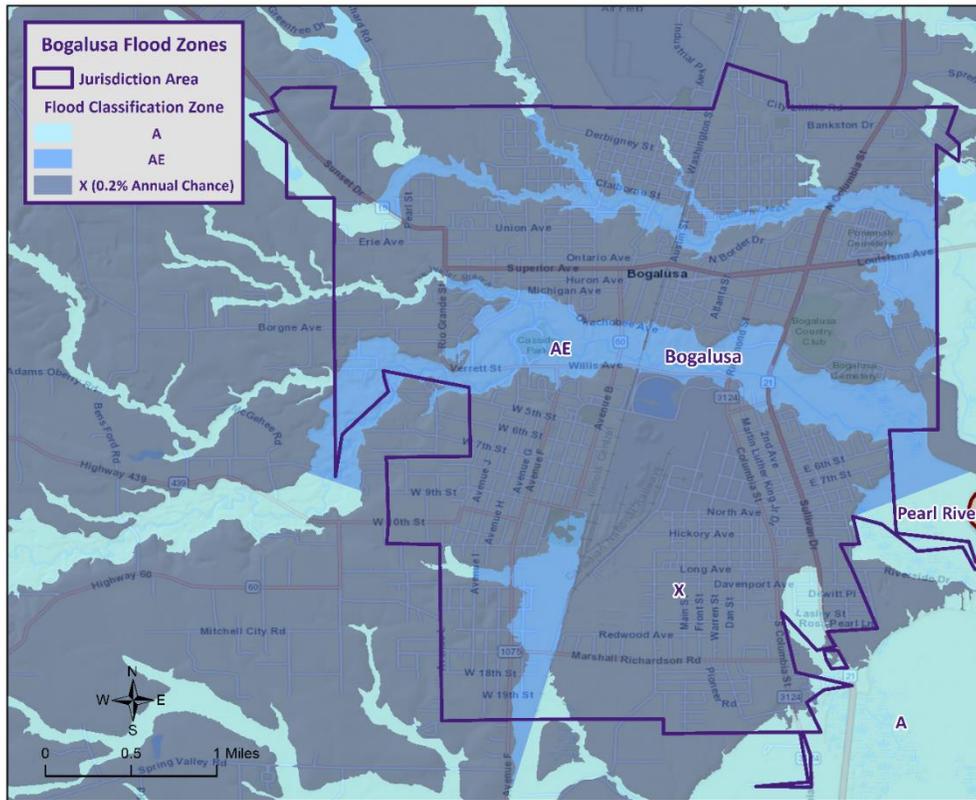


Figure 2-13: Bogalusa Areas within the Flood Zones.

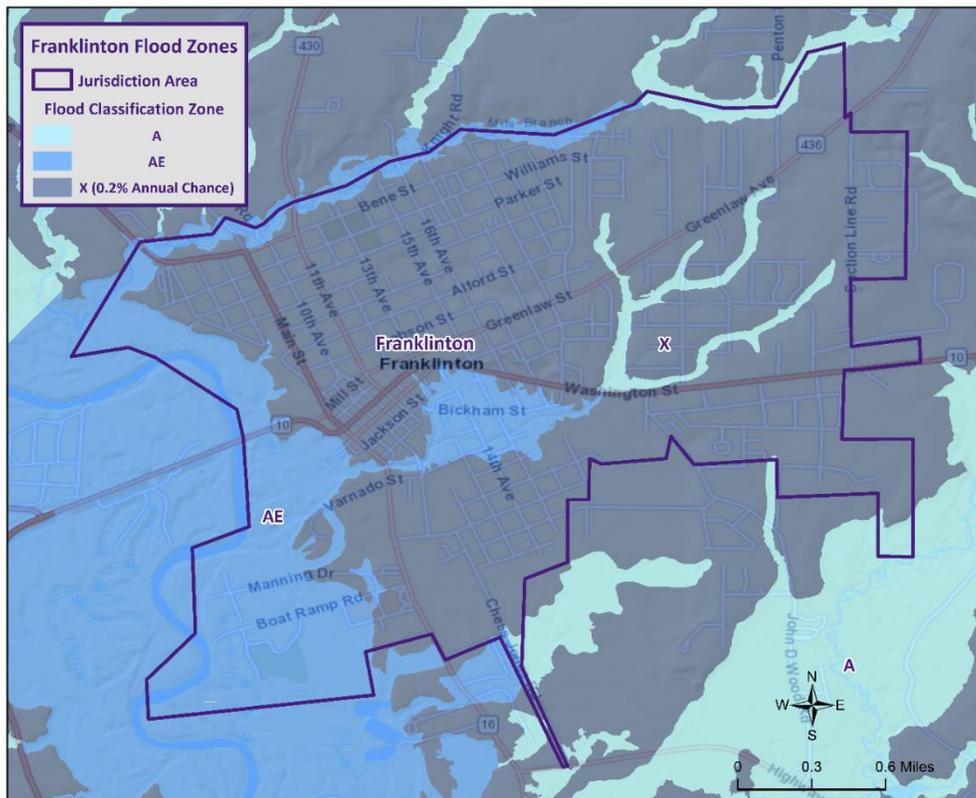


Figure 2-14: Franklinton Areas within the Flood Zones.

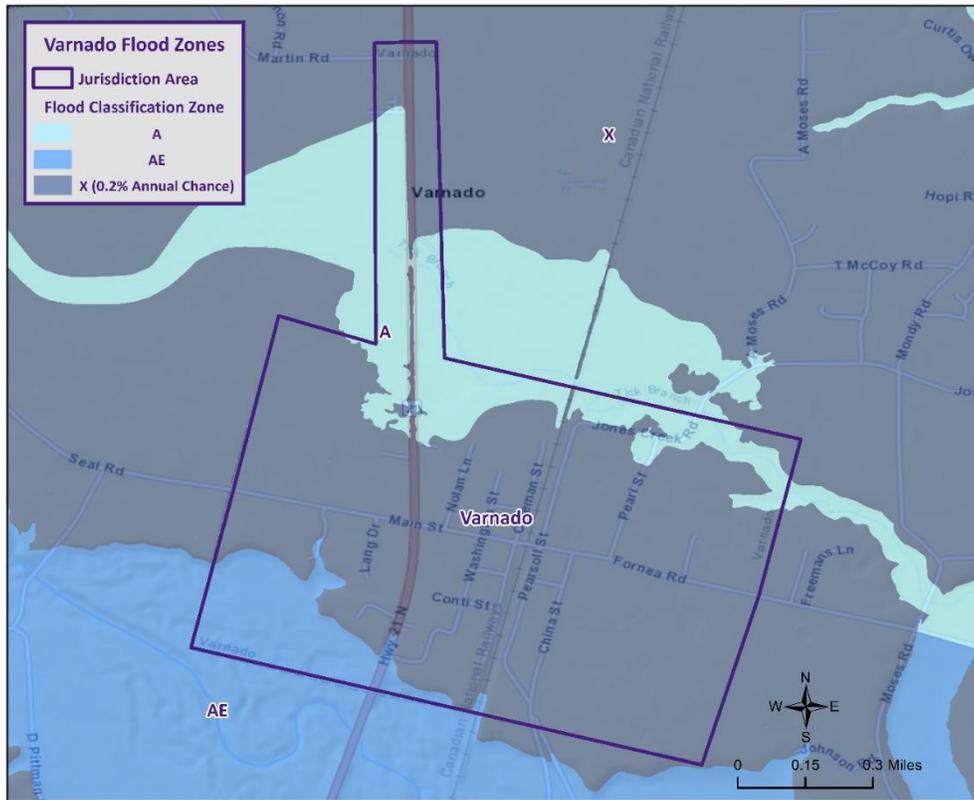


Figure 2-15: Varnado Areas within the Flood Zones.

Previous Occurrences / Extents

Historically, there have been 18 flooding events that have caused significant flooding in Washington Parish and its jurisdictions between 1990 and 2020. Below is a brief synopsis of the flooding event which occurred since the last Washington Parish HMP Update in 2016.

Table 2-15: Historical Floods in Washington Parish with Locations since the 2016 Washington Parish HMP Update.

Date	Extents	Type of Flooding	Estimated Damages	Location
December 27, 2018	Widespread 5 to 10 inches of rainfall with isolated areas having over 10 inches of rainfall caused flash flooding. 73 homes reported flooded in the parish and at least 6 roads closed due to flooding. Around 20 roads had some type of flooding. Cassidy Park in Bogalusa had significant flood damage with estimated \$100,000 damage.	Flash Flood	\$250,000	PARISHWIDE
May 11, 2019	Heavy rainfall of 6 to 8 inches during the pre-dawn hours across northeast Washington Parish resulted in flooding of numerous secondary roadways. Several homes were flooded in the Varnado and Angie communities, some with flood depths greater than 1 ft or water.	Flash Flood	\$50,000	STATE LINE

The worst-case scenarios are based on several different types of flooding events. Storm water excesses affects primarily the low lying areas of the parish and flood depths of up to five feet can be expected in the southeastern unincorporated areas of the parish located in the Pearl River floodplain. The low-lying areas outside of the Pearl River floodplain can expect flood depths from two to four feet. The incorporated areas of Bogalusa and Franklinton can expect flood depths from three to five feet from future flooding events. Based on historical records, the worst-case scenario for Varnado and Angie would be flooding levels of approximately one to three feet.

Frequency / Probability

The NCEI Storm Events Database identified 18 flooding events within the Washington Parish planning area since 1990. The table below shows the probability and return frequency for each jurisdiction.

Table 2-16: Annual Flood Probabilities for Washington Parish.

Jurisdiction	Annual Probability	Return Frequency
Washington Parish (Unincorporated)	36%	1 event every 2 to 3 years
Angie	20%	1 event every 5 years
Bogalusa	24%	1 event every 4 to 5 years
Franklinton	16%	1 event every 6 to 7 years
Varnado	16%	1 event every 6 to 7 years

Based on historical record, the overall flooding probability for the entire Washington Parish Planning area is 60% with 18 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 2-17* shows the total economic losses that would result from this occurrence.

*Table 2-17: Estimated Losses in Washington Parish from a 100-year Flood Event.
(Source: Hazus)*

Jurisdiction	Estimated Total Losses from 100-Year Flood Event
Washington Parish (Unincorporated Area)	\$506,818,000
Angie	\$3,081,000
Bogalusa	\$109,532,000
Franklinton	\$73,793,000
Varnado	\$16,176,000
Total	\$709,400,000

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

Table 2-18: Estimated 100-year Flood Losses for Washington Parish by Sector.

(Source: Hazus)

Washington Parish (Unincorporated)	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$14,017,000
Commercial	\$50,809,000
Government	\$5,329,000
Industrial	\$21,329,000
Religious / Non-Profit	\$19,564,000
Residential	\$393,083,000
Schools	\$2,687,000
Total	\$506,818,000

Table 2-19: Estimated 100-year Flood Losses for Angie by Sector.

(Source: Hazus)

Angie	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$0
Commercial	\$662,000
Government	\$23,000
Industrial	\$638,000
Religious / Non-Profit	\$0
Residential	\$1,756,000
Schools	\$2,000
Total	\$3,081,000

Table 2-20: Estimated 100-year Flood Losses for Bogalusa by Sector.

(Source: Hazus)

Bogalusa	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$428,000
Commercial	\$24,625,000
Government	\$2,543,000
Industrial	\$5,836,000
Religious / Non-Profit	\$4,309,000
Residential	\$71,540,000
Schools	\$251,000
Total	\$109,532,000

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

Franklinton	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$208,000
Commercial	\$28,798,000
Government	\$1,947,000
Industrial	\$828,000
Religious / Non-Profit	\$210,000
Residential	\$39,778,000
Schools	\$2,024,000
Total	\$73,793,000

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

Varnado	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$0
Commercial	\$144,000
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$1,485,000
Residential	\$14,494,000
Schools	\$53,000
Total	\$16,176,000

Threat to People

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

Table 2-23: Vulnerable Populations Susceptible to a 100-year Flood Event.
(Source: Hazus)

Number of People Exposed to Flood Hazards			
Location	# in Community	# in Hazard Area	% in Hazard Area
Washington Parish (Unincorporated)	29,367	27,103	92.3%
Angie	251	159	63.3%
Bogalusa	12,232	3,779	30.9%
Franklinton	3,857	1,774	46.0%
Varnado	1,461	1,380	94.5%
Total	47,168	34,195	72.5%

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

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

Washington Parish (Unincorporated)		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	27,103	92.3%
Persons Under 5 Years	1,735	6.4%
Persons Under 18 Years	6,586	24.3%
Persons 65 Years and Over	4,309	15.9%
White	18,403	67.9%
Minority	8,700	32.1%

*Table 2-25: Vulnerable Populations Susceptible to a 100-year Flood Event in Angie.
(Source: Hazus)*

Angie		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	159	63.3%
Persons Under 5 Years	7	4.4%
Persons Under 18 Years	34	21.5%
Persons 65 Years and Over	25	15.5%
White	110	68.9%
Minority	49	31.1%

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

Bogalusa		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	3,779	30.9%
Persons Under 5 Years	310	8.2%
Persons Under 18 Years	703	18.6%
Persons 65 Years and Over	590	15.6%
White	1,833	48.5%
Minority	1,946	51.5%

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

Franklinton		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	1,774	46.0%
Persons Under 5 Years	119	6.7%
Persons Under 18 Years	351	19.8%
Persons 65 Years and Over	298	16.8%
White	823	46.4%
Minority	951	53.6%

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

Varnado		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	1,380	94.5%
Persons Under 5 Years	25	1.8%
Persons Under 18 Years	52	3.8%
Persons 65 Years and Over	50	3.6%
White	569	41.2%
Minority	811	58.8%

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 2-29: 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 2-30: Spectrum of Hailstone Diameters and their Everyday Description.

(Source: National Weather Service)

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

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

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

High Winds

In general, high winds can occur in a number of different ways, within and without thunderstorms. The Federal Emergency Management Agency (FEMA) distinguishes these as shown in *Table 2-31*.

Table 2-31: High Winds Categorized by Source, Frequency, and Duration.
(Source: *Making Critical Facilities Safe from High Wind, FEMA*)

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

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

Table 2-32 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 2-32: Beaufort Wind Scale.
(Source: NOAA's SPC)*

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

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

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

Lightning

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

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

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

Table 2-33: Lightning Activity Level (LAL) Grids.

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

Hazard Profile

Hailstorms

Location

Hailstorms are a meteorological phenomenon that can occur anywhere. Therefore, the entire planning area for Washington Parish and its jurisdictions are equally at risk for hailstorms. The worst-case scenario for hailstorms is hail up to a 2" diameter.

Previous Occurrences / Extents

Historically, there have been 51 hail incidents in Washington Parish. Hailstorm diameters have ranged from 0.75 inches to 2 inches per the National Climatic Data Center since 1990. The most frequently recorded hail sizes have been 1.75-inch in diameter. There have been no significant hailstorm events in Washington Parish since the 2016 Washington Parish HMP update.

Frequency

Hailstorms occur frequently within Washington 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 Washington Parish, while *Figure 2-17* provides an overview of hailstorm size based on location.

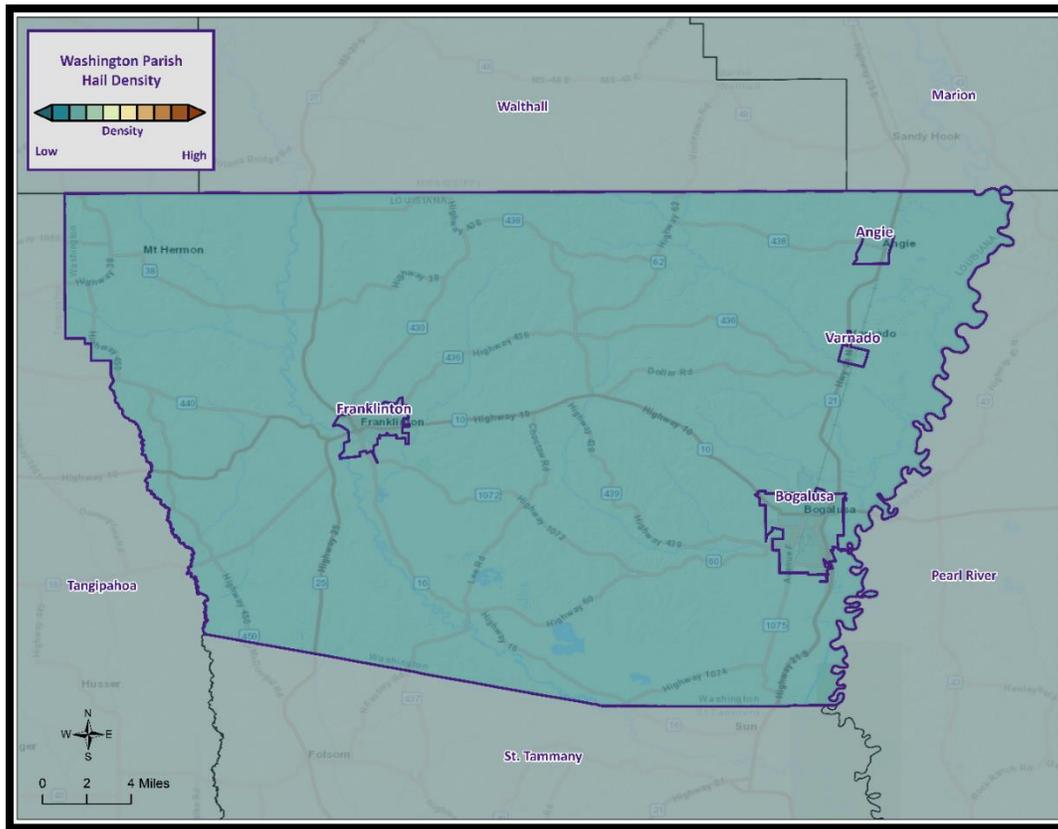


Figure 2-16: Density of Hailstorms by Diameter from 1950-2020.

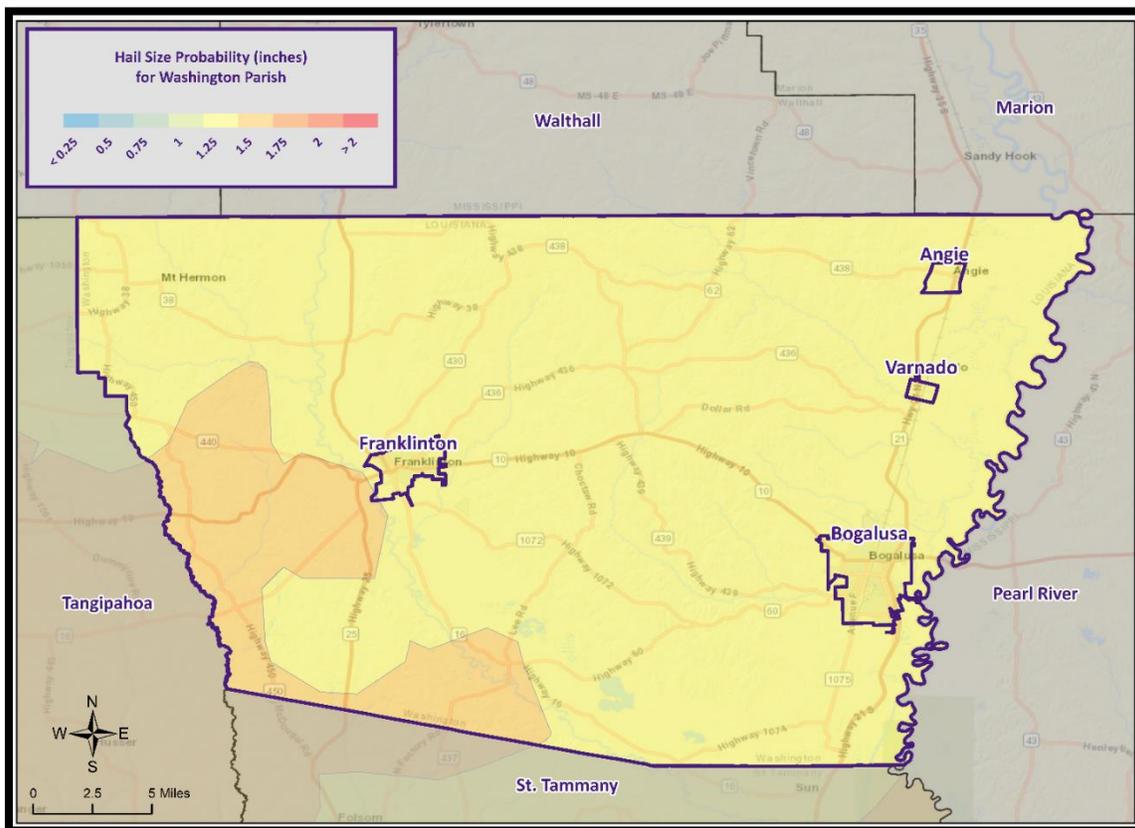


Figure 2-17: Hail Size Probability in Inches for Washington Parish.

Estimated Potential Losses

Since 1990, there have been 51 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 \$5,000. To estimate the potential losses of a hailstorm event on an annual basis, the total damages recorded for wind events was divided by the total number of years of available wind data in the NCEI Storm Events Database (1990 - 2020). This provides an annual estimated potential loss of \$167 and \$98 per event. The following table provides an estimate of potential property losses for Washington Parish:

Table 2-34: Estimated Annual Losses Washington Parish and its Jurisdictions Resulting from Hailstorms.

Estimated Potential Annual Losses from Hailstorms				
Unincorporated Area	Angie	Bogalusa	Franklinton	Varnado
\$104	\$1	\$43	\$14	\$5

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 Washington Parish is equally at risk from high winds. The worst-case scenario for thunderstorm high wind is wind speeds of approximately 90 mph.

Previous Occurrences / Extents

Historically, there have been 133 thunderstorm high wind events in Washington Parish. The high wind events have ranged in wind speeds from 46 mph to 90 mph per the National Climatic Data Center since 1990. There have been seven high wind speeds events which impacted the Washington Parish Planning area since the 2016 Washington Parish HMP update. Below is a brief synopsis of those events.

Table 2-35: 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	69	\$0	\$0
June 11, 2018	58	\$0	\$0
April 18, 2019	63	\$0	\$0
April 18, 2019	63	\$0	\$0
December 16, 2019	60	\$0	\$0
August 15, 2020	60	\$0	\$0
August 15, 2020	63	\$0	\$0

Frequency

High winds are a fairly common occurrence within Washington 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 Washington Parish and its jurisdictions.

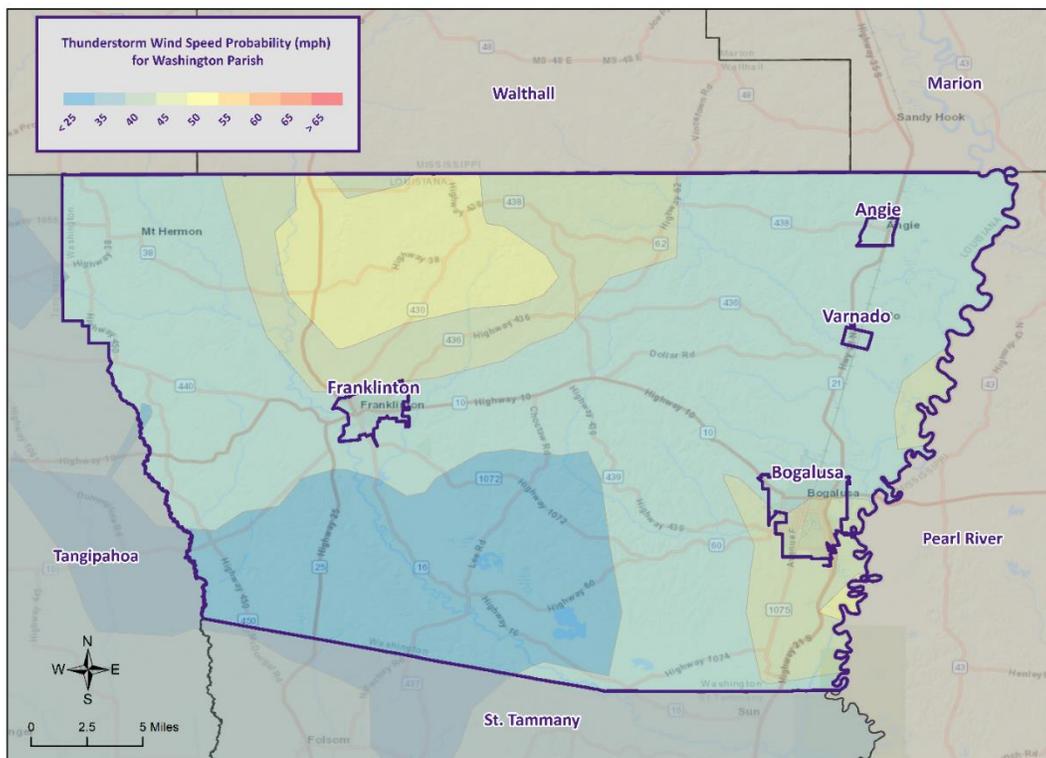


Figure 2-18: Thunderstorm High Wind Speed Probability in Miles Per Hour for Washington Parish.

Estimated Potential Losses

Since 1990, there has been 133 significant wind events that have resulted in property damages according to NCEI Storm Events Database. The total property damage associated with this storm totaled approximately \$904,550. To estimate the potential losses of a wind event on an annual basis, the total damages recorded for wind events was divided by the total number of years of available wind data in the NCEI Storm Events Database (1990 - 2020). This provides an annual estimated potential loss of \$30,152 and \$5,990 per event. The following table provides an estimate of potential property losses for Washington Parish:

Table 2-36: Estimated Annual Property Losses in Washington Parish Resulting from Wind Damage.

Estimated Potential Annual Losses from High Winds				
Unincorporated Area	Angie	Bogalusa	Franklinton	Varnado
\$18,773	\$160	\$7,819	\$2,466	\$934

There has been one fatality and one injury 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 Washington 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 two lightning events in Washington Parish and its jurisdictions between the years 1990 and 2020. Since the last HMP update, there has been no significant lightning events within the boundaries of Washington Parish.

Frequency

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

Estimated Potential Losses

Since 1990, there have been two significant lightning events that have resulted in property damages according to NCEI Storm Events Database. The total property damages associated with those storms have totaled approximately \$2,000. 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 \$67 and \$1,000 per event. The following table provides an estimate of potential property losses for Washington Parish:

Table 2-37: Estimated Annual Property Losses in Washington Parish resulting from Lightning Damage.

Estimated Potential Annual Losses from Lightning				
Unincorporated Area	Angie	Bogalusa	Franklinton	Varnado
\$42	\$0	\$17	\$5	\$2

Per the NCEI Storm Events Database, there have been no fatalities or injuries as a result of lightning in Washington 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 2-38* 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 2-38: 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 2-39: Fujita and Enhanced Fujita Tornado Damage Scale.

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

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

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

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

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

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

Location

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

Previous Occurrences / Extent

The NCEI Storm Events Database reports a total of 21 tornadoes or waterspouts occurring within the boundaries of Washington Parish since 1990 ranging in extent from F0 to F1 under the Fujita Scale and EF0 to EF2 on the Enhanced Fujita Scale. Washington Parish can expect future tornadoes up to an EF2 under the Enhanced Fujita Scale as a worst-case scenario.

The most destructive tornado to impact Washington Parish was a F2 tornado which occurred on February 21, 1961. The tornado was responsible for over \$389,560 in damage and nine injuries. The tornado touched down near the town of Angie and moved north destroying a school and several homes. There have been no fatalities as a result of tornadoes in Washington Parish. Since the 2016 HMP Update, three

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

Table 2-40: Historical Tornadoes in Washington Parish with Locations since the 2016 Update.

Date	Impacts	Property Damage	Location	Magnitude
November 1, 2018	2.25 mile path with a width of 200 yards. An EF-2 tornado touched down along Highway 60, moved north-northeast across Highway 439 and continued to just north of Mack Adams Oberry Road. Where the tornado touched down along Highway 60, numerous trees were snapped and uprooted. A single family home had a large portion of its roof removed and one exterior wall blown in. Several trailers were heavily damaged including one rolled trailer, injuring its two occupants. Estimated peak wind was 115 mph.	\$0	LEES CREEK	EF2
November 1, 2018	0.66 mile path with a width of 200 yards. An EF-2 tornado initially touched down near Military Road, north of Brookedale Road, and continued north-northeast to just north of HH Williams Road. A large number of trees were snapped or uprooted. An outbuilding was destroyed, and several camper trailers rolled. A single family home had part of the roof removed with damage to the porch. Estimated peak wind was 115 mph.	\$0	VARNADO	EF2
January 19, 2019	1.2 mile path with a width of 75 yards. A weak tornado touched down just west of Buford Creek Road and moved east-northeast, crossing T C Brumfield Road and James Creel Road. A home on Buford Creek Road had much of its roof removed. A nearby mobile home was destroyed and a pickup truck rolled over. Several houses on James Creel Road had considerable roof damage and a large storage building destroyed. Several large trees were also uprooted. Estimated maximum winds speed was 105 mph.	\$0	HACKLEY	EF1

Frequency / Probability

Tornadoes occur frequently within Washington Parish and its jurisdictions with an annual chance of occurrence calculated at 70% based on the records for the past 30 years (1990 - 2020). *Figure 2-19* displays the density of tornado touchdowns in Washington Parish and neighboring parishes.

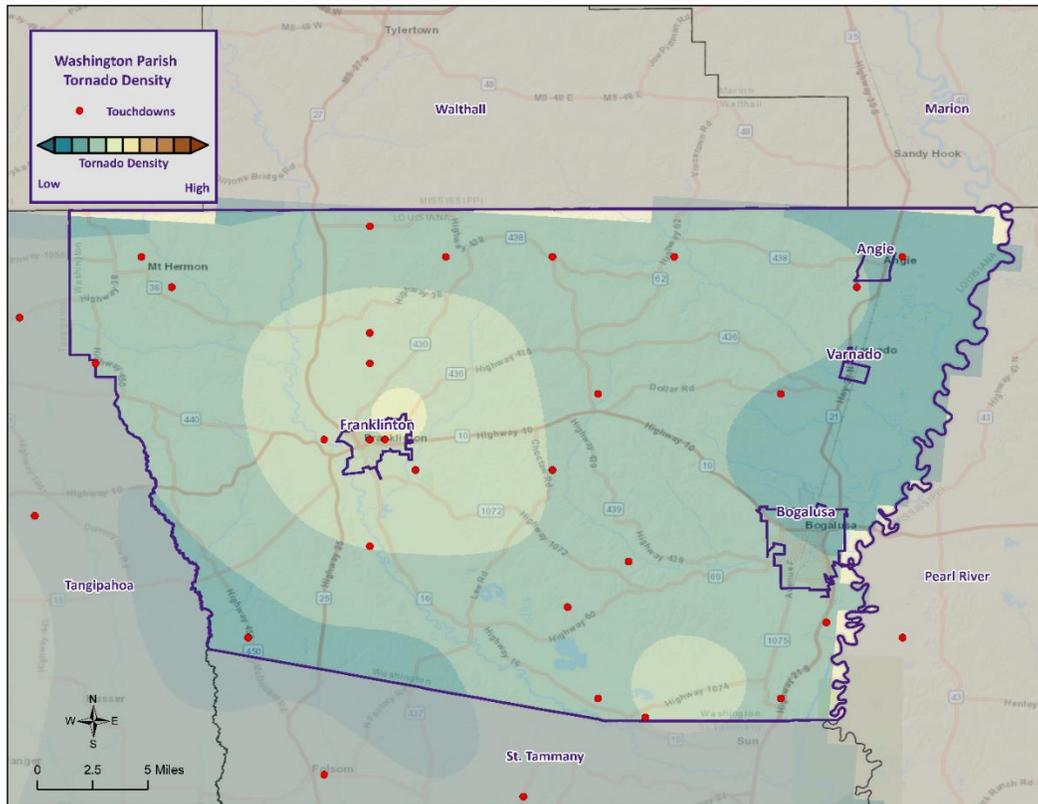


Figure 2-19: Location and Density of Tornadoes to Touchdown in Washington Parish. (Source: NOAA/SPC Severe Weather Database)

Estimated Potential Loses

According to the NCEI Storm Events Database, there have been 21 tornadoes that have caused some level of property damage. The total damage from the actual claims for property is approximately \$556,500 with an average cost of \$18,550 per tornado event. When annualizing the total cost over the 30-year record, total annual losses based on tornadoes are estimated to be \$26,500. The following table provides an annual estimate of potential losses for Washington Parish.

Table 2-41 Estimated Annual Losses for Tornadoes in Washington Parish.

Estimated Potential Annual Losses from Tornadoes				
Unincorporated Area	Angie	Bogalusa	Franklinton	Varnado
\$11,549	\$99	\$4,811	\$1,517	\$575

Table 2-42 presents an analysis of building exposure that are susceptible to tornadoes by general occupancy type for Washington Parish along with the percentage of building stock that are mobile homes.

Table 2-42: Building Exposure by General Occupancy Type for Tornadoes in Washington Parish.
(Source: Hazus)

Building Exposure by General Occupancy Type for Tornadoes (\$1,000)							
Residential	Commercial	Industrial	Agricultural	Religion	Government	Education	Mobile Homes (%)
237,306	679,122	187,863	40,604	237,306	52,159	70,560	22.4%

The Parish has suffered through a total of 21 events in which tornadoes or waterspouts have accounted for two 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 22.4% of all housing in Washington Parish consists of manufactured housing. The location and density of manufactured houses can be seen in *Figure 2-20*.

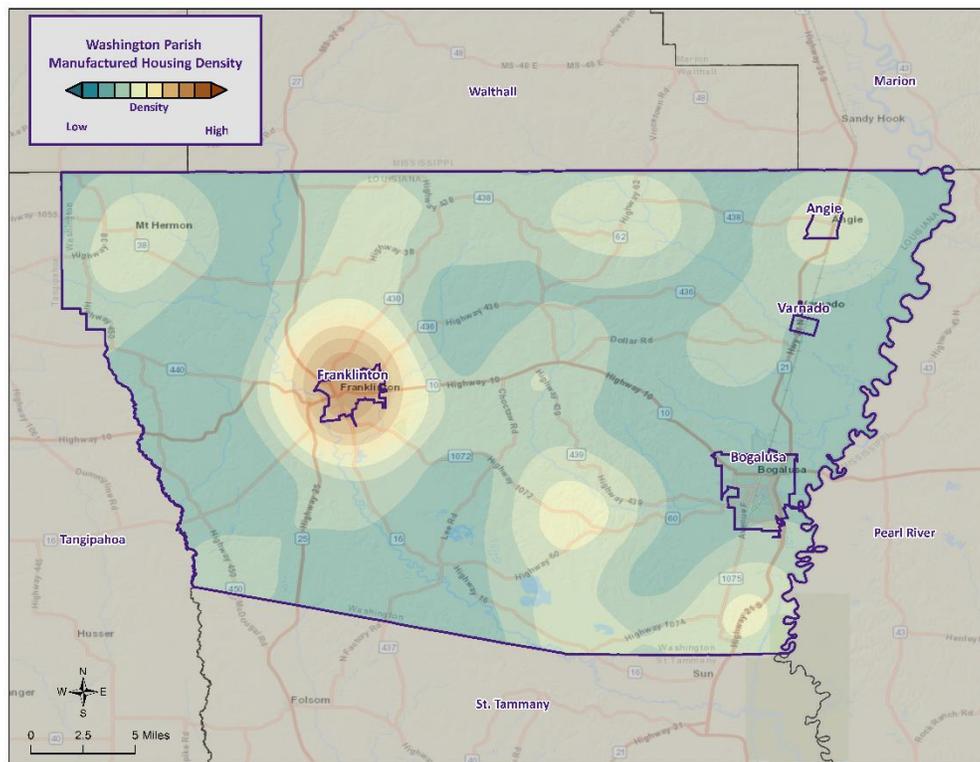


Figure 2-20: Location and Approximate Number of Units in Manufactured Housing Locations throughout Washington Parish.

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 2-43: 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 Washington Parish planning area. The worst-case scenario for a tropical cyclone event in Washington Parish is a Category 3 Hurricane.

Previous Occurrences / Extents

Washington Parish has experienced nine major tropical cyclone events since 2002. Hurricane Katrina has been by far the worst hurricane to impact Washington Parish in recorded history. The following table provides a list of tropical cyclones which have impacted Washington Parish since 2002.

Table 2-44: Historical Tropical Cyclone Events in Washington Parish from 2002 – 2020.

Date	Name	Storm Type at Time of Impact
2002	Lili	Hurricane
2003	Bill	Tropical Storm
2005	Cindy	Tropical Storm
2005	Katrina	Hurricane
2008	Fay	Tropical Depression
2008	Gustav	Hurricane
2011	Lee	Tropical Storm
2012	Isaac	Hurricane
2020	Zeta	Tropical Storm

Since the last Washington Parish HMP update in 2016, there has been one tropical cyclone event which has impacted the parish. Below is a brief description of the event and the impact it had on Washington Parish.

Tropical Storm Zeta (2020)

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

In Washington Parish, Zeta produced tropical storm force wind gusts which resulted in minor impacts across the parish in the form of a few downed trees and power outages. At the peak, around 800 customers were without power in Washington Parish.

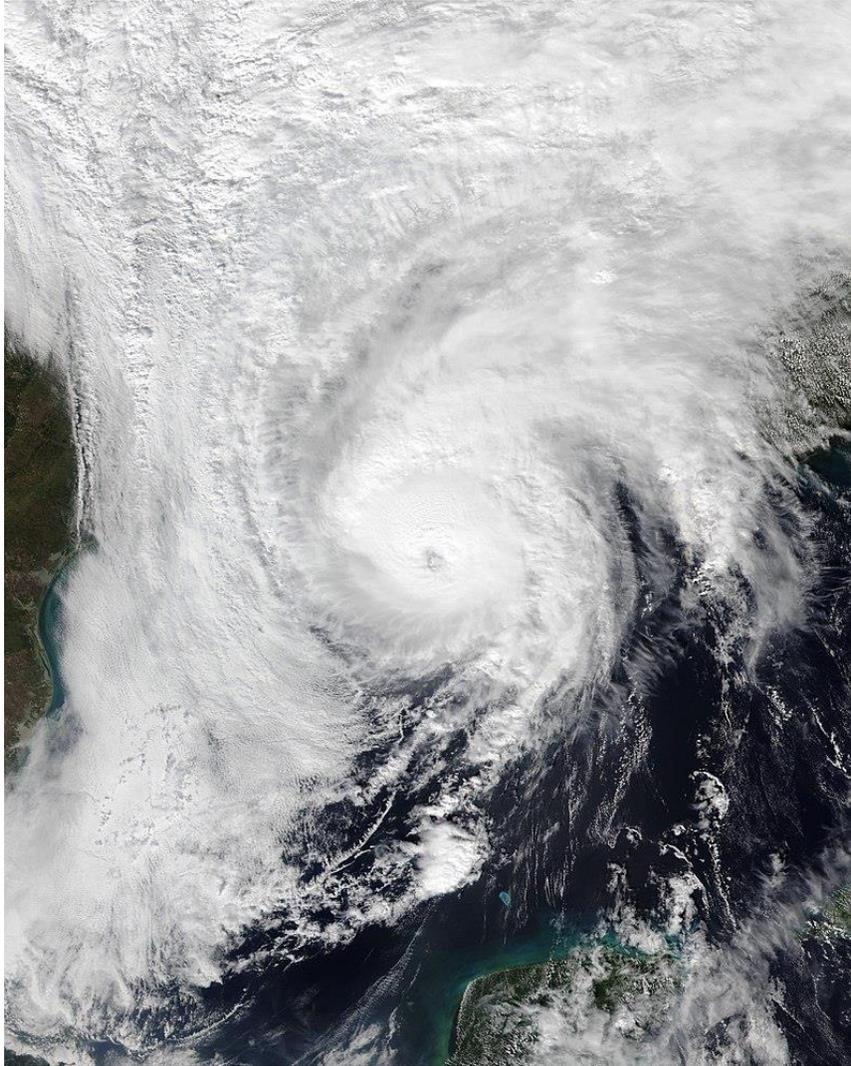


Figure 2-21: Hurricane Zeta in the Gulf Coast Area.
(Source: NOAA)

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

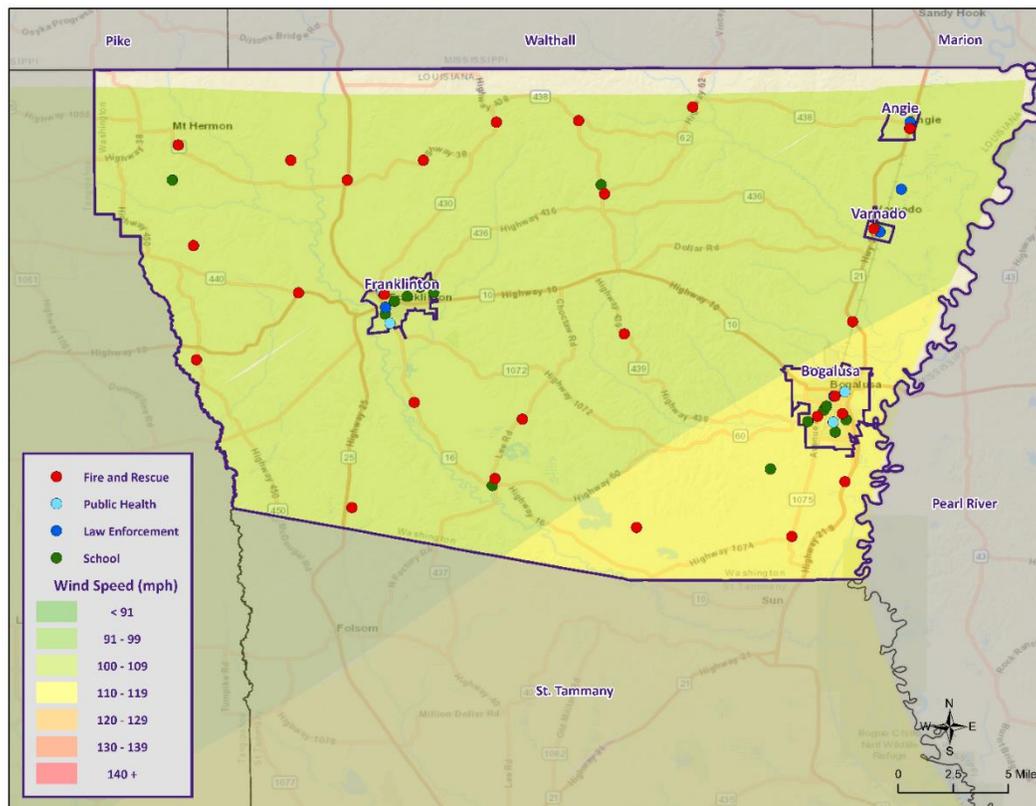


Figure 2-22: Winds Zones for Washington Parish in Relation to Critical Facilities

Frequency / Probability

Tropical cyclones are large natural hazard events that regularly impact Washington Parish. The annual chance of occurrence for a tropical cyclone is estimated at 50% for Washington Parish, with nine events having occurred 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, Washington 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 table on the next page shows the total economic losses that would result from this occurrence.

Table 2-45: Total Estimated Losses for a 100-Year Hurricane Event
(Source: Hazus)

Jurisdiction	Estimated Total Losses from 100-Year Hurricane Event
Washington Parish (Unincorporated)	\$33,783,168
Angie	\$287,175
Bogalusa	\$14,062,522
Franklinton	\$4,434,201
Varnado	\$1,659,638
Total	\$54,226,704

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

Table 2-46: Ratio of Total Losses to Total Estimated Value of Assets for Washington Parish
(Source: Hazus)

Jurisdiction	Estimated Total Losses from 100-Year Hurricane Event	Total Estimated Value of Assets	Ratio of Estimated Losses to Total Value
Washington Parish (Unincorporated)	\$33,783,168	\$3,278,241,000	1.0%
Angie	\$287,175	\$30,667,000	0.9%
Bogalusa	\$14,062,522	\$1,721,468,000	0.8%
Franklinton	\$4,434,201	\$627,951,000	0.7%
Varnado	\$1,659,638	\$69,504,000	2.4%

Based on the Hazus Hurricane Model, estimated total losses for Washington Parish and its jurisdictions ranged from 0.7% to 2.4% of the total estimated value of all assets.

The Hazus Hurricane Model also provides a breakdown for seven primary sectors (Hazus occupancy) throughout the parish. The losses for Washington Parish by sector are listed in the tables below.

Table 2-47: Estimated Losses in Unincorporated Washington Parish for a 100-Year Hurricane Event
(Source: Hazus)

Washington Parish (Unincorporated)	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$171,818
Commercial	\$1,780,700
Government	\$89,766
Industrial	\$251,601
Religious / Non-Profit	\$378,337
Residential	\$31,005,689
Schools	\$105,258
Total	\$33,783,168

Table 2-48: Estimated Losses in Angie for a 100-Year Hurricane Event
(Source: Hazus)

Angie	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$0
Commercial	\$15,220
Government	\$767
Industrial	\$2,049
Religious / Non-Profit	\$3,234
Residential	\$265,006
Schools	\$900
Total	\$287,175

Table 2-49: Estimated Losses in Bogalusa for a 100-Year Hurricane Event
(Source: Hazus)

Bogalusa	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$67,624
Commercial	\$741,701
Government	\$37,390
Industrial	\$99,831
Religious / Non-Profit	\$157,586
Residential	\$12,914,550
Schools	\$43,842
Total	\$14,062,522

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

Franklinton	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$21,323
Commercial	\$233,873
Government	\$11,790
Industrial	\$31,479
Religious / Non-Profit	\$49,690
Residential	\$4,072,222
Schools	\$13,824
Total	\$4,434,201

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

Varnado	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$0
Commercial	\$88,589
Government	\$4,466
Industrial	\$0
Religious / Non-Profit	\$18,822
Residential	\$1,542,524
Schools	\$5,237
Total	\$1,659,638

Threat to People

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

Table 2-52: Number of People Susceptible to a 100-Year Hurricane Event in Washington Parish
(Source: Hazus)

Number of People Exposed to Hurricane Hazards			
Location	# in Community	# in Hazard Area	% in Hazard Area
Washington Parish (Unincorporated)	29,367	29,367	100%
Angie	251	251	100%
Bogalusa	12,232	12,232	100%
Franklinton	3,857	3,857	100%
Varnado	1,461	1,461	100%
Total	47,168	47,168	100%

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

Table 2-53: Vulnerable Populations in Unincorporated Washington Parish for a 100-Year Hurricane Event
(Source: Hazus)

Washington Parish (Unincorporated)		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	29,367	100.0%
Persons Under 5 Years	1,879	6.4%
Persons Under 18 Years	7,136	24.3%
Persons 65 Years and Over	4,669	15.9%
White	19,940	67.9%
Minority	9,427	32.1%

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

Angie		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	251	100.0%
Persons Under 5 Years	11	4.4%
Persons Under 18 Years	54	21.5%
Persons 65 Years and Over	39	15.5%
White	173	68.9%
Minority	78	31.1%

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

Bogalusa		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	12,232	100.0%
Persons Under 5 Years	1,003	8.2%
Persons Under 18 Years	2,275	18.6%
Persons 65 Years and Over	1,908	15.6%
White	5,933	48.5%
Minority	6,299	51.5%

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

Franklinton		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	3,857	100.0%
Persons Under 5 Years	258	6.7%
Persons Under 18 Years	764	19.8%
Persons 65 Years and Over	648	16.8%
White	1,790	46.4%
Minority	2,067	53.6%

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

Varnado		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	1,461	100.0%
Persons Under 5 Years	26	1.8%
Persons Under 18 Years	56	3.8%
Persons 65 Years and Over	53	3.6%
White	602	41.2%
Minority	859	58.8%

Vulnerability

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

Wildfires

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

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

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

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

Table 2-58: Southern Group of State Foresters Wildfire Risk Assessment Fire Intensity Scale.
(Source: Southern Wildfire Assessment Portal)

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

Location

Wildfires impact areas that are populated with forests and grasslands. The worse-case scenario for Washington Parish is a level 5, the incorporated area of Angie a level 4, the incorporated areas of Franklinton and Varnado a level 3, and the incorporated area of Bogalusa a level 2 on the fire intensity scale. The following figures display the areas of wildland-urban interface and intermix in Washington Parish and its jurisdictions.

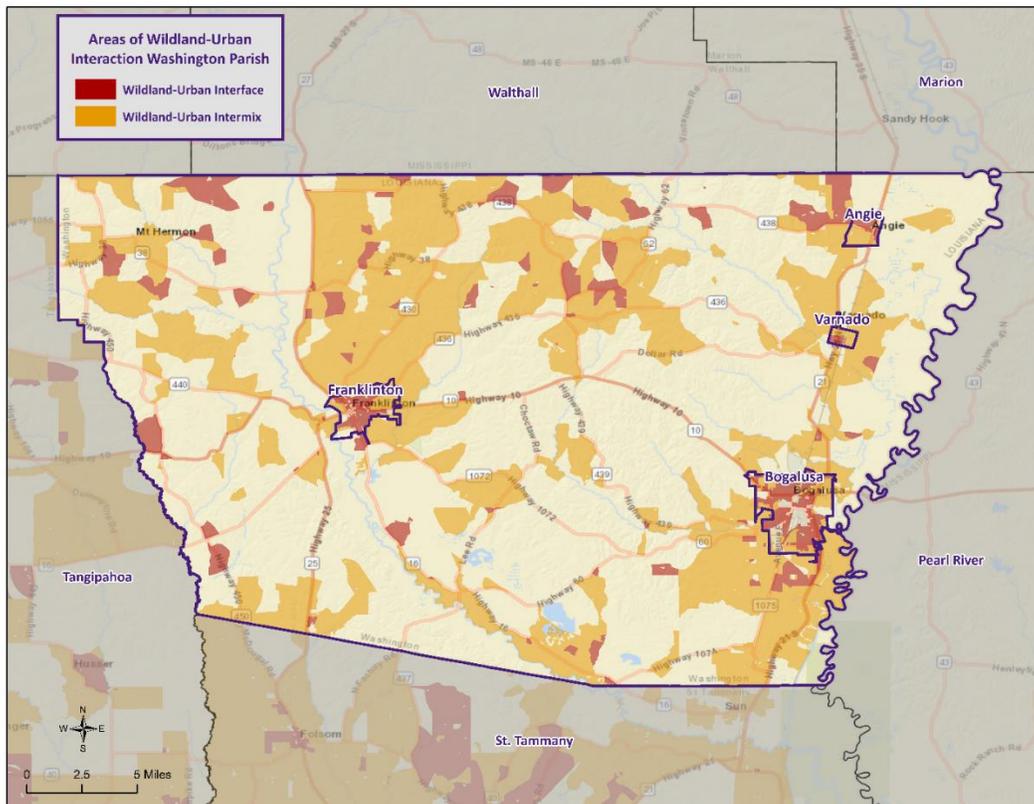


Figure 2-23: Wildland-Urban Interaction in Washington Parish.

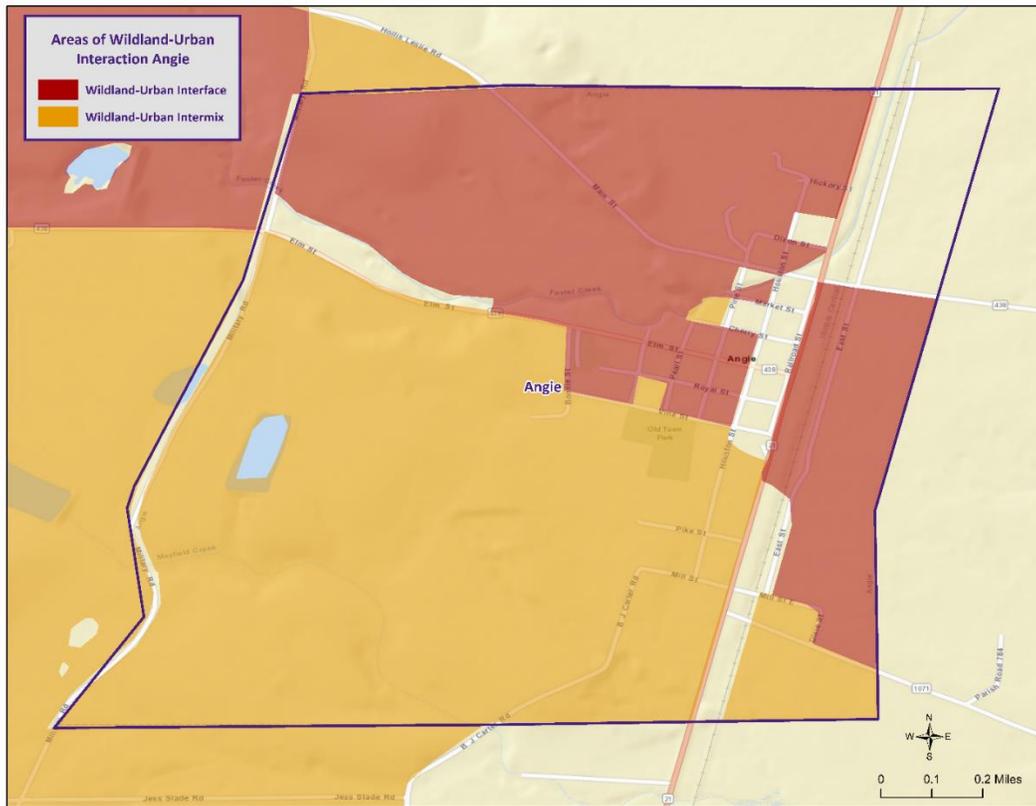


Figure 2-24: Wildland-Urban Interaction in Angie.

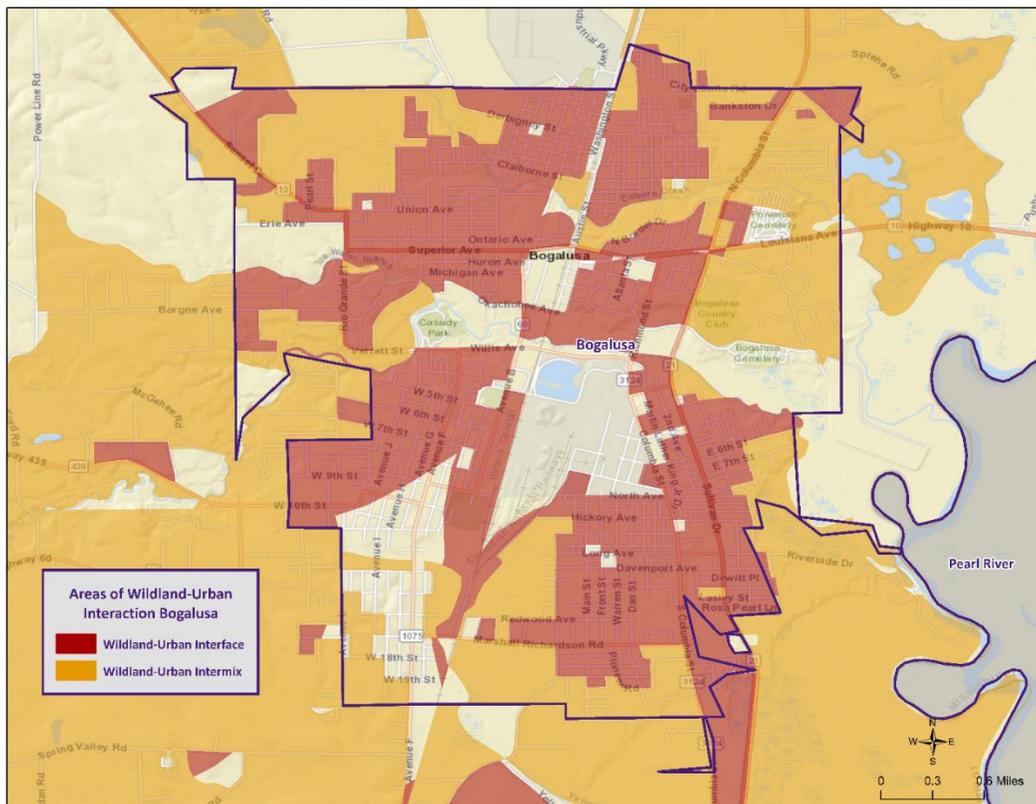


Figure 2-25: Wildland-Urban Interaction in Bogalusa.

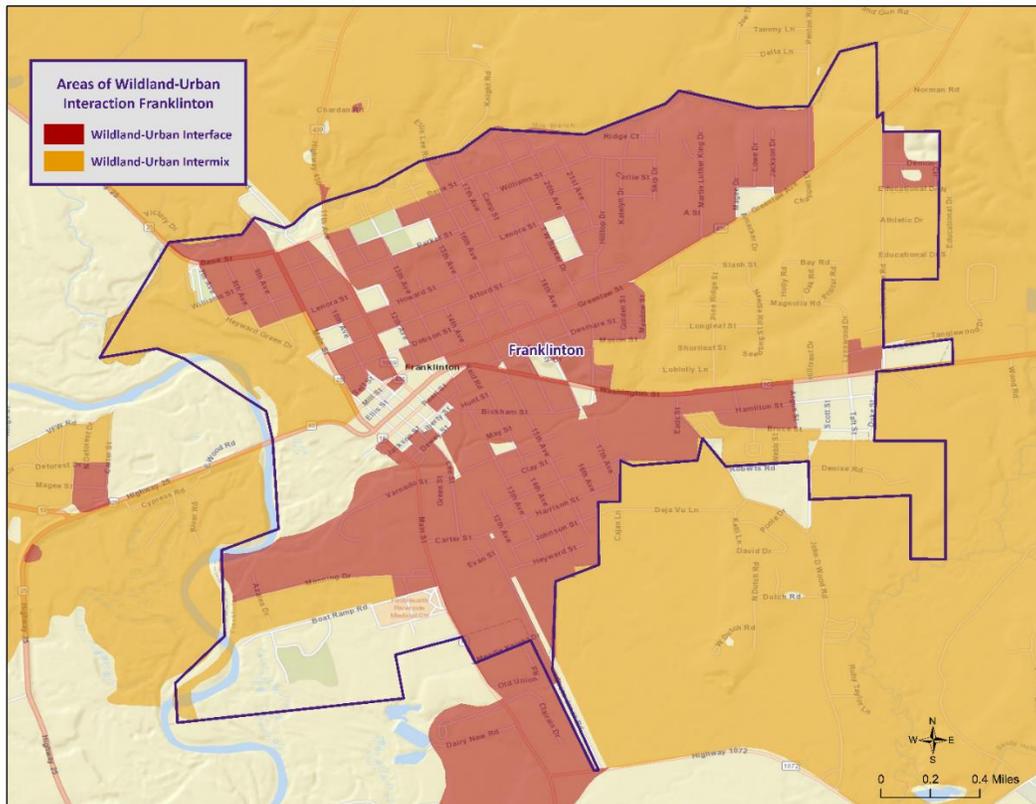


Figure 2-26: Wildland-Urban Interaction in Franklinton.

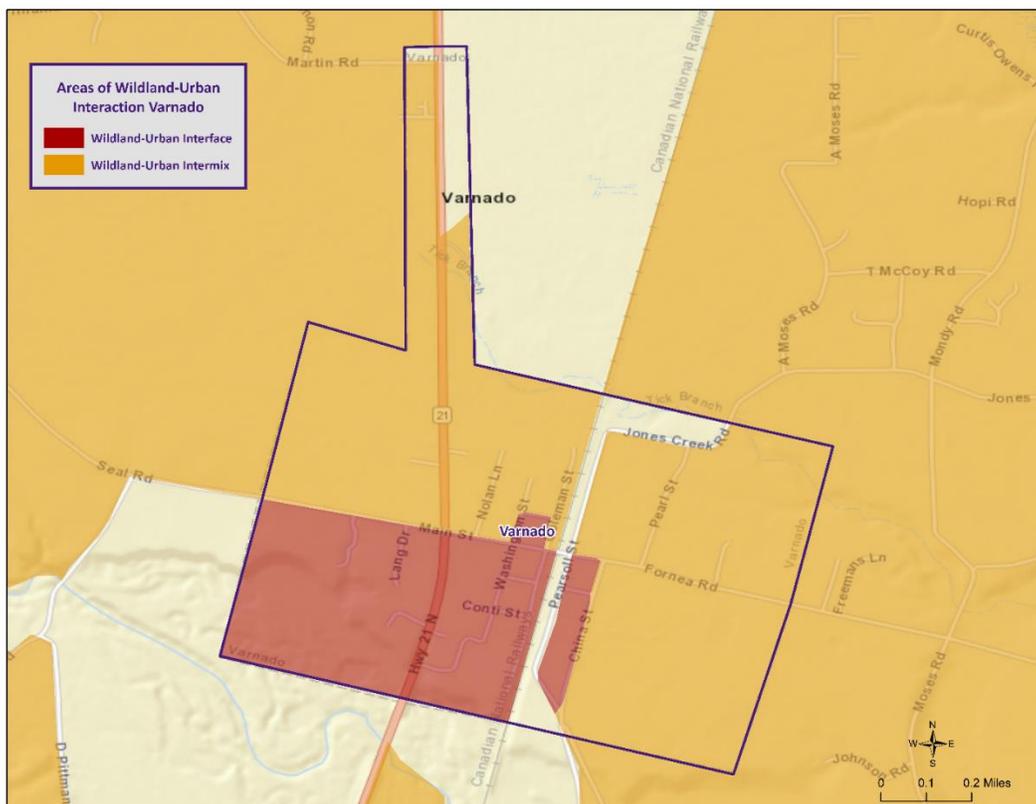


Figure 2-27: Wildland-Urban Interaction in Varnado.

Previous Occurrences / Extents

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

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

*Table 2-59: Potential Wildfire Intensity Levels for Washington Parish.
(Source: Southern Wildfire Assessment Portal)*

Fire Intensity	
Washington (Unincorporated)	Highest Intensity Level 5
Angie	High Intensity Level 4
Bogalusa	Low Intensity Level 2
Franklinton	Moderate Intensity Level 3
Varnado	Moderate Intensity Level 3

Frequency / Probability

Based on historical records, there have been no significant wildfire events within the boundaries of Washington Parish and the jurisdictions of Angie, Bogalusa, Franklinton, and Varnado; therefore, the annual chance of occurrence for wildfires is estimated at less than 1%.

Estimated Potential Loses

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

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

*Table 2-60: Total Building Exposure by Wildland-Urban Interaction Areas.
(Source: Hazus)*

Jurisdiction	Estimated Total Building Exposure
Washington Parish (Unincorporated)	\$3,100,661,000
Angie	\$11,757,000
Bogalusa	\$1,662,906,000
Franklinton	\$595,910,000
Varnado	\$41,740,000
Total	\$5,412,974,000

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

*Table 2-61: Estimated Exposure for Unincorporated Washington Parish by Sector.
(Source: Hazus)*

Washington Parish (Unincorporated)	Estimated Total Building Exposure by Sector
Agricultural	\$35,036,000
Commercial	\$189,217,000
Government	\$17,898,000
Industrial	\$105,908,000
Religious / Non-Profit	\$111,782,000
Residential	\$2,618,996,000
Schools	\$21,824,000
Total	\$3,100,661,000

*Table 2-62: Estimated Exposure for Angie by Sector.
(Source: Hazus)*

Angie	Estimated Total Building Exposure by Sector
Agricultural	\$0
Commercial	\$906,000
Government	\$4,430,000
Industrial	\$1,456,000
Religious / Non-Profit	\$592,000
Residential	\$3,231,000
Schools	\$1,142,000
Total	\$11,757,000

*Table 2-63: Estimated Exposure in Bogalusa by Sector.
(Source: Hazus)*

Bogalusa	Estimated Total Building Exposure by Sector
Agricultural	\$1,644,000
Commercial	\$272,019,000
Government	\$14,175,000
Industrial	\$47,658,000
Religious / Non-Profit	\$75,610,000
Residential	\$1,222,986,000
Schools	\$28,814,000
Total	\$1,662,906,000

Table 2-64: Estimated Exposure in Franklinton by Sector.
(Source: Hazus)

Franklinton	Estimated Total Building Exposure by Sector
Agricultural	\$1,984,000
Commercial	\$417,538,000
Government	\$11,166,000
Industrial	\$109,333,000
Religious / Non-Profit	\$25,092,000
Residential	\$1,441,115,000
Schools	\$13,790,000
Total	\$2,020,018,000

Table 2-65: Estimated Exposure in Varnado by Sector.
(Source: Hazus)

Varnado	Estimated Total Building Exposure by Sector
Agricultural	\$0
Commercial	\$1,880,000
Government	\$4,429,000
Industrial	\$0
Religious / Non-Profit	\$9,216,000
Residential	\$26,059,000
Schools	\$156,000
Total	\$41,740,000

Threat to People

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

Table 2-66: Population Located within a Wildland-Urban Interaction Areas.
(Source: 2010 U.S. Census Data)

Number of People Located in Wildland-Urban Interaction Areas			
Location	# in Community	# in Hazard Area	% in Hazard Area
Washington Parish (Unincorporated)	29,367	18,117	61.7%
Angie	251	240	95.6%
Bogalusa	12,232	12,011	98.2%
Franklinton	3,857	3,828	99.2%
Varnado	1,461	1,459	99.9%
Total	47,168	35,655	75.6%

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

Table 2-67: Population in Unincorporated Washington Parish Located within a Wildland-Urban Interaction Area.

(Source: 2010 Census Data)

Washington Parish (Unincorporated)		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	18,117	61.7%
Persons Under 5 Years	1,159	6.4%
Persons Under 18 Years	4,402	24.3%
Persons 65 Years and Over	2,881	15.9%
White	12,301	67.9%
Minority	5,816	32.1%

Table 2-68: Population in Angie Located within a Wildland-Urban Interaction Area.

(Source: 2010 Census Data)

Angie		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	240	95.6%
Persons Under 5 Years	11	4.4%
Persons Under 18 Years	52	21.5%
Persons 65 Years and Over	37	15.5%
White	165	68.9%
Minority	75	31.1%

Table 2-69: Population in Bogalusa Located within a Wildland-Urban Interaction Area.

(Source: 2010 Census Data)

Bogalusa		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	12,011	98.2%
Persons Under 5 Years	985	8.2%
Persons Under 18 Years	2,234	18.6%
Persons 65 Years and Over	1,874	15.6%
White	5,825	48.5%
Minority	6,186	51.5%

*Table 2-70: Population in Franklinton Located within a Wildland-Urban Interaction Area.
(Source: 2010 Census Data)*

Franklinton		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	3,828	99.2%
Persons Under 5 Years	256	6.7%
Persons Under 18 Years	758	19.8%
Persons 65 Years and Over	643	16.8%
White	1,776	46.4%
Minority	2,052	53.6%

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

Varnado		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	1,459	99.9%
Persons Under 5 Years	26	1.8%
Persons Under 18 Years	55	3.8%
Persons 65 Years and Over	53	3.6%
White	601	41.2%
Minority	858	58.8%

Vulnerability

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

Winter Weather

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

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

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

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

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

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

Table 2-72: 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 Washington Parish as all of the adjacent parishes, the entire planning area for Washington Parish is equally at risk for winter storms.

Previous Occurrences / Extents

The NCEI Storm Events Database reports two winter weather events occurring within the boundaries of Washington Parish between the years 1990 and 2020. There have been no winter weather events to impact Washington Parish since the last Washington Parish HMP Update in 2016. The worse-case scenario for Washington Parish and all of its jurisdictions is a level 2 on the Sperry-Piltz Ice Accumulation Index.

Frequency / Probability

Based on historical records, there have been two significant winter weather events within the boundaries of Washington Parish and the jurisdictions of Angie, Bogalusa, Franklinton, and Varnado; therefore, the annual chance of occurrence for winter weather is estimated at 7%.

Estimated Potential Losses

Since 1990, there have been two winter weather events that have resulted in property damages according to NCEI Storm Events Database. The total property damages associated with those storms have totaled approximately \$5,000. To estimate the potential losses of a winter weather event on an annual basis, the total damages recorded for winter weather was divided by the total number of years of available winter weather in the NCEI Storm Events Database (1990 - 2020). This provides an annual estimated potential loss of \$167 and \$2,500 per event.

The following table provides an estimate of potential property losses for Washington Parish:

Table 2-73: Estimated Annual Losses Washington Parish and its Jurisdictions Resulting from Winter Weather.

Estimated Annual Potential Losses from Winter Weather				
Unincorporated Area	Angie	Bogalusa	Franklinton	Varnado
\$104	\$1	\$43	\$14	\$5

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

Vulnerability

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

This Page Left Intentionally Blank

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, Washington Parish OHSEP 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 Washington 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

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

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

Building Codes, Permitting, Land Use Planning and Ordinances

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

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

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

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

While local capabilities for mitigation can vary from community to community, the jurisdictions within the Washington 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 Washington 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.						
	Washington Unincorporated	Village of Angie	City of Bogalusa	Town of Franklinton	Village of Varnado	Comments
Administration	Yes / No					
Planning Commission	Yes	No	Yes	Yes	No	
Mitigation Planning Committee	Yes	No	Yes	Yes	No	
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	Yes	Yes	Yes	Yes	
Staff	Yes / No					
Chief Building Official	Yes	No	Yes	Yes	No	
Floodplain Administrator	Yes	Yes	Yes	Yes	Yes	
Emergency Manager	Yes	No	Yes	Yes	No	
Community Planner	Yes	No	Yes	No	No	
Civil Engineer	No	No	No	No	No	
GIS Coordinator	Yes	No	No	No	No	
Grant Writer	Yes	No	No	No	No	
Other	No	No	No	No	No	
Technical	Yes / No					
Warning Systems / Service (Reverse 911, outdoor warning signals)	Yes	Yes	Yes	Yes	No	
Hazard Data & Information	Yes	No	No	No	No	
Grant Writing	Yes	No	No	No	No	
Hazus Analysis	Yes	No	No	No	No	
Other	Yes	No	No	No	No	

Financial capabilities are the resources that Washington 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 Washington 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.						
	Washington Unincorporated	Village of Angie	City of Bogalusa	Town of Fran Klinton	Village of Varnado	Comments
Funding Resource	Yes / No					
Capital Improvements project funding	Yes	Yes	Yes	Yes	Yes	
Authority to levy taxes for specific purposes	Yes	No	Yes	Yes	No	
Fees for water, sewer, gas, or electric services	Yes	Yes	Yes	Yes	No	
Impact fees for new development	Yes	No	No	No	No	
Stormwater Utility Fee	No	No	No	No	No	
Community Development Block Grant (CDBG)	Yes	No	Yes	Yes	Yes	
Other Funding Programs	Yes	No	No	No	Yes	

Education and Outreach

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

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

Table 3-4: Education and Outreach Capabilities

Education and Outreach						
Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.						
	Washington Unincorporated	Village of Angie	City of Bogalusa	Town of Franklinton	Village of Varnado	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	No	Yes	Yes	No	
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	Yes	Yes	Yes	Yes	No	
Natural Disaster or safety related school program	Yes	Yes	Yes	Yes	No	
Storm Ready certification	No	No	No	No	No	
Firewise Communities certification	No	No	No	No	No	
Public/Private partnership initiatives addressing disaster-related issues	Yes	No	No	No	No	
Other	No	No	No	No	No	

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

Flood Insurance and Community Rating System

Participation in the CRS strengthens local capabilities by lowering flood insurance premiums for jurisdictions that exceed NFIP minimum requirements. As noted in the CRS Eligible Communities List effective April 1, 2021, neither Washington Parish nor the incorporated jurisdictions of Angie, Bogalusa, Franklinton, or Varnado are active participants in the 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 2011², 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

² <https://www.fema.gov/national-flood-insurance-program-community-rating-system>

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

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

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

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

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

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

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

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

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

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

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

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

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

NFIP Worksheets

NFIP worksheets for Washington Parish and its jurisdictions can be found in *Appendix E: State Required Worksheets*.

This Page Left Intentionally Blank

4. Mitigation Strategy

Introduction

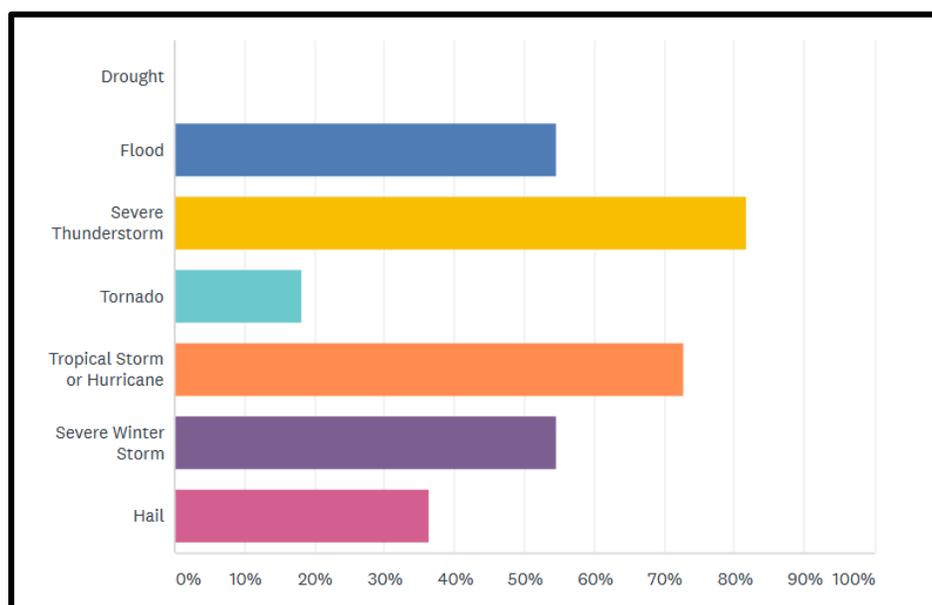
The Hazard Mitigation Strategy for Washington Parish and its incorporated communities have a common guiding principle and is the demonstration of the parish's commitment to reduce risks from hazards. The strategy also serves as a guide for parish and local decision makers as they commit resources to 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 Washington Parish Hazard Mitigation Plan Steering Committee under the coordination of the Washington 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 March 2021 – July 2021.

An online public opinion survey of Washington Parish residents was conducted between March 2021 and July 2021. The survey was designed to capture public perceptions and opinions regarding natural hazards in the Washington Parish planning area. In addition, the survey collected information regarding the methods and techniques preferred by the respondents for reducing the risks and losses associated with local hazards.

When asked which natural disasters citizens or someone in their household had experienced in the last five years, the following responses were recorded:

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

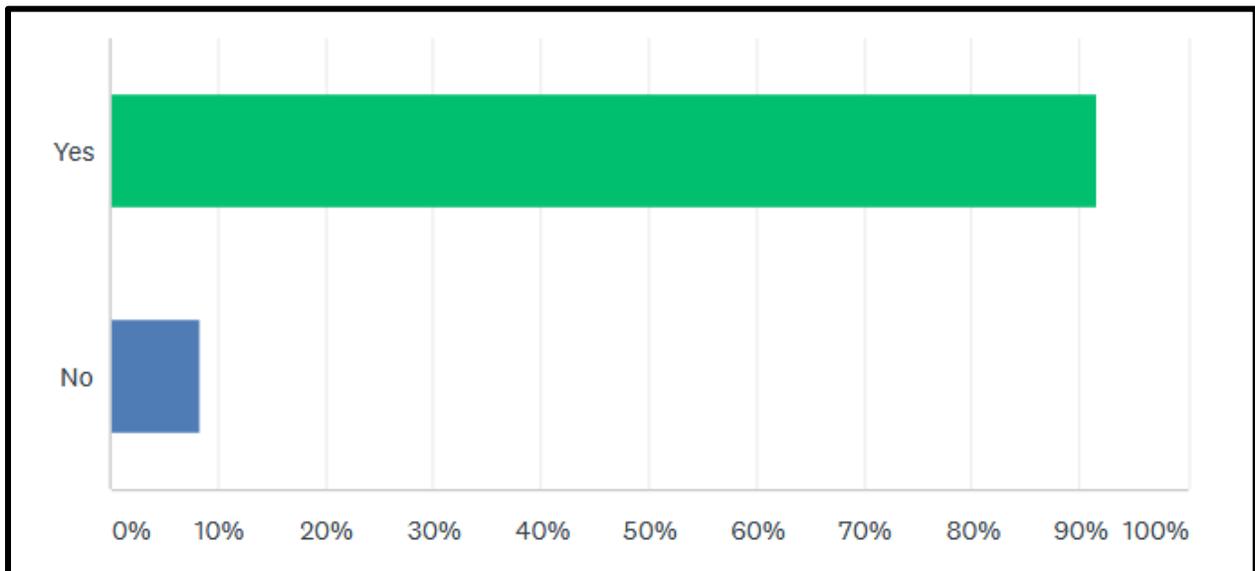


The survey results also indicated which natural disasters citizens were *concerned* with being affected by in the Washington Parish planning area. The top three natural disasters selected for “very concerned” were:

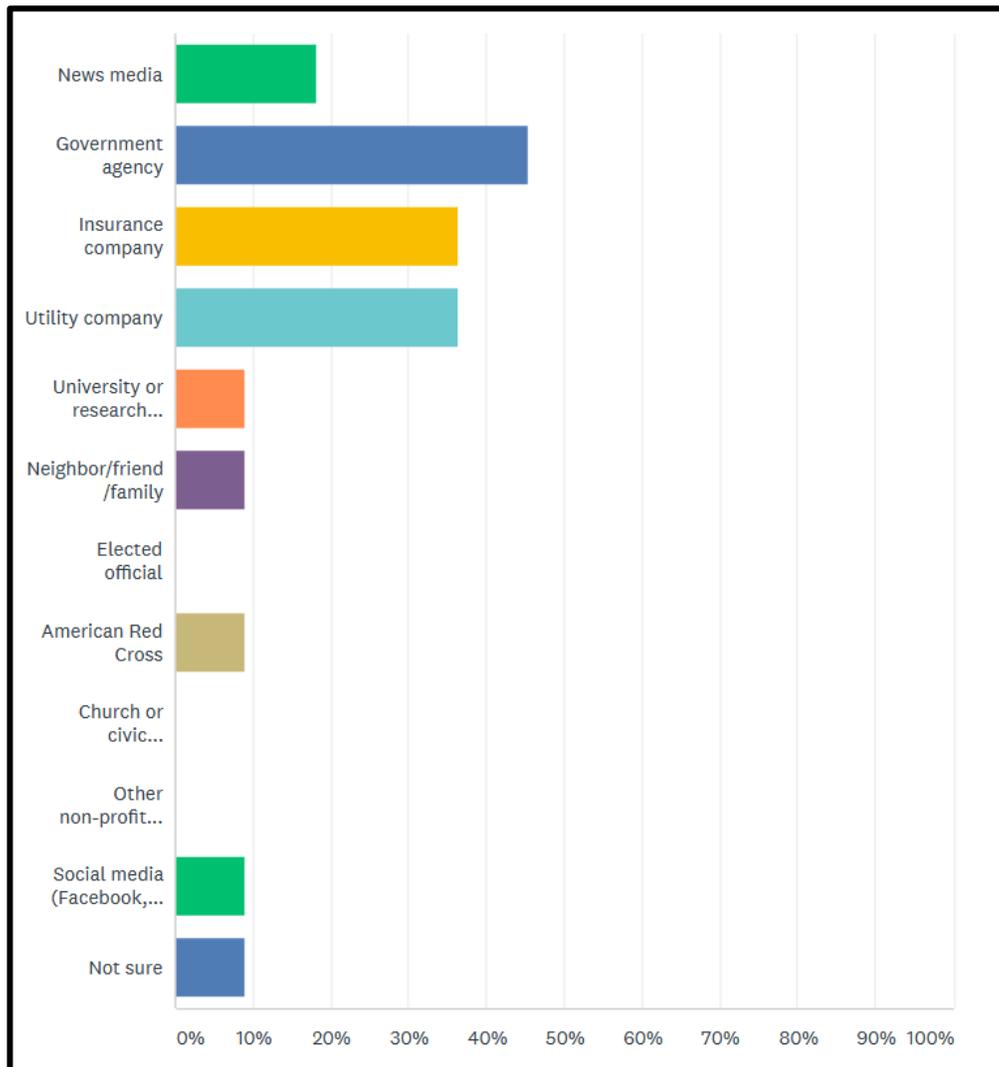
1. Tropical Storm or Hurricane; Flooding; Severe Thunderstorm (all tied for 1st)
2. Severe Winter Storm
3. Tornado

	NOT CONCERNED	NOT VERY CONCERNED	NEUTRAL	SOMEWHAT CONCERNED	VERY CONCERNED	TOTAL	WEIGHTED AVERAGE
Drought	9.09% 1	18.18% 2	54.55% 6	9.09% 1	9.09% 1	11	2.91
Flood	0.00% 0	0.00% 0	8.33% 1	33.33% 4	58.33% 7	12	4.50
Severe Thunderstorm	0.00% 0	0.00% 0	8.33% 1	33.33% 4	58.33% 7	12	4.50
Tornado	0.00% 0	8.33% 1	8.33% 1	33.33% 4	50.00% 6	12	4.25
Tropical Storm or Hurricane	0.00% 0	0.00% 0	0.00% 0	41.67% 5	58.33% 7	12	4.58
Severe Winter Storm	0.00% 0	18.18% 2	9.09% 1	18.18% 2	54.55% 6	11	4.09
Hail	0.00% 0	0.00% 0	16.67% 2	41.67% 5	41.67% 5	12	4.25

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



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



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

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

<https://www.surveymonkey.com/results/SM-VXMB83WD9/>

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 Washington 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, Washington 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 Washington 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:

Goal 1: Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive flood losses in the parish and municipalities.

Goal 2: Enhance public awareness and understanding of hazard mitigation.

Goal 3: Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards.

Goal 4: Enhance local capability and improve data collection as relates to hazard mitigation

The Mitigation Action Plan focuses on actions to be taken by Washington 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.

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 Washington Parish Hazard Mitigation Plan Steering Committee identified new actions that would reduce and/or prevent future damage within the Washington 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 Washington 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.

Washington Parish Mitigation Actions

Previous Action Update

Washington Unincorporated Mitigation Actions							
Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
W1: Hardening of buildings	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after storms.	HMGP and Parish funding	July 2021-December 2024	Washington Parish OHSEP Director	Tropical Cyclones, Tornadoes	1	Ongoing

<p>W2: Drainage - flood relief projects</p>	<p>Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Initially identified projects include projects within the unincorporated areas, and other potential sites. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.</p>	<p>HMGP and Parish funding</p>	<p>July 2021-December 2024</p>	<p>Washington Parish OHSEP Director</p>	<p>Flooding, Tropical Cyclones</p>	<p>1,3</p>	<p>Ongoing</p>
<p>W3: Residential elevations and acquisitions for repetitive loss properties</p>	<p>Elevation or acquisition-demolition of properties. Benefits: Relieves property owners of the continual flooding problems. Saves flood relief and damage repayment for each property.</p>	<p>HMGP</p>	<p>July 2021-December 2024</p>	<p>Washington Parish OHSEP Director</p>	<p>Flooding</p>	<p>1,3</p>	<p>Ongoing</p>
<p>W4: Safe Room Projects</p>	<p>Construction of a safe room for first responders located in unincorporated Washington parish Other locations will be identified based on funding availability.</p>	<p>HMGP and Parish</p>	<p>January 2022-December 2024</p>	<p>Washington Parish OHSEP Director</p>	<p>Tornadoes, Tropical Cyclones, Wildfires</p>	<p>1</p>	<p>Carried Over/ Not Started (See Washington Action 1)</p>

W5: Mitigation Public Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for flooding, tropical cyclone, tornadoes and wildfire hazards, as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	HMPG and Parish	July 2021-December 2024	Washington Parish OHSEP Director	Flooding, Tropical Cyclones, Tornadoes, Wildfires	1,2,3,4	Ongoing
W6: Emergency Shelters	Construct emergency shelters to provide shelter to the public for natural hazard events	HMPG and Parish	January 2022 - January 2024	Washington Parish OHSEP Director	Tornadoes, Tropical Cyclones, Wildfires	1	Carried Over/ Not Started (See Washington Action 2)
W7: Emergency Generators for Critical Facilities	Acquire and install emergency generators with transfer switches at identified critical facilities within the unincorporated areas of the parish.	HMPG and Parish	January 2022 - January 2024	Washington Parish OHSEP Director	Tornadoes, Tropical Cyclones, Wildfires	1	Ongoing
W8: Transfer Switch Installation	Installation of automatic transfer switches at 8 fire stations, Washington Parish Mechanic Shop	HMPG	1-5 years	Washington Parish OHSEP Director	Flooding, Tornadoes, Tropical Cyclones, Wildfires	1,3	Ongoing
W9: Wind Retrofitting	Wind retrofit of six schools in Washington Parish	HMPG	1-5 years	Washington Parish OHSEP Director	Tropical Cyclones, Tornadoes	1,3	Completed
W10: Phase 1 Wind Retrofit	Phase 1 of wind retrofitting for four Bogalusa City Schools	HMPG	1-5 years	Washington Parish OHSEP Director	Tropical Cyclones, Tornadoes	1,3	Completed
W11: Wind Retrofitting	Wind retrofit of four schools in Washington Parish	HMPG	1-5 years	Washington Parish OHSEP Director	Tropical Cyclones, Tornadoes		Completed
W12: Hardening Project	Hardening of Washington Parish Government Building and Courthouse	HMPG	1-5 years	Washington Parish OHSEP Director	Tropical Cyclones, Tornadoes	1,3	Completed
W13: Elevations	Elevation of eight severe repetitive loss properties	HMPG	1-5 years	Washington Parish OHSEP Director	Flooding, Tropical Cyclones	1,3,4	Completed
W14: Culvert work	Bridge to culvert (47)	HMPG	1-5 years	Washington Parish	Flooding, Tropical Cyclones	1,3,4	Completed

				OHSEP Director			
W15: Drainage	Drainage Improvements - Phase 1	HMPG	1-5 years	Washington Parish OHSEP Director	Flooding, Tropical Cyclones	1,3,4	Deleted
W16: Elevation and Acquisition Projects	Washington Parish (7) Elevation and (2) Acquisition Project	HMGP	1-5 years	Washington Parish OHSEP Director	Flooding, Tropical Cyclones	1,3,4	In Progress (See Washington Action 3)
W17: Elevation Projects	Phase 1 of Washington Parish (4) Elevation Project	HMGP	1-5 years	Washington Parish OHSEP Director	Flooding, Tropical Cyclones	1,3,4	In Progress (See Washington Action 4)

New Mitigation Actions

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS WASHINGTON PARISH	
DESCRIPTION	
WASHINGTON ACTION 1	Safe Room Projects
LEAD AGENCY	Director – Washington Parish OHSEP
SUPPORTING AGENCIES	Washington Unincorporated, City of Bogalusa, Town of Franklinton, Village of Angie, Village of Varnado and first responder agencies
TIMELINE	January 2022-December 2024
COST ESTIMATE	\$1.5M
POSSIBLE FUNDING SOURCE(S)	HMGP/Parish
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.
PRIORITY	High
Action Description	Construction of a safe room for first responders located in unincorporated Washington parish. Other locations will be identified based on funding availability.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Protects against loss of life and provides safe space for local government and first responders during hazardous events.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Weather

Additional Information:



IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS WASHINGTON PARISH	
DESCRIPTION	
WASHINGTON ACTION 2	Emergency Shelters
LEAD AGENCY	Director – Washington Parish OHSEP
SUPPORTING AGENCIES	Washington Unincorporated, City of Bogalusa, Town of Franklinton, Village of Angie, Village of Varnado
TIMELINE	January 2022-January 2024
COST ESTIMATE	\$3.5M
POSSIBLE FUNDING SOURCE(S)	HMPG/Parish
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.
PRIORITY	High
Action Description	Construct emergency shelters to provide shelter to the public for natural hazard events.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Protects against loss of life and provides safety during hazardous events.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Weather

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS WASHINGTON PARISH	
DESCRIPTION	
WASHINGTON ACTION 3	Elevation and Acquisition Projects
LEAD AGENCY	Director – Washington Parish OHSEP
SUPPORTING AGENCIES	Washington Unincorporated, City of Bogalusa, Town of Franklinton, Village of Angie, Village of Varnado
TIMELINE	1-5 years
COST ESTIMATE	\$1.5M
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	<p>1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.</p> <p>3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards.</p> <p>4) Enhance local capability and improve data collection as relates to hazard mitigation.</p>
PRIORITY	Low
Action Description	Washington Parish (7) Elevation and (2) Acquisition Projects for those vulnerable properties funded by DR 4263.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Relieves property owners and local government of future damages and/or claims of homes and structures in flood prone areas.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS WASHINGTON PARISH	
DESCRIPTION	
WASHINGTON ACTION 4	Elevation Projects
LEAD AGENCY	Director – Washington Parish OHSEP
SUPPORTING AGENCIES	Washington Unincorporated, City of Bogalusa, Town of Franklinton, Village of Angie, Village of Varnado
TIMELINE	1-5 years
COST ESTIMATE	\$870,084.00
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	<p>1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.</p> <p>3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards.</p> <p>4) Enhance local capability and improve data collection as relates to hazard mitigation.</p>
PRIORITY	Low
Action Description	Phase 1 of Washington Parish Elevation Projects funded by DR 4277.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Relieves property owners and local government of future damages and/or claims of homes and structures in flood prone areas.
Current Status of Action	Ongoing/In Progress from 2015 Update
Hazard Addressed	Flooding, Tropical Cyclones

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS	
WASHINGTON PARISH	
DESCRIPTION	
WASHINGTON ACTION 5	Wind Retrofitting
LEAD AGENCY	Director – Washington Parish OHSEP
SUPPORTING AGENCIES	Washington Unincorporated, City of Bogalusa, Town of Franklinton, Village of Angie, Village of Varnado
TIMELINE	1-5 years
COST ESTIMATE	\$2.0M
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	<p>1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.</p> <p>3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards.</p> <p>4) Enhance local capability and improve data collection as relates to hazard mitigation.</p>
PRIORITY	High
Action Description	Wind retrofitting for all critical facilities throughout the parish.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Prevents high wind damage to essential facilities, allowing for continued use during and after events.
Current Status of Action	New
Hazard Addressed	Thunderstorms, Tropical Cyclones, Tornadoes

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS	
WASHINGTON PARISH	
DESCRIPTION	
WASHINGTON ACTION 6	Warming Stations
LEAD AGENCY	Director – Washington Parish OHSEP
SUPPORTING AGENCIES	Washington Unincorporated, City of Bogalusa, Town of Franklinton, Village of Angie, Village of Varnado
TIMELINE	1-5 years
COST ESTIMATE	\$250,000
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.
PRIORITY	Medium
Action Description	Planning and execution of warming stations throughout the parish for vulnerable populations during longer than expected events with extended power outages and damage to infrastructure.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Protection of vulnerable populations during and after events.
Current Status of Action	New
Hazard Addressed	Winter Weather

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS WASHINGTON PARISH	
DESCRIPTION	
WASHINGTON ACTION 7	Elevation and Acquisition Projects
LEAD AGENCY	Director – Washington Parish OHSEP
SUPPORTING AGENCIES	Washington Unincorporated, City of Bogalusa, Town of Franklinton, Village of Angie, Village of Varnado
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	<p>1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.</p> <p>3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards.</p> <p>4) Enhance local capability and improve data collection as relates to hazard mitigation.</p>
PRIORITY	Medium
Action Description	Elevation and acquisitions projects for all vulnerable properties throughout the parish.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Relieves property owners and local government of future damages and/or claims of homes or other structures in flood prone areas.
Current Status of Action	New
Hazard Addressed	Flooding, Tropical Cyclones

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS WASHINGTON PARISH	
DESCRIPTION	
WASHINGTON ACTION 8	Fire-Resistant Construction Techniques
LEAD AGENCY	Washington Parish Government
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	As funding is available; 1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish Budget, HMGP
ASSOCIATED GOALS	<ol style="list-style-type: none"> 1) Identify and pursue preventative measures that will reduce future damages from hazards 3) Facilitate sound development in the parish to reduce or eliminate the potential impact of hazards
PRIORITY	Low
Action Description	<ul style="list-style-type: none"> • Encourage the use of non-combustible materials (i.e., stone, brick, and stucco) for new construction in wildfire hazard areas. • Using fire resistant roofing and building materials in remodels, upgrades, and new construction. • Encourage the use of functional shutters on windows.
Type of Mitigation Action	Local Planning and Regulations
How Action Aligns with Risk Reduction	Encouraging fire-resistant construction will provide the citizens of Washington Parish a safety measure to protect them against the possibility of a wildfire hazard.
Current Status of Action	New
Hazard Addressed	Wildfires

Village of Angie

Previous Action Update

Village of Angie - Action Update							
Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
A1: Hardening of buildings	Retrofit city public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after storms.	HMGP and Parish funding	1-5 years	Mayor of Village of Angie	Tropical Cyclones, Tornadoes	1	Carried Over/Not Started (See Angie Action 4)
A2: Drainage - flood relief projects	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Initially identified projects include projects within the Village of Angie, and other potential sites. Benefits: Relieves local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	HMGP and Parish funding	1-5 years	Mayor of Village of Angie	Flooding, Tropical Cyclones	1,3	Carried Over/Not Started (See Angie Action 3)
A3: Residential elevations and acquisitions for repetitive loss properties	Elevation or acquisition-demolition of properties. Benefits: Relieves property owners of the continual flooding problems. Saves flood relief and damage repayment for each property.	HMGP	1-5 years	Mayor of Village of Angie	Flooding	1,3	Carried Over/Not Started (See Angie Action 7)
A4: Safe Room Projects	Construction of a safe room for first responders located in the Village of Angie. Other locations will be identified based on funding availability.	HMGP and Parish	January 2022- January 2024	Mayor of Village of Angie	Tornadoes, Tropical Cyclones, Wildfires	1	Carried Over/Not Started (See Angie Action 1)

<p>A5: Mitigation Public Outreach</p>	<p>Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for flooding, tropical cyclone, tornadoes and wildfire hazards, as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.</p>	<p>HMPG and Parish</p>	<p>1-5 years</p>	<p>Mayor of Village of Angie</p>	<p>Flooding, Tropical Cyclones, Tornadoes, Wildfires</p>	<p>1,2,3,4</p>	<p>Carried Over/Not Started (See Angie Action 8)</p>
<p>A6: Emergency Shelters</p>	<p>Construct emergency shelters to provide shelter to the public for natural hazard events</p>	<p>HMPG and Parish</p>	<p>January 2022- January 2024</p>	<p>Mayor of Village of Angie</p>	<p>Tornadoes, Tropical Cyclones, Wildfires</p>	<p>1</p>	<p>Carried Over/Not Started (See Angie Action 2)</p>
<p>A7: Emergency Generators for Critical Facilities</p>	<p>Acquire and install emergency generators with transfer switches at identified critical facilities within the Village of Angie.</p>	<p>HMPG and Parish</p>	<p>1-5 years</p>	<p>Mayor of Village of Angie</p>	<p>Tornadoes, Tropical Cyclones, Wildfires</p>	<p>1</p>	<p>Carried Over/Not Started (See Angie Action 9)</p>

New Mitigation Actions

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF ANGIE	
DESCRIPTION	
ANGIE ACTION 1	Safe Room Projects
LEAD AGENCY	Mayor – Village of Angie
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	January 2022-December 2024
COST ESTIMATE	\$1.5M
POSSIBLE FUNDING SOURCE(S)	HMGP/Parish
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.
PRIORITY	High
Action Description	Construction of a safe room for first responders located in Washington Parish. Other locations will be identified based on funding availability.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Protects against loss of life and provides safe space for local government and first responders during hazardous events.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Weather

Additional Information:



IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF ANGIE	
DESCRIPTION	
ANGIE ACTION 2	Emergency Shelters
LEAD AGENCY	Mayor – Village of Angie
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	January 2022-January 2024
COST ESTIMATE	\$3.5M
POSSIBLE FUNDING SOURCE(S)	HMPG/Parish
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.
PRIORITY	High
Action Description	Construct emergency shelters to provide shelter to the public for natural hazard events.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Protects against loss of life and provides safety during hazardous events.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Weather

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF ANGIE	
DESCRIPTION	
ANGIE ACTION 3	Drainage - Flood Relief Projects
LEAD AGENCY	Mayor – Village of Angie
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMPG/Parish Funding
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities. 3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards.
PRIORITY	Medium
Action Description	Relieves local government and property owners of the continual flooding problems, with closed or impassable roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Relieves local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF ANGIE	
DESCRIPTION	
ANGIE ACTION 4	Hardening of Buildings
LEAD AGENCY	Mayor – Village of Angie
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMPG/Parish
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities. 3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards.
PRIORITY	Medium
Action Description	Retrofit city public buildings exterior shell to maintain use during and after storm events.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Reduces damage from hazardous events and allows for continued use and operation of public buildings during and after natural hazard events.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Thunderstorms, Tropical Cyclones, Tornadoes

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF ANGIE	
DESCRIPTION	
ANGIE ACTION 5	Wind Retrofitting
LEAD AGENCY	Mayor – Village of Angie
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	\$2.0M
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities. 3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards. 4) Enhance local capability and improve data collection as relates to hazard mitigation.
PRIORITY	High
Action Description	Wind retrofitting for all critical facilities throughout the parish.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Reduces damage from high winds and allows for continued use and operation of critical facilities during and after natural hazard events.
Current Status of Action	New
Hazard Addressed	Thunderstorms, Tropical Cyclones, Tornadoes

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF ANGIE	
DESCRIPTION	
ANGIE ACTION 6	Warming Stations
LEAD AGENCY	Mayor – Village of Angie
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	\$250,000
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.
PRIORITY	Medium
Action Description	Planning and execution of warming stations throughout the parish for vulnerable populations during longer than expected events with extended power outages and damage to infrastructure.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Protection of vulnerable populations during and after events.
Current Status of Action	New
Hazard Addressed	Winter Weather

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF ANGIE	
DESCRIPTION	
ANGIE ACTION 7	Elevation and Acquisition Projects
LEAD AGENCY	Mayor – Village of Angie
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities. 3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards. 4) Enhance local capability and improve data collection as relates to hazard mitigation.
PRIORITY	Medium
Action Description	Elevation and acquisitions projects for all vulnerable properties throughout the parish.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Relieves property owners and local government of future damages and/or claims of homes and structures in flood prone areas.
Current Status of Action	New
Hazard Addressed	Flooding, Tropical Cyclones

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF ANGIE	
DESCRIPTION	
ANGIE ACTION 8	Mitigation Public Outreach
LEAD AGENCY	Mayor – Village of Angie
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMPG/Parish
ASSOCIATED GOALS	<ol style="list-style-type: none"> 1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities. 2) Enhance public awareness and understanding of hazard mitigation. 3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards. 4) Enhance local capability and improve data collection as relates to hazard mitigation.
PRIORITY	Medium
Action Description	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for flooding, tropical cyclones, tornadoes, wildfire hazards, winter weather, and thunderstorms, as well as providing information on high-risk areas.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects, Education and Awareness Programs
How Action Aligns with Risk Reduction	Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Weather

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF ANGIE	
DESCRIPTION	
ANGIE ACTION 9	Emergency Generators for Critical Facilities
LEAD AGENCY	Mayor – Village of Angie
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.
PRIORITY	Medium
Action Description	Acquire and install emergency generators with transfer switches at identified critical facilities within the Village of Angie.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Allows for continued operations of critical facilities during and after events.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Weather

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF ANGIE	
DESCRIPTION	
ANGIE ACTION 10	Residential Elevation and Acquisitions for Repetitive Loss Properties
LEAD AGENCY	Mayor – Village of Angie
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities. 3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards.
PRIORITY	Medium
Action Description	Elevation or acquisition-demolition of properties.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Relieves property owners and local government of future damages and/or claims of homes and structures in flood prone areas.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding

Additional Information:

City of Bogalusa

Previous Action Update

City of Bogalusa - Action Update							
Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
B1: Hardening of buildings	Retrofit city public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after storms.	HMGP and Parish funding	1-5 years	Mayor of City of Bogalusa	Tropical Cyclones, Tornadoes	1	Ongoing
B2: Drainage - flood relief projects	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Initially identified projects include projects within the City of Bogalusa, and other potential sites. Benefits: Relieves local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	HMGP and Parish funding	1-5 years	Mayor of City of Bogalusa	Flooding, Tropical Cyclones	1,3	Ongoing
B3: Residential elevations and acquisitions for repetitive loss properties	Elevation or acquisition-demolition of properties. Benefits: Relieves property owners of the continual flooding problems. Saves flood relief and damage repayment for each property.	HMGP	1-5 years	Mayor of City of Bogalusa	Flooding	1,3	Ongoing
B4: Safe Room Projects	Construction of a safe room for first responders located in the City of Bogalusa. Other locations will be identified based on funding availability.	HMGP and Parish	January 2022- January 2024	Mayor of City of Bogalusa	Tornadoes, Tropical Cyclones, Wildfires	1	Not Started/Carried Over (See Bogalusa Action 1)

<p>B5: Mitigation Public Outreach</p>	<p>Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for flooding, tropical cyclone, tornadoes and wildfire hazards, as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.</p>	<p>HMPG and Parish</p>	<p>1-5 years</p>	<p>Mayor of City of Bogalusa</p>	<p>Flooding, Tropical Cyclones, Tornadoes, Wildfires</p>	<p>1,2,3,4</p>	<p>Ongoing</p>
<p>B6: Emergency Shelters</p>	<p>Construct emergency shelters to provide shelter to the public for natural hazard events</p>	<p>HMPG and Parish</p>	<p>January 2022 - January 2024</p>	<p>Mayor of City of Bogalusa</p>	<p>Tornadoes, Tropical Cyclones, Wildfires</p>	<p>1</p>	<p>Not Started/Carried Over (See Bogalusa Action 2)</p>
<p>B7: Emergency Generators for Critical Facilities</p>	<p>Acquire and install emergency generators with transfer switches at identified critical facilities within the City of Bogalusa.</p>	<p>HMPG and Parish</p>	<p>1-5 years</p>	<p>Mayor of City of Bogalusa</p>	<p>Tornadoes, Tropical Cyclones, Wildfires</p>	<p>1</p>	<p>Ongoing</p>
<p>B8: Culvert work</p>	<p>Bridge to culvert</p>	<p>HMPG and City funds</p>	<p>January 2022- January 2024</p>	<p>Mayor of City of Bogalusa</p>	<p>Flooding</p>	<p>1</p>	<p>Not Started/Carried Over (See Bogalusa Action 5)</p>

New Mitigation Actions

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CITY OF BOGALUSA	
DESCRIPTION	
BOGALUSA ACTION 1	Safe Room Projects
LEAD AGENCY	Mayor – City of Bogalusa
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	January 2022-December 2024
COST ESTIMATE	\$1.1M
POSSIBLE FUNDING SOURCE(S)	HMGP/Parish
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.
PRIORITY	Low
Action Description	Construction of a safe room for first responders located in Washington Parish. Other locations will be identified based on funding availability.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Protects against loss of life and provides safe space for local government and first responders during hazardous events.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Weather

Additional Information:



IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CITY OF BOGALUSA	
DESCRIPTION	
BOGALUSA ACTION 2	Emergency Shelters
LEAD AGENCY	Mayor – City of Bogalusa
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	January 2022-January 2024
COST ESTIMATE	\$1.1M
POSSIBLE FUNDING SOURCE(S)	HMPG/Parish
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.
PRIORITY	Low
Action Description	Construct emergency shelters to provide shelter to the public for natural hazard events.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Protects against loss of life and provides safety during hazardous events.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Weather

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CITY OF BOGALUSA	
DESCRIPTION	
BOGALUSA ACTION 4	Wind Retrofitting
LEAD AGENCY	Mayor – City of Bogalusa
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	\$1.2M
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	<p>1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.</p> <p>3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards.</p> <p>4) Enhance local capability and improve data collection as relates to hazard mitigation.</p>
PRIORITY	Low
Action Description	Wind retrofitting for all critical facilities throughout the parish.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Reduces damage from high winds and allows for continued use and operation of critical facilities during and after natural hazard events.
Current Status of Action	New
Hazard Addressed	Thunderstorms, Tropical Cyclones, Tornadoes

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CITY OF BOGALUSA	
DESCRIPTION	
BOGALUSA ACTION 5	Culvert Work
LEAD AGENCY	Mayor – City of Bogalusa
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	January 2022-January 2024
COST ESTIMATE	\$2.5M
POSSIBLE FUNDING SOURCE(S)	HMPG/City Funding
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities. 3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards. 4) Enhance local capability and improve data collection as relates to hazard mitigation.
PRIORITY	Low
Action Description	Construction of a bridge to culvert.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Reduces existing and future flood damage.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CITY OF BOGALUSA	
DESCRIPTION	
BOGALUSA ACTION 6	Warming Stations
LEAD AGENCY	Mayor – City of Bogalusa
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	\$250,000
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.
PRIORITY	Low
Action Description	Planning and execution of warming stations throughout the parish for vulnerable populations during longer than expected events with extended power outages and damage to infrastructure.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Protection of vulnerable populations during and after events.
Current Status of Action	New
Hazard Addressed	Winter Weather

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CITY OF BOGALUSA	
DESCRIPTION	
BOGALUSA ACTION 7	Elevation and Acquisition Projects
LEAD AGENCY	Mayor – City of Bogalusa
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities. 3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards. 4) Enhance local capability and improve data collection as relates to hazard mitigation.
PRIORITY	Medium
Action Description	Elevation and acquisitions projects for all vulnerable properties throughout the parish.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Relieves property owners and local government of future damages and/or claims of homes and structures in flood prone areas.
Current Status of Action	New
Hazard Addressed	Flooding, Tropical Cyclones

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS CITY OF BOGALUSA	
DESCRIPTION	
BOGALUSA ACTION 8	Fire-Resistant Construction Techniques
LEAD AGENCY	City of Bogalusa Mayor's Office
SUPPORTING AGENCIES	Washington Parish OHSEP; Washington Parish Government
TIMELINE	As funding is available; 1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish Budget, HMGP
ASSOCIATED GOALS	<ol style="list-style-type: none"> 1) Identify and pursue preventative measures that will reduce future damages from hazards 3) Facilitate sound development in the parish to reduce or eliminate the potential impact of hazards
PRIORITY	Low
Action Description	<ul style="list-style-type: none"> • Encourage the use of non-combustible materials (i.e., stone, brick, and stucco) for new construction in wildfire hazard areas. • Using fire resistant roofing and building materials in remodels, upgrades, and new construction. • Encourage the use of functional shutters on windows.
Type of Mitigation Action	Local Planning and Regulations
How Action Aligns with Risk Reduction	Encouraging fire-resistant construction will provide the citizens of Bogalusa a safety measure to protect them against the possibility of a wildfire hazard.
Current Status of Action	New
Hazard Addressed	Wildfires

Additional Information:

Town of Franklinton

Previous Action Update

Mitigation Actions for Town of Franklinton							
Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
F1: Hardening of buildings	Retrofit city public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after storms.	HMGP and Parish funding	1-5 years	Mayor of Town of Franklinton	Tropical Cyclones, Tornadoes	1	Not Started/Carried Over (See Franklinton Action 4)
F2: Drainage - flood relief projects	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Initially identified projects include projects within the Town of Franklinton, and other potential sites. Benefits: Relieves local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	HMGP and Parish funding	1-5 years	Mayor of Town of Franklinton	Flooding, Tropical Cyclones	1,3	Ongoing
F3: Residential elevations and acquisitions for repetitive loss properties	Elevation or acquisition-demolition of properties. Benefits: Relieves property owners of the continual flooding problems. Saves flood relief and damage repayment for each property.	HMGP	1-5 years	Mayor of Town of Franklinton	Flooding	1,3	Ongoing
F4: Safe Room Projects	Construction of a safe room for first responders located in the Town of Franklinton. Other locations will be identified based on funding availability.	HMGP and Parish	January 2022- January 2024	Mayor of Town of Franklinton	Tornadoes, Tropical Cyclones, Wildfires	1	Not Started/Carried Over (See Franklinton Action 1)

<p>F5: Mitigation Public Outreach</p>	<p>Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for flooding, tropical cyclone, tornadoes and wildfire hazards, as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.</p>	<p>HMPG and Parish</p>	<p>1-5 years</p>	<p>Mayor of Town of Franklinton</p>	<p>Flooding, Tropical Cyclones, Tornadoes, Wildfires</p>	<p>1,2,3,4</p>	<p>Ongoing</p>
<p>F6: Emergency Shelters</p>	<p>Construct emergency shelters to provide shelter to the public for natural hazard events</p>	<p>HMPG and Parish</p>	<p>January 2022 - January 2024</p>	<p>Mayor of Town of Franklinton</p>	<p>Tornadoes, Tropical Cyclones, Wildfires</p>	<p>1</p>	<p>Not Started/Carried Over (See Franklinton Action 2)</p>
<p>F7: Emergency Generators for Critical Facilities</p>	<p>Acquire and install emergency generators with transfer switches at identified critical facilities within the Town of Franklinton.</p>	<p>HMPG and Parish</p>	<p>1-5 years</p>	<p>Mayor of Town of Franklinton</p>	<p>Tornadoes, Tropical Cyclones, Wildfires</p>	<p>1</p>	<p>Ongoing</p>

New Mitigation Actions

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF FRANKLINTON	
DESCRIPTION	
FRANKLINTON ACTION 1	Safe Room Projects
LEAD AGENCY	Mayor – Town of Franklinton
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	January 2022-December 2024
COST ESTIMATE	\$1.5
POSSIBLE FUNDING SOURCE(S)	HMGP/Parish
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.
PRIORITY	Low
Action Description	Construction of a safe room for first responders located in Washington Parish. Other locations will be identified based on funding availability.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Protects against loss of life and provides safe space for local government and first responders during hazardous events.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Weather

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF FRANKLINTON	
DESCRIPTION	
FRANKLINTON ACTION 2	Emergency Shelters
LEAD AGENCY	Mayor – Town of Franklinton
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	January 2022-January 2024
COST ESTIMATE	\$350,000
POSSIBLE FUNDING SOURCE(S)	HMPG/Parish
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.
PRIORITY	High
Action Description	Construct emergency shelters to provide shelter to the public for natural hazard events.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Protects against loss of life and provides safety during hazardous events.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Weather

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF FRANKLINTON	
DESCRIPTION	
FRANKLINTON ACTION 3	Wind Retrofitting
LEAD AGENCY	Mayor – Town of Franklinton
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	\$2.0M
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities. 3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards. 4) Enhance local capability and improve data collection as relates to hazard mitigation.
PRIORITY	Low
Action Description	Wind retrofitting for all critical facilities throughout the parish.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Prevents high wind damage to essential facilities, allowing for continued use during and after events.
Current Status of Action	New
Hazard Addressed	Thunderstorms, Tropical Cyclones, Tornadoes

Additional Information:



IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF FRANKLINTON	
	DESCRIPTION
FRANKLINTON ACTION 4	Hardening of Buildings
LEAD AGENCY	Mayor – Town of Franklinton
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	\$2.0M
POSSIBLE FUNDING SOURCE(S)	HMPG/City Funding
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities. 3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards.
PRIORITY	Medium
Action Description	Retrofit city public buildings exterior shell to maintain use during and after storm events.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Reduces damage from hazardous events and allows for continued use and operation of public buildings during and after natural hazard events.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Thunderstorms, Tropical Cyclones, Tornadoes

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF FRANKLINTON	
DESCRIPTION	
FRANKLINTON ACTION 5	Warming Stations
LEAD AGENCY	Mayor – Town of Franklinton
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	\$250,000
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.
PRIORITY	Medium
Action Description	Planning and execution of warming stations throughout the parish for vulnerable populations during longer than expected events with extended power outages and damage to infrastructure.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Protection of vulnerable populations during and after events.
Current Status of Action	New
Hazard Addressed	Winter Weather

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF FRANKLINTON	
DESCRIPTION	
FRANKLINTON ACTION 6	Elevation and Acquisition Projects
LEAD AGENCY	Mayor – Town of Franklinton
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities. 3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards. 4) Enhance local capability and improve data collection as relates to hazard mitigation.
PRIORITY	Medium
Action Description	Elevation and acquisitions projects for all vulnerable properties throughout the parish.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Relieves property owners and local government of future damages and/or claims of homes or other structures in flood prone areas.
Current Status of Action	New
Hazard Addressed	Flooding, Tropical Cyclones

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF FRANKLINTON	
DESCRIPTION	
FRANKLINTON ACTION 7	Fire-Resistant Construction Techniques
LEAD AGENCY	Town of Franklinton Mayor’s Office
SUPPORTING AGENCIES	Washington Parish OHSEP; Washington Parish Government
TIMELINE	As funding is available; 1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish Budget, HMGP
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 3) Facilitate sound development in the parish to reduce or eliminate the potential impact of hazards
PRIORITY	Low
Action Description	<ul style="list-style-type: none"> • Encourage the use of non-combustible materials (i.e., stone, brick, and stucco) for new construction in wildfire hazard areas. • Using fire resistant roofing and building materials in remodels, upgrades, and new construction. • Encourage the use of functional shutters on windows.
Type of Mitigation Action	Local Planning and Regulations
How Action Aligns with Risk Reduction	Encouraging fire-resistant construction will provide the citizens of Franklinton a safety measure to protect them against the possibility of a wildfire hazard.
Current Status of Action	New
Hazard Addressed	Wildfires

Additional Information:

Village of Varnado

Previous Action Update

Mitigation Actions for Village of Varnado							
Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
V1: Hardening of buildings	Retrofit city public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after storms.	HMGP and Parish funding	1-5 years	Mayor of Village of Varnado	Tropical Cyclones, Tornadoes	1	Carried Over/Not Started (See Varnado Action 4)
V2: Drainage - flood relief projects	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Initially identified projects include projects within the Village of Varnado, and other potential sites. Benefits: Relieves local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	HMGP and Parish funding	1-5 years	Mayor of Village of Varnado	Flooding, Tropical Cyclones	1,3	Carried Over/Not Started (See Varnado Action 3)
V3: Residential elevations and acquisitions for repetitive loss properties	Elevation or acquisition-demolition of properties. Benefits: Relieves property owners of the continual flooding problems. Saves flood relief and damage repayment for each property.	HMGP	1-5 years	Mayor of Village of Varnado	Flooding	1,3	Carried Over/Not Started (See Varnado Action 10)
V4: Safe Room Projects	Construction of a safe room for first responders located in the Village of Varnado. Other locations will be identified based on funding availability.	HMGP and Parish	January 2022- January 2024	Mayor of Village of Varnado	Tornadoes, Tropical Cyclones, Wildfires	1	Carried Over/Not Started (See Varnado Action 1)

<p>V5: Mitigation Public Outreach</p>	<p>Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for flooding, tropical cyclone, tornadoes and wildfire hazards, as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.</p>	<p>HMPG and Parish</p>	<p>1-5 years</p>	<p>Mayor of Village of Varnado</p>	<p>Flooding, Tropical Cyclones, Tornadoes, Wildfires</p>	<p>1,2,3,4</p>	<p>Carried Over/Not Started (See Varnado Action 8)</p>
<p>V6: Emergency Shelters</p>	<p>Construct emergency shelters to provide shelter to the public for natural hazard events</p>	<p>HMPG and Parish</p>	<p>January 2022 - January 2024</p>	<p>Mayor of Village of Varnado</p>	<p>Tornadoes, Tropical Cyclones, Wildfires</p>	<p>1</p>	<p>Carried Over/Not Started (See Varnado Action 2)</p>
<p>V7: Emergency Generators for Critical Facilities</p>	<p>Acquire and install emergency generators with transfer switches at identified critical facilities within the Village of Varnado.</p>	<p>HMPG and Parish</p>	<p>1-5 years</p>	<p>Mayor of Village of Varnado</p>	<p>Tornadoes, Tropical Cyclones, Wildfires</p>	<p>1</p>	<p>Carried Over/Not Started (See Varnado Action 9)</p>

New Mitigation Actions

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF VARNADO	
DESCRIPTION	
VARNADO ACTION 1	Safe Room Projects
LEAD AGENCY	Mayor – Village of Varnado
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	January 2022-December 2024
COST ESTIMATE	\$1.5M
POSSIBLE FUNDING SOURCE(S)	HMGP/Parish
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.
PRIORITY	High
Action Description	Construction of a safe room for first responders located in Washington Parish. Other locations will be identified based on funding availability.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Protects against loss of life and provides safe space for local government and first responders during hazardous events.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Weather

Additional Information:



IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF VARNADO	
DESCRIPTION	
VARNADO ACTION 2	Emergency Shelters
LEAD AGENCY	Mayor – Village of Varnado
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	January 2022-January 2024
COST ESTIMATE	\$3.5M
POSSIBLE FUNDING SOURCE(S)	HMPG/Parish
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.
PRIORITY	High
Action Description	Construct emergency shelters to provide shelter to the public for natural hazard events.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Protects against loss of life and provides safety during hazardous events.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Weather

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF VARNADO	
DESCRIPTION	
VARNADO ACTION 3	Drainage - Flood Relief Projects
LEAD AGENCY	Mayor – Village of Varnado
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMPG/Parish Funding
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities. 3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards.
PRIORITY	Medium
Action Description	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Initially identified projects include projects within the Village of Varnado, and other potential sites.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Relieves local government and property owners of the continual flooding problems, with closed or impassable roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF VARNADO	
DESCRIPTION	
VARNADO ACTION 4	Hardening of Buildings
LEAD AGENCY	Mayor – Village of Varnado
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMPG/Parish
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities. 3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards.
PRIORITY	Medium
Action Description	Retrofit city public buildings exterior shell to maintain use during and after storm events.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Reduces damage from hazardous events and allows for continued use and operation of public buildings during and after natural hazard events.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Thunderstorms, Tropical Cyclones, Tornadoes

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF VARNADO	
DESCRIPTION	
VARNADO ACTION 5	Wind Retrofitting
LEAD AGENCY	Mayor – Village of Varnado
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	\$2.0M
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities. 3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards. 4) Enhance local capability and improve data collection as relates to hazard mitigation.
PRIORITY	High
Action Description	Wind retrofitting for all critical facilities throughout the parish.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Reduces damage from high winds and allows for continued use and operation of critical facilities during and after natural hazard events.
Current Status of Action	New
Hazard Addressed	Thunderstorms, Tropical Cyclones, Tornadoes

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF VARNADO	
DESCRIPTION	
VARNADO ACTION 6	Warming Stations
LEAD AGENCY	Mayor – Village of Varnado
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	\$250,000
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.
PRIORITY	Medium
Action Description	Planning and execution of warming stations throughout the parish for vulnerable populations during longer than expected events with extended power outages and damage to infrastructure.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Protection of vulnerable populations during and after events.
Current Status of Action	New
Hazard Addressed	Winter Weather

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF VARNADO	
DESCRIPTION	
VARNADO ACTION 7	Elevation and Acquisition Projects
LEAD AGENCY	Mayor – Village of Varnado
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities. 3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards. 4) Enhance local capability and improve data collection as relates to hazard mitigation.
PRIORITY	Medium
Action Description	Elevation and acquisitions projects for all vulnerable properties throughout the parish.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Relieves property owners and local government of future damages and/or claims of homes and structures in flood prone areas.
Current Status of Action	New
Hazard Addressed	Flooding, Tropical Cyclones

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF VARNADO	
DESCRIPTION	
VARNADO ACTION 8	Mitigation Public Outreach
LEAD AGENCY	Mayor – Village of Varnado
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMPG/Parish
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities. 2) Enhance public awareness and understanding of hazard mitigation. 3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards. 4) Enhance local capability and improve data collection as relates to hazard mitigation.
PRIORITY	Medium
Action Description	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for flooding, tropical cyclones, tornadoes, wildfire hazards, winter weather, and thunderstorms, as well as providing information on high-risk areas.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects, & Education and Awareness Programs
How Action Aligns with Risk Reduction	Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Weather

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF VARNADO	
DESCRIPTION	
VARNADO ACTION 9	Emergency Generators for Critical Facilities
LEAD AGENCY	Mayor – Village of Varnado
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities.
PRIORITY	Medium
Action Description	Acquire and install emergency generators with transfer switches at identified critical facilities within the Village of Varnado.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Allows for continued operations of critical facilities during and after events.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Weather

Additional Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF VARNADO	
DESCRIPTION	
VARNADO ACTION 10	Residential Elevation and Acquisitions for Repetitive Loss Properties
LEAD AGENCY	Mayor – Village of Varnado
SUPPORTING AGENCIES	Washington Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMPG
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards including the reduction of repetitive losses in the parish and its municipalities. 3) Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards.
PRIORITY	Medium
Action Description	Elevation or acquisition-demolition of properties.
Type of Mitigation Action	Local Plans and Regulations, Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Relieves property owners and local government of future damages and/or claims of homes and structures in flood prone areas.
Current Status of Action	New (Carried Over/Not Started from 2015 Update)
Hazard Addressed	Flooding, Tropical Cyclones, Tornadoes, Winter Weather, Thunderstorms

Additional 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.

Washington 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.

This Page Left Intentionally Blank

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 Washington Parish Hazard Mitigation Plan Update

The Washington 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
2/23/2021	Kick Off Email	Email	No	Schedule kick off call with Parish OHSEP and SDMI Staff.
3/2/2021	Kick Off Meeting	Phone Conference	No	Discuss with the Parish OHSEP Director and OHSEP staff requirements of the project. Discuss meeting schedules, committee make up, and next steps.
3/17/2021	Steering Committee Meeting (Planning Process)	Franklinton, LA	No	Discussion with Washington Parish Hazard Mitigation Steering Committee the process and expectations of plan participants. Discuss timeline and action items of each jurisdiction and parish.
6/4/2021	Steering Committee Meeting (Mitigation Actions)	Franklinton, LA	No	Discussion with Washington Parish Hazard Mitigation Steering Committee of the outstanding data required for plan update, as well as discussion of mitigation actions (old and new) for plan update. Continued timeline discussions.
7/13/2021	Risk Assessment Review with Steering Committee	Bogalusa, LA	Yes	Presentation of Risk Assessment Hazards and maps to Steering Committee.
7/13/2021	Public Meeting #1	Bogalusa, LA	Yes	Presentation of Risk Assessment Hazards and maps to Public. Presentation also includes current mitigation project highlights within communities and public survey discussion.
7/15/2021	Public Meeting #2	Zoom VTC	Yes	Presentation of Risk Assessment Hazards and maps to Public. Presentation also includes current mitigation project highlights within communities and public survey discussion.

Date	Meeting or Outreach	Location	Public Invited	Purpose
2/23/2021 – 7/23/2021	Public Opinion Survey	Online	Yes	This survey asked participants about public perceptions and opinions regarding natural hazards in Washington 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-VXMB83WD9/

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

Coordination

The Washington Parish Office of Homeland Security and Emergency Preparedness (OHSEP) and Washington Parish 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. SDMI assisted the Parish Director with press releases and social media statements for notification to the media and general public for public meetings and public outreach activities.

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

Neighboring Community, Local and Regional Planning Process Involvement

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

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

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

SDMI assisted Washington Parish with encouraging the collaboration with neighboring communities by recommending the involvement of the neighboring parish Tangipahoa in the planning process. This neighboring parish had open invitations to attend any of the planning meetings. Washington Parish is aligned with Tangipahoa on future mitigation strategies as a region. The participation of the GOHSEP Region 9 Coordinator during the process also contributed to neighboring community representation.

The Tangipahoa OHSEP Director was invited via email and phone call to participate in an effort to collaborate with neighboring communities.

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:

Washington Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Bobbi Jo Breland	Director	WP Homeland Security	bbreland@wpgov.org
Jordan Dykes	Emergency Management Assistant	WP Homeland Security	jdykes@wpgov.org
Richard Thomas	Parish President	Washington Parish Government	rthomas@wpgov.org
JoAnna Thomas	Chairman	WP Communication District	jthomas@wpcde-911.com
James Hall	Director of Public Works	City of Bogalusa	james.hall@bogalusa.org
Ken Wheat	Director of Public Works	Washington Parish Government	kwheat@wpgov.org
Reginald McMasters	Director of Public Works	Town of Franklinton	rmcmasters@tofpw.com
Wendy Oquin Perrette	Mayor	City of Bogalusa	MayorPerrette@bogalusa.org
John Dawsey	Mayor	Village of Angie	angiecityhall@bellsouth.net
Parish Sumrall	Mayor	Village of Varnado	pariscs@netzero.com
Greg Route	Mayor	Town of Franklinton	groute@tofch.com

Richard Moody	Fire Chief	Bogalusa Fire Department	bfd_ram@yahoo.com
Dustin Wascom	Fire Chief	Franklinton Fire Department	dwascom@franklintonfirerescue.com
Kendall Bullen	Police Chief	Bogalusa Police Department	kendall.bullen@bogalusa.org
Justin Brown	Police Chief	Franklinton Police Department	jbrown@tofpd.com
Nancy McBeth	Director	Council on Aging	nmcbeth0629@gmail.com
Ryan Seal	Director	WP Economic Development	rseal@wedf.com
Lisa Tanner	Superintendent	Bogalusa City Schools	ltanner@bogschools.org
Frances Varnado	Superintendent	Washington Parish Schools	frances.varnado@wpsb.info
Alban Bush	Environmental Manager	International Paper	Alban.Bush@ipaper.com
Randy Seal	Sheriff	Washington Parish Sheriff Office	rseal@wpsa.la.gov

Program Integration

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

Washington 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 Washington Parish Hazard Mitigation Steering Committee will remain charged with ensuring that the goals and strategies of new and updated local planning documents for their communities or agencies are consistent with the goals and actions of the Hazard Mitigation Plan and will not contribute to increased hazard vulnerability in the parish. Existing plans, studies, and technical information were incorporated in the planning process. Examples include flood data from FEMA and the U. S. Geological Survey. Much of this data was incorporated into the Risk Assessment component of the plan relative to plotting historical events and the magnitude of damages that occurred. The parish's 2015 Hazard Mitigation Plan was also used in the planning process. Other existing data and plans used in the planning process include those listed below.

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

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

Meeting Documentation and Public Outreach Activities

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

Meeting #1: Hazard Mitigation Plan Update Kick-Off

Date: March 2, 2021

Location: Conference Call

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

Public Invitation: No

Meeting Invitees:

Washington Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Bobbi Jo Breland	Director	WP Homeland Security	bjbreland@wpgov.org
Jordan Dykes	Emergency Management Assistant	WP Homeland Security	jdykes@wpgov.org
Richard Thomas	Parish President	Washington Parish Government	rthomas@wpgov.org
Lauren Morgan	Associate Director	LSU-SDMI	lstevens@lsu.edu
Chris Rippetoe	HM Program Manager	LSU-SDMI	Crippe2@lsu.edu
Anna Daigle	EM Specialist	LSU-SDMI	Adaig35@lsu.edu

Meeting #2: Hazard Mitigation Plan Update Planning Meeting – Planning Process

Date: March 17, 2021

Location: Franklinton, LA - ZOOM

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

Public Invitation: No

Meeting Invitees:

Washington Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Bobbi Jo Breland	Director	WP Homeland Security	bjbreland@wpgov.org
Jordan Dykes	Emergency Management Assistant	WP Homeland Security	jdykes@wpgov.org
Richard Thomas	Parish President	Washington Parish Government	rthomas@wpgov.org
JoAnna Thomas	Chairman	WP Communication District	jthomas@wpcde-911.com
James Hall	Director of Public Works	City of Bogalusa	james.hall@bogalusa.org
Ken Wheat	Director of Public Works	Washington Parish Government	kwheat@wpgov.org
Reginald McMasters	Director of Public Works	Town of Franklinton	rmcmasters@tofpw.com
Wendy Oquin Perrette	Mayor	City of Bogalusa	MayorPerrette@bogalusa.org
John Dawsey	Mayor	Village of Angie	angiecityhall@bellsouth.net
Parish Sumrall	Mayor	Village of Varnado	pariscs@netzero.com
Greg Route	Mayor	Town of Franklinton	groute@tofch.com
Richard Moody	Fire Chief	Bogalusa Fire Department	bfd_ram@yahoo.com
Dustin Wascom	Fire Chief	Franklinton Fire Department	dwascom@franklintonfirerescue.com
Kendall Bullen	Police Chief	Bogalusa Police Department	kendall.bullen@bogalusa.org

Justin Brown	Police Chief	Franklinton Police Department	jbrown@tofpd.com
Nancy McBeth	Director	Council on Aging	nmcbeth0629@gmail.com
Ryan Seal	Director	WP Economic Development	rseal@wedf.com
Lisa Tanner	Superintendent	Bogalusa City Schools	ltanner@bogschools.org
Frances Varnado	Superintendent	Washington Parish Schools	frances.varnado@wpsb.info
Alban Bush	Environmental Manager	International Paper	Alban.Bush@ipaper.com
Randy Seal	Sheriff	Washington Parish Sheriff Office	rseal@wpso.la.gov

Meeting #3: Hazard Mitigation Plan Steering Committee Meeting – Mitigation Actions

Date: June 4, 2021

Location: Franklinton Fire Department Training Room, Franklinton, Louisiana

Purpose: Discussion with Washington Parish Hazard Mitigation Steering Committee of the outstanding data required for plan update, as well as discussion of mitigation actions (old and new) for plan update. Continued timeline discussions.

Public Invitation: No

Meeting Invitees:

Washington Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Bobbi Jo Breland	Director	WP Homeland Security	bbreland@wpgov.org
Jordan Dykes	Emergency Management Assistant	WP Homeland Security	jdynes@wpgov.org
Richard Thomas	Parish President	Washington Parish Government	rthomas@wpgov.org
JoAnna Thomas	Chairman	WP Communication District	jthomas@wpcde-911.com
James Hall	Director of Public Works	City of Bogalusa	james.hall@bogalusa.org
Ken Wheat	Director of Public Works	Washington Parish Government	kwheat@wpgov.org
Reginald McMasters	Director of Public Works	Town of Franklinton	rmcmasters@tofpw.com
Wendy Oquin Perrette	Mayor	City of Bogalusa	MayorPerrette@bogalusa.org
John Dawsey	Mayor	Village of Angie	angicityhall@bellsouth.net
Parish Sumrall	Mayor	Village of Varnado	pariscs@netzero.com
Greg Route	Mayor	Town of Franklinton	groute@tofch.com
Richard Moody	Fire Chief	Bogalusa Fire Department	bfd_ram@yahoo.com
Dustin Wascom	Fire Chief	Franklinton Fire Department	dwascom@franklintonfirerescue.com
Kendall Bullen	Police Chief	Bogalusa Police Department	kendall.bullen@bogalusa.org
Justin Brown	Police Chief	Franklinton Police Department	jbrown@tofpd.com
Nancy McBeth	Director	Council on Aging	nmcbeth0629@gmail.com
Ryan Seal	Director	WP Economic Development	rseal@wedf.com
Lisa Tanner	Superintendent	Bogalusa City Schools	ltanner@bogschools.org
Frances Varnado	Superintendent	Washington Parish Schools	frances.varnado@wpsb.info
Alban Bush	Environmental Manager	International Paper	Alban.Bush@ipaper.com
Randy Seal	Sheriff	Washington Parish Sheriff Office	rseal@wpso.la.gov

Meeting #4: Risk Assessment Presentation to Steering Committee

Date: July 13, 2021**Location:** Washington Parish Fire District 7 – Bogalusa, LA**Purpose:** Presentation of Risk Assessment hazards and maps to Steering Committee.**Public Invitation:** No**Meeting Invitees:**

Washington Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Bobbi Jo Breland	Director	WP Homeland Security	bbreland@wpgov.org
Jordan Dykes	Emergency Management Assistant	WP Homeland Security	jdynes@wpgov.org
Richard Thomas	Parish President	Washington Parish Government	rthomas@wpgov.org
JoAnna Thomas	Chairman	WP Communication District	jthomas@wpcde-911.com
James Hall	Director of Public Works	City of Bogalusa	james.hall@bogalusa.org
Ken Wheat	Director of Public Works	Washington Parish Government	kwheat@wpgov.org
Reginald McMasters	Director of Public Works	Town of Franklinton	rmcmasters@tofpw.com
Wendy Oquin Perrette	Mayor	City of Bogalusa	MayorPerrette@bogalusa.org
John Dawsey	Mayor	Village of Angie	angiecityhall@bellsouth.net
Parish Sumrall	Mayor	Village of Varnado	pariscs@netzero.com
Greg Route	Mayor	Town of Franklinton	groute@tofch.com
Richard Moody	Fire Chief	Bogalusa Fire Department	bfd_ram@yahoo.com
Dustin Wascom	Fire Chief	Franklinton Fire Department	dwascom@franklintonfirerescue.com
Kendall Bullen	Police Chief	Bogalusa Police Department	kendall.bullen@bogalusa.org
Justin Brown	Police Chief	Franklinton Police Department	jbrown@tofpd.com
Nancy McBeth	Director	Council on Aging	nmcbeth0629@gmail.com
Ryan Seal	Director	WP Economic Development	rseal@wedf.com
Lisa Tanner	Superintendent	Bogalusa City Schools	ltanner@bogschools.org
Frances Varnado	Superintendent	Washington Parish Schools	frances.varnado@wpsb.info
Alban Bush	Environmental Manager	International Paper	Alban.Bush@ipaper.com
Randy Seal	Sheriff	Washington Parish Sheriff Office	rseal@wpsa.la.gov

Meeting #5: Public Meeting #1**Date:** July 13, 2021**Location:** Washington Parish Fire District 7 – Bogalusa, LA**Purpose:** The Public Meeting allowed the public and community stakeholders to participate and provide input into the hazard mitigation planning process. Event Questionnaires were given to participants to fill out to document any hazardous conditions in their communities in line with the HM Plan.**Public Invitation:** Yes**Meeting Invitees:**

Washington Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Bobbi Jo Breland	Director	WP Homeland Security	bjbreland@wpgov.org
Jordan Dykes	Emergency Management Assistant	WP Homeland Security	jdikes@wpgov.org
Richard Thomas	Parish President	Washington Parish Government	rthomas@wpgov.org
JoAnna Thomas	Chairman	WP Communication District	jthomas@wpcde-911.com
James Hall	Director of Public Works	City of Bogalusa	james.hall@bogalusa.org
Ken Wheat	Director of Public Works	Washington Parish Government	kwheat@wpgov.org
Reginald McMasters	Director of Public Works	Town of Franklinton	rmcmasters@tofpw.com
Wendy Oquin Perrette	Mayor	City of Bogalusa	MayorPerrette@bogalusa.org
John Dawsey	Mayor	Village of Angie	angiecityhall@bellsouth.net
Parish Sumrall	Mayor	Village of Varnado	pariscs@netzero.com
Greg Route	Mayor	Town of Franklinton	groute@tofch.com
Richard Moody	Fire Chief	Bogalusa Fire Department	bfd_ram@yahoo.com
Dustin Wascom	Fire Chief	Franklinton Fire Department	dwascom@franklintonfirerescue.com
Kendall Bullen	Police Chief	Bogalusa Police Department	kendall.bullen@bogalusa.org
Justin Brown	Police Chief	Franklinton Police Department	jbrown@tofpd.com
Nancy McBeth	Director	Council on Aging	nmcbeth0629@gmail.com
Ryan Seal	Director	WP Economic Development	rseal@wedf.com
Lisa Tanner	Superintendent	Bogalusa City Schools	ltanner@bogschools.org
Frances Varnado	Superintendent	Washington Parish Schools	frances.varnado@wpsb.info
Alban Bush	Environmental Manager	International Paper	Alban.Bush@ipaper.com
Randy Seal	Sheriff	Washington Parish Sheriff Office	rseal@wpsola.gov

Meeting #6: Public Meeting #2

Date: July 15, 2021**Location:** ZOOM**Purpose:** The Public Meeting allowed the public and community stakeholders and additional opportunity to participate and provide input into the hazard mitigation planning process.**Public Invitation:** Yes**Meeting Invitees:**

Washington Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Bobbi Jo Breland	Director	WP Homeland Security	bjbreland@wpgov.org
Jordan Dykes	Emergency Management Assistant	WP Homeland Security	jdykes@wpgov.org
Richard Thomas	Parish President	Washington Parish Government	rthomas@wpgov.org
JoAnna Thomas	Chairman	WP Communication District	jthomas@wpcde-911.com
James Hall	Director of Public Works	City of Bogalusa	james.hall@bogalusa.org
Ken Wheat	Director of Public Works	Washington Parish Government	kwheat@wpgov.org
Reginald McMasters	Director of Public Works	Town of Franklinton	rmcmasters@tofpw.com
Wendy Oquin Perrette	Mayor	City of Bogalusa	MayorPerrette@bogalusa.org
John Dawsey	Mayor	Village of Angie	angiecityhall@bellsouth.net
Parish Sumrall	Mayor	Village of Varnado	pariscs@netzero.com
Greg Route	Mayor	Town of Franklinton	groute@tofch.com
Richard Moody	Fire Chief	Bogalusa Fire Department	bfd_ram@yahoo.com
Dustin Wascom	Fire Chief	Franklinton Fire Department	dwascom@franklintonfirerescue.com
Kendall Bullen	Police Chief	Bogalusa Police Department	kendall.bullen@bogalusa.org
Justin Brown	Police Chief	Franklinton Police Department	jbrown@tofpd.com
Nancy McBeth	Director	Council on Aging	nmcbeth0629@gmail.com
Ryan Seal	Director	WP Economic Development	rseal@wedf.com
Lisa Tanner	Superintendent	Bogalusa City Schools	ltanner@bogschools.org
Frances Varnado	Superintendent	Washington Parish Schools	frances.varnado@wpsb.info
Alban Bush	Environmental Manager	International Paper	Alban.Bush@ipaper.com
Randy Seal	Sheriff	Washington Parish Sheriff Office	rseal@wpsola.gov

Meeting Announcement:

WASHINGTON PARISH OFFICE OF HOMELAND SECURITY & EMERGENCY PREPAREDNESS

PUBLIC MEETING ANNOUNCEMENT**Washington Parish and its partners are seeking community input for the 2021 Washington Parish Hazard Mitigation Plan update!**

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

Are you passionate about building a more resilient future for your parish? Do you have questions about the natural hazards your community is at risk to? Please join us on for a public meeting to learn more about the plan and share your input on the risks and vulnerabilities that most impact you and your community. Due to the ongoing pandemic, the parish will be offering two meeting options, virtual or in person.

Meeting Details:

In Person Option: Tuesday, July 13, 2021:
WP FIRE DISTRICT #7, 17380 BILL BOOTY ROAD, BOGALUSA LA 5:00pm – 6:00pm

Virtual Option: Thursday, July 15, 2021: Zoom Meeting, 1:00pm – 2:00pm
<https://lsu.zoom.us/j/92035252997?pwd=OVdjem05Um9OT2tJb04wMGtZN2RDdz09>

Residents of Washington Parish are asked to participate in a survey about public perceptions and opinions regarding natural hazards in the parish. The survey results will be used in the development of the plan. This short web-based survey can be found at the following link:

<https://www.surveymonkey.com/r/Washingtonhm2021>

The Parish appreciates your input.

If you have questions, please contact: Washington Parish Homeland Security Director, Bobbi Jo Breland at 985-516-1673

Outreach Activity #1: Public Opinion Survey

Date: Ongoing throughout planning process

Location: Web survey

Public Invitation: Yes

Outreach Activity #2: Incident Questionnaire

Date: July 13, 2021; Public Meeting Activity

Location: Public Meeting

Public Invitation: Yes

WASHINGTON PARISH PUBLIC MEETING

PUBLIC ACTIVITY:
INCIDENT/ISSUE
QUESTIONNAIRE

1. HAZARD TYPE(S):

A. FLOODING

I. RIVERINE

II. STORM SURGE

III. STREET

IV. OTHER (DESCRIBE):

B. HIGH WINDS (NOT TROPICAL)

C. COASTAL

I. SALTWATER INTRUSION

II. EROSION

III. OTHER (DESCRIBE):

D. TROPICAL SYSTEMS

E. WINTER WEATHER

F. OTHER:

2. DESCRIBE INCIDENT OR ISSUE:

3. LOCATION:

A. CITY:

B. ADDRESS OR AREA:

C. LOCALIZED OR DISPERSED:

4. INTENSITY:

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

B. WIND STRENGTH

5. RE-OCCURRING OR ONE-TIME

A. IF RE-OCCURRING, HOW OFTEN?

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

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

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

Outreach Activity #3: 2021 Washington Parish Hazard Mitigation Plan Public Review

Date: Ongoing

Location: SDMI Hazard Mitigation Website

Public Initiation: Yes

After an initial review by Washington Parish and its communities was completed, the 2021 Washington Parish Hazard Mitigation Plan was made available for public review and comment. The plan was hosted on SDMI's Hazard Mitigation website: <http://hmplans.sdmi.lsu.edu/Home/Parish/washington>

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 Washington 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 the HMP in parish public buildings, as well as the SDMI website. This section describes the whole update process which includes the following:

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

Responsible Parties

Washington 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

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

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

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

2021 Plan Version Plan Method and Schedule Evaluation

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

Incorporation into Existing Planning Programs

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

- Ordinances, Resolutions, Regulations
- Floodplain Ordinances
- Master Plans
- Capital Improvement Plans
- Economic Development Plans
- Emergency Operations Plans
- Debris Removal Plan
- Transportation Plan
- Stormwater Management Plan

Opportunities to integrate the requirements of this plan into other local planning mechanisms will continue to be identified through future meetings of the Washington 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.). The members of the steering committee will remain charged with ensuring that the goals and strategies of new and updated local planning documents for their jurisdictions or agencies are consistent with the

goals and actions of the Washington Parish Hazard Mitigation Plan, and will not contribute to increased hazard vulnerability within the parish.

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 Angie, City of Bogalusa, Town of Franklinton and Village of Varnado, Washington Parish has the authority to incorporate the contents of the Hazard Mitigation Plan into the parish’s existing regulatory mechanisms. Agreements are currently in place with jurisdictions to allow for the parish incorporation mechanisms to take place.

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

Washington Parish			
<i>Comprehensive Master Plan</i>	Updated as needed	Washington Parish OHSEP	✓
<i>Capital Improvements Plan</i>	Updated as needed	Washington Parish OHSEP	✓
<i>Local Emergency Operations Plan</i>	Updated as needed	Washington Parish OHSEP	✓
<i>Transportation Plan</i>	Updated as needed	Washington Parish OHSEP	✓
<i>Economic Development Plan</i>	Updated as needed	Washington Economic Development Authority	✓
<i>Stormwater Management Plan</i>	Updated as needed	Washington Parish OHSEP	✓

Village of Angie			
<i>Local Emergency Operations Plan</i>	Updated as needed	Village of Angie Mayor’s Office	✓

City of Bogalusa			
<i>Local Emergency Operations Plan</i>	Updated as needed	City of Bogalusa Mayor’s Office	✓
<i>Capital Improvement Plan</i>	Updated as needed	City of Bogalusa Mayor’s Office	✓
<i>Comprehensive Master Plan</i>	Updated as needed	City of Bogalusa Mayor’s Office	✓

Town of Franklinton

<i>Comprehensive Master Plan</i>	Updated as needed	Town of Franklinton Mayor's Office	✓
<i>Capital Improvements Plan</i>	Updated as needed	Town of Franklinton Mayor's Office	✓
<i>Economic Development Plan</i>	Updated as needed	Town of Franklinton Mayor's Office	✓
<i>Local Emergency Operations Plan</i>	Updated as needed	Town of Franklinton Mayor's Office	✓
<i>Stormwater Management Plan</i>	Updated as needed	Town of Franklinton Mayor's Office	✓

Village of Varnado

There are no local plans to incorporate in the Village of Varnado

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.

This Page Left Intentionally Blank

Public Health	Bogalusa Health Unit		X	X	X	X	X	X	X
	Franklinton Health Unit		X	X	X	X	X	X	X
	Riverside Medical Center (HMP)								
	Washington Parish Health Unit								
Schools	Enon Elementary		X	X	X	X	X	X	X
	Franklinton Elementary		X	X	X	X	X	X	X
	Thomas Elementary		X	X	X	X	X	X	X
	Wesley Ray Elementary		X	X	X	X	X	X	X
	Central Elementary		X	X	X	X	X	X	X
	Byrd Ave Elementary		X	X	X	X	X	X	X
	Denamtown Elementary		X	X	X	X	X	X	X
	Franklinton Primary		X	X	X	X	X	X	X
	Franklinton Jr. High		X	X	X	X	X	X	X
	Pine Jr./Sr. High		X	X	X	X	X	X	X
	Franklinton High		X	X	X	X	X	X	X
	Varnado High		X	X	X	X	X	X	X
	Mt. Hermon		X	X	X	X	X	X	X
	Bogalusa High		X	X	X	X	X	X	X
	Annunciation Catholic School		X	X	X	X	X	X	X
Bens Ford Christian School		X	X	X	X	X	X	X	
Bowling Green School		X	X	X	X	X	X	X	

This Page Left Intentionally Blank

Appendix D: Plan Adoption

Unincorporated Washington Parish

STATE OF LOUISIANA
PARISH OF WASHINGTON

WASHINGTON PARISH COUNCIL
RESOLUTION NO. 21-1116

**RESOLUTION ADOPTING THE WASHINGTON PARISH
MULTI-JURISDICTION HAZARD MITIGATION PLAN 2021**

WHEREAS the Washington Parish Council recognizes the threat that natural hazards pose to people and property within Washington Parish; and

WHEREAS, Washington Parish has prepared a multi-hazard mitigation plan, hereby known as THE WASHINGTON PARISH MULTI-JURISDICTION HAZARD MITIGATION PLAN 2021 in accordance with the Disaster Mitigation Act of 2000; and

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

WHEREAS adoption by the Washington Parish Council demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the Washington Parish Multi-Jurisdiction Hazard Mitigation Plan 2021.

THEREFORE, BE IT RESOLVED that the Washington Parish Council does hereby adopt the Washington Parish Multi-Jurisdiction Hazard Mitigation Plan 2021.

The above and foregoing having been submitted to a vote, the vote thereupon resulted as follows:

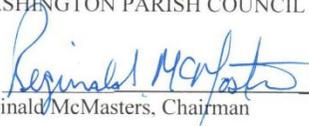
YEAS: (7) Rice, Wagner, Harry, McMasters, Fornea, King, and Culpepper

NAYS: (0)

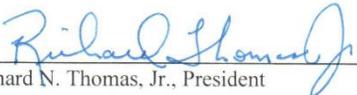
ABSENT: (0)

The resolution was declared adopted on the 8th day of November 2021.

WASHINGTON PARISH COUNCIL

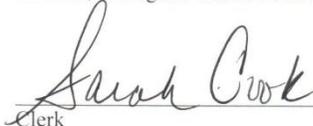
By: 
Reginald McMasters, Chairman

WASHINGTON PARISH GOVERNMENT

By: 
Richard N. Thomas, Jr., President

CERTIFICATION

I, SARAH COOK, CLERK OF THE WASHINGTON PARISH COUNCIL, hereby certify that foregoing is a true and correct copy of a resolution adopted by the Washington Parish Council, in Regular Session convened on the 8th day of November 2021 Franklinton, Louisiana.


Clerk
Washington Parish Council

Resolution No. 21-1116
Page 2

Village of Angie

VILLAGE OF ANGIE

RESOLUTION NO. #21-12-28-01**A RESOLUTION BY THE VILLAGE OF ANGIE ADOPTING THE WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021**

WHEREAS the WASHINGTON PARISH GOVERNMENT recognizes the threat that natural hazards pose to people and property within the VILLAGE OF ANGIE; and

WHEREAS, the VILLAGE OF ANGIE has prepared a multi-hazard mitigation plan, hereby known as THE WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021 in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021 identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in THE VILLAGE OF ANGIE from the impacts of future hazards and disasters; and

WHEREAS adoption by the VILLAGE OF ANGIE demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021.

NOW THEREFORE, BE IT RESOLVED THE VILLAGE OF ANGIE does hereby adopt the WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021.

Having been submitted to a vote, the vote resulted as follows:

YEAS: 3NAYS: 0ABSENT: 0ABSTAINED: 0

The resolution was declared adopted on the 28th day of December, 2021

By: Roxie Fornea

(Roxie Fornea)

By: Kayla Knight

(print name) Kayla Knight

ATTEST: Paris C Sumrall

(print name) Paris C Sumrall



City of Bogalusa

RESOLUTION NO. 2287

CITY OF BOGALUSA

DATE November 16, 2021

The following Resolution was offered for a final adoption by Councilwoman Graham and
 Seconded by Councilwoman Kates.

**A RESOLUTION BY THE CITY OF BOGALUSA ADOPTING THE WASHINGTON
 PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021.**

WHEREAS, the WASHINGTON PARISH GOVERNMENT recognizes the threat that natural hazards pose to people and property within the CITY OF BOGALUSA; and

WHEREAS, the CITY OF BOGALUSA has prepared a multi-hazard mitigation plan, hereby known as THE WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021 in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021 identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in THE CITY OF BOGALUSA from the impacts of future hazards and disasters; and

WHEREAS, adoption by the CITY OF BOGALUSA demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021.

NOW THEREFORE, BE IT RESOLVED, THE CITY OF BOGALUSA does hereby adopt the WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021.

Having been submitted to a vote, the vote resulted as follows:

YEAS: 6
 NAYS: 0
 ABSENT: 1
 ABSTAINED: 0

The resolution was declared adopted on the 16th day of November, 2021

By: Danielle Keys
 Danielle Keys, President
 Bogalusa City Council

By: Wendy O'Quin Perrette
 Wendy O'Quin Perrette, Mayor
 City of Bogalusa, Louisiana

ATTEST:
 By: Brenda Ford
 Brenda Ford, Bogalusa City Council Secretary

Town of Franklinton

TOWN OF FRANKLINTON

RESOLUTION NO. _____

**A RESOLUTION BY THE TOWN OF FRANKLINTON ADOPTING THE WASHINGTON PARISH MULTI
JURISDICTION HAZARD MITIGATION PLAN 2021**

WHEREAS the WASHINGTON PARISH GOVERNMENT recognizes the threat that natural hazards pose to people and property within the TOWN OF FRANKLINTON; and

WHEREAS, the TOWN OF FRANKLINTON has prepared a multi-hazard mitigation plan, hereby known as THE WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021 in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021 identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in THE TOWN OF FRANKLINTON from the impacts of future hazards and disasters; and

WHEREAS adoption by the TOWN OF FRANKLINTON demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021.

NOW THEREFORE, BE IT RESOLVED THE TOWN OF FRANKLINTON does hereby adopt the WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021.

Having been submitted to a vote, the vote resulted as follows:

YEAS: 5

NAYS: 0

ABSENT: 0

ABSTAINED: 0

The resolution was declared adopted on the 14th day of December, 2021

By: Gregory Roate
(Print name) Gregory Roate

By: Patrice Crain
(print name) Patrice Crain

ATTEST:
By: Ellen Washburn
(print name) Ellen Washburn

Village of Varnado

VILLAGE OF VARNADO
RESOLUTION NO. 2021-07

A RESOLUTION BY THE VILLAGE OF VARNADO ADOPTING THE WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021

WHEREAS the WASHINGTON PARISH GOVERNMENT recognizes the threat that natural hazards pose to people and property within the VILLAGE OF VARNADO; and

WHEREAS, the VILLAGE OF VARNADO has prepared a multi-hazard mitigation plan, hereby known as THE WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021 in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021 identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in THE VILLAGE OF VARNADO from the impacts of future hazards and disasters; and

WHEREAS adoption by the VILLAGE OF VARNADO demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021.

NOW THEREFORE, BE IT RESOLVED THE VILLAGE OF VARNADO does hereby adopt the WASHINGTON PARISH MULTI JURISDICTION HAZARD MITIGATION PLAN 2021.

Having been submitted to a vote, the vote resulted as follows:

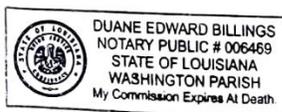
YEAS: 3
NAYS: 0
ABSENT: 0
ABSTAINED: 0

The resolution was declared adopted on the 15th day of December, 2021

By: Paris C. Sumrall II
(Print name) Paris C Sumrall II

By: Mary Adams
(print name) Mary Adams

ATTEST:
By: Duane Carl Kelly
(print name)



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

Washington Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Bobbi Jo Breland	Director	Washington Parish Office of Homeland Security	bjbreland@wpgov.org
Jordan Dykes	Emergency Management Assistant	Washington Parish Office of Homeland Security	jdikes@wpgov.org
Richard Thomas	Parish President	Washington Parish Government	rthomas@wpgov.org
JoAnna Thomas	Chairman	Washington Parish Communication District	jthomas@wpcde-911.com
James Hall	Director of Public Works	City of Bogalusa	james.hall@bogalusa.org
Ken Wheat	Director of Public Works	Washington Parish Government	kwheat@wpgov.org
Reginald McMasters	Director of Public Works	Town of Franklinton	rmcmasters@tofpw.com
Wendy Oquin Perrette	Mayor	City of Bogalusa	MayorPerrette@bogalusa.org
John Dawsey	Mayor	Village of Angie	angiecityhall@bellsouth.net
Parish Sumrall	Mayor	Village of Varnado	pariscs@netzero.com
Greg Route	Mayor	Town of Franklinton	groute@tofch.com
Richard Moody	Fire Chief	Bogalusa Fire Department	bfd_ram@yahoo.com
Dustin Wascom	Fire Chief	Franklinton Fire Department	dwascom@franklintonfirerescue.com
Kendall Bullen	Police Chief	Bogalusa Police Department	kendall.bullen@bogalusa.org
Justin Brown	Police Chief	Franklinton Police Department	jbrown@tofpd.com
Nancy McBeth	Director	Council on Aging	nmcbeth0629@gmail.com
Ryan Seal	Director	Washington Parish Economic Development	rseal@wedf.com
Lisa Tanner	Superintendent	Bogalusa City Schools	ltanner@bogschools.org
Frances Varnado	Superintendent	Washington Parish Schools	frances.varnado@wpsb.info
Alban Bush	Environmental Manager	International Paper	Alban.Bush@ipaper.com
Randy Seal	Sheriff	Washington Parish Sheriff Office	rseal@wpsola.gov

Capability Assessment
Washington Parish

Capability Assessment Worksheet		
Washington Unincorporated		
Local mitigation capabilities are existing authorities, polices and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible.		
Planning and Regulatory		
Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place.		
Plans	Yes / No	Comments
Comprehensive / Master Plan	Yes	
Capital Improvements Plan	Yes	
Economic Development Plan	Yes	
Local Emergency Operations Plan	Yes	5 years
Continuity of Operations Plan	No	
Transportation Plan	Yes	stewards of COA plan
Stormwater Management Plan	Yes	
Community Wildfire Protection Plan	No	
Other plans (redevelopment, recovery, coastal zone management)	No	
Building Code, Permitting and Inspections	Yes / No	Comments
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	Yes	Score
Fire Department ISO/PIAL rating	Yes	
Site plan review requirements	No	
Land Use Planning and Ordinances	Yes / No	Comments
Zoning Ordinance	No	
Subdivision Ordinance	Yes	
Floodplain Ordinance	Yes	
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	No	
Flood Insurance Rate Maps	Yes	
Acquisition of land for open space and public recreation uses	Yes	
Other	No	

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

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

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

Village of Angie

Capability Assessment Worksheet		
Village of Angie		
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	
Capital Improvements Plan	No	
Economic Development Plan	No	
Local Emergency Operations Plan	Yes	As needed
Continuity of Operations Plan	No	
Transportation Plan	No	
Stormwater Management Plan	No	
Community Wildfire Protection Plan	No	
Other plans (redevelopment, recovery, coastal zone management)	No	
Building Code, Permitting and Inspections	Yes / No	Comments
Building Code	Yes	under Parish Plan
Building Code Effectiveness Grading Schedule (BCEGS) Score	Yes	Score
Fire Department ISO/PIAL rating	Yes	5
Site plan review requirements	No	
Land Use Planning and Ordinances	Yes / No	Comments
Zoning Ordinance	Yes	Yes
Subdivision Ordinance	No	
Floodplain Ordinance	Yes	
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	No	
Flood Insurance Rate Maps	Yes	
Acquisition of land for open space and public recreation uses	No	
Other	No	

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

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

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

City of Bogalusa

Capability Assessment Worksheet		
City of Bogalusa		
Local mitigation capabilities are existing authorities, polices and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible.		
Planning and Regulatory		
Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place.		
Plans	Yes / No	Comments
Comprehensive / Master Plan	Yes	As needed
Capital Improvements Plan	Yes	annually
Economic Development Plan	No	
Local Emergency Operations Plan	Yes	Under the Parish Plan
Continuity of Operations Plan	No	
Transportation Plan	No	
Stormwater Management Plan	No	
Community Wildfire Protection Plan	No	
Other plans (redevelopment, recovery, coastal zone management)	Yes	Under Parish Plan
Building Code, Permitting and Inspections	Yes / No	Comments
Building Code	Yes	IBC 2006 Yes
Building Code Effectiveness Grading Schedule (BCEGS) Score	Yes	
Fire Department ISO/PIAL rating	Yes	Rating 3
Site plan review requirements	Yes	
Land Use Planning and Ordinances	Yes / No	Comments
Zoning Ordinance	Yes	Yes
Subdivision Ordinance	Yes	Yes
Floodplain Ordinance	Yes	Yes
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	No	
Flood Insurance Rate Maps	Yes	Yes
Acquisition of land for open space and public recreation uses	Yes	Yes
Other	No	

Administration and Technical		
Identify whether your community has the following administrative and technical capabilities. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.		
Administration	Yes / No	Comments
Planning Commission	Yes	
Mitigation Planning Committee	Yes	
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	
Staff	Yes / No	Comments
Chief Building Official	Yes	22%
Floodplain Administrator	Yes	10%
Emergency Manager	Yes	20%
Community Planner	Yes	15
Civil Engineer	No	Outsourced
GIS Coordinator	No	Outsourced
Grant Writer	No	Some by department
Other	No	
Technical	Yes / No	Comments
Warning Systems / Service (Reverse 911, outdoor warning signals)	Yes	Texting and emailing to subscribers
Hazard Data & Information	No	
Grant Writing	No	Some by department
Hazus Analysis	No	
Other	No	

Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes / No	Comments
Capital Improvements project funding	Yes	Depends on the priority of the project.
Authority to levy taxes for specific purposes	Yes	Subject to voter ratification.
Fees for water, sewer, gas, or electric services	Yes	No
Impact fees for new development	No	
Stormwater Utility Fee	No	
Community Development Block Grant (CDBG)	Yes	Depends on the priority of the project.
Other Funding Programs	No	

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

Town of Franklinton

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

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

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

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

Village of Varnado

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

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

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

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

Building Inventory

Washington Unincorporated								
Name of Building	Purpose of Building	Address	City	Latitude	Longitude	Assessed Value	Date Built	Construction Type
Washington Parish Courthouse	Government	Washington & Main St	Franklinton	30.844409	-90.15579	\$8,282,000	1960	Concrete
Bogalusa Health Unit	healthcare	626 Carolina Ave	Bogalusa	30.78973	-90.898542	\$1,050,998	1970	Steel
Franklinton Health Unit	healthcare	120 11th Street	Franklinton	30.854669	-90.158042	\$1,901,278	2010	Concrete
Washington Parish Government	parish government	909 Pearl Street	Franklinton	30.843922	-90.155055	included in #1	1940	Concrete
Choctaw Landfill	waste disposal	22249 Choctaw Road	Franklinton	30.763281	-90.023022	\$126,957.00	1987	Reinforced Masonry
Washington Parish E911/EOC Center	911 /EOC	54100 Dollar Road	Franklinton	30.870226	-89.992896	\$1,400,735	2012	Reinforced Masonry
Parish Office of Homeland Security and Emergency Preparedness	emergency management	909 Pearl Street	Franklinton	30.843954	-90.155174	\$500,000.00	2015	Steel
Washington Parish Sheriff Office	law enforcement	1002 Main Street	Franklinton	30.844409	-90.15579	\$2,977,700	1982	Concrete
Washington Parish Permit Office	parish government	203 11th Avenue - Suite 1	Franklinton	30.855723	-90.15864	\$849,394.00	2010	Reinforced Masonry
Washington Parish Library	public library	825 Free St	Franklinton	30.848764	-90.15951	\$772,081.00		Wood
Bogalusa Branch Library	public library	304 Avenue F	Bogalusa	30.7800	-89.8700	\$1,516,159	1967	Reinforced Masonry
Washington Parish Library	public library	14140 Highway 16	Enon	30.7272	-90.0854	\$58,000.00	2004	Wood
Washington Parish Library	public library	30369 Hwy 424	Thomas	30.9675	-90.029	\$36,000.00	2003	Wood
Washington Public Works #3	maintenance	801 Pearl St	Franklinton	30.843242	-90.155711	\$50,000.00	1975	Reinforced Masonry
Washington Public Works #2	maintenance	Seven Mile Rd / Hwy 10	Franklinton	30.8522	-89.9501	\$164,695.00	1979	Reinforced Masonry
Washington Public Works #1	maintenance	End of Pearl St	Franklinton	30.842283	-90.156939	\$366,032.00	2009	Wood
Washington Parish Fleet Shop	maintenance	54006 Hwy 10	Franklinton	30.9674	-89.996	\$300,000.00		
Washington Parish Storage	Equipment Storage	2185 Greenlaw Ave	Franklinton	30.8541	-90.1395	\$250,000.00		

Northshore Technical Community College	college	1710 Sullivan Drive	Franklinton	30.7593	-89.8469	N/A	N/A	Reinforced Masonry
Enon Elementary	school	14058 Hwy 16	Franklinton	30.7275	-90.0857	\$6,880,635	1955	Reinforced Masonry
Pine Jr/Sr High	school	1 Raider Drive	Franklinton	30.924922	-90.014207	\$14,869,701	2006	Reinforced Masonry
Thomas Elementary	school	30341 Hwy 424	Franklinton	30.848501	-90.149983	\$6,497,530	N/A	Wood
Varnado High	school	25543 Washington St	Angie	30.501548	-90.09292	\$8,411,186	1995	Reinforced Masonry
Wesley Ray Elementary	school	30523 Wesley Ray Drive	Angie	30.581878	-89.502115	\$4,776,266	1955	Reinforced Masonry
Bogalusa High	school	100 M J Israel Drive	Bogalusa	30.779645	-89.866092	\$19,759,600	1958	Reinforced Masonry
Central Elementary	school	420 Spartans Ave	Bogalusa	30.770567	-89.853211	\$10,436,581	1954	Reinforced Masonry
Byrd Avenue Elementary	school	1600 Byrd Avenue	Bogalusa	30.76264	-89.86035	\$2,818,767	1960	Reinforced Masonry
Denamtown Elementary	school	1101 Avenue M	Bogalusa	30.76948	-89.87833	\$2,818,767	1960	Reinforced Masonry
Annunciation Catholic School	school	511 Avenue C	Bogalusa	30.777	-89.8679	\$5,000,000	1955/ 1980/ 1996	Reinforced Masonry
Bens Ford Christian School	school	59253 Mount Pleasant Road	Bogalusa	30.738345	-89.903089	\$5,462,000	1968- 2004	Reinforced Masonry
Bowling Green School	school	700 Varnado Street	Franklinton	30.840075	-90.156051	\$5,868,180	1972	Reinforced Masonry

Village of Angie								
Name of Building	Purpose of Building	Address	City	Latitude	Longitude	Assessed Value	Date Built	Construction Type
Washington Parish Fire District	Fire Protection	30162 Hwy 21	Angie	30.9619457	-89.8114992		1975	
Angie Town Hall	Government / Police	64474 Market St	Angie	30.9663226	-89.8111735			

City of Bogalusa								
Name of Building	Purpose of Building	Address	City	Latitude	Longitude	Assessed Value	Date Built	Construction Type
City Hall	Municipal Government	214 Arkansas Ave.	Bogalusa	30.786335	-89.860226	\$3,000,000	1906	Wood
Central Fire Station	Fire Protection	202 Arkansas Ave.	Bogalusa	30.786191	-89.860545	\$900,000	1949	Unreinforced Masonry
Bogalusa Police Headquarters/Jail	Law Enforcement/ Corrections	111 Memphis St.	Bogalusa	30.786182	-89.861336	\$2,000,000	1980	Reinforced Masonry
Anthony Fiorenza Fire Station	Fire Protection	505 W. 8th St.	Bogalusa	30.772819	-89.871989	\$800,000	1960	Reinforced Masonry
Southside Fire Station	Fire Protection	E. 5th Street at Avenue U	Bogalusa	30.774634	-89.855633	\$600,000	1948	Unreinforced Masonry
Senior Citizen Center	Community Programs	603 Willis Avenue	Bogalusa	30.783209	-89.87009	\$900,000	2002	Reinforced Masonry
Bogalusa Airport Terminal and Hangar	Aviation	401 Walker Street	Bogalusa	30.805155	-89.861011	\$2,300,000	1960	Steel
Bogalusa Industrial Park Complex	Economic Development	Industrial Parkway	Bogalusa	30.80806	-89.858462	\$22,300,000	1971-2006	Metal
Milltown Building	Storage	660 Willis Avenue	Bogalusa	30.782078	-89.87153	\$500,000	1975	Metal
Sewer Treatment Plant	Sewer Treatment	101 Memphis	Bogalusa	30.784946	-89.60239	\$12,000,000	1957	Concrete
City of Bogalusa Maintenance Bldgs	Maintenance	Memphis Street	Bogalusa	30.785018	-89.86154	\$600,000	1960	Steel
Water Treatment Plant	Water Treatment	150 Sycamore St.	Bogalusa	30.781522	-89.867113	\$1,200,000	1950	Concrete
Welcome Center Building	under renovation	Louisiana Avenue	Bogalusa	30.791939	-89.841085	\$100,000	1930	Wood

Town of Franklinton								
Name of Building	Purpose of Building	Address	City	Latitude	Longitude	Assessed Value	Date Built	Construction Type
Washington Parish Activity Center	Special Upward Challenge	2008 Main St	Franklinton	30.83245	90.15109		1975	Concrete
Fire Department	Fire	415 11th	Franklinton	30.85302	90.15664	\$630,000	2004	Metal
Police Department	Police	409 11th	Franklinton	30.85322	90.15704	\$1,141,000	2004	Concrete
Public Works Department	Town Management	1108 Lenora St	Franklinton	30.85244	90.15578	\$674,000	1978	Steel
City Hall	Mayor Office	301 11th Ave	Franklinton	30.85439	90.1578	\$1,290,000	1974	Concrete
Franklinton Little Theater	Store	Taft St.	Franklinton	30.84079	90.12764	\$30,000	2012	Metal
Sewer Plant	Waste Water Treatment Lab	506 Riverside Drive	Franklinton	30.83232	90.15627	\$8,830,208	1985	Concrete
Franklinton Lions Club	Police Department Store	Boat Ramp Rd	Franklinton	30.83241	90.16138	\$30,000	1990	Wood
Bene St Well	Water well	Bene St	Franklinton	30.85558	90.15944	\$2,794,716	1957	Metal
Mason Well	Water well	2007 Mason St.	Franklinton	30.84975	90.14035	combined	1972	Metal
Chess Jones Well	Water well	Chess Jones	Franklinton	30.82946	90.14714	combined	1997	Metal
Animal Shelter	Animal Shelter	1637 Desmare St.	Franklinton	30.84937	90.14632	\$75,000	1990	Concrete
Franklinton Elementary	school	345 Jaquar Drive	Franklinton	30.854061	-90.124217	\$10,146,770	2006	Reinforced Masonry
Franklinton High	school	1 Demon Circle	Franklinton	30.859467	-90.126023	\$18,723,270	1986-2006	Reinforced Masonry
Franklinton Jr High	school	617 Main St	Franklinton	30.505868	-90.092934	\$13,169,505	1938	Reinforced Masonry
Franklinton Primary	school	610 T. W. Barker Drive	Franklinton	30.511863	-90.084467	\$12,580,855	1955	Reinforced Masonry
Mt Hermon	school	36119 Hwy 38	Mt Hermon	30.928032	-90.295904	\$11,521,009	1984	Reinforced Masonry
Grand Isle Shipyard Bldg	Fabrication Facility	1212 Taft St	Franklinton	30.8433	-90.1277	\$273,000	2008	Reinforced Masonry

Village of Varnado								
Name of Building	Purpose of Building	Address	City	Latitude	Longitude	Assessed Value	Date Built	Construction Type
Varnado Town Hall	Government	63097 Main Street	Varnado	30.894246	-89.830984	\$65,000	2012	wood

Vulnerable Populations

Washington Parish Planning Area					
All Hospitals (Private or Public)	Address	City	Zip Code	Latitude	Longitude
Our Lady of the Angels Hospital	433 Plaza St	Bogalusa	70427	30.77863	-89.87002
Our Lady of the Angels Family Medicine Clinic	420 Ave F	Bogalusa	70427	30.77874	-89.86997
Our Lady of the Angels Family Practice Clinic	1416 Gobbler Head Drive	Bogalusa	70427	30.75886	-89.85404
Our Lady of the Angels Primary Care Clinic	617 Ave	Bogalusa	70427	30.77579	-89.87167
Riverside Medical Center	1900 Main Street	Franklinton	70438	30.83429	-90.15298
Riverside Medical Center Clinics	Riverside Drive	Franklinton	70438	30.83337	-90.15285
Riverside Medical Center	1900 Main Street	Franklinton	70438	30.834221	-90.152784
Our Lady of the Angels	400 Memphis Street	Bogalusa	70427	30.789466	-89.860264
Our Lady of the Angels Hospital	433 Plaza	Bogalusa	70427	30.778256	-89.869056
AMG Specialty Hospital	Memphis	Bogalusa	70427	30.771768	-89.853779
Nursing Homes (Private or Public)	Address	City	Zip Code	Latitude	Longitude
Resthaven Living Center	1301 Harrison St	Bogalusa	70427	30.80058	-89.86731
Good Samaritan Nursing Home	605 Hilltop Church Road	Franklinton	70438	30.85564	-90.14172
Heritage Manor Nursing Home	2000 Main Street	Franklinton	70438	30.83333	-90.15164
Heritage Manor Living Center	2000 Main St	Franklinton	70438	30.833097	-90.151650
Good Samaritan Living Center	605 Hilltop Ave	Franklinton	70438		
Rest Haven Living Center	1301 Harrison St	Bogalusa	70427	30.799883	-89.86657
Mobile Home Parks	Address	City	Zip Code	Latitude	Longitude
Crains Nest	22556 Lon Miley Road	Bogalusa	70427	30.85467	-89.87026
Mitch Trailer Park	21141 Mitch Road	Bogalusa	70427	30.82691	-89.84591
Esco Butler	20285 Tree of Life Church Road	Bogalusa	70427	30.81537	-89.85394
Aggies Place	60501 Aggies Place	Bogalusa	70427	30.68658	-89.8744
The Meadows Home Park	20376 Hwy 25	Franklinton	70438		
Causey Estates	25370 Hwy 430	Franklinton	70438	30.89338	-90.13408
Mcneal Trailer Park	46188 Hwy 1072	Franklinton	70438	30.82047	-90.12359
Happy Acres Trailer Park	Happy Acres Park	Franklinton	70438	30.80975	-90.20395
Harts Place	Hwy 430	Franklinton	70438		
Greenwood Trailer Park	Hwy 21	Bogalusa	70427		

Sudon Trailer Park	120 Sudon Road	Bogalusa	70427	30.73626	-89.84768
Willa Villa Trailer Park	250 Willa Villa Drive	Bogalusa	70427	30.7434	-89.8739
B&J Trailer Park	21328 John D Woods Road	Franklinton	70438	30.832294	-90.12874
Ron Son Bear Trailer Park	42175 Hwy 16	Franklinton	70438	30.80907	-90.19041
Coxs Trailer Park	Ralph Cotton Road	Franklinton	70438	30.92927	-90.03467
Sumrall Trailer Park	23793 Hwy 430	Franklinton	70438	30.86654	-90.15864
29 Palms Trailer Park	27111 Gene Williams Road	Franklinton	70438	30.78649	-90.07509
K&D Rentals	20779 Hwy 439	Franklinton	70438	30.82745	-90.00242
Hunts Mobile Home Park	West 10th at Ave K	Bogalusa	70427		
Young's Mobile Home	Manning Drive	Franklinton	70438	30.8357	90.1532
Magee's Mobile Home	Woods Rd	Franklinton	70438	30.84807	90.14275
Willa Villa Mobile Home & RV	205 Willa Villa Dr Lot 8	Bogalusa	70427	30-743083	-89.87344
Hunts Mobile Home Park	West 10th at Avenue K	Bogalusa	70427	30.770058	-89.878139

National Flood Insurance Program (NFIP)

National Flood Insurance Program (NFIP)					
	Washington Unincorporated	Village of Angie	City of Bogalusa	Town of Franklinton	Village of Varnado
Insurance Summary					
How many NFIP policies are in the community? What is the total premium and coverage?	522 / \$93,405,900.00	3 / \$1,160.00 / \$980,000.00	167 / \$142,899.00 / \$37,736,500.00	63 / \$47,600.00 / \$12,734,900.00	3 / \$1,365.00 / \$595,000.00
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?	312 / \$7,214,697.00 / 20	N-A / N-A / N-A	164 / \$4,692,497.00 / 33	107 / \$1,718,199.00 / 17	N-A / N-A / N-A
How many structures are exposed to flood risk with in the community?	The SFHA of Washington Parish are designated as "A" and "AE" zones, however there is no known data as to the number of structures that are exposed	The SFHA of Washington Parish are designated as "A" and "AE" zones, however there is no known data as to the number of structures that are exposed	The SFHA of Washington Parish are designated as "A" and "AE" zones, however there is no known data as to the number of structures that are exposed	The SFHA of Washington Parish are designated as "A" and "AE" zones, however there is no known data as to the number of structures that are exposed	The SFHA of Washington Parish are designated as "A" and "AE" zones, however there is no known data as to the number of structures that are exposed
Describe any areas of flood risk with limited NFIP policy coverage.	Flood risk with limited NFIP coverage includes areas below the lowest elevated flood depending on the flood zone and construction dates.	Flood risk with limited NFIP coverage includes areas below the lowest elevated flood depending on the flood zone and construction dates.	Flood risk with limited NFIP coverage includes areas below the lowest elevated flood depending on the flood zone and construction dates.	Flood risk with limited NFIP coverage includes areas below the lowest elevated flood depending on the flood zone and construction dates.	Flood risk with limited NFIP coverage includes areas below the lowest elevated flood depending on the flood zone and construction dates.

Staff Resources					
Is the Community FPA or NFIP Coordinator certified?	Assigned and Certified by Washington Parish ordinance 09-507 effective 12/1/2009	Assigned and certified by WP Ordinance 09-507 12/1/2009	unknown	no	Assigned and Certified by Washington Parish ordinance 09-507 effective 12/1/2009
Is flood plain management an auxiliary function?	Washington Parish Director of Public Works is responsible for floodplain administration with the assistance from the Washington Parish Building and Permits Department	Washington Parish Director of Public Works is responsible for floodplain administration with the assistance from the Washington Parish Building and Permits Department	yes	yes	Washington Parish Director of Public Works is responsible for floodplain administration with the assistance from the Washington Parish Building and Permits Department
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Washington Parish Director of Public Works provides full service administration which includes permits, floodplain review, GPS identification, community education, site inspections and BFE survey determination	Washington Parish Director of Public Works provides full service administration which includes permits, floodplain review, GPS identification, community education, site inspections and BFE survey determination	Permit Review	outreach, inspections	Washington Parish Director of Public Works provides full service administration which includes permits, floodplain review, GPS identification, community education, site inspections and BFE survey determination
What are the barriers to running an effective NFIP program in the community, if any?	Public Awareness	resources, staffing	Resources, Increased Cost of Compliance	resources, staffing	resources, staffing

Compliance History					
Is the community in good standing with the NFIP?	yes	yes	yes	yes	yes
Are there any outstanding compliance issues(i.e., current violations)?	no	no	no	no	no
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact(CAC)?	1-Jul-18	unknown	Sep-14	unknown	unknown
Is a CAV or CAC scheduled or needed? If so when?	1-Apr-21	unknown	no	unknown	unknown

Regulation					
When did the community enter the NFIP?	4-May-88	12/3/2009	1987	9/28/1979	4/5/1989
Are the FIRMs digital or paper?	digital and paper	unknown	digital and paper	paper	unknown
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	both	meet	Meet	Meet	meet

Community Rating System (CRS)					
Does the community participate in CRS?	yes	no - parish	no	no - parish	no - parish
What is the community's CRS Class Ranking?	10	no	no	no	no
Does the plan include CRS planning requirements?	yes	yes	yes	yes	yes

