



WEBSTER

PARISH HAZARD MITIGATION UPDATE – 2016



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WEBSTER PARISH

HAZARD MITIGATION PLAN UPDATE

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Webster Parish



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June 30, 2016

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ACKNOWLEDGMENTS

This 2016 Webster Parish Hazard Mitigation Plan Update was coordinated by the Webster Parish Hazard Mitigation Plan Update Steering Committee, in collaboration with the participating jurisdictions as well as community stakeholders and the general public. The participating jurisdictions are made up of the following communities:

Webster Parish
Town of Cotton Valley
Town of Cullen
Village of Dixie Inn
Village of Doyline
Village of Dubberly
Village of Heflin
City of Minden
Town of Sarepta
Village of Shongaloo
Town of Sibley
City of Springhill

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

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The 2016 Webster Parish Hazard Mitigation Plan Update was written by the Stephenson Disaster Management Institute, Louisiana State University. Further comments should be directed to the Webster Parish Office of Homeland Security and Emergency Preparedness: 410 Main Street, Minden, LA, 71055.

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1. Introduction

Hazard Mitigation is defined as sustained actions taken to reduce or eliminate long-term risk from hazards and their effects. Hazard Mitigation Planning is the process through which natural hazards that threaten communities are identified, likely impacts of those hazards are determined, mitigation goals are set, and appropriate strategies that would lessen the impacts are determined, prioritized, and implemented.

In that regard, this plan (a) documents the Webster Parish Hazard Mitigation Plan Update process; (b) identifies natural hazards and risks within the parish; and (c) identifies the parish's hazard mitigation strategy to make Webster Parish less vulnerable and more disaster resistant. It also includes mitigation project scoping to further identify the extent of work, estimated costs, and implementation timing requirements of proposed selected mitigation projects. Information in the plan will be used to help guide and coordinate mitigation activities and local policy decisions affecting future land use.

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

- Town of Cotton Valley
- Town of Cullen
- Village of Dixie Inn
- Village of Doyline
- Village of Dubberly
- Village of Heflin
- City of Minden
- Town of Sarepta
- Village of Shongaloo
- Town of Sibley
- City of Springhill

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 and Rita environment in south Louisiana.

This Hazard Mitigation Plan is a comprehensive plan for disaster resiliency in Webster 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.

Why this plan? 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 or cookbook 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.

Mitigation activities need funding. 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, a program that reduces flood insurance premiums in participating communities. This program is described at the end of this chapter.

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 Community Rating System credit, and provides the parish and its municipalities with a blueprint for reducing the impacts of these natural hazards on people and property.

Location, Demography, and Economy

Location

Webster Parish is located in northwestern Louisiana, about 25 miles west of Shreveport. The planning area covers approximately 615 square miles including roughly 20 square miles of water area. Webster Parish is bounded by Lafayette County, Arkansas to the northwest, Columbia County, Arkansas to the north, Claiborne Parish to the east, Bienville Parish to the southeast and south, and Bossier Parish to the southwest and west. The City of Minden is the Parish seat.

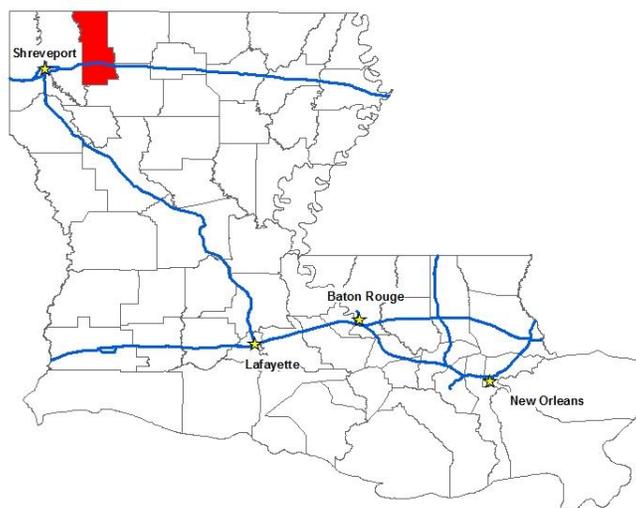


Figure 1-1: Location of Webster Parish within the State of Louisiana

The topography of Webster Parish consists of wooded areas, rolling hills, and open farmland. Some of the land around Minden and Springhill is urban or suburban. Dorcheat Bayou flows north-south through the middle of the parish, ultimately leading to Lake Bistineau. It is complemented by other bayous and lakes including Bodcau, Bayou, Lake Murray, and Caney Lake.

The main transportation arteries through Webster Parish are Interstate I-20, U.S. Highways 79, 80, and 371; and State Highways 2 and 159. I-20 is the primary road traveling east-west in the parish. It is paralleled by U.S. Highway 80. State Highway 2 also travels east-west across the northern part of the parish. U.S. Highway 371 the primary route traveling north-south in the parish. Some of these roadways are significant evacuation routes for Bossier Parish, as well as surrounding parishes during states of emergency.

Webster Parish is located in Louisiana Governor’s Office of Homeland Security and Emergency Preparedness (GOHSEP) Region 7.

As noted above, Webster Parish is located in the northwestern region of Louisiana.



Figure 1-2: Louisiana Homeland Security Regions

Table 1-1: Webster Parish Population
(Source: U.S. Census Bureau)

	2010 Census	2014 Census	Current Year (If Available)	Percent Change 2010 - 2014
Total Population	41,207	40,333	—	-2.10%
Population Density (Pop/Sq Mi)	69.5	—	—	—
Total Households	19,336	19,428	—	—

Economy

A hard-working labor force, abundant raw materials, location near a corridor of significant industrial activity, and land for commercial and industrial development make Webster Parish an ideal prospect for business investment. Major industrial products manufactured include paper and paper products, oil, gas, butane, timber, timber products, farm implements, dump trailer, plywood board and extensive gravel and road contracting businesses.

Tourism and recreation also play a role in the economy of Webster Parish. Part of the “Sportsman’s Paradise” region of Louisiana, Webster Parish boasts superb hunting and fishing in beautiful Lake Bistineau, Caney Lakes and Kisatchie Forest. Just north of Minden, the Germantown Colony and Museum showcases German settlers who established a commune beginning in the mid-1800’s in a quest to avoid religious persecution.

Industry data for business patterns in Webster Parish can be found in the table below:

Table 1-2: Business Patterns in Webster Parish
(Source: <http://censtats.census.gov/cgi-bin/cbpnaic/cbpsect.pl>)

Business Description	Number of Employees	Number of Establishments	Annual Payroll (\$1,000)
Retail Trade	2,149	162	49,806
Manufacturing	1,424	28	65,853
Health Care and Social Assistance	2,195	86	67,957
Mining, Quarrying, Oil and Gas Extraction	473	27	42,266
Transportation and Warehousing	331	30	15,764
Construction	1,314	63	70,508
Administration and Support and Waste Management and Remediation Services	178	32	3,927
Real Estate and Rental and Leasing	100-249	33	10,501
Wholesale Trade	290	34	13,026
Other Services (except Public Administration)	555	87	11,655
Accommodation and Food Services	778	59	9,208
Financial and Insurance	397	66	14,945
Professional, Scientific, and Technical Services	217	55	6,310
Information	62	13	2,638
Educational Services	20-99	4	—
Arts, Entertainment, and Recreation	0-19	5	187
Management of Companies and Enterprises	20-99	4	3,032
Agriculture, Forestry, Fishing and Hunting	104	12	4,246
Utilities	0-19	6	—

While nature has presented the parish with a variety of hazards, the parish has the human resources that can face those hazards and manage the impact they have on people and property. This plan will discuss hazards affecting Webster Parish. Hazard Profiles (see Section Two) contain detailed information on the likelihood of occurrence, possible magnitude or intensity, areas of the parish that could be affected, and conditions that could influence the manifestation of the hazard.

Hazard Mitigation

To fully understand hazard mitigation efforts in Webster 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 before 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, however, 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.

The catastrophic events of 2005 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 GOHSEP encourages the parishes and the local municipalities 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 2016 Webster Parish Hazard Mitigation Plan maintains much of the information from the 2006 and 2011 plan versions, but it now reflects the order and methodologies of the 2011 Louisiana State Hazard Mitigation Plan. The sections in the 2011 Webster Hazard Mitigation Plan were as follows:

- Section One Prerequisites
- Section Two Planning Process
- Section Three Risk Assessment
- Section Four Mitigation Strategy
- Section Five Plan Maintenance
- Appendices

This plan update now 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 Webster Parish Hazard Mitigation Steering Committee was not ignorant or dismissive of the successful analysis and mitigation planning executed in previous plan updates. This plan update remains coherent with those documents, retaining language and content when needed, deleting it when appropriate, and augmenting it when constructive.

2016 Plan Update

This 2016 plan update proceeds with the previous goals of the Webster Parish Hazard Mitigation Plan. Goal six was edited to exclude the direct mention of hazardous materials, as they are not considered a natural hazard. The current goals are as follows:

- Reduce or prevent injury and loss of life
- Reduce or prevent damage to property and material assets
- Reduce or prevent future damage to critical facilities essential for protection and public safety including: fire, rescue, law enforcement, communications, command and control
- Reduce or prevent future damage to special facilities and commercial facilities including: schools, nursing homes, hospitals and clinics, prisons, historical and cultural resources
- Reduce or prevent future damage to infrastructure including: stormwater conveyance structures, utility systems, pipelines, railroads, highways, bridges, and waterways
- Reduce or prevent future damage to facilities that if damaged, could endanger people, damage the environment, or harm the local economy.

This plan update makes a number of textual changes throughout, but the most obvious changes are data related and structural edits. First, the Spatial Hazard Events and Losses Database for the United States (SHELDUS) was used as a data source for hazard identification because it incorporates all storm event data from the National Climatic Data Center (NCDC) Storm Events Database used in previous plans, as well as storm event data from other sources including the NOAA Storm Prediction Center, National Hurricane Center, and U.S. Fire Administration. Furthermore, all of the sections were updated to reflect the most current information and the most current vision of the plan update. Second, instead of eleven, separate sections for numerous tables, maps, and appendices, the present plan update has four sections and five appendices. The most significant changes are the newly developed hazard profiles and risk assessments, as well as the removal of repetition between sections from the previous plan updates. The 2016 plan update is organized generally 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

Table 1-4: Plan Crosswalk

2011 Plan	Revised Plan (2016)
Section 1: Prerequisites	Section 1: Introduction
Section 2: Planning Process	Appendix A: Planning Process
Section 3: Risk Assessment	Section 2: Hazard Identification and Risk Assessment
Section 4: Mitigation Strategy	Section 4: Mitigation Strategy
Section 5: Plan Maintenance	Appendix B: Plan Maintenance
Appendices	Appendices

Despite changes in this plan update, the plan remains consistent in its emphasis on the few types of hazards that pose the most risk to loss of life, injury, and property in Webster Parish and its municipalities. The extent of this risk is dictated primarily by its geographic location. Most significantly, Webster Parish remains at high risk of water inundation from various sources, including flooding, tornadoes, and thunderstorm activity. All of the parish is also at high risk of damages from high winds and wind-borne debris caused by various meteorological phenomena. Other hazards threaten the parish and/or its municipalities, 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 Webster 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 Webster Parish Hazard Mitigation Plan published in 2011, as well as the hazards that were identified in the state's 2014 Hazard Mitigation Plan that were considered to be 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 2016 Update
Subsidence/Coastal Land Loss			
Drought	X		X
Earthquakes	X		*
Expansive Soils			
Fog			
Flooding	X	X	X
Extreme Heat	X		X
Sinkholes	X	X	X
Thunderstorms (Hail, Lightning, & Wind)	X	X	X
Tornadoes	X	X	X
Tropical Cyclones	X	X	X
Tsunamis			
Wildfires	X		X
Winter Storms	X		X
Dam Failure	X		+
Levee Failure	X		*

* Hazard was profiled but discounted

+ Hazard was profiled, but a data deficiency was declared

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, along with sinkholes. The hazards of earthquakes and levee failures were discounted due to having no impact on Webster Parish, and dam failure was profiled but a data deficiency was declared.

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

- a) Drought
- b) Earthquakes
- c) Extreme Heat
- d) Flooding (backwater, riverine, localized stormwater event)
- e) Sinkholes
- f) Thunderstorms (hail, lightning, wind)
- g) Tornadoes
- h) Tropical Cyclones (flooding and high winds)
- i) Wildfires
- j) Winter Storms
- k) Dam Failure
- l) Levee Failure

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

- Flooding from rivers and waterways, rain storms, tropical cyclones, and hurricanes in the following forms:
 - a) Riverine
 - b) Stormwater
 - c) Surge
 - d) Backwater flooding (as the result of river flooding and surge)
- High wind damage most commonly resulting from hurricanes, thunderstorms, and tornadoes
- Property and crop damage resulting from drought, extreme heat, and wildfires

The potential destructive power of tropical cyclones and flooding were determined to be the most prevalent hazards to the parish. Eight of the sixteen Presidential Declarations that Webster Parish has received resulted from either tropical cyclones (4 declarations) or flooding (4 declarations), which validates these as the most significant hazards. Therefore, the issues of hurricanes and floods will both 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 fairly 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 Webster Parish is included in the tropical cyclone risk assessment.

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

Previous Occurrences

Table 2-2 summarizes federal disaster declarations for Webster Parish since 1965. Information includes names, dates, and types of disaster.

Table 2-2: Webster Parish Major Disaster Declarations

Disaster Declaration Number	Date	Type of Disaster
3031	2/22/1977	Drought and Freezing
567	12/6/1978	Severe Storms and Tornadoes
829	5/20/1989	Severe Storms and Flooding
835	7/17/1989	Tropical Cyclone – Tropical Storm Allison
902	4/23/1991	Severe Storms and Flooding
904	5/3/1991	Severe Storms, Tornadoes, and Flooding
1012	2/28/1994	Severe Winter Ice Storm
1264	1/21/1999	Severe Ice Storm
1269	4/9/1999	Severe Storms, Tornadoes, and Flooding
1314	2/15/2000	Severe Winter Storm
1357	1/12/2001	Severe Winter Ice Storm
3172	2/1/2003	Loss of Space Shuttle Columbia
1603	8/29/2005	Tropical Cyclone – Hurricane Katrina
1607	9/24/2005	Tropical Cyclone – Hurricane Rita
1786	9/2/2008	Tropical Cyclone – Hurricane Gustav
1863	12/10/2009	Severe Storms, Tornadoes, and Flooding

Probability of Future Hazard Events

The probability of a hazard event occurring in Webster 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 Spatial Hazards Events and Losses Database (SHELDUS), which provides historical hazard data from 1960 to 2014. In staying consistent with the state plan, the SHELDUS database was evaluated for the last twenty five years (1990 – 2015) in order to determine future probability of a hazard occurring. While the 25-year record used by the State was adopted for the purpose of determining the overall probability, in order to assist with determining estimated losses, unless otherwise stated, the full 54-year record was used when Hazus-Multi-Hazard (MH) wasn’t 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. In addition, the National Climatic Data Center (NCDC) was also used to help identify hazard data specific to the municipalities. This was used due to it containing specific data for cities, whereas the data within SHELDUS is limited to parishes.

The following tables shows the annual probability for each hazard occurring across the parish and in separate jurisdictions:

Table 2-3: Probability of Future Hazard Reoccurrence

Hazard	Probability						
	Webster Parish (Unincorporated)	Cotton Valley	Cullen	Dixie Inn	Doyline	Dubberly	Heflin
Drought	4%	4%	4%	4%	4%	4%	4%
Earthquake	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Extreme Heat	4%	4%	4%	4%	4%	4%	4%
Flooding	40%	20%	20%	40%	24%	20%	20%
Sinkholes	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Thunderstorms (Hail)	68%	68%	68%	68%	68%	68%	68%
Thunderstorms (Lightning)	44%	44%	44%	44%	44%	44%	44%
Thunderstorms (Wind)	100%	100%	100%	100%	100%	100%	100%
Tornadoes	48%	48%	48%	48%	48%	48%	48%
Tropical Cyclones	12%	12%	12%	12%	12%	12%	12%
Wildfires	4%	4%	4%	4%	4%	4%	4%
Winter Storms	28%	28%	28%	28%	28%	28%	28%
Dam Failure	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Levee Failure	<1%	<1%	<1%	<1%	<1%	<1%	<1%

Table 2-3: Probability of Future Hazard Reoccurrence (Continued)

Hazard	Probability				
	Minden	Sarepta	Shongaloo	Sibley	Springhill
Drought	4%	4%	4%	4%	4%
Earthquake	<1%	<1%	<1%	<1%	<1%
Extreme Heat	4%	4%	4%	4%	4%
Flooding	60%	20%	28%	28%	76%
Sinkholes	<1%	<1%	<1%	<1%	<1%
Thunderstorms (Hail)	68%	68%	68%	68%	68%
Thunderstorms (Lightning)	44%	44%	44%	44%	44%
Thunderstorms (Wind)	100%	100%	100%	100%	100%
Tornadoes	48%	48%	48%	48%	48%
Tropical Cyclones	12%	12%	12%	12%	12%
Wildfires	4%	4%	4%	4%	4%
Winter Storms	28%	28%	28%	28%	28%
Dam Failure	<1%	<1%	<1%	<1%	<1%
Levee Failure	<1%	<1%	<1%	<1%	<1%

As shown in *Table 2-3*, thunderstorm winds for the entire planning area have the highest annual chance of occurrence in the parish (100%), followed by flood events for the incorporated area of Springhill (76%). Flood events in the remaining incorporated areas have a slightly lower chance of occurring annually. Hail has a 68% annual chance of reoccurrence, followed by tornadoes (48%), lightning (44%), winter storms (28%), and tropical cyclones (12%). Wildfires, drought, and extreme heat all have a 4% annual chance of occurrence, followed lastly by sinkholes at less than 1%. Earthquakes and levee failure were discounted since the annual chance of occurrence was calculated at less than 1% and the hazards have no impact on the parish. A data deficiency was declared for dam failure, but the parish will continue to work to update the hazard information as new data is received from the USACE.

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 \$6,269,806,000 in structures throughout the parish. The following tables provide the total estimated value for each type of structure by occupancy.

Table 2-4: Estimated Total of Potential Losses throughout Webster Parish

Occupancy	Webster Parish	Unincorporated Webster Parish	Cotton Valley	Cullen	Dixie Inn
Agricultural	\$4,764,580,000	\$1,962,274,000	\$115,506,000	\$136,430,000	\$25,655,000
Commercial	\$849,961,000	\$185,923,000	\$5,194,000	\$2,480,000	\$8,618,000
Government	\$318,473,000	\$178,961,000	\$402,000	\$0	\$9,128,000
Industrial	\$11,868,000	\$6,470,000	\$0	\$0	\$0
Religion	\$203,324,000	\$59,720,000	\$5,854,000	\$0	\$4,060,000
Residential	\$44,731,000	\$11,560,000	\$1,432,000	\$0	\$844,000
Education	\$76,869,000	\$19,560,000	\$946,000	\$0	\$0
Total	\$6,269,806,000	\$2,424,468,000	\$129,334,000	\$138,910,000	\$48,305,000

Table 2-4: Estimated Total of Potential Losses (Continued)

Occupancy	Doyline	Dubberly	Heflin	Minden	Sarepta
Agricultural	\$91,715,000	\$21,526,000	\$28,731,000	\$1,457,908,000	\$93,690,000
Commercial	\$9,486,000	\$2,012,000	\$1,088,000	\$449,811,000	\$3,492,000
Government	\$2,770,000	\$1,265,000	\$396,000	\$78,225,000	\$19,900,000
Industrial	\$140,000	\$0	\$0	\$3,590,000	\$8,000
Religion	\$10,282,000	\$1,488,000	\$850,000	\$79,816,000	\$882,000
Residential	\$948,000	\$432,000	\$408,000	\$19,749,000	\$26,000
Education	\$6,782,000	\$1,922,000	\$0	\$31,384,000	\$4,424,000
Total	\$122,123,000	\$28,645,000	\$31,473,000	\$2,120,483,000	\$122,422,000

Table 2-4: Estimated Total of Potential Losses (Continued)

Occupancy	Shongaloo	Sibley	Springhill
Agricultural	\$21,986,000	\$111,226,000	\$697,933,000
Commercial	\$5,898,000	\$10,214,000	\$165,745,000
Government	\$174,000	\$1,660,000	\$25,592,000
Industrial	\$0	\$0	\$1,660,000
Religion	\$1,242,000	\$3,816,000	\$35,314,000
Residential	\$346,000	\$1,038,000	\$7,948,000
Education	\$3,692,000	\$0	\$8,159,000
Total	\$33,338,000	\$127,954,000	\$942,351,000

Essential Facilities of the Parish

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

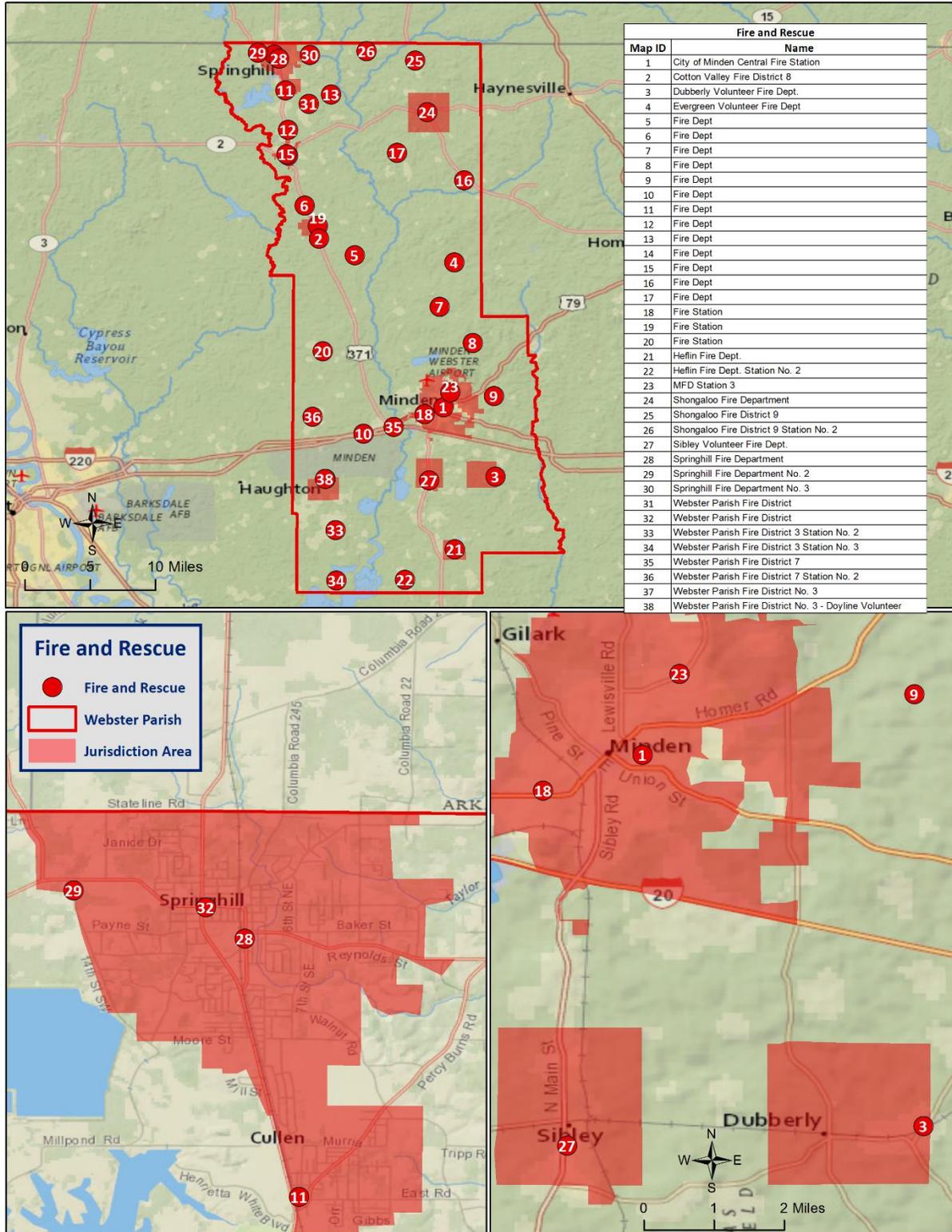


Figure 2-1: Fire and Rescue Buildings in Webster Parish

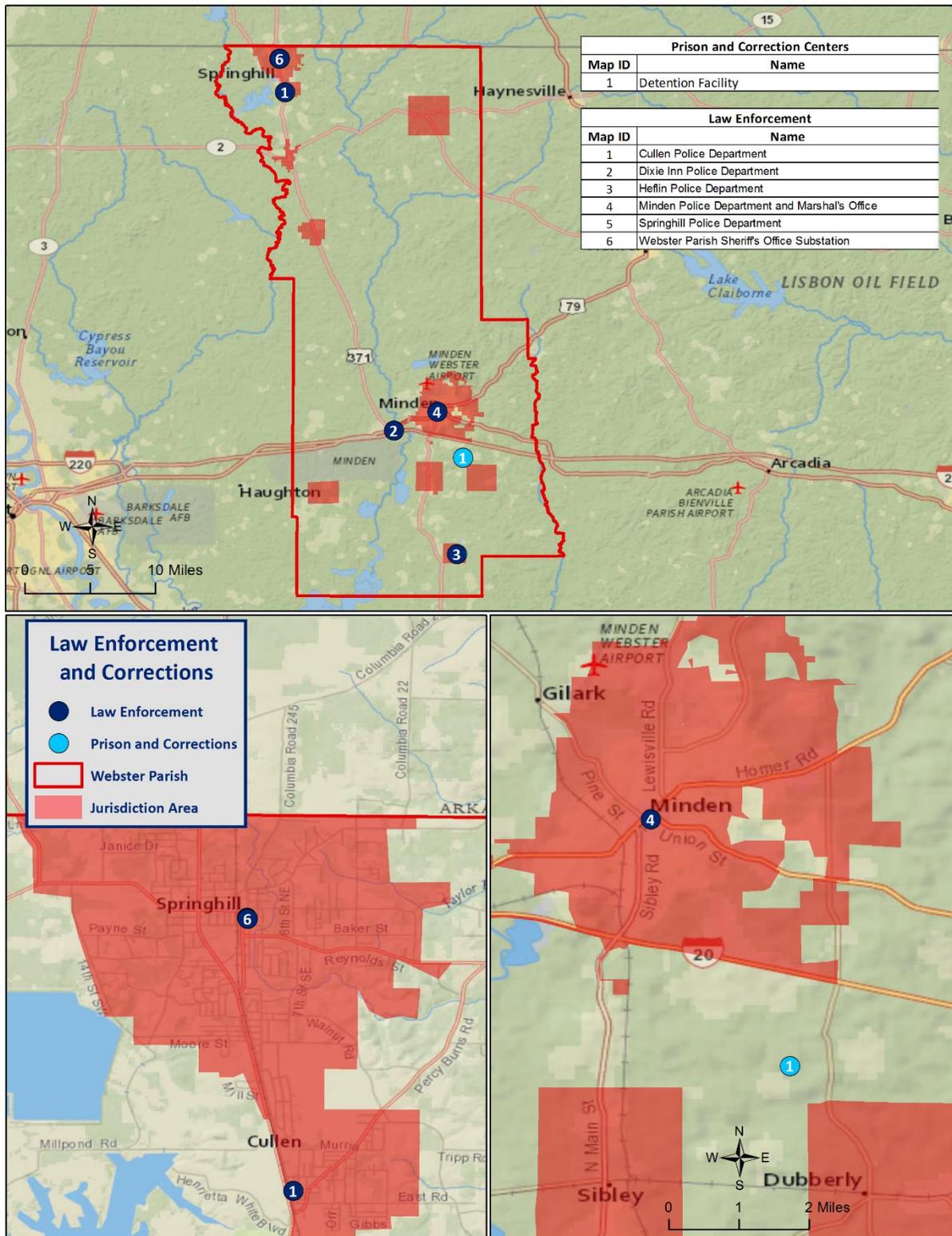


Figure 2-3: Law Enforcement Facilities in Webster Parish

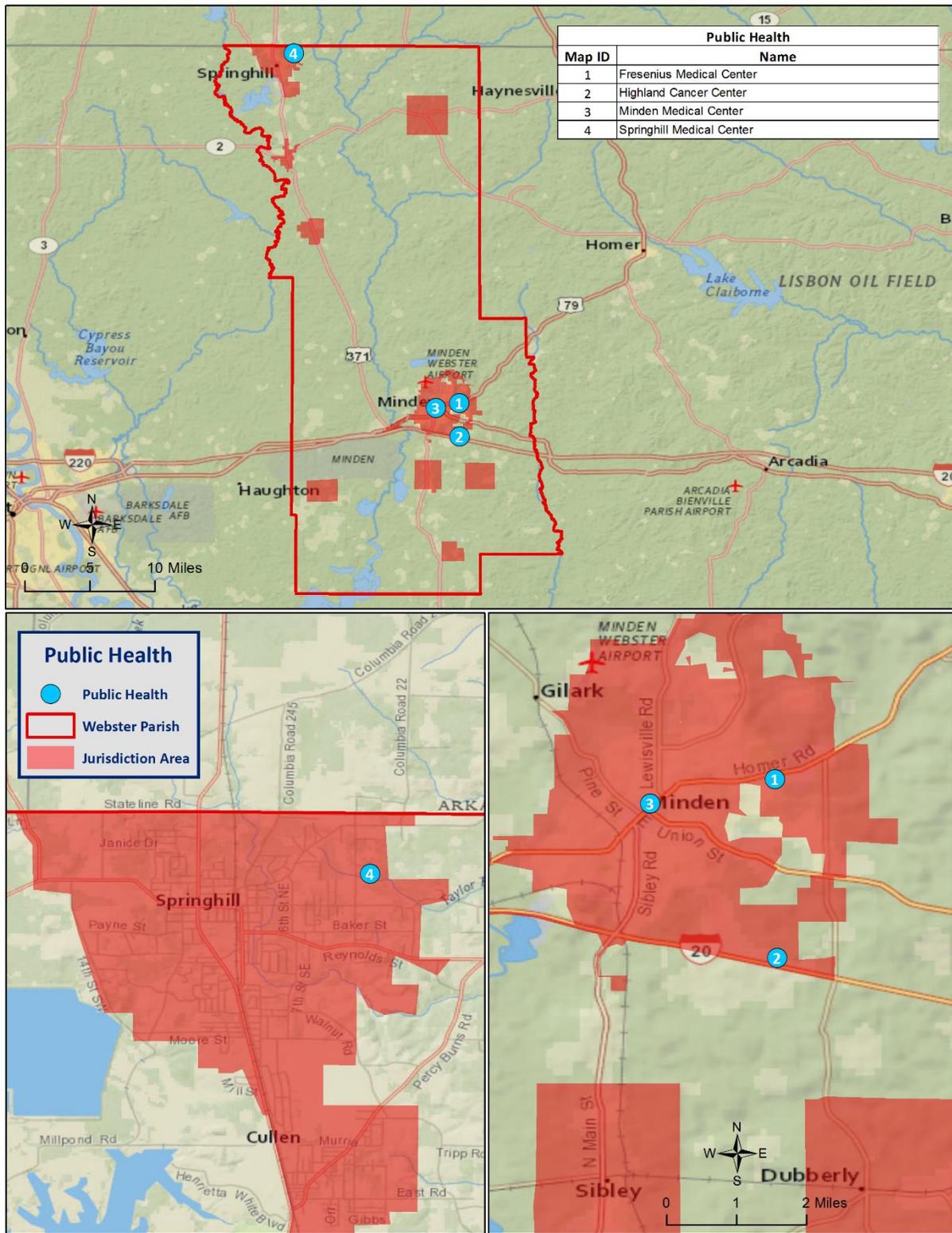


Figure 2-4: Public Health Facilities in Webster Parish

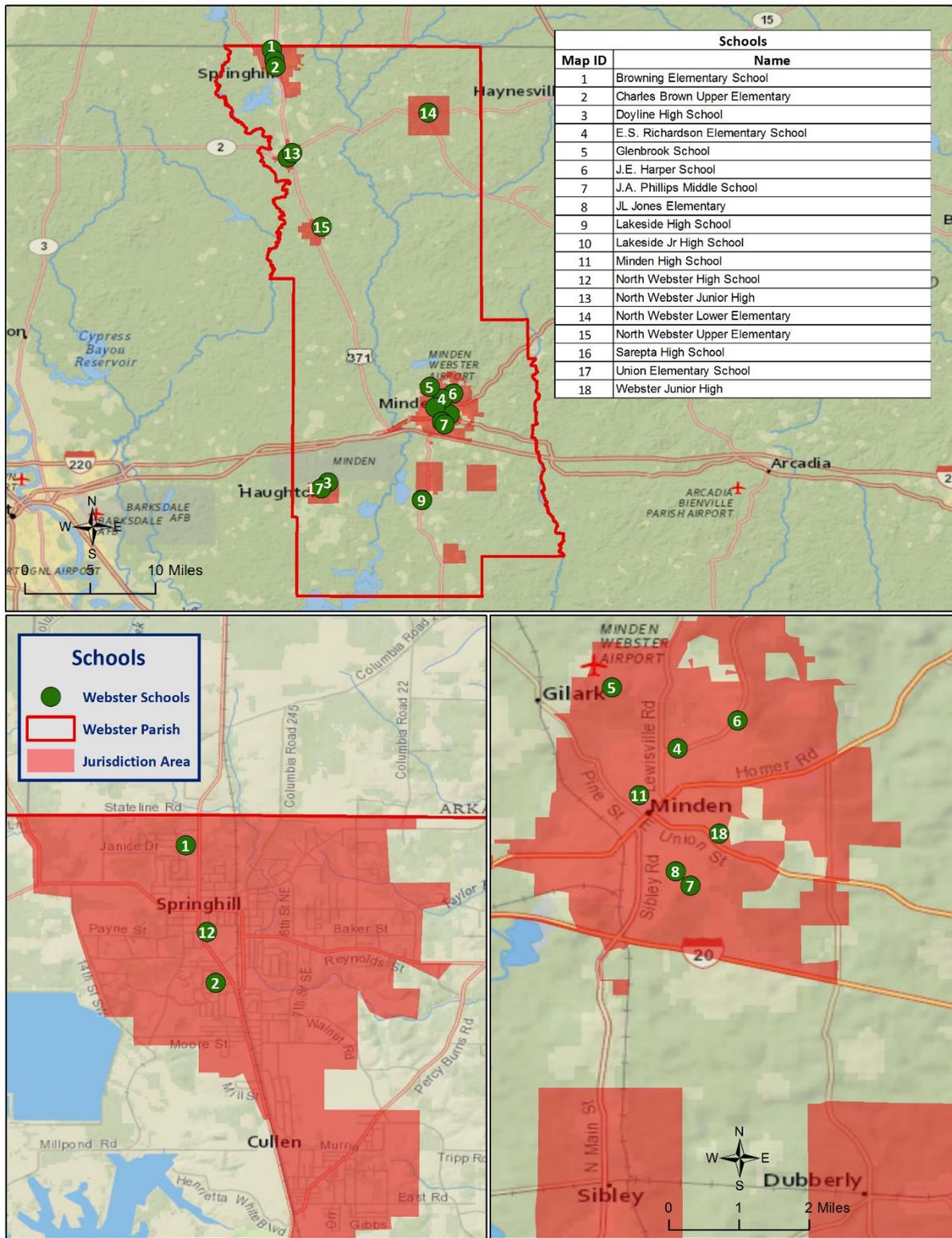


Figure 2-5: School Facilities in Webster Parish

Future Development Trends

Webster Parish experienced a small decline in population and a small growth in housing between the years of 2000 and 2014, with a population of 41,700 with 18,991 housing units in 2000 to a population of 40,890 with 19,401 housing units in 2014. This decline in population was largely in the incorporated area of Dixie Inn from the years 2000 to 2010, and in the incorporated area of Cullen from 2010 to 2014. 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 2014:

Table 2-5: Population Growth Rate for Webster Parish

Total Population	Webster Parish	Webster Parish (Unincorporated)	Cotton Valley	Cullen	Dixie Inn	Doyline	Dubberly	Heflin
1-Apr-00	41,700	16,579	1,154	1,265	358	850	278	249
1-Apr-10	41,215	16,789	1,009	1,163	273	818	273	244
1-Jul-14	40,890	17,006	961	937	283	999	221	234
Population Growth between 2000 – 2010	-1.2%	1.3%	-12.6%	-8.1%	-23.7%	-3.8%	-1.8%	-2.0%
Average Annual Growth Rate between 2000 – 2010	-0.1%	0.1%	-1.3%	-0.8%	-2.4%	-0.4%	-0.2%	-0.2%
Population Growth between 2010 – 2014	-0.8%	1.3%	-4.8%	-19.4%	3.7%	22.1%	-19.0%	-4.1%
Average Annual Growth Rate between 2010 – 2014	-0.20%	0.32%	-1.19%	-4.86%	0.92%	5.53%	-4.76%	-1.02%

Table 2-5: Population Growth Rate for Webster Parish (Continued)

Total Population	Minden	Sarepta	Shongaloo	Sibley	Springhill
1-Apr-00	13,366	931	165	1,108	5,397
1-Apr-10	13,085	891	182	1,218	5,270
1-Jul-14	12,808	919	181	1,193	5,148
Population Growth between 2000 – 2010	-2.1%	-4.3%	10.3%	9.9%	-2.4%
Average Annual Growth Rate between 2000 – 2010	-0.2%	-0.4%	1.0%	1.0%	-0.2%
Population Growth between 2010 – 2014	-2.1%	3.1%	-0.5%	-2.1%	-2.3%
Average Annual Growth Rate between 2010 – 2014	-0.53%	0.79%	-0.14%	-0.51%	-0.58%

Table 2-6: Housing Growth Rate for Webster Parish

Total Housing Units	Webster Parish	Webster Parish (Unincorporated)	Cotton Valley	Cullen	Dixie Inn	Doyline	Dubberly	Heflin
1-Apr-00	18,991	7,737	568	600	189	359	143	104
1-Apr-10	19,336	8,044	530	637	139	373	121	99
1-Jul-14	19,401	8,017	591	728	126	423	109	79
Housing Growth between 2000 – 2010	1.8%	4.0%	-6.7%	6.2%	-26.5%	3.9%	-15.4%	-4.8%
Average Annual Growth Rate between 2000 – 2010	0.2%	0.4%	-0.7%	0.6%	-2.6%	0.4%	-1.5%	-0.5%
Housing Growth between 2010 – 2014	0.3%	-0.3%	11.5%	14.3%	-9.4%	13.4%	-9.9%	-20.2%
Average Annual Growth Rate between 2010 – 2014	0.1%	-0.1%	2.9%	3.6%	-2.3%	3.4%	-2.5%	-5.1%

Table 2-6: Housing Growth Rate for Webster Parish (Continued)

Total Housing Units	Minden	Sarepta	Shongaloo	Sibley	Springhill
1-Apr-00	5,795	411	77	457	2,551
1-Apr-10	5,832	401	78	511	2,571
1-Jul-14	5,573	450	71	562	2,672
Housing Growth between 2000 – 2010	0.6%	-2.4%	1.3%	11.8%	0.8%
Average Annual Growth Rate between 2000 – 2010	0.1%	-0.2%	0.1%	1.2%	0.1%
Housing Growth between 2010 – 2014	-4.4%	12.2%	-9.0%	10.0%	3.9%
Average Annual Growth Rate between 2010 – 2014	-1.1%	3.1%	-2.2%	2.5%	1.0%

As shown in the previous tables, Webster Parish has experienced a slight decline population and a slight growth in housing units. Housing growth rates grew at 0.2% annually from 2000 to 2010, and at 0.1% annually from 2010 to 2014. Population growth rates for the parish were declined at -0.1% annually from 2000 to 2010, and -0.2% annually from 2010 to 2014. From 2000 to 2010, the incorporated area of Shongaloo had the largest increase in population rate at 10.3%, followed by the incorporated area of Sibley at 9.9%. The incorporated area of Dixie Inn had the largest decrease in population during the 2000 to 2010 time period at -23.7%. From 2010 to 2014, Doyline experienced the largest growth in population at 22.1% followed by Dixie Inn at 3.7%.

The incorporated area of Doyline experienced the largest increase in housing units from 2000 to 2010 at 11.8%, followed by the incorporated area of Cullen at 6.2%. From 2010 to 2014, the incorporated area of Cullen experienced the largest growth in housing units at 14.3%, followed by Cotton Valley at 11.5%. The incorporated area of Heflin experienced the largest decline in housing units at -20.2% from 2010 to 2014.

Future Hazard Impacts

Hazard impacts were estimated for five years and ten years in the future (2019 and 2024). 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 slightly within Webster Parish from the present until 2024. 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%. No changes in development have impacted the community’s vulnerability since the plans last update.

Table 2-7: Estimated Future Impacts, 2019-2024
(Source: Hazus, US Census Bureau)

Hazard / Impact	Total in Parish (2014)	Hazard Area (2014)	Hazard Area (2019)	Hazard Area (2024)
Flood Damage				
Structures	19,417	2,914	2,926	2,941
Value of Structures	\$6,339,080,920	\$951,162,116	\$1,004,883,019	\$1,073,368,047
# of People	40,931	6,142	6,172	6,209
Tropical Cyclones				
Structures	19,417	19,417	19,499	19,598
Value of Structures	\$6,339,080,920	\$6,339,080,920	\$6,697,107,319	\$7,153,530,181
# of People	40,931	40,931	41,136	41,383

Land Use

The Webster Parish Land Use table is provided below. Residential, commercial, and industrial areas account for only 12% of the parish’s land use. Forested land is the largest category at 224,891 acres, accounting for 75% of parish land. At 26,549 acres, agricultural land accounts for 9% of parish lands, while 6,288 acres of open water areas account for 2% of parish lands. The parish also consists of 5,774 acres of wetlands, accounting for 2% of all parish lands.

Table 2-8: Webster Parish Land Use
(Source: USGS Land Use Map)

Land Use	Acres	Percentage
Agricultural Land, Cropland, and Pasture	26,549	9%
Wetlands	5,774	2%
Forest Land (not including forested wetlands)	224,891	75%
Urban/Development	34,707	12%
Water	6,288	2%

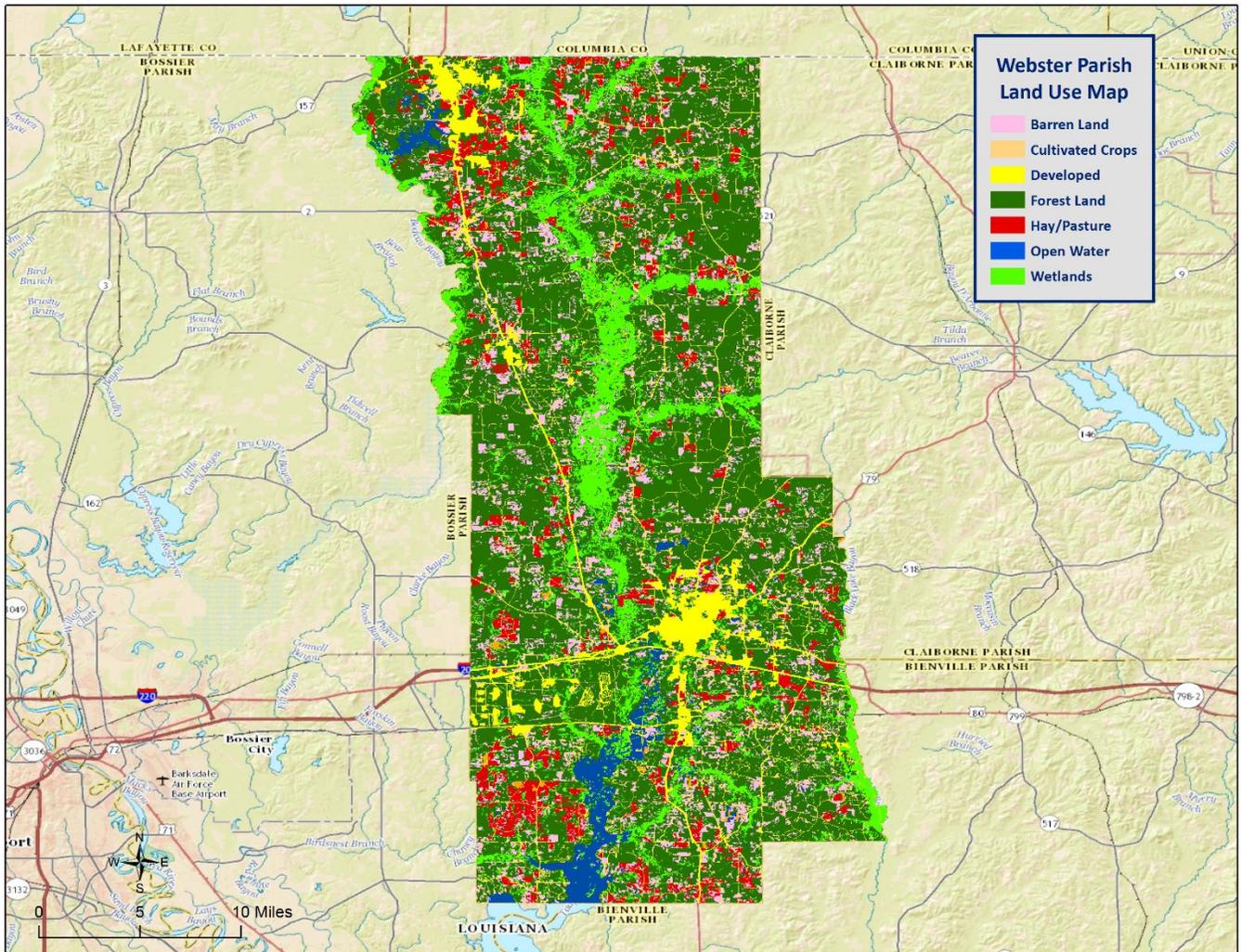


Figure 2-6: Webster Parish Land Use Map
(Source: USGS Land Use Map)

Hazard Identification

Drought

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

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

This hazard is often measured using the Palmer Drought Severity Index (PDSI, also known operationally as the Palmer Drought Index). The PDSI, first developed by Wayne Palmer in a 1965 paper for the U.S. Weather Bureau, measures drought through recent precipitation and temperature data with regard to a basic supply-and-demand model of soil moisture. It is most effective in long-term calculations. Three other indices used to measure drought are the Palmer Hydrologic Drought Index (PHDI), the Crop Moisture Index (CMI), which is derived from the PDSI, and the Keetch-Byram Drought Index (KBDI), created by John Keetch and George Byram in 1968 for the U.S. Forest Service. The KBDI is used mainly for predicting the likelihood of wildfire outbreaks. As a compromise, the PDSI is used most often for droughts since it is a medium-response drought indicator. The objective of the PDSI is to provide measurements of moisture conditions that are standardized so that comparisons using the index can be made between locations and between months. [Table 2-9](#) displays the range and Palmer classifications of the PDSI index. [Figure 2-7](#) displays the current drought monitor for the State of Louisiana and its parishes.

Table 2-9: Palmer Drought Severity Index Classification and Range

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

The PDSI best measures the duration and intensity of drought-inducing circulation patterns at a somewhat long-term time scale, although not as long-term as the PHDI. Long-term drought is cumulative, so the intensity of drought during the current month is dependent on the current weather patterns in addition to the effects of cumulative patterns of previous months. Although weather patterns can change almost overnight from a long-term drought pattern to a long-term wet pattern, as a medium-response indicator, the PDSI responds relatively rapidly. Data compiled by the National Drought Mitigation Center indicates normal conditions exist in most of Webster Parish at the time this plan went to publication. However, the very southeastern corner of the parish is experiencing abnormally dry conditions. (*Figure 2-7*).

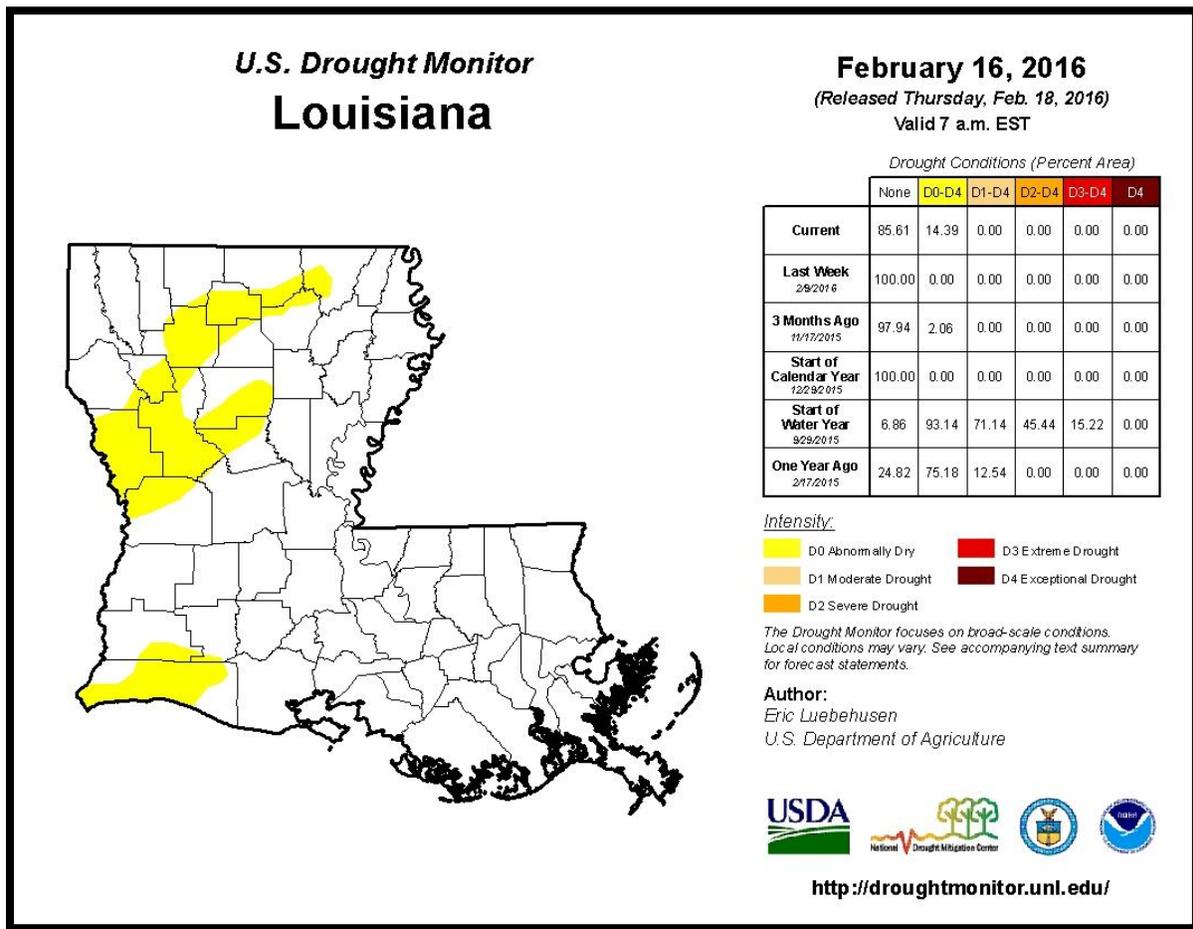


Figure 2-7: United States Drought Monitor for the State of Louisiana and its Parishes
(Source: The National Drought Mitigation Center)

Location

Drought typically impacts a region and not one specific parish or jurisdiction. While the entire planning area can experience drought, the major impact of a drought event in Webster Parish is on the agricultural community.

Previous Occurrences / Extents

The SHELDUS database reports a total of one drought event occurring within the boundaries of Webster Parish between the years of 1990 to 2015. *Table 2-10* identifies the date of occurrence, estimated crop damage, and severity of the events that have occurred in Webster Parish. Based on previous occurrences, and in accordance with the Palmer Drought Index, the worst case scenario for drought in Webster Parish would be a severe drought event.

*Table 2-10: Drought Events with Crop Damage Totals for Webster Parish
(Source: SHELDUS)*

Date	Crop Damage	Palmer Classification
June 1998	\$1,281,497	Severe Drought

Frequency / Probability

Based on previous occurrences of one drought event in 25 years, the probability of drought occurrence in the planning area in any given year is 4%.

Estimated Potential Losses

According to the SHELDUS database, there has been one drought event that has caused some level of crop damage. The total agricultural damage from this event is \$1,281,497, with an average cost of \$1,281,497 per drought event. When annualizing the total cost over the 25-year record, total annual losses based on drought is estimated to be \$51,260. *Table 2-11* presents an analysis of agricultural exposure that is susceptible to drought by major crop type for Webster Parish.

*Table 2-11: Agricultural Exposure by Crop Type for Droughts in Webster Parish
(Source: LSU Ag Center 2014 Parish Totals)*

Agricultural Exposure by Type for Drought						
Forestry	Hay	Tomatoes	Sweet Corn	Watermelon	Southern Peas	Total
\$20,175,362	\$3,476,160	\$888,125	\$461,250	\$288,000	\$218,400	\$25,507,297

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

Earthquakes

An earthquake is a sudden motion or trembling of the Earth caused by an abrupt release of stored energy in the rocks beneath the Earth’s surface. The energy released results in vibrations which are known as seismic waves. Ground motion from seismic waves is expressed as peak ground acceleration (PGA), the fastest measured change in speed for a particle at ground level that is moving because of an earthquake. PGA is commonly measured as a percentage of acceleration due to Earth’s gravity (%g). This measurement is relied upon to determine seismic load engineering design and construction requirements. Earthquakes are typically described in terms of magnitude and intensity. Magnitude is the measure of the amplitude of the seismic wave and is often expressed by the Richter scale, and intensity is a measure of how strong the shock was felt at a particular location, indexed by the Modified Mercalli Intensity (MMI) scale. The Richter scale is a logarithmic measurement whereby an increase in the scale by one whole number represents a tenfold increase in measured ground motion of the earthquake (and an increase in energy released of more than 30 times). An increase by two whole numbers represents a 102 (or 100-fold) increase in ground motion, and thus more than 302 (or 900) times the energy released. *Table 2-12* shows the rough correlation between the Richter scale, PGA, and the MMI. The relationship between these is approximate and depends upon such specifics as the depth of the focus (the location of the actual rock movement) and distance from the epicenter (the location on the Earth’s surface above the earthquake focus) of the earthquake.

*Table 2-12: Comparison of Earthquake Magnitudes for PGA, Richter, and MMI
(Source: USGS Earthquake Hazards Program)*

COMPARISON OF EARTHQUAKE METRICS			
PGA (%g)	Magnitude (Richter)	Intensity (MMI)	Description (MMI)
<0.17	1.0 - 3.0	I	I. Not felt except by a very few under especially favorable conditions.
0.17 - 1.4	3.0 - 3.9	II - III	II. Felt only by a few persons at rest, especially on upper floors of buildings. III. Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motorcars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
1.4 - 9.2	4.0 - 4.9	IV - V	IV. Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motorcars rock noticeably. V. Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
9.2 - 34	5.0 - 5.9	VI - VII	VI. Felt by all. Some heavy furniture moved; a few instances of fallen plaster. Damage slight. VII. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.

COMPARISON OF EARTHQUAKE METRICS			
PGA (%g)	Magnitude (Richter)	Intensity (MMI)	Description (MMI)
34 - 124	6.0 - 6.9	VII - IX	VIII. Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, and walls. Heavy furniture overturned. IX. Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
>124	7.0 and higher	VIII or higher	X. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent. XI. Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly. XII. Damage total. Lines of sight and level are distorted. Objects thrown into the air.

The system of subsidence faults in southern Louisiana developed due to accelerated land subsidence and rapid sediment deposition from the Mississippi River. The system stretches across the southern portion of the state from Beauregard Parish in the west to West Baton Rouge Parish in the east and it includes every parish south of this line. This system is thought to be responsible for many of the recorded earthquakes from 1843 to the present. All of the earthquakes that occurred over this period of time were of low magnitude, resulting mostly in limited property damage (such as broken windows, damaged chimneys, and cracked plaster). While faults throughout the northwestern parishes are thought to be inactive, the New Madrid seismic zone lies just to the north of Louisiana and originates in the region of New Madrid, Missouri. The magnitude of historic earthquakes originating in the New Madrid seismic zone is far greater than that generated by the subsidence fault system in coastal Louisiana. A significant seismic event from the New Madrid seismic zone is more likely to have a greater impact on Louisiana than a seismic event from the subsidence fault system.

Location

An earthquake event is a geological hazard that occurs along fault lines. Webster Parish has two fault lines, with one running through the northeast corner of the parish and the second running through the southeast corner of the parish. (*Figure 2-8*). Effects of an earthquake may be felt throughout the parish.

Previous Occurrences / Extents

Both the SHELUDS and National Climatic Data Center report no earthquake events occurring within the boundaries of Webster Parish between the years of 1990 – 2015. The National Oceanic and Atmospheric Administration’s National Geophysical Data Center reports no earthquake events occurring within the boundaries of Webster Parish between the years 1811 – 2014. *Figure 2-8* displays the location and intensity of each earthquake events in the parishes surrounding Webster Parish. Based on the previous earthquake events that occurred in surrounding parishes, an earthquake with an intensity level of MMI 3 could occur within the planning area. This intensity of an earthquake would only be noticeable by those indoors, with many people not recognizing it as an earthquake.

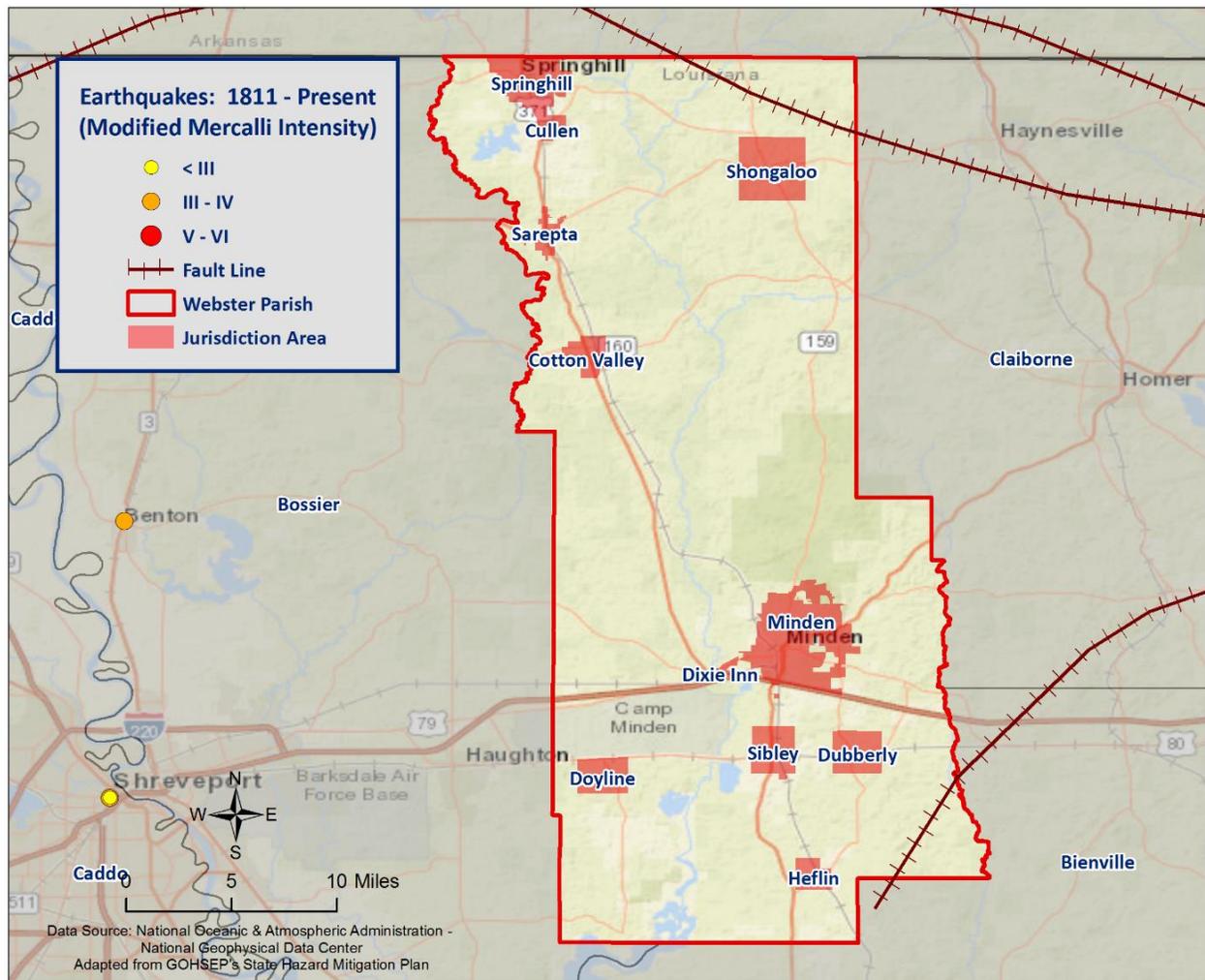


Figure 2-8: Location and Intensity (MMI) of Earthquakes in Webster Parish

Frequency / Probability

Earthquakes are an extremely rare occurrence in the State of Louisiana and Webster Parish, with no occurrences of an earthquake event within the boundaries of the parish from the years 1811 – 2014. Based on this historical record and Louisiana’s State Hazard Mitigation Plan, it is determined that an earthquake event has less than a 1% annual chance of occurrence in the Webster Parish planning area, and would have no impact on the parish. As a result, earthquakes are not carried forward into risk assessment and are discounted.

Extreme Heat

There is no operational definition for defining heat or a heat wave. Heat waves are the consequence of the same weather pattern as drought, and therefore both hazards often occur concurrently. A heat wave is an extended period of oppressive and above normal temperatures over a given period of time. The World Meteorological Organization recommends the declaration of a heat wave when the daily maximum temperature exceeds the average maximum temperatures by 9 °F and lasts for a period of at least five days.

However, temperature alone is insufficient to describe the stress placed on humans (as well as flora and fauna) in hot weather. It is crucial to consider the effect of relative humidity since it is essential to the body's ability to perspire and cool. Once air temperature reaches 95 °F, perspiration becomes a very significant biophysical mechanism to ensure heat loss. Perspiration is ineffective as a cooling mechanism if the water cannot evaporate (i.e., sweating in high relative humidity is reduced as compared to during dry conditions). To communicate this relationship between temperature and humidity, the National Weather Service (NWS) developed the Heat Index (HI), which provides a warning system based on a combination of air temperature and relative humidity. The HI is presented in *Table 2-13*, and *Table 2-14* summarizes the HI risk levels and protective measures. The NWS devised the index for shady, light wind conditions, and thus advises that the HI value can be increased by as much as 15 °F if a person is in direct sunlight with strong, hot winds present.

Most heat disorders (e.g., sunburn, heat cramps, heat exhaustion, and heat stroke) occur because the victim has been overexposed to heat, or has over-exercised in relation to their age and physical condition. Other circumstances that can induce heat-related illnesses include stagnant atmospheric conditions and poor air quality. Seniors and children are most at risk from adverse heat effects. Extreme heat can also damage roads, bridges, pipelines, utilities, and railroads. High temperatures can be partially responsible for deflection of rails and related railroad accidents.

According to NOAA, extreme heat is the leading weather-related cause of death in the United States. And while heat-related deaths in Louisiana are not common, due in part to the consistency and predictability of high seasonal temperatures, they do occur and are still very intense and dangerous. Such deaths happen in a variety of circumstances, often in ways that are not easily categorized due to their unexpectedness. For instance, although exposure to heat is higher at the beach than usual, NOAA does not track heat-related deaths there because such deaths happen infrequently.

Table 2-13: Heat Index Advisor based on Air Temperature (°F) and Relative Humidity
(Source: National Weather Service)

		Temperature (°F)															
		80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
Relative Humidity (%)	40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
	45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
	50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
	55	81	84	86	89	93	97	101	106	112	117	124	130	137			
	60	82	84	88	91	95	100	105	110	116	123	129	137				
	65	82	85	89	93	98	103	108	114	121	128	136					
	70	83	86	90	95	100	105	112	119	126	134						
	75	84	88	92	97	103	109	116	124	132							
	80	84	89	94	100	106	113	121	129								
	85	85	90	96	102	110	117	126	135								
	90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127											
100	87	95	103	112	121	132											

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution
 Extreme Caution
 Danger
 Extreme Danger

Table 2-14: Summary of Heat Index Risk Levels with Protective Measures
(Source: National Weather Service)

Heat Index	Risk Level	Protective Measures
Less than 91°F	Lower (Caution)	Basic heat safety and planning.
91°F to 103°F	Moderate	Implement precautions and heighten awareness.
103°F to 115°F	High	Additional precautions to protect workers.
Greater than 115°F	Very High to Extreme	Triggers even more aggressive protective measures.

Location

Extreme heat typically impacts a region and not one specific parish or jurisdiction. Because extreme heat is a climatological based hazard and has the same probability of occurring in Webster Parish as all of the adjacent parishes, the entire planning area for Webster Parish is equally at risk for extreme heat.

Previous Occurrences / Extents

The SHELDUS database reports a total of two significant extreme heat events occurring within the boundaries of Webster Parish between the years of 1960 to 2015 that have caused significant crop damage. *Table 2-15* provides an overview of extreme heat events that have impacted the Webster Parish planning area since 2010. Based on historical data, the worst case scenario for Webster Parish involving extreme heat would be a high risk level event on the HI scale with temperatures ranging from 103 °F to 115 °F.

Table 2-15: Previous Occurrences of Extreme Heat in Webster Parish
(Source: NOAA)

Date	Temperature (°F)
August 4, 2011	103
August 5, 2011	103
August 18, 2011	103

Frequency / Probability

Based on the geographical location of the State of Louisiana, and Webster Parish in particular, extreme heat events occur frequently. The probability of a significant extreme heat event that causes injury and/or loss of life or crop damage is estimated at approximately 4%.

Estimated Potential Losses

According to the SHELUDS database, crop damage due to extreme heat in Webster Parish has totaled approximately \$626,857 since 1960. To estimate the potential losses of an extreme heat event on an annual basis, the total damages recorded for an extreme event is divided by the total number of years of available extreme heat data in SHELUDS (1960 – 2015). This provides an annual estimated potential loss of \$11,397. The following tables, based on the 2010 Census data, provides an estimate of potential crop losses for Webster Parish:

Table 2-16: Estimated Annual Crop Losses in Webster Parish for Extreme Heat

Estimated Annual Crop Losses from Extreme Heat for Webster Parish						
Unincorporated Webster Parish (40.7% of Population)	Cotton Valley (2.4% of Population)	Cullen (2.8% of Population)	Dixie Inn (0.7% of Population)	Doyline (2.0% of Population)	Dubberly (0.7% of Population)	Heflin (0.6% of Population)
\$4,643	\$279	\$322	\$76	\$226	\$76	\$67

Table 2-16: Estimated Annual Crop Losses in Webster Parish for Extreme Heat (Continued)

Estimated Annual Potential Losses from Extreme Heat for Webster Parish				
Minden (31.7% of Population)	Sarepta (2.2% of Population)	Shongaloo (0.4% of Population)	Sibley (3.0% of Population)	Springhill (12.8% of Population)
\$3,618	\$246	\$50	\$337	\$1,457

There have been no reported injuries or deaths as a direct result of extreme heat in Webster Parish.

Vulnerability

See Appendix C for parish and municipality agricultural exposure to extreme heat hazards.

Flooding

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

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

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

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.

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, they can be different along any given river. A 100-year event upstream is different from one downstream due to the variation 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 temporally fluctuate. 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 2-9*.

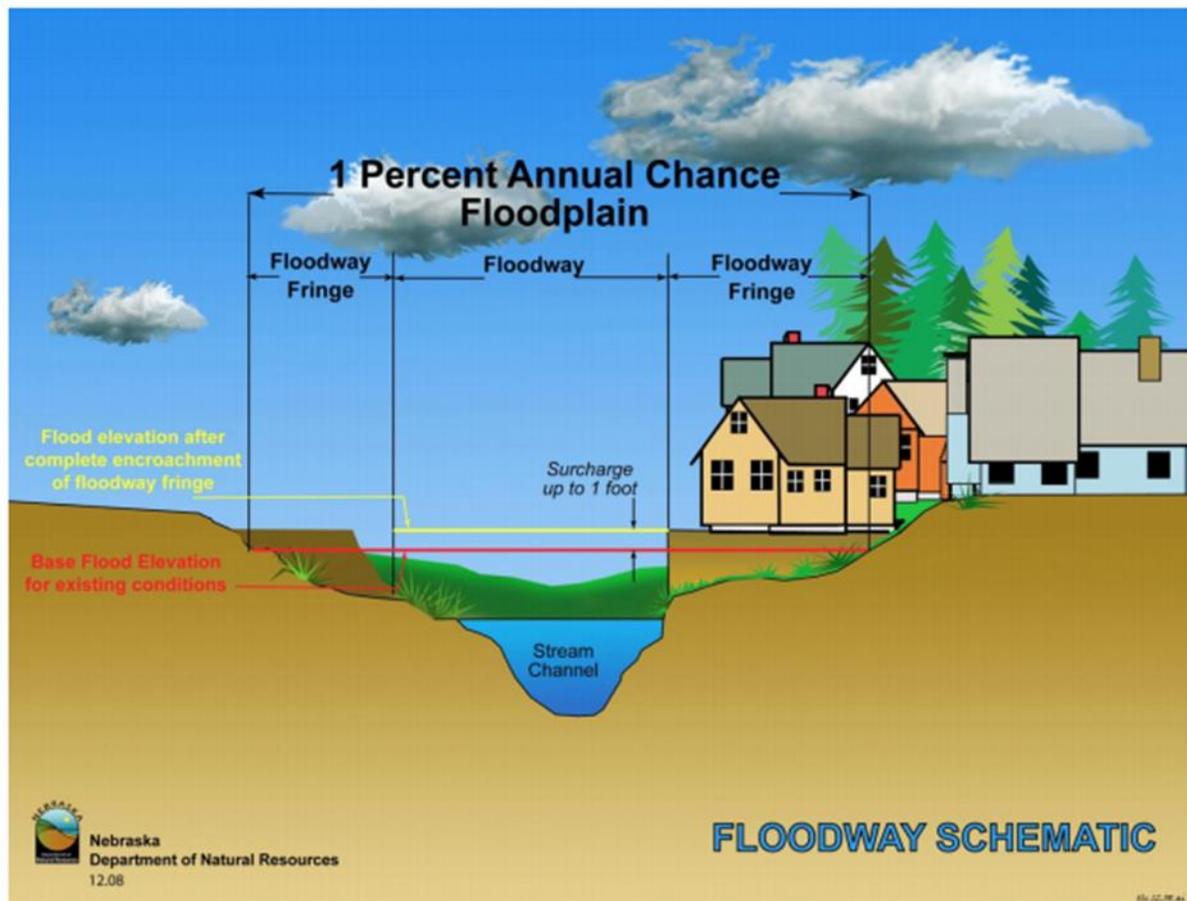


Figure 2-9: Schematic of 100-Year Floodplain. The Special Flood Hazard Area (SFHA) extends to the end of the floodway fringe.

(Source: Nebraska Department of Natural Resources)

A SFHA is the land area covered by the floodwaters of the base flood (red line in *Figure 2-9*), 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 are usually 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 Webster Parish are provided in the table below:

Table 2-17: Repetitive Loss Structures for Webster Parish

Jurisdiction	Number of Structures	Residential	Commercial	Government	Total Claims	Total Claims Paid	Average Claim Paid
Webster Parish (Unincorporated)	17	17	0	0	54	\$898,332	\$16,636
Cotton Valley	0	0	0	0	0	0	\$0
Cullen	0	0	0	0	0	0	\$0
Dixie Inn	0	0	0	0	0	0	\$0
Doyline	0	0	0	0	0	0	\$0
Dubberly	0	0	0	0	0	0	\$0
Heflin	0	0	0	0	0	0	\$0
Minden	2	2	0	0	5	\$15,673	\$3,135
Sarepta	0	0	0	0	0	0	\$0
Shongaloo	0	0	0	0	0	0	\$0
Sibley	0	0	0	0	0	0	\$0
Springhill	4	1	3	0	10	\$201,302	\$20,130
Total	23	18	3	0	64	\$1,115,307	\$17,427

Of the 23 repetitive loss structures, 12 were able to be geocoded in order to provide an overview of where the repetitive loss structures were located throughout the parish. *Figure 2-10* shows the approximate location of the 12 structures, while *Figure 2-11* shows where the highest concentration of repetitive loss structures are located. Through the repetitive loss map, it is clear that the primary concentrated area of repetitive loss structures is focused in the unincorporated of Webster Parish.

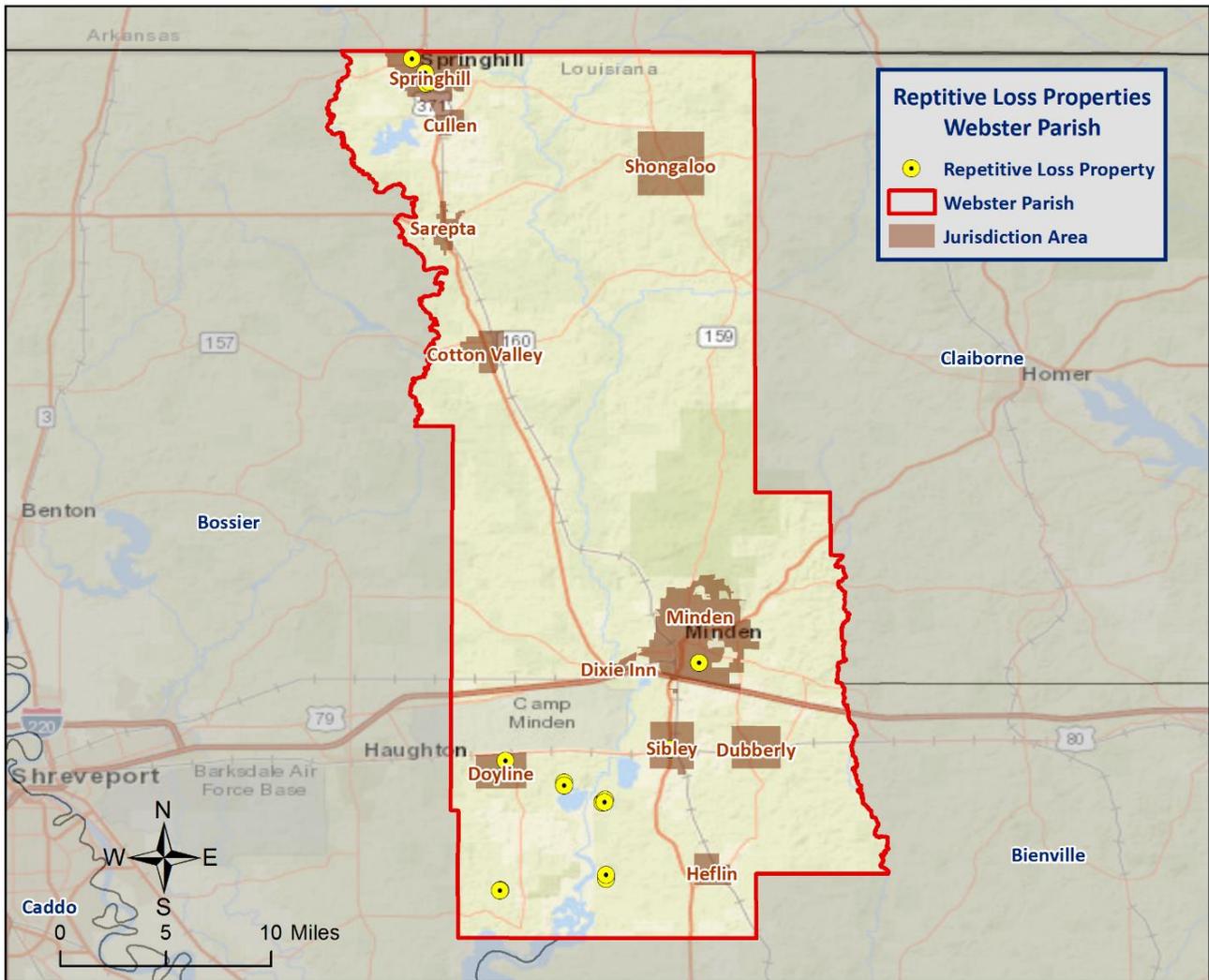


Figure 2-10: Repetitive Loss Properties in Webster Parish

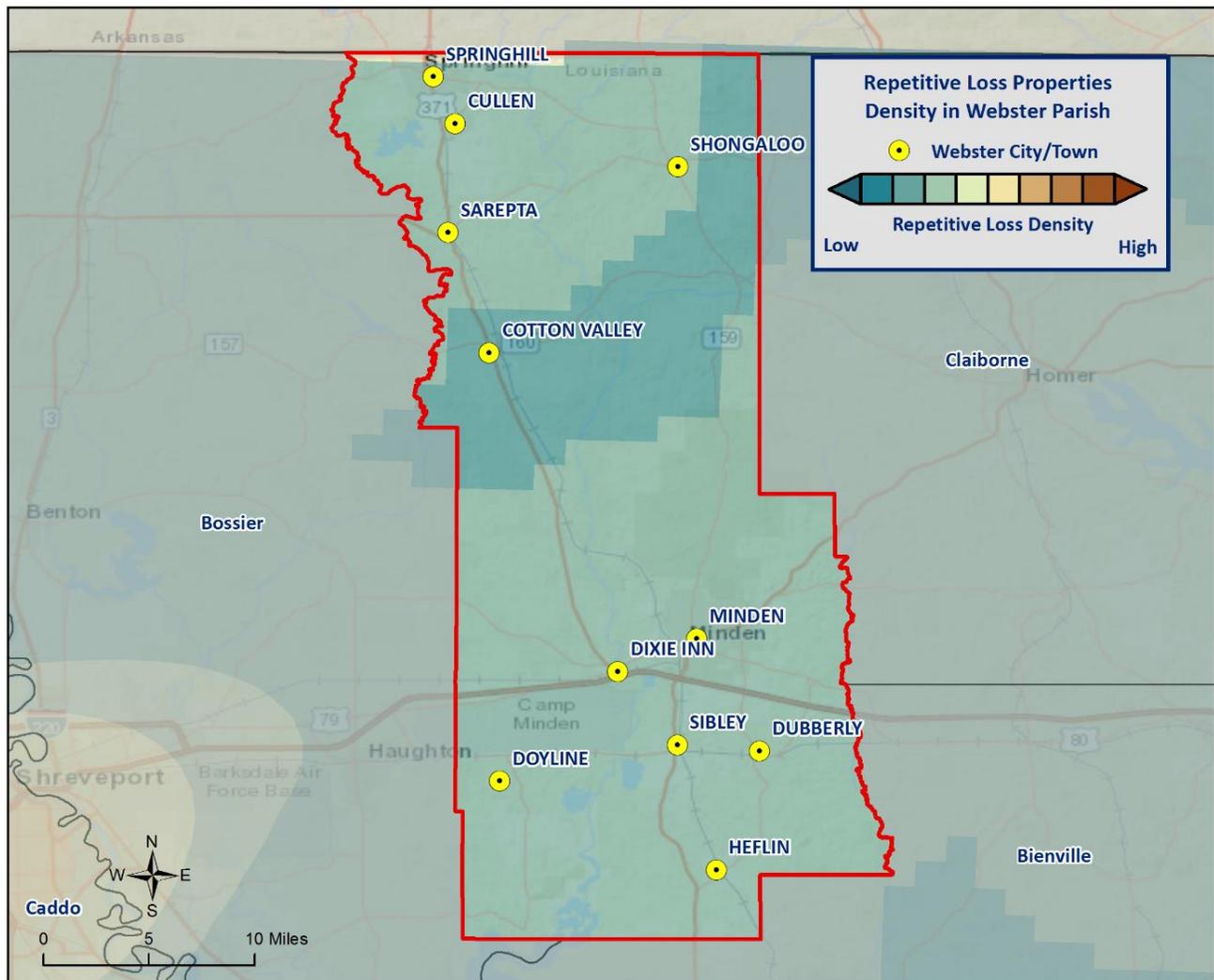


Figure 2-11: Repetitive Loss Property Densities in Webster Parish

National Flood Insurance Program

Flood insurance statistics indicate that Webster Parish has 134 flood insurance policies with the NFIP, with total annual premiums of \$127,514. Webster Parish and the incorporated areas of Cotton Valley, Cullen, Dixie Inn, Doyline, Minden, Sarepta, Sibley, and Springhill are participants in the NFIP. The incorporated areas of Dubberly, Heflin, and Shongaloo do not participated in the NFIP. Webster Parish and each of the incorporated 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 Webster Parish are provided in the tables on the next page.

Webster Parish and the communities listed above will continue their active participation in the NFIP through various education and outreach activities. These activities will include community outreach on the availability of flood insurance within the parish and incorporated municipalities, as well as flood safe building initiatives throughout the parish. The Parish Floodplain Manager will continue to work in coordination with each community to ensure floodplain management regulations are adopted and enforced. The Parish Floodplain

Manager and community floodplain managers will continue to seek and attend floodplain management and NFIP continuing education.

Table 2-18: Summary of NFIP Policies for Webster Parish

Location	No. of Insured Structures	Total Insurance Coverage Value	Annual Premiums Paid	No. of Insurance Claims Filed Since 1978	Total Loss Payments
Webster Parish (Unincorporated)	70	\$12,846,800	\$43,754	110	\$2,032,230
Cotton Valley	0	\$0	\$0	0	\$0
Cullen	0	\$0	\$0	0	\$0
Dixie Inn	0	\$0	\$0	0	\$0
Doyline	0	\$0	\$0	1	\$16,036
Dubberly	0	\$0	\$0	0	\$0
Heflin	0	\$0	\$0	0	\$0
Minden	34	\$5,985,000	\$32,045	26	\$176,105
Sarepta	0	\$0	\$0	0	\$0
Shongaloo	0	\$0	\$0	0	\$0
Sibley	2	\$218,200	\$617	2	\$52,504
Springhill	28	\$7,765,300	\$51,098	18	\$542,435
Total	134	\$26,815,300	\$127,514	157	\$2,819,310

*While the Town of Cotton Valley, Town of Cullen, Village of Dixie Inn, Village of Doyline, Village of Dubberly, Village of Heflin, Town of Sarepta, and Village of Shongaloo do not have any active NFIP policies, the jurisdictions will continue to promote NFIP participation through education and outreach.

Table 2-19: Summary of Community Flood Maps for Webster Parish

CID	Community Name	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Date Joined the NFIP	Tribal
220322#	Cotton Valley	1/14/1997	10/15/1985	3/2/2010 (M)	10/15/1985	No
220235#	Cullen	4/12/1974	3/2/2010	3/2/2010 (M)	10/15/1985	No
220269#	Dixie Inn	-	3/2/2010	3/2/2010 (M)	7/23/2010	No
220236#	Doyline	4/5/1974	9/18/1979	3/2/2010 (M)	9/18/1979	No
220237#	Minden	3/15/1974	7/18/1985	3/2/2010	7/18/1985	No
220348#	Sarepta	6/11/1976	3/2/2010	3/2/2010 (M)	3/2/2010	No
220258#	Sibley	2/7/1975	7/18/1985	3/2/2010 (M)	7/18/1985	No
220238#	Springhill	3/15/1974	6/15/1981	3/2/2010	6/15/1981	No
220357#	Webster Parish*	5/31/1977	7/15/1988	3/2/2010	7/15/1988	No
220281#	Dubberly	3/26/76	3/2/10	3/2/10	Not in NFIP	No
220293#	Heflin	3/26/76	3/2/10	3/2/10	Not in NFIP	No
220089#	Shongaloo	-	3/2/10	3/2/10	Not in NFIP	No

According to the Community Rating System (CRS) list of eligible communities dated June 1, 2014, Webster Parish and the incorporated areas of Cotton Valley, Cullen, Dixie Inn, Doyline, Dubberly, Heflin, Minden, Sarepta, Shongaloo, Sibley, and Springhill do not participate in the CRS.

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 flooding 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 Webster 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 Webster Parish experiences.

Flash Flooding: Flash flooding is characterized by a rapid rise in water level, high velocity, and large amounts of debris. It is 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 is, by definition, river-based. Most of the riverine flooding problems occur when the Bayou Dorcheat crests at flood stage levels, causing extensive flooding in low-lying areas.

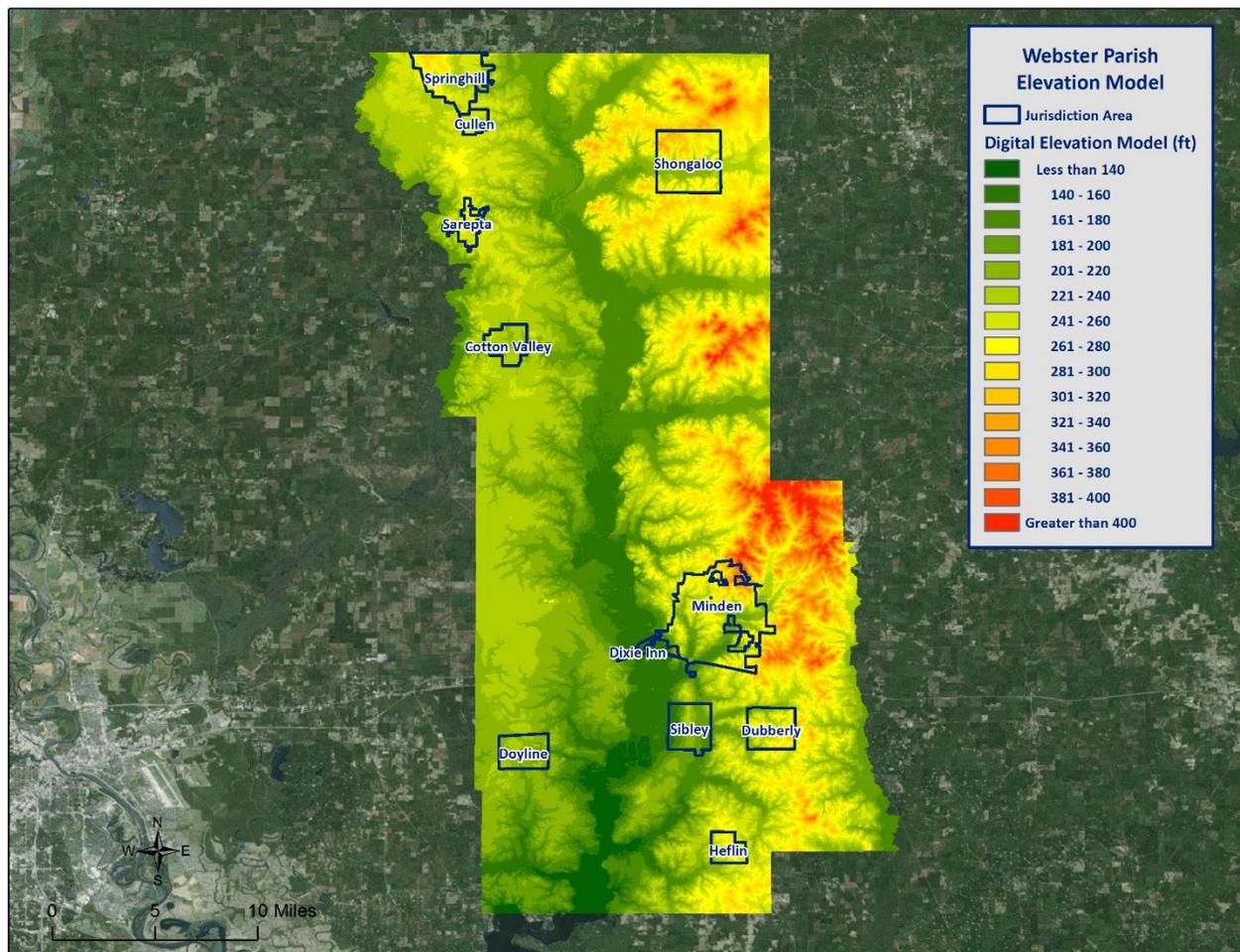


Figure 2-12: Elevation throughout Webster Parish

Looking at the digital elevation model (DEM) for Webster Parish is instructive in visualizing where the low lying and high risk areas are for the parish. Elevations in the parish range from approximately 140 feet to over 400 feet. The highest elevations in the parish are approximately 480 feet, located in the unincorporated area of the parish. The incorporated areas range in elevation from approximately 167 feet to 297 feet, with Dixie Inn averaging 167 feet, Sibley averaging 200 feet, Cotton Valley and Doyline averaging 226 feet, Minden averaging 240 feet, Cullen and Dubberly averaging 249 feet, Shongaloo averaging 256 feet, Sarepta and Heflin averaging 272 feet, and Springhill averaging 292 feet.

Location

Webster Parish has experienced significant flooding in its history and can expect more in the future. There are portions of three watersheds within Webster Parish: Bodcau Bayou, Black Lake Bayou, and the Loggy Bayou. The Loggy Bayou is the largest watershed in Webster parish. Each watershed possesses unique flooding characteristics due to topography, vegetative cover, soil type, and the like. However, riverine flooding from the Bayou Dorcheat emptying into Lake Bistineau poses the largest flood hazard in terms of linear miles.

The following are enlarged maps of the incorporated areas showing the areas within each jurisdiction that are at risk of flooding:

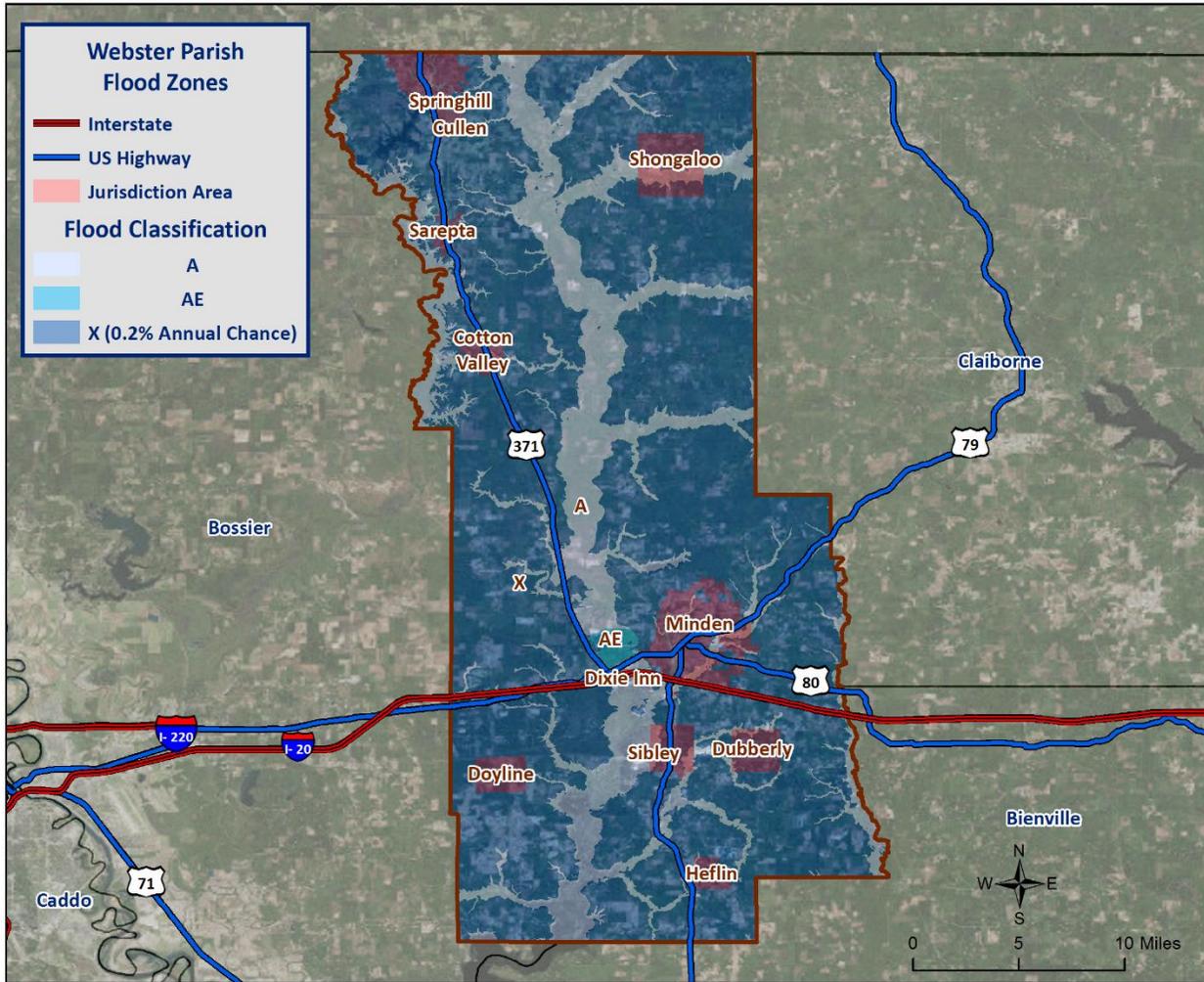


Figure 2-13: Webster Parish Areas within the Flood Zones

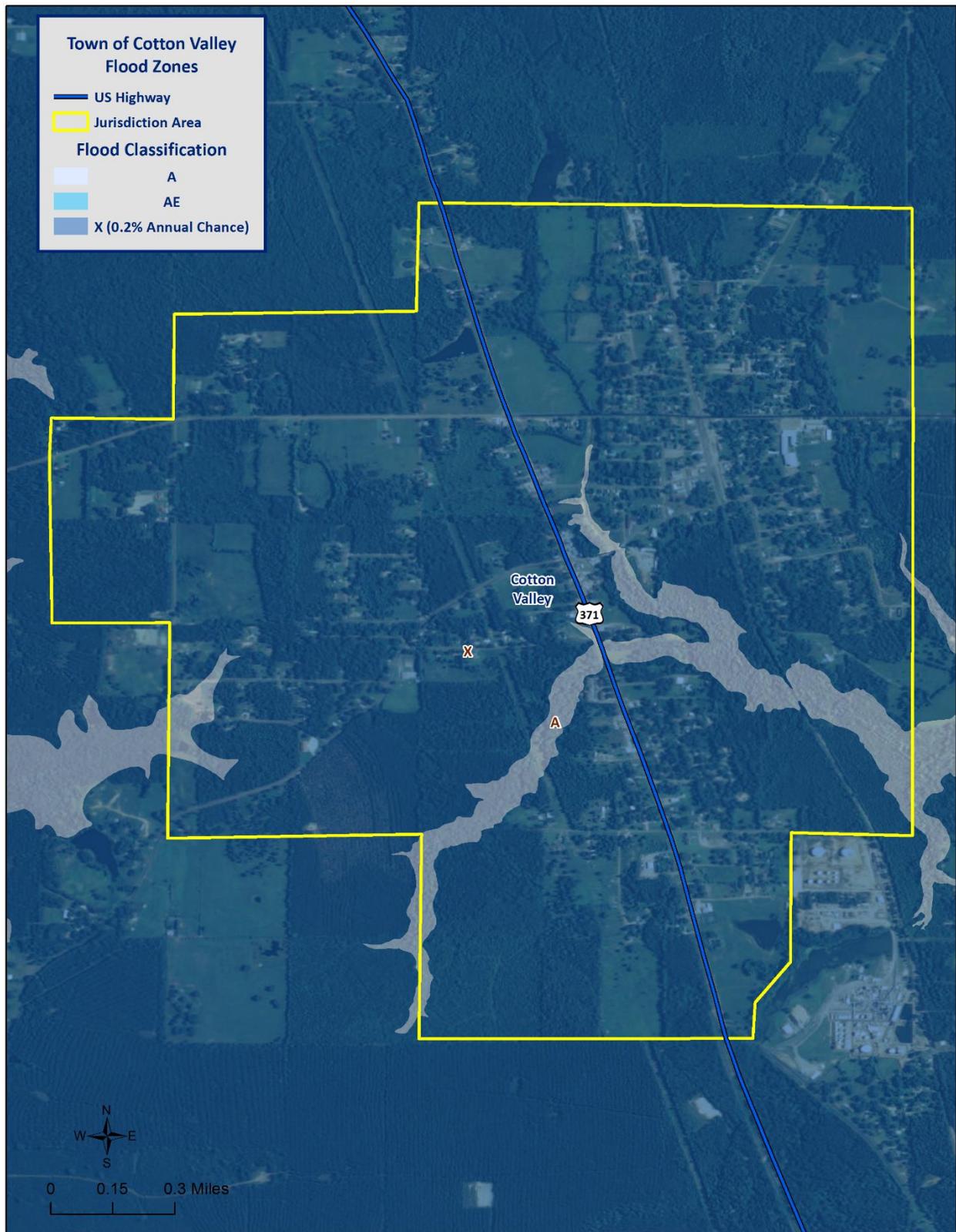


Figure 2-14: Town of Cotton Valley Areas within the Flood Zones

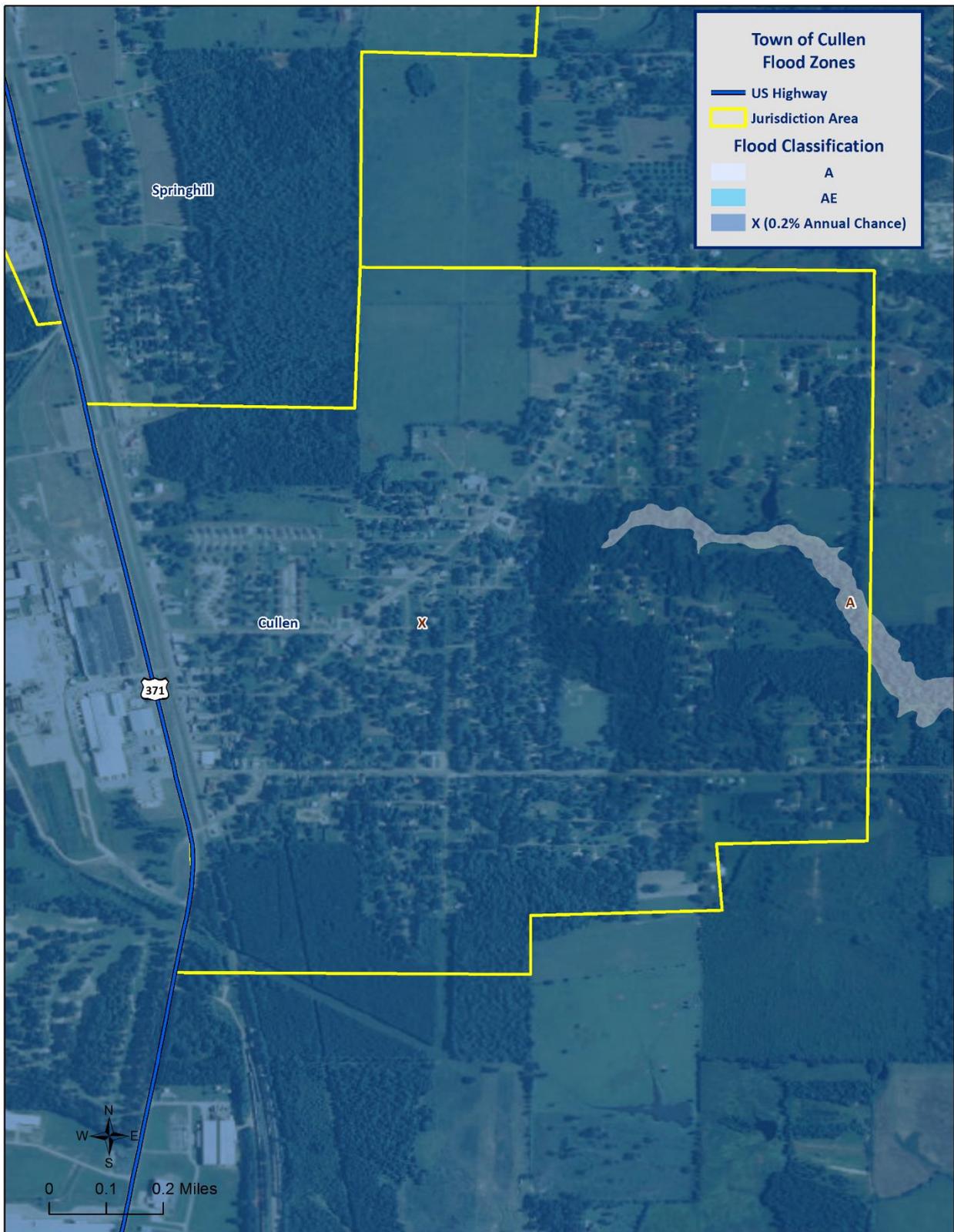


Figure 2-15: Town of Cullen Areas within the Flood Zones

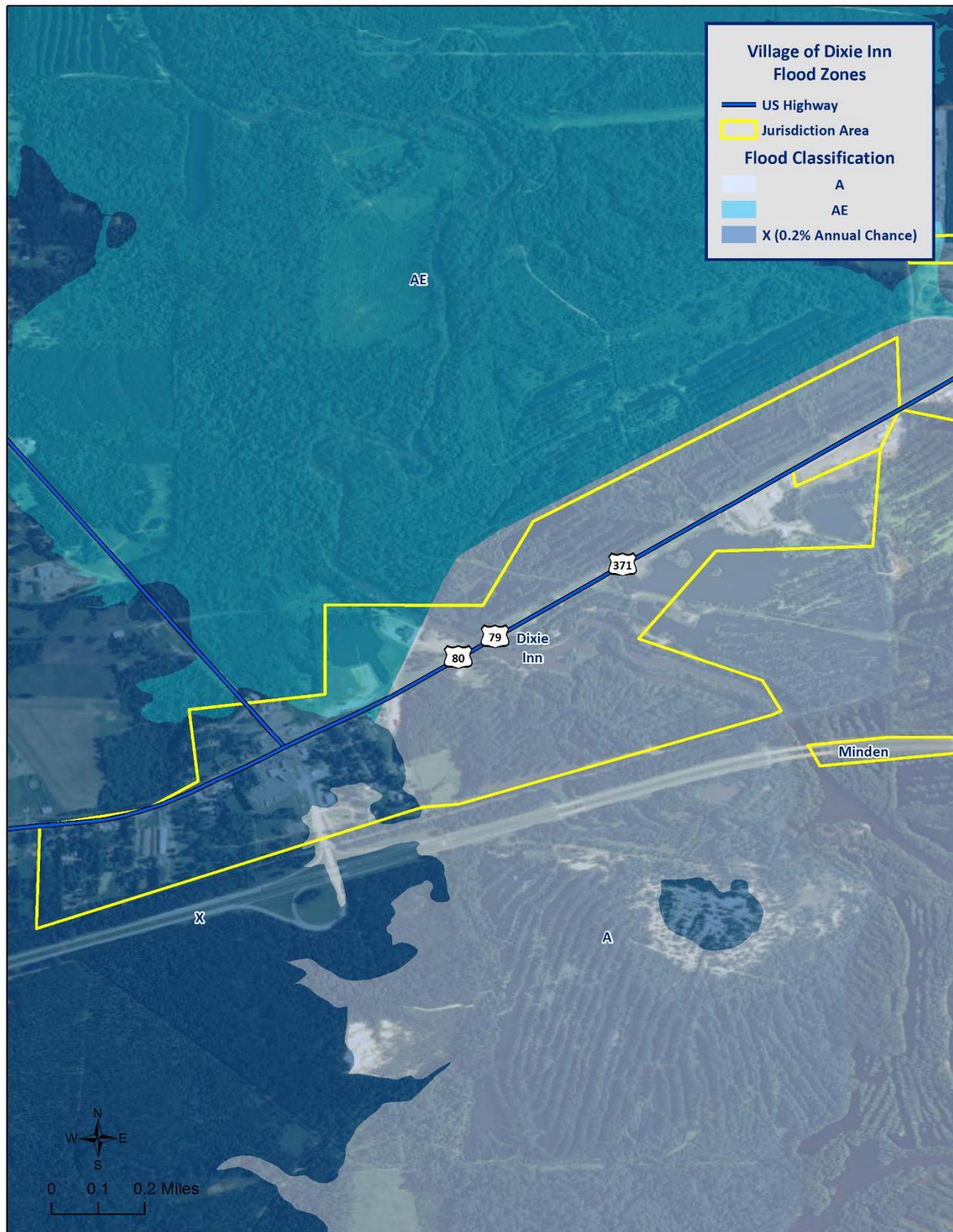


Figure 2-16: Village of Dixie Inn Areas within the Flood Zones

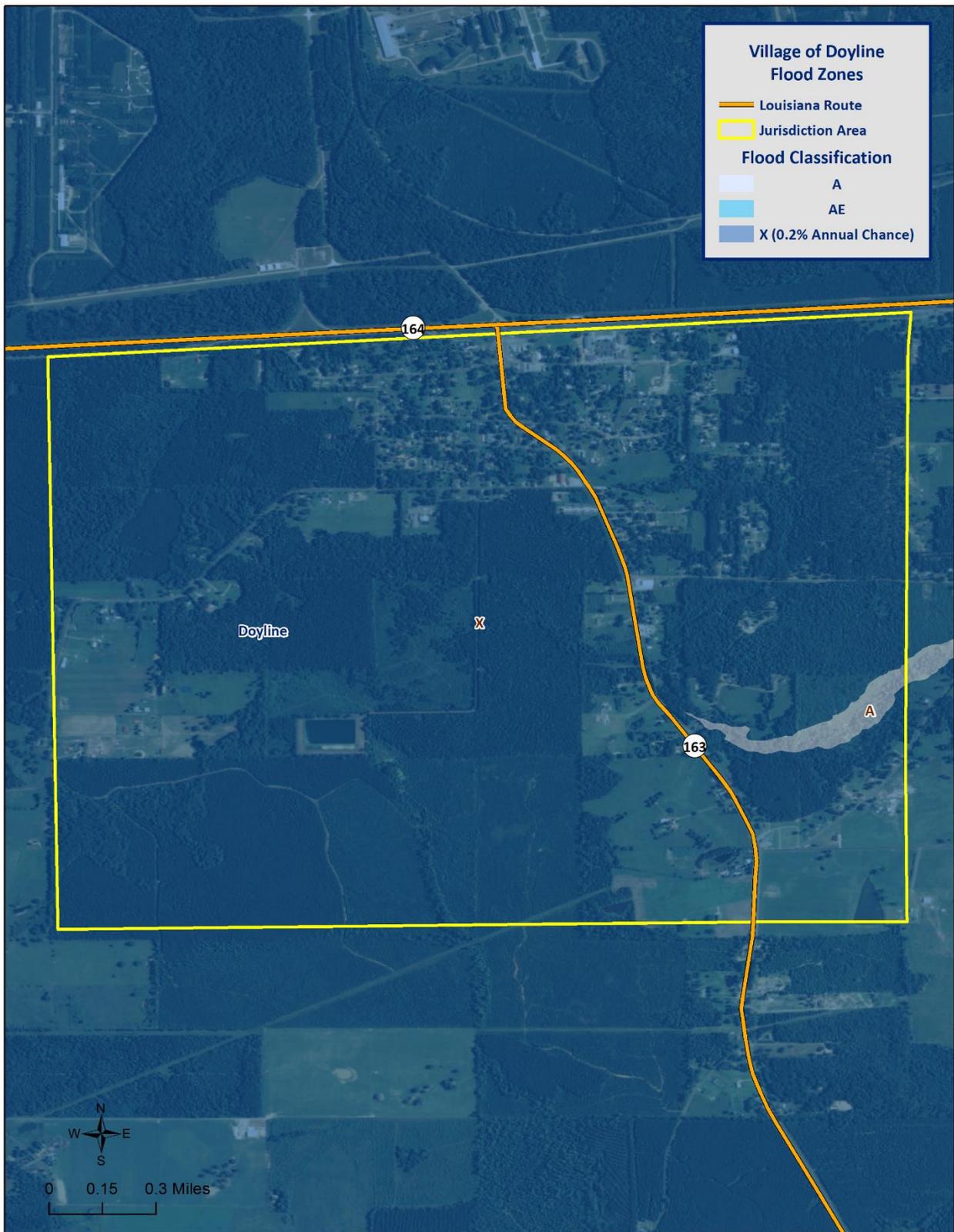


Figure 2-17: Village of Doyline Areas within the Flood Zones

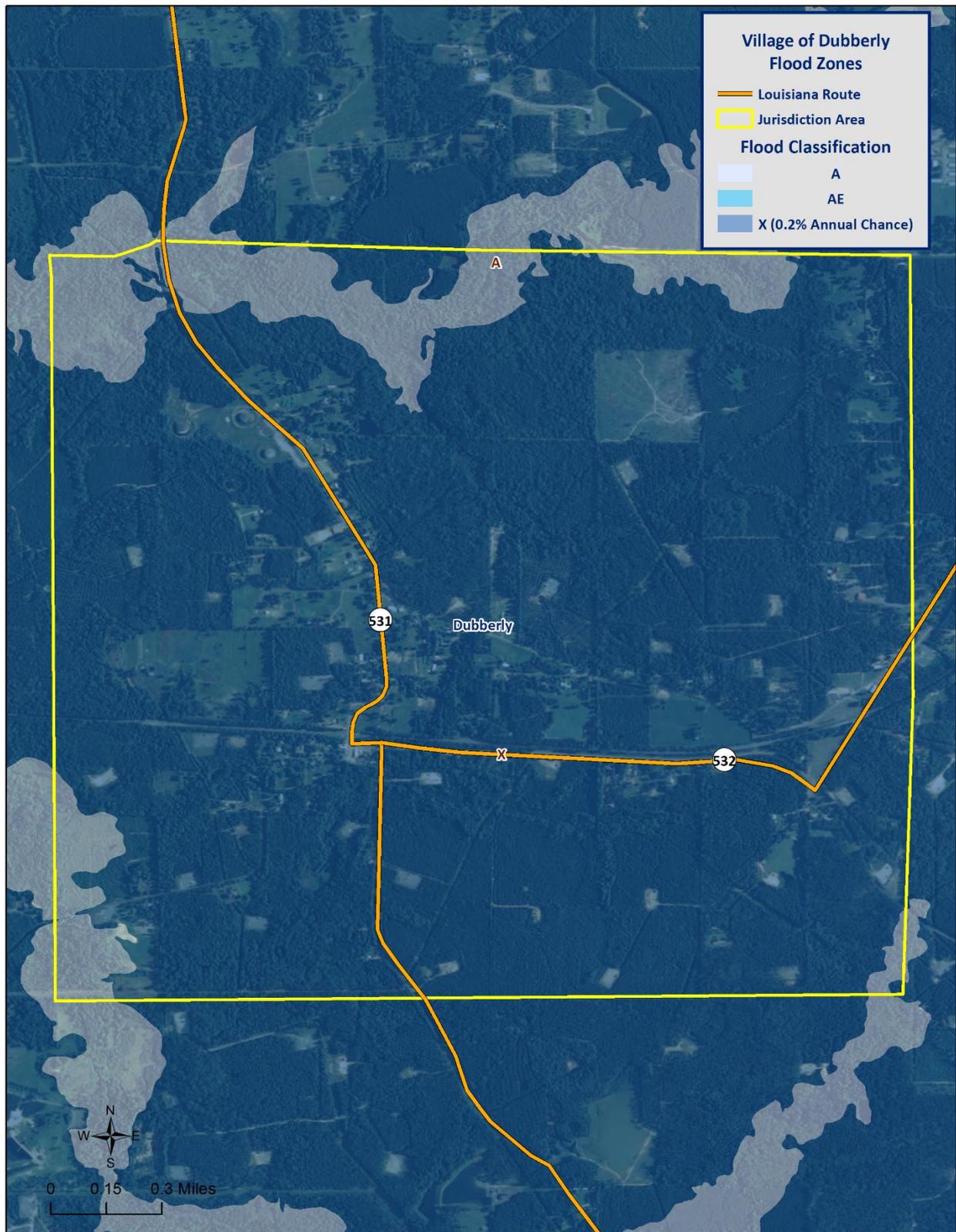


Figure 2-18: Village of Dubberly Areas within the Flood Zones

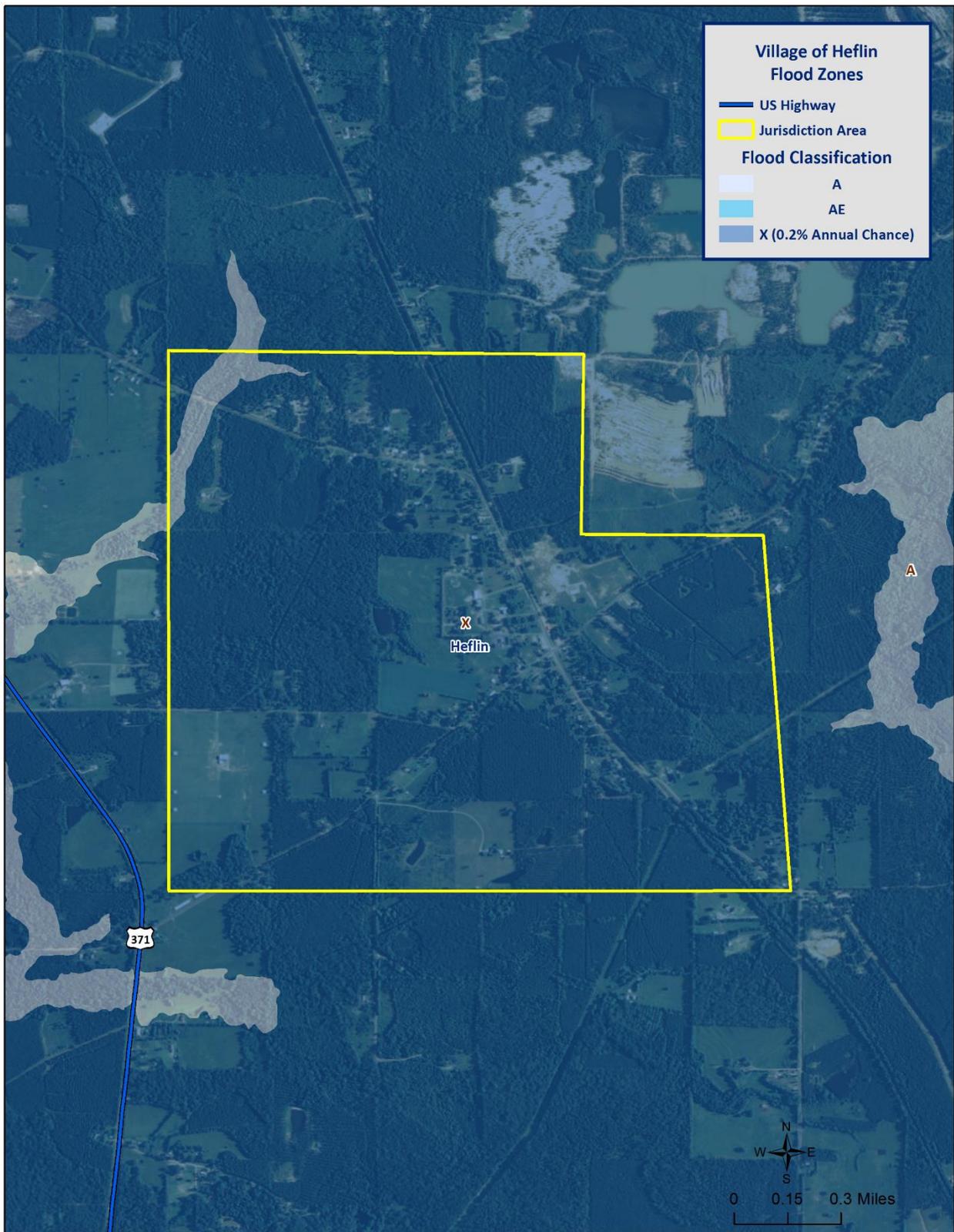


Figure 2-19: Village of Heflin Areas within the Flood Zones

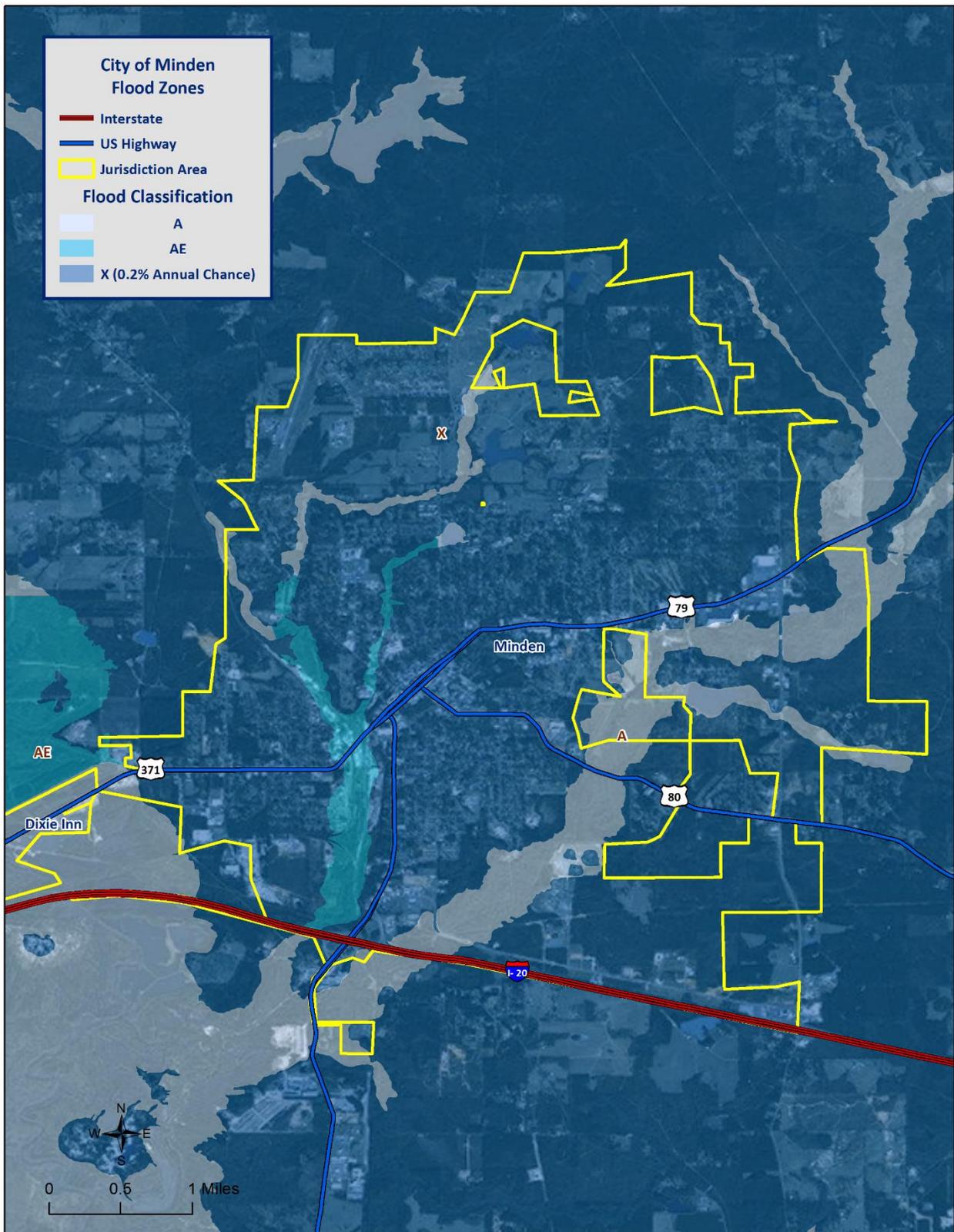


Figure 2-20: City of Minden Areas within the Flood Zones

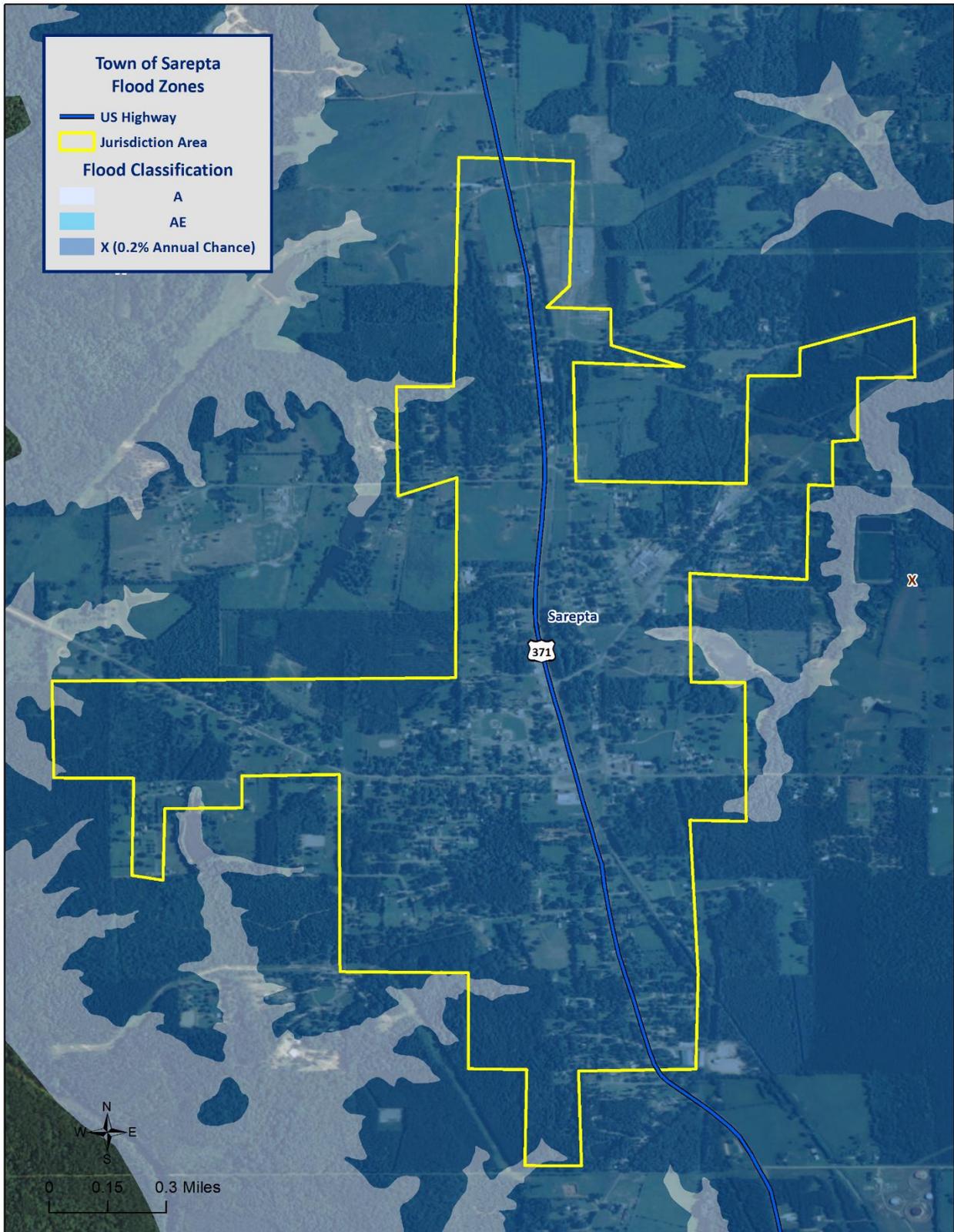


Figure 2-21: Town of Sarepta Areas within the Flood Zones

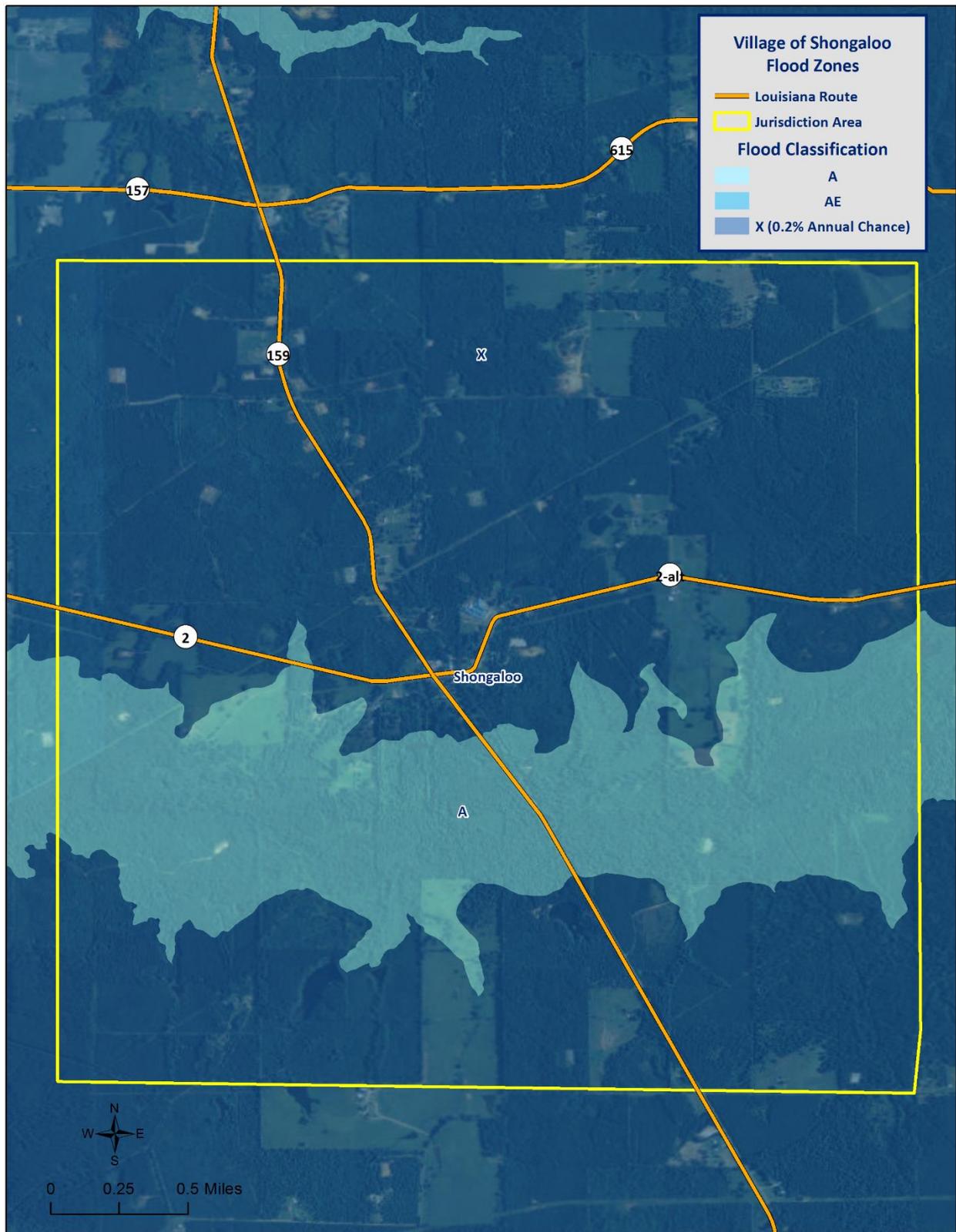


Figure 2-22: Village of Shongaloo Areas within the Flood Zones

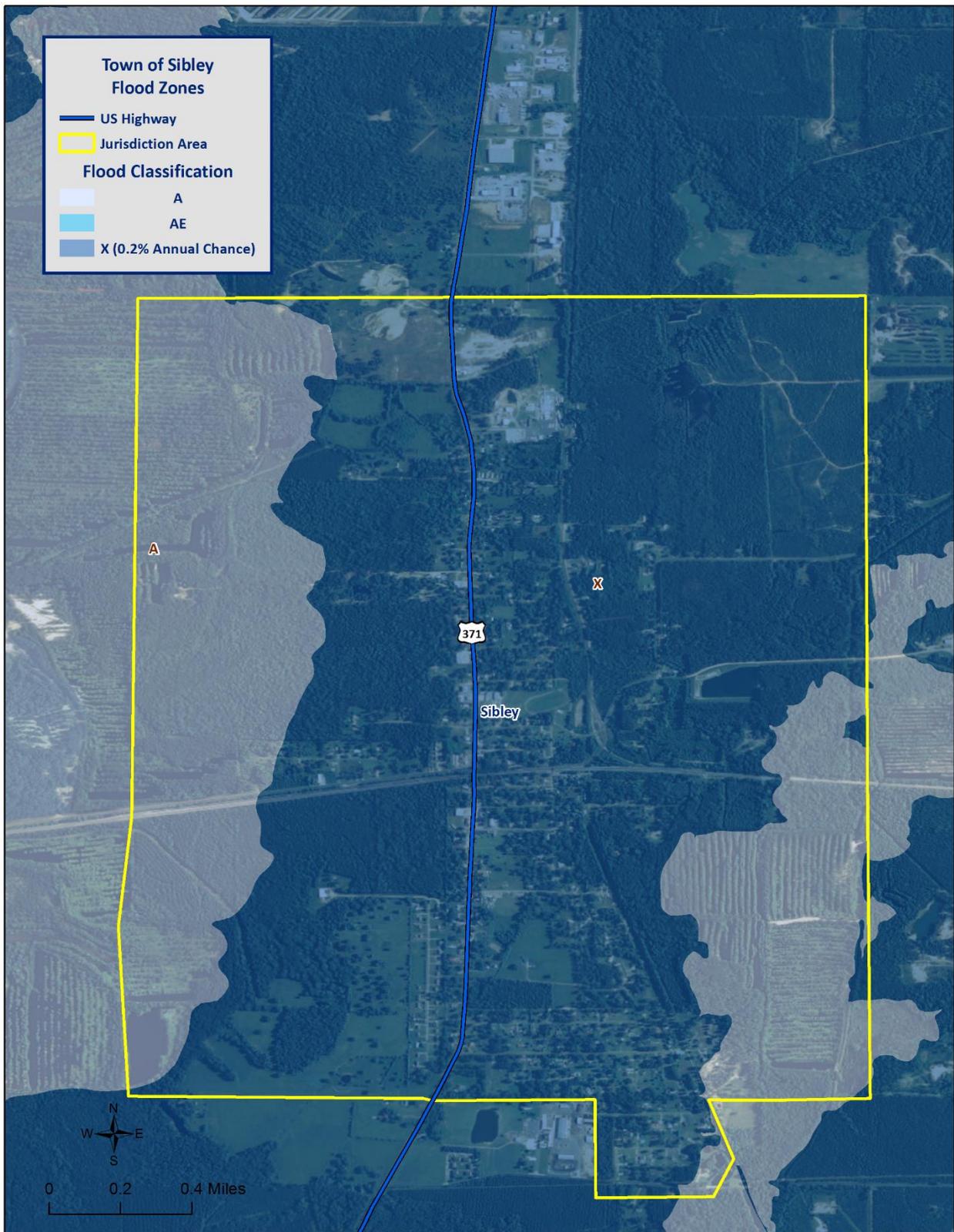


Figure 2-23: Town of Sibley Areas within the Flood Zones

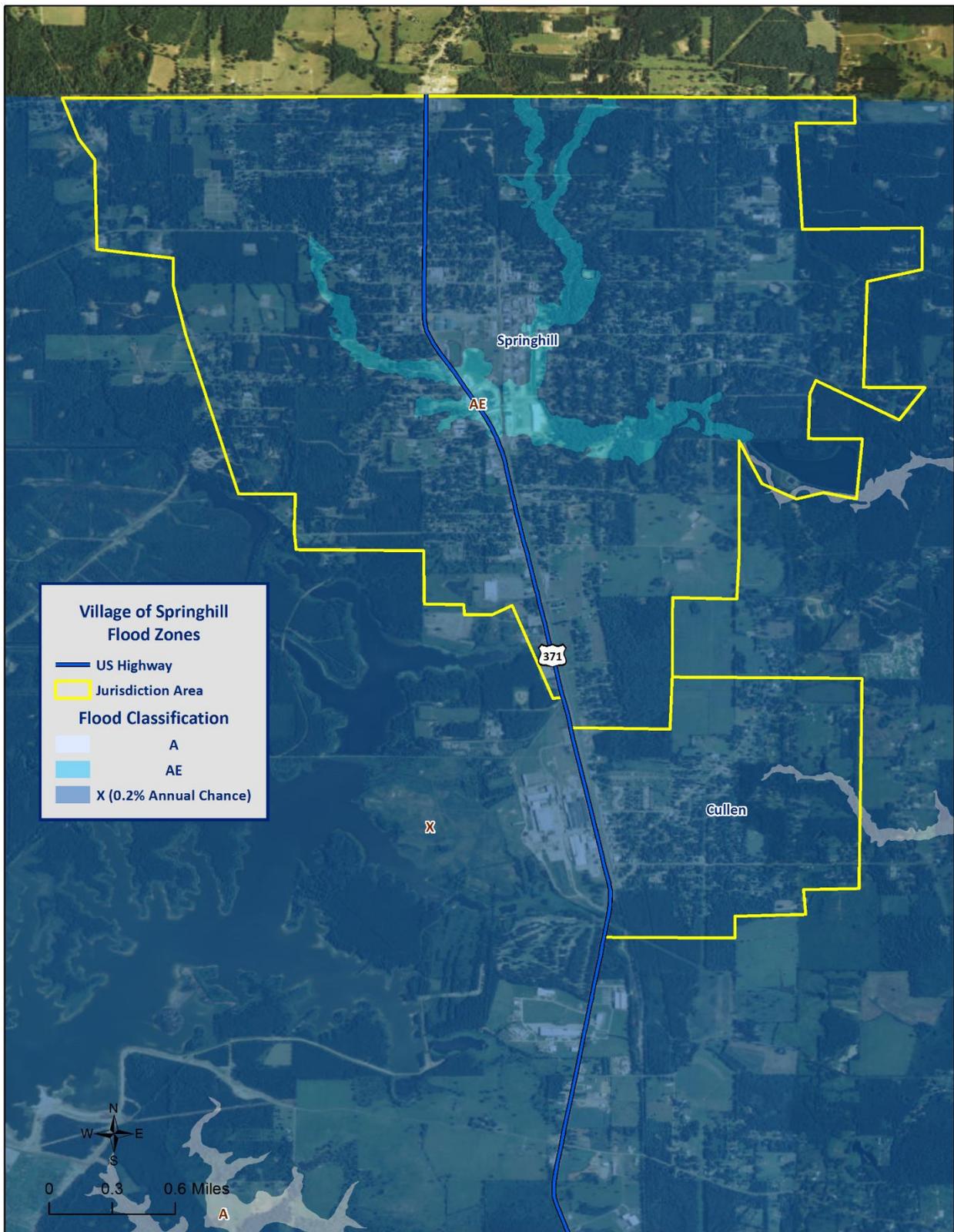


Figure 2-24: Village of Springhill Areas within the Flood Zones

Previous Occurrences / Extents

Historically, there have been 44 flooding events that have created significant flooding in Webster Parish between 1990 and 2015. Below is a brief synopsis of the three flooding events that have occurred since 2010, including flooding events that have occurred since the parish's last planning update. Since 2010, there have been no significant flood events in the incorporated areas of Cullen, Dubberly, Heflin, Sarepta, Shongaloo, Sibley, and Springhill.

Table 2-20: Historical Floods in Webster Parish with Locations from 2010 - 2015

Date	Extents	Type of Flooding	Estimated Damages	Location
March 21, 2012	Severe storms caused flash floods in the area. Numerous roads were flooded and closed throughout the parish.	Flash Flood	\$0	UNINCORPORATED AREAS, DIXIE INN, MINDEN, COTTON VALLEY, AND DOYLINE
May 18, 2015	Excessive heavy rainfall caused localized flooding in the unincorporated areas of the parish. Fuller Cemetery Road off of Old Arcadia Road was reported flooded.	Flash Flood	\$0	NINE FORKS
December 27, 2015	Heavy storms caused flooding in the parish. Fuller Road was closed due to flooding in the northwest area of Dixie Inn.	Flash Flood	\$0	UNINCORPORATED AREAS AND DIXIE INN

The worst-case scenarios are based on several different types of flooding events. Storm water excesses and riverine flooding primarily affect the low-lying areas of the parish, and flood depths of up to six to eight feet can be expected in the unincorporated areas of the parish. The incorporated areas of Cotton Valley, Dixie Inn, Doyline, and Minden can expect flood depths from four to six feet, while the incorporated areas of Cullen, Dubberly, Heflin, and Springhill can expect flooding levels of approximately two to four feet. The incorporated areas of Sarepta, Shongaloo, and Sibley can expect flood levels of approximately one to four feet.

Frequency / Probability

While other parts of this plan, along with the State's Hazard Mitigation Plan, have relied on the SHELUS database to provide the annual probability, due to Webster Parish having multiple jurisdictions, it was necessary to assess the historical data found in the National Climatic Data Center for Webster Parish and its jurisdictions to properly determine probability for future flood events. The table on the next page shows the probability and return frequency for each jurisdiction.

Table 2-21: Annual Flood Probabilities for Webster Parish

Jurisdiction	Annual Probability	Return Frequency
Webster Parish (Unincorporated)	40%	2 – 3 years
Cotton Valley	20%	5 years
Cullen	20%	5 years
Dixie Inn	40%	2 – 3 years
Doyline	24%	4 – 5 years
Dubberly	20%	5 years
Heflin	20%	5 years
Minden	60%	1 – 2 years
Sarepta	20%	5 years
Shongaloo	28%	3 – 4 years
Sibley	28%	3 – 4 years
Springhill	76%	1 – 2 years

Based on historical record, the overall flooding probability for the entire Webster Parish planning area is 100%, with 44 events occurring over a 25-year period.

Estimated Potential Losses

Using the Hazus 2.2 Flood Model, along with the Parish DFIRM, the 100-year flood scenario was analyzed to determine losses from this worst-case scenario. *Table 2-22* shows the total economic losses that would result from this occurrence.

Table 2-22: Estimated Losses in Webster Parish from a 100-Year Flood Event
(Source: Hazus 2.2)

Jurisdiction	Estimated Total Losses from 100-Year Flood Event
Webster Parish (Unincorporated)	\$56,997,000
Cotton Valley	\$0
Cullen	\$0
Dixie Inn	\$1,612,000
Doyline	\$0
Dubberly	\$0
Heflin	\$0
Minden	\$29,898,000
Sarepta	\$48,000
Shongaloo	\$605,000
Sibley	\$1,530,000
Springhill	\$0
Total	\$90,690,000

The Hazus 2.2 Flood Model also provides a breakdown by jurisdiction for seven primary sectors (Hazus occupancy) throughout the parish. The losses for each jurisdiction by sector are listed in the following tables:

*Table 2-23: Estimated 100-Year Flood Losses for Unincorporated Webster Parish by Sector
(Source: Hazus 2.2)*

Webster Parish (Unincorporated)	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$272,000
Commercial	\$4,434,000
Government	\$5,000
Industrial	\$2,568,000
Religious / Non-Profit	\$2,851,000
Residential	\$46,721,000
Schools	\$146,000
Total	\$56,997,000

*Table 2-24: Estimated 100-Year Flood Losses for Dixie Inn by Sector
(Source: Hazus 2.2)*

Dixie Inn	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$0
Commercial	\$1,368,000
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$244,000
Schools	\$0
Total	\$1,612,000

*Table 2-25: Estimated 100-Year Flood Losses for Minden by Sector
(Source: Hazus 2.2)*

Minden	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$98,000
Commercial	\$21,349,000
Government	\$376,000
Industrial	\$380,000
Religious / Non-Profit	\$344,000
Residential	\$6,703,000
Schools	\$648,000
Total	\$29,898,000

*Table 2-26: Estimated 100-Year Flood Losses for Sarepta by Sector
(Source: Hazus 2.2)*

Sarepta	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$0
Commercial	\$0
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$48,000
Schools	\$0
Total	\$48,000

*Table 2-27: Estimated 100-Year Flood Losses for Shongaloo by Sector
(Source: Hazus 2.2)*

Shongaloo	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$0
Commercial	\$46,000
Government	\$53,000
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$506,000
Schools	\$0
Total	\$605,000

*Table 2-28: Estimated 100-Year Flood Losses for Sibley by Sector
(Source: Hazus 2.2)*

Sibley	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$0
Commercial	\$86,000
Government	\$0
Industrial	\$12,000
Religious / Non-Profit	\$2,000
Residential	\$1,430,000
Schools	\$0
Total	\$1,530,000

Threat to People

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

*Table 2-29: Vulnerable Populations Susceptible to a 100-Year Flood Event
(Source: Hazus 2.2)*

Number of People Exposed to Flood Hazards			
Location	# in Community	# in Hazard Area	% in Hazard Area
Webster Parish (Unincorporated)	16,875	5,226	31.1%
Cotton Valley	1,009	0	0%
Cullen	1,163	0	0%
Dixie Inn	273	8	2.9%
Doyline	818	0	0%
Dubberly	273	0	0%
Heflin	244	0	0%
Minden	13,082	731	5.6%
Sarepta	891	4	0.4%
Shongaloo	182	64	35.2%
Sibley	1,218	218	17.9%
Springhill	5,269	0	0%
Total	41,207	6183	15%

The Hazus 2.2 Flood Model was also extrapolated to provide an overview of vulnerable populations throughout the jurisdictions in the following tables:

*Table 2-30: Vulnerable Populations Susceptible to a 100-Year Flood Event in Unincorporated Webster Parish
(Source: Hazus 2.2)*

Webster Parish (Unincorporated)		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	5,226	31.1%
Persons Under 5 Years	334	6.4%
Persons Under 18 Years	898	17.2%
Persons 65 Years and Over	874	16.7%
White	3,357	64.2%
Minority	1,869	35.8%

*Table 2-31: Vulnerable Populations Susceptible to a 100-Year Flood Event in Dixie Inn
(Source: Hazus 2.2)*

Dixie Inn		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	8	2.9%
Persons Under 5 Years	1	7.7%
Persons Under 18 Years	1	15.0%
Persons 65 Years and Over	1	9.5%
White	4	51.6%
Minority	4	48.4%

*Table 2-32: Vulnerable Populations Susceptible to a 100-Year Flood Event in Minden
(Source: Hazus 2.2)*

Minden		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	731	5.6%
Persons Under 5 Years	51	6.9%
Persons Under 18 Years	131	18.0%
Persons 65 Years and Over	126	17.2%
White	338	46.2%
Minority	393	53.8%

*Table 2-33: Vulnerable Populations Susceptible to a 100-Year Flood Event in Sarepta
(Source: Hazus 2.2)*

Sarepta		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	4	0.4%
Persons Under 5 Years	0	6.2%
Persons Under 18 Years	1	20.9%
Persons 65 Years and Over	1	17.0%
White	4	98.8%
Minority	0	1.2%

*Table 2-34: Vulnerable Populations Susceptible to a 100-Year Flood Event in Shongaloo
(Source: Hazus 2.2)*

Shongaloo		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	64	35.2%
Persons Under 5 Years	6	9.9%
Persons Under 18 Years	14	21.4%
Persons 65 Years and Over	5	8.2%
White	60	94.5%
Minority	4	5.5%

*Table 2-35: Vulnerable Populations Susceptible to a 100-Year Flood Event in Sibley
(Source: Hazus 2.2)*

Sibley		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	218	17.9%
Persons Under 5 Years	15	7.0%
Persons Under 18 Years	44	20.0%
Persons 65 Years and Over	32	14.8%
White	156	71.7%
Minority	62	28.3%

Vulnerability

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

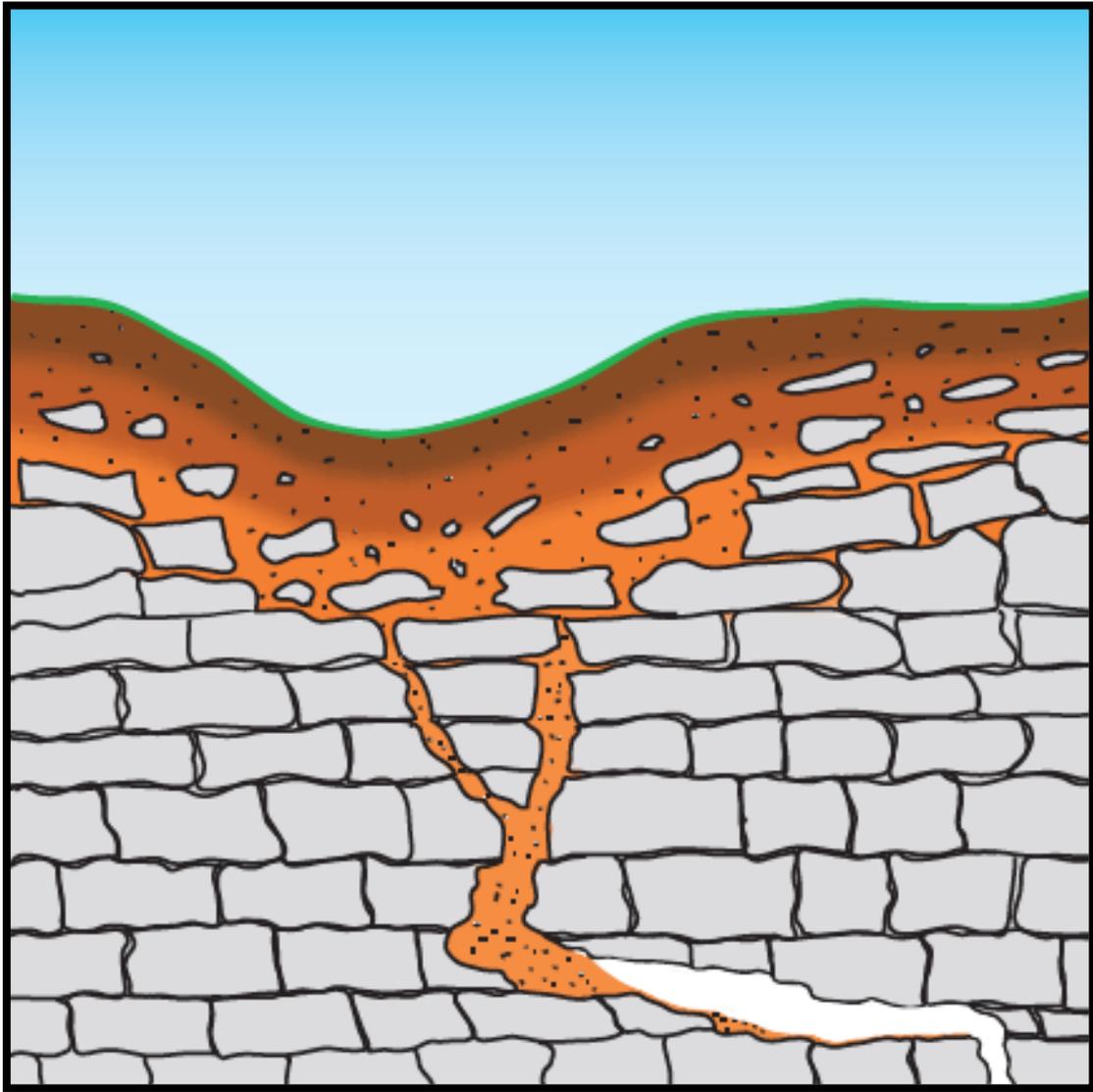
Sinkholes

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

Sinkhole formation is a very simple process. Whenever water is absorbed through soil, it encounters water-soluble bedrock. The water then begins to dissolve the bedrock, forming sinkholes. The karst rock dissolves along cracks; as the fissures grow, soil and other particles fill the gaps, loosening the soil above the bedrock. *Figure 2-25* illustrates the development of a cover subsidence sinkhole. As the soil sinks from the surface a depression forms, which draws in more water, funneling it down to the water-soluble rock. The increase of water and soil in the rock pushes open the cracks, again drawing more soil and water into it. This positive feedback loop continues, unless clay plugs into the cracks in the bedrock, at which time a pond may form. A sudden cover-collapse sinkhole occurs when the top soil above dissolving bedrock does not sink, but forms a bridge over the soil that is sinking beneath it. As *Figure 2-26* demonstrates, underground soil continues to fill the bedrock fissures, until finally the soil bridge collapses and fills the void beneath it.

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

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



*Figure 2-25: Cover-subsidence Sinkhole Formation from the Breaking Apart of Karst Bedrock by Soil Deposit
(Courtesy of USGS Sinkholes Fact Sheet)*

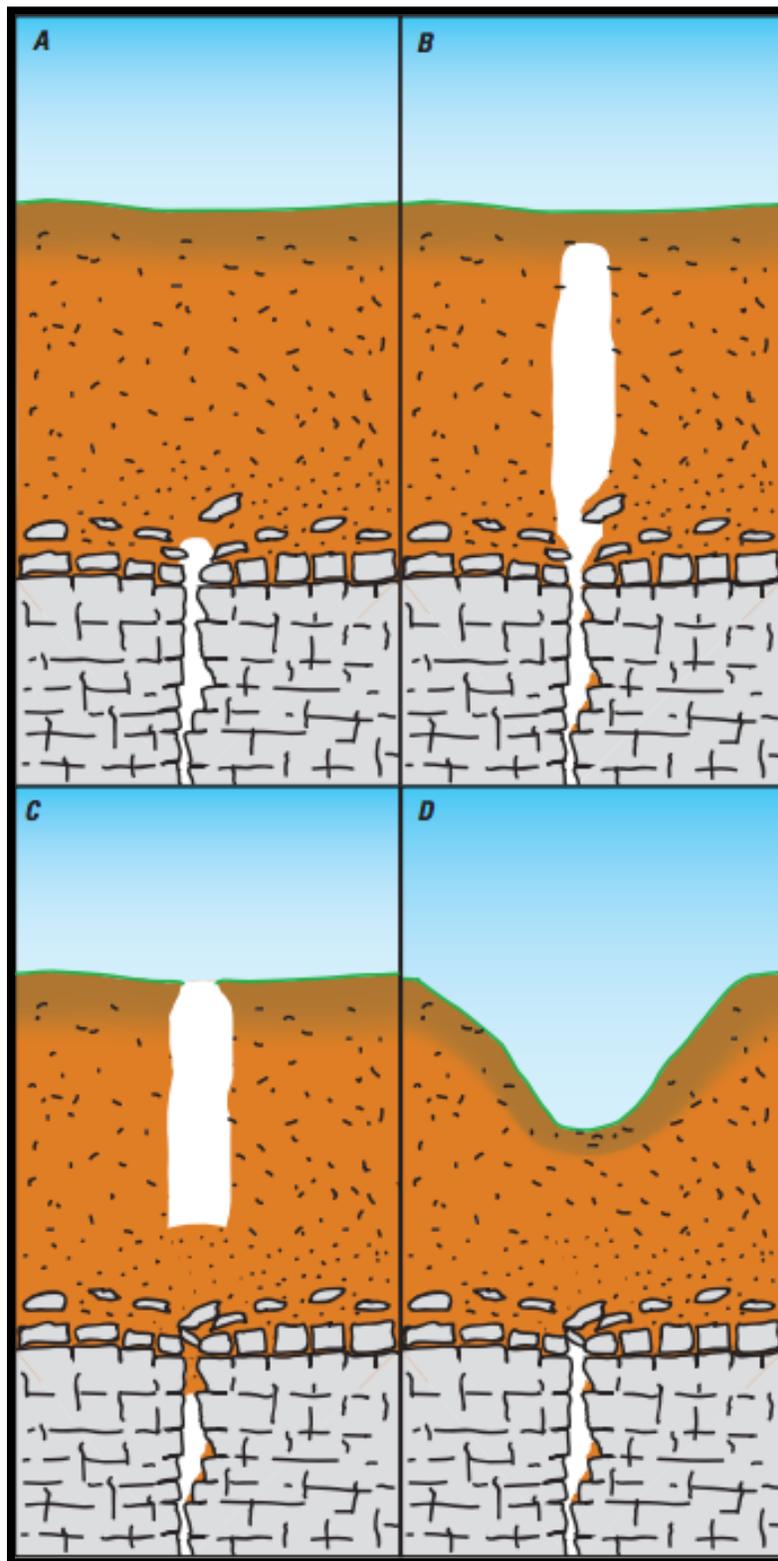


Figure 2-26: Formation of Cover-collapse Sinkhole after a Soil Bridge forms above Dissolving Bedrock
(Courtesy of USGS Sinkhole Fact Sheet)

Location

Currently, there are three identifiable salt dome locations in Webster Parish. *Figure 2-27* displays the locations of these salt domes with their relative location to the nearest jurisdiction. As depicted in *Figure 2-27*, the sinkholes are dispersed throughout Webster Parish, with all three of the sinkholes located in the unincorporated areas of the parish. At this time, there are no sinkholes in or near the incorporated areas of Cotton Valley, Cullen, Dixie Inn, Doyline, Dubberly, Heflin, Minden, Sarepta, Sibley, Shongaloo, and Springhill, but the salt domes will continue to be monitored.

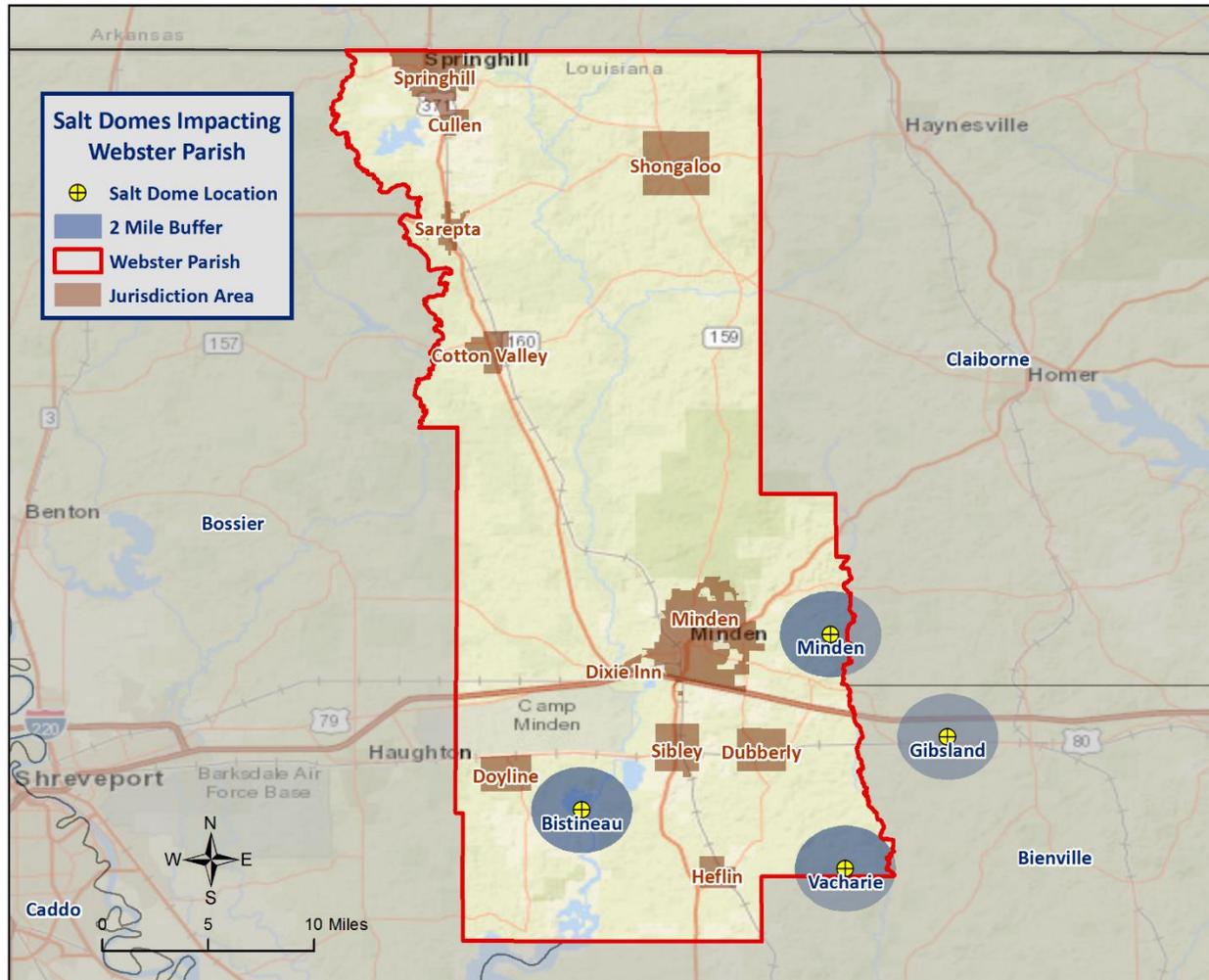


Figure 2-27: Salt Dome Locations in Webster Parish Relative to Jurisdictions

Previous Occurrences / Extents

There have been no recorded incidents of sinkholes or salt dome collapses in Webster Parish to date. Based on the State of Louisiana Hazard Mitigation Plan, sinkholes in the planning area would be anticipated to reach up to two square miles in size. As shown in *Figure 2-27*, only the unincorporated portion of Webster Parish would be affected by any of the 3 salt domes in the parish. The boundaries for the jurisdictions of Cotton Valley, Cullen, Dixie Inn, Doyline, Dubberly, Heflin, Minden, Sarepta, Sibley, Shongaloo, and Springhill do not intersect with the 2 mile buffers for any of the salt domes in Webster Parish.

Frequency / Probability

Since there has been no recorded incidents of sinkhole or salt dome collapse in unincorporated Webster Parish or any of the incorporated jurisdictions, the annual chance of occurrence is calculated at less than 1%.

Estimated Potential Losses

All three salt domes were analyzed to determine the number of people and houses that are potentially susceptible to losses from a sinkhole materializing from one of the salt domes. The following table is based on conducting a two mile buffer around the center of the salt dome. The values were determined by querying the 2010 U.S. Census block data to determine the number of houses and people located within two miles of each salt dome. Critical facilities were also analyzed to determine if they fell within the two mile buffer of a salt dome. Total value for all occupancy groups from Hazus 2.2 was used to estimate a total loss of all facilities that were within two miles of a salt dome. Again, the boundaries for the jurisdictions of Cotton Valley, Cullen, Dixie Inn, Doyline, Dubberly, Heflin, Minden, Sarepta, Sibley, Shongaloo, and Springhill do not intersect with the 2 mile buffers for any of the salt domes in Webster Parish.

The salt dome that poses the greatest risk to Webster Parish is the Bistineau Salt Dome. The Bistineau Salt Dome contains a total of 744 homes and 1,306 people within its two mile buffer.

*Table 2-36: Estimated Potential Losses from a Sinkhole Formation
(Source: U.S. 2010 Census Data and Hazus 2.2)*

Salt Dome Name	Total Building Exposure	Critical Infrastructure Exposure	Number of People Exposed	Number of Houses Exposed
Bistineau	\$189,807,000	0	1,306	744
Minden	\$111,727,000	0	965	414
Vacharie	\$3,109,000	0	147	81

Vulnerability

See Appendix C for parish and municipality building exposure to a sinkhole hazard.

Thunderstorms

The term “thunderstorm” is usually used as a catch-all term for several kinds of storms. Here, “thunderstorm” is defined to include any precipitation event in which thunder is heard or lightning is seen. Thunderstorms are often accompanied by heavy rain and strong winds, and depending on conditions, occasionally by hail or snow. Thunderstorms form when humid air masses are heated, which causes them to become convectively unstable. Consequently, the air masses 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, multi-cell, 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 multi-cell 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, which warms 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), has the ability to issue advisory messages based on forecasts and observations. The following are the advisory messages that may be issued, along 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 parishes (counties).

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

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

Table 2-37: TORRO Hailstorm Intensity Scale

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

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

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

Hailstorms can cause widespread damage to 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 the following table.

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

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

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

The following table presents the Beaufort Wind Scale, first developed in 1805 by Sir Francis Beaufort, which aids in determining relative force and wind speed based on the appearance of wind effects.

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

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

Major damage directly caused by thunderstorm winds is relatively rare, while minor damage is common and pervasive, and most noticeable when it contributes to power outages. These power outages can have major negative impacts such as increased tendency for traffic accidents, loss of revenue for businesses, increased vulnerability to fire, food spoilage, and other losses that might be sustained by a loss of power. Power outages may pose a health risk for those requiring electric medical equipment and/or air conditioning.

Lightning

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

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

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

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

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

Hazard Profile

Hailstorms

Location

Because hailstorms are a climatological based hazard, the entire planning area for Webster Parish is equally at risk for hailstorms.

Previous Occurrences / Extents

The SHELDUS database reports 17 significant hailstorm events occurring within the boundaries of Webster Parish between the years of 1990-2015. According to the National Climatic Data Center, hailstorm diameters experienced in Webster Parish have ranged from 0.50 inches to 2.75 inches since 1990. The most frequently recorded hail size has been 1.00 inch diameters. Based on the National Climatic Data Center dataset, [Table 2-42](#) provides an overview of hailstorms that have impacted the Webster Parish planning area since 2010. [Figure 2-28](#) displays the density of hailstorms in Webster Parish and adjacent parishes. Webster Parish can expect to experience hail up to 2.75 inches in diameter for future events.

Table 2-42: Previous Occurrences of Hailstorms in Webster Parish
(Source: NCDC)

Date	Recorded Hail Size (inches)	Location
March 10, 2010	1.75	MINDEN
April 24, 2010	2.75	GOODWILL
March 26, 2011	1	HEFLIN
April 3, 2012	1	SHONGALOO
April 3, 2012	1	SHONGALOO
August 12, 2012	0.75	SPRINGHILL
February 25, 2013	1	SPRINGHILL
March 23, 2013	0.88	SHONGALOO
February 20, 2014	1	SPRINGHILL
June 8, 2014	1	SHONGALOO
April 24, 2015	0.88	SHONGALOO
May 28, 2015	0.75	MINDEN

Since 2010, there have been no significant hailstorm events in the incorporated areas of Cotton Valley, Cullen, Dixie Inn, Doyline, Dubberly, Sarepta, and Sibley.

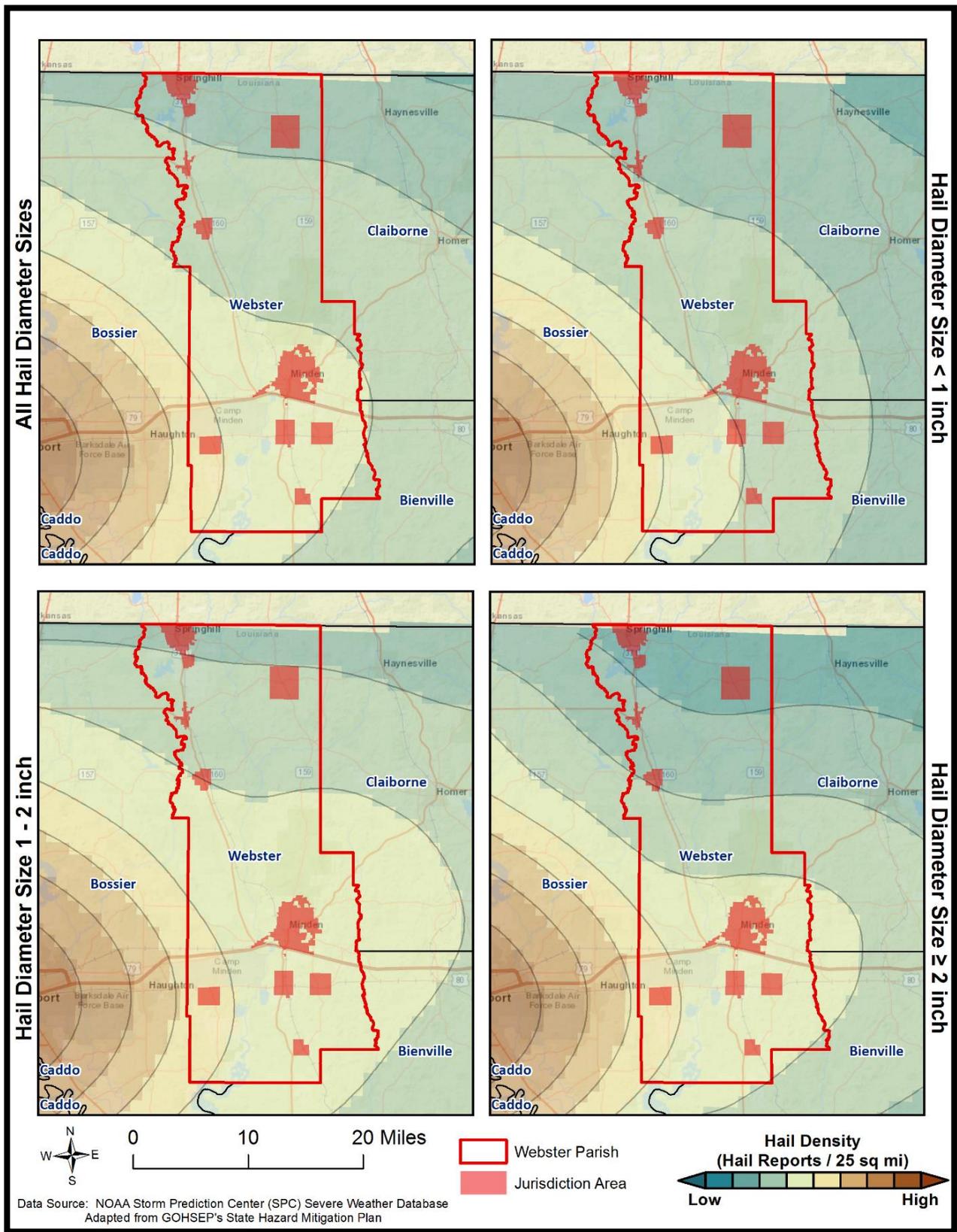


Figure 2-28: Density of Hailstorms by Diameter from 1950-2012
(Source: State of Louisiana Hazard Mitigation Plan 2014)

Frequency

Based on historical data from SHELDUS for the past 25 years, it is estimated the probability of occurrence for a significant hailstorm event is approximately 68%. The probability was determined based on a review of significant hail data that has caused damages in the last 25 years, in which Webster Parish has had 17 recorded events.

Estimated Potential Losses

According to the SHELDUS database, property damage due to hailstorms in Webster Parish have totaled approximately \$96,000 since 1990. To estimate the potential losses of a hail 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 SHELDUS (1990 – 2015). This provides an annual estimated potential loss of \$3,840. *Table 2-43* provides an estimate of potential property losses for Webster Parish.

Table 2-43: Estimated Annual Property Losses in Webster Parish from Hailstorms

Estimated Annual Potential Losses from Hailstorms for Webster Parish					
Unincorporated Webster Parish (40.7% of Population)	Cotton Valley (2.4% of Population)	Cullen (2.8% of Population)	Dixie Inn (0.7% of Population)	Doyline (2.0% of Population)	Dubberly (0.7% of Population)
\$1,564	\$94	\$108	\$25	\$76	\$25

Table 2-43: Estimated Annual Property Losses in Webster Parish from Hailstorms (Continued)

Estimated Annual Potential Losses from Hailstorms for Webster Parish					
Heflin (0.6% of Population)	Minden (31.7% of Population)	Sarepta (2.2% of Population)	Shongaloo (0.4% of Population)	Sibley (3.0% of Population)	Springhill (12.8% of Population)
\$23	\$1,219	\$83	\$17	\$114	\$491

There have been 20 injuries and no fatalities due to hailstorms from 1990 – 2015 in Webster Parish.

Vulnerability

See Appendix C for parish and municipality buildings that are susceptible to hailstorms.

High Winds

Location

Because high winds are a climatological based hazard, the entire planning area for Webster Parish is equally at risk for high winds.

Previous Occurrences / Extents

The SHELDUS database reports a total of 51 thunderstorm wind events occurring within the boundaries of Webster Parish between the years of 1990 to 2015. The significant thunderstorm wind events experienced in Webster Parish have ranged in wind speed from 59 mph to 81 mph. Webster Parish can expect to receive thunderstorm winds up to 81 mph for future high wind events. The table on the next page provides an overview of significant high wind events over the last five years.

Table 2-44: Previous Occurrences for Thunderstorm High Wind Events

Location	Date	Recorded Wind Speeds (mph)	Property Damage	Crop Damage
SPRINGHILL	February 24, 2011	62	\$5,262	\$0
SPRINGHILL	April 15, 2011	60	\$5,262	\$0
HEFLIN	April 26, 2011	69	\$7,894	\$0
COTTON VALLEY	August 24, 2011	64	\$15,787	\$0
MINDEN	January 25, 2012	64	\$15,467	\$0
SHONGALOO	March 11, 2012	61	\$5,156	\$0
SPRINGHILL	August 8, 2012	60	\$1,547	\$0
MINDEN WEBSTER FLD	July 23, 2014	63	\$15,000	\$0

Since 2010, there have been no significant thunderstorm wind events in the incorporated areas of Cullen, Dixie Inn, Doyline, Dubberly, Sarepta, and Sibley.

Frequency

High winds are a fairly common occurrence within Webster Parish, with an annual chance of occurrence calculated at 100%.

Estimated Potential Losses

Since 1990, there have been 51 significant wind events that have resulted in property damages according to the SHELDUS database. The total property damages associated with those storms have totaled \$1,704,568. 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 SHELDUS (1990 – 2015). This provides an annual estimated potential loss of \$68,183. The following table provides an estimate of potential property losses for Webster Parish:

Table 2-45: Estimated Annual Property Losses in Webster Parish Resulting from High Winds

Estimated Annual Potential Losses from Thunderstorm High Winds for Webster Parish					
Unincorporated Webster Parish (40.7% of Population)	Cotton Valley (2.4% of Population)	Cullen (2.8% of Population)	Dixie Inn (0.7% of Population)	Doyline (2.0% of Population)	Dubberly (0.7% of Population)
\$27,773	\$1,670	\$1,924	\$452	\$1,353	\$452

Table 2-45: Estimated Annual Property Losses in Webster Parish Resulting from High Winds (Continued)

Estimated Annual Potential Losses from Thunderstorm High Winds for Webster Parish					
Heflin (0.6% of Population)	Minden (31.7% of Population)	Sarepta (2.2% of Population)	Shongaloo (0.4% of Population)	Sibley (3.0% of Population)	Springhill (12.8% of Population)
\$404	\$21,646	\$1,474	\$301	\$2,015	\$8,718

There have been no reported injuries or fatalities as a result of a thunderstorm wind event over the 25-year record.

Vulnerability

See Appendix C for parish and municipality buildings that are susceptible to high winds.

Lightning

Location

Like hail and high winds, lightning is a climatological based hazard and has the same probability of occurring throughout the entire planning area for Webster Parish.

Previous Occurrences / Extents

The SHELDUS database reports a total of 11 lightning events occurring within the boundaries of Webster Parish between the years of 1990-2015. The SHELDUS database only records lightning events that cause death, injuries, crop damage, and/or property damage, so these numbers do not accurately reflect the number of lightning events in Webster Parish, which occur on a nearly monthly basis. The planning area can expect to have a lightning density of 11-12 flashes per sq. mile per year. The table below provides an overview of significant lightning strikes over the last five years:

*Table 2-46: Previous Occurrences of Significant Lightning Strikes in Webster Parish from 2010 – 2015
(Source: NCDC and SHELDUS)*

Location	Date	Summary	Property Damage
SIBLEY	June 8, 2010	Lightning struck oil holding tanks at an oil and gas pumping station near Sibley. The lightning first struck a salt water holding tank, causing it to catch fire. As the fiberglass tank structure disintegrated, the flames spread to the holding tank, which contained 68 barrels of crude.	\$7,600
SPRINGHILL	July 5, 2011	Lightning was reported to have struck the top of a supermarket in town.	\$5,262

Since 2010, there have been no lightning events that have caused property damage or loss of life in the unincorporated areas of Webster Parish or in the incorporated areas of Cotton Valley, Cullen, Dixie Inn, Doyline, Dubberly, Heflin, Minden, Sarepta, and Shongaloo.

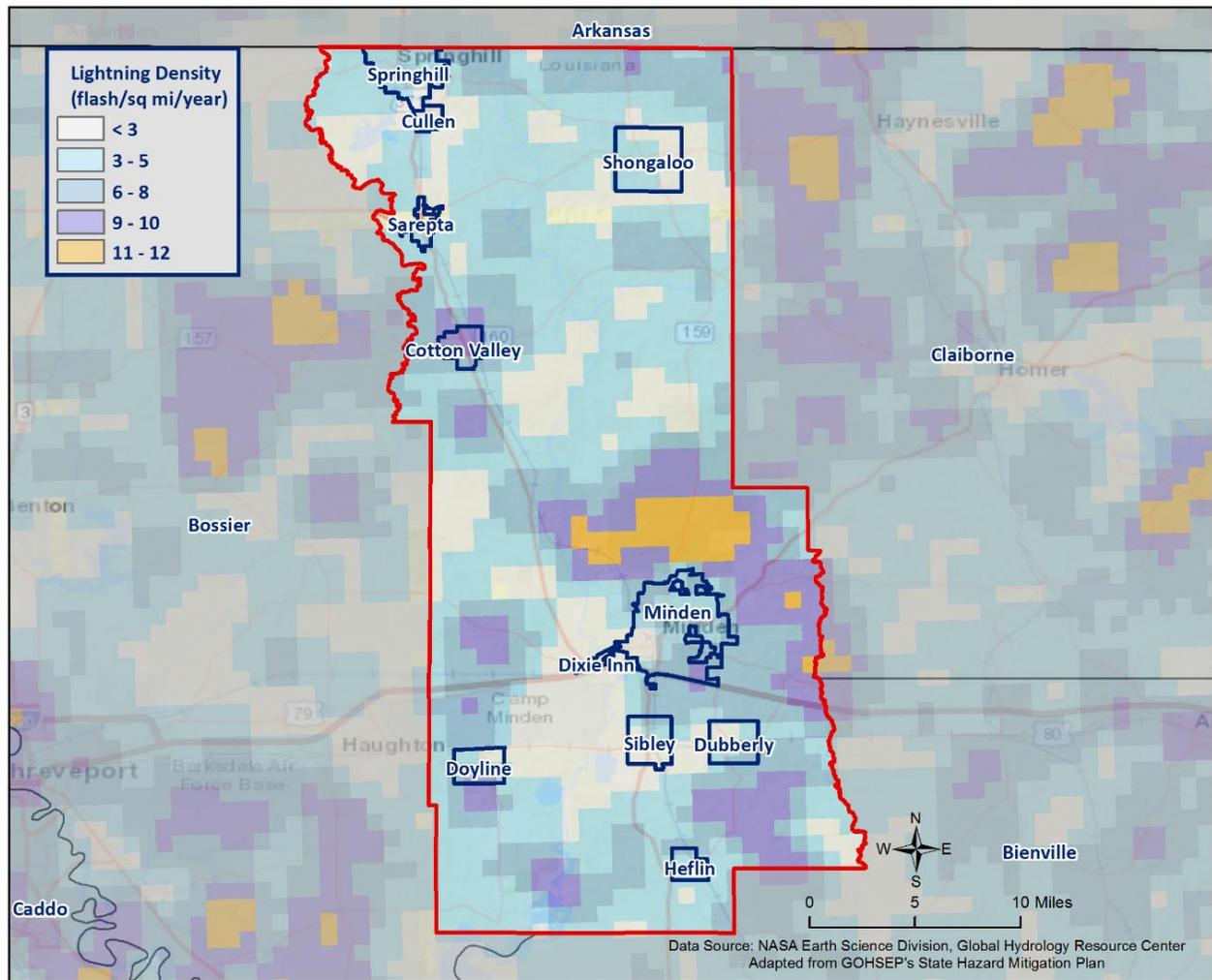


Figure 2-29: Lightning Density Reports for Webster Parish

Frequency

Lightning can strike anywhere and is produced by every thunderstorm, so the chance of lightning occurring in Webster Parish is high. However, lightning that meets the definition that is used by SHELDUS and the NCDC that actually results in damages to property and injury or death is a less likely event. According to SHELDUS, there have been 11 lightning events that have caused property damages or injuries over the last 25 years, establishing an annual probability of 44%.

Estimated Potential Losses

Since 1990, there have been 11 significant lightning events that have resulted in property damages according to the SHELDUS database. The total property damages associated with lightning events totaled \$275,052. 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 major lightning strike data in SHELDUS (1990 – 2015). This provides an annual estimated potential loss of \$11,002. The tables on the following page provide an estimate of potential property losses for Webster Parish.

Table 2-47: Estimated Annual Property Losses in Webster Parish Resulting from Lightning

Estimated Annual Potential Losses from Lightning for Webster Parish					
Unincorporated Webster Parish (40.7% of Population)	Cotton Valley (2.4% of Population)	Cullen (2.8% of Population)	Dixie Inn (0.7% of Population)	Doyline (2.0% of Population)	Dubberly (0.7% of Population)
\$4,482	\$269	\$311	\$73	\$218	\$73

Table 2-47: Estimated Annual Property Losses in Webster Parish Resulting from Lightning (Continued)

Estimated Annual Potential Losses from Lightning for Webster Parish					
Heflin (0.6% of Population)	Minden (31.7% of Population)	Sarepta (2.2% of Population)	Shongaloo (0.4% of Population)	Sibley (3.0% of Population)	Springhill (12.8% of Population)
\$65	\$3,493	\$238	\$49	\$325	\$1,407

There have been no reported injuries or fatalities in Webster Parish as a result of a lightning strikes over the 25-year record.

Vulnerability

See Appendix C for parish and municipality building exposure to lightning hazards.

Tornadoes

Tornadoes (also called twisters or 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. This usually results in a counterclockwise rotation 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 2-48* 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 2-48: 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 2-49: Fujita and Enhanced Fujita Tornado Damage Scale

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

The National Weather Service (NWS) has the ability to issue advisory messages based on forecasts and observations. The following are the advisory messages that may be issued, along 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 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 with 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 projectiles 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 Webster Parish with actual locations, tornadoes in general are a climatological based hazard and have the same approximate probability of occurring in Webster Parish as all of its jurisdictions. Because a tornado has a similar probability of striking anywhere within the planning area for Webster Parish, all jurisdictions are equally at risk for tornadoes.

Previous Occurrences / Extents

SHELDUS reports a total of 12 tornadoes or waterspouts occurring within the boundaries of Webster Parish between the years of 1990-2015. The tornadoes experienced in Webster Parish have from ranged EF0 to EF1 on the EF scale, and ranged from F0 to F2 on the F scale. The worst case scenario Webster Parish can expect in the future is an EF1 tornado.

The tornado that caused the most damage to property occurred on April 23, 2000. The F2 tornado caused approximately \$800,000 in damages. About 200 houses suffered roof damage and numerous trees were either uprooted or snapped. Tree damage occurred up to one mile on either side of the tornado track.

Table 2-50: Historical Tornadoes in Webster Parish with Locations from 1990-2015

Date	Impacts	Property Damage	Location	Magnitude
April 27, 1990	1.5 mile path with a width of 50 yards.	\$0	HEFLIN	F1
December 21, 1990	2.0 mile path with a width of 125 yards. Most of the paths were through forested areas, and a majority of the damage was confined to downed trees. A barn was destroyed and car windows were blown out.	\$91	SPRINGHILL	F1
November 3, 1992	1.5 mile path with a width of 45 yards. Destroyed numerous trees and blew an unoccupied car around a utility pole.	\$8,437	MINDEN	F1
April 4, 1997	20 mile path with a width of 100 yards. Trees were uprooted while several homes were lifted off their foundations. A travel trailer was blowing about 100 yards. Shongaloo High School suffered moderate damage as part of its roof and frame was torn apart.	\$294,998	COTTON VALLEY	F1
January 1, 1999	7.9 mile path with a width of 50 yards. A 20 horse stall and building consisting of iron square tubing was destroyed. One tin feed shed was destroyed. Numerous large trees were snapped or uprooted.	\$125,047	DOYLINE	F2
April 23, 2000	16.2 mile path with a width of 700 yards. About 200 houses suffered roof damage and numerous trees were either uprooted or snapped.	\$1,099,819	MINDEN	F2
November 26, 2001	5 mile path with a width of 40 yards. Damage was mostly to small trees, tree limbs, and power lines. The side of a barn was caved in from the	\$60,153	EVERGREEN	F1

Date	Impacts	Property Damage	Location	Magnitude
	tornado and tin roofs were missing from two sheds.			
April 5, 2005	1 mile path with a width of 300 yards. This storm destroyed two mobile homes and damaged four other homes along with uprooting or snapping several trees along its path.	\$303,041	HEFLIN	F1
March 27, 2007	8 mile path with a width of 75 yards. Damage consisted of downed trees along Route 2. One tree fell onto an abandoned home near Sikes Ferry. A tree also fell atop a parked truck at a residence in Shongaloo.	\$28,544	COTTON VALLEY	EF1
December 9, 2008	0.2 mile path with a width of 50 yards. Several outbuildings were destroyed. In addition, the storm damaged several homes, peeling the siding from one home and destroying the roofs of several others.	\$219,910	GOODWILL	EF1
April 9, 2009	2.28 mile path with a width of 100 yards. Several trees were snapped off at the top while others were uprooted.	\$110,347	OGDEN	EF0
April 26, 2011	6.49 mile path with a width of 150 yards. Numerous trees were snapped and uprooted. Several homes sustained roof damage.	\$105,245	OGDEN	EF1

The incorporated areas of Cotton Valley, Cullen, Dixie Inn, Doyline, Dubberly, Heflin, Minden, Sarepta, Shongaloo, Sibley, and Springhill have not experienced a tornado event from 2010 to the present. Since 2011, the year in which the last update to this hazard mitigation plan was written, Webster Parish has had one tornado touch down in the unincorporated areas of the parish. The following is a brief synopsis of this event:

April 26, 2011 – EF1 Tornado in Ogden

The National Weather Service conducted a storm survey near Dubberly and concluded that damage was the result of an EF1 tornado. Numerous trees were snapped and uprooted south of Sibley, east

of Highway 371. The tornado continued into Dubberly where several homes sustained roof damage. Numerous trees were snapped and uprooted along Highway 531 north of Dubberly. The tornado lifted as it approached Interstate 20.

Frequency / Probability

Tornadoes are a sporadic occurrence within Webster Parish, with an annual chance of occurrence calculated at 48% based on the records for the past 25 years (1990-2015). The following figure displays the density of tornado touch downs in Webster Parish and neighboring parishes.

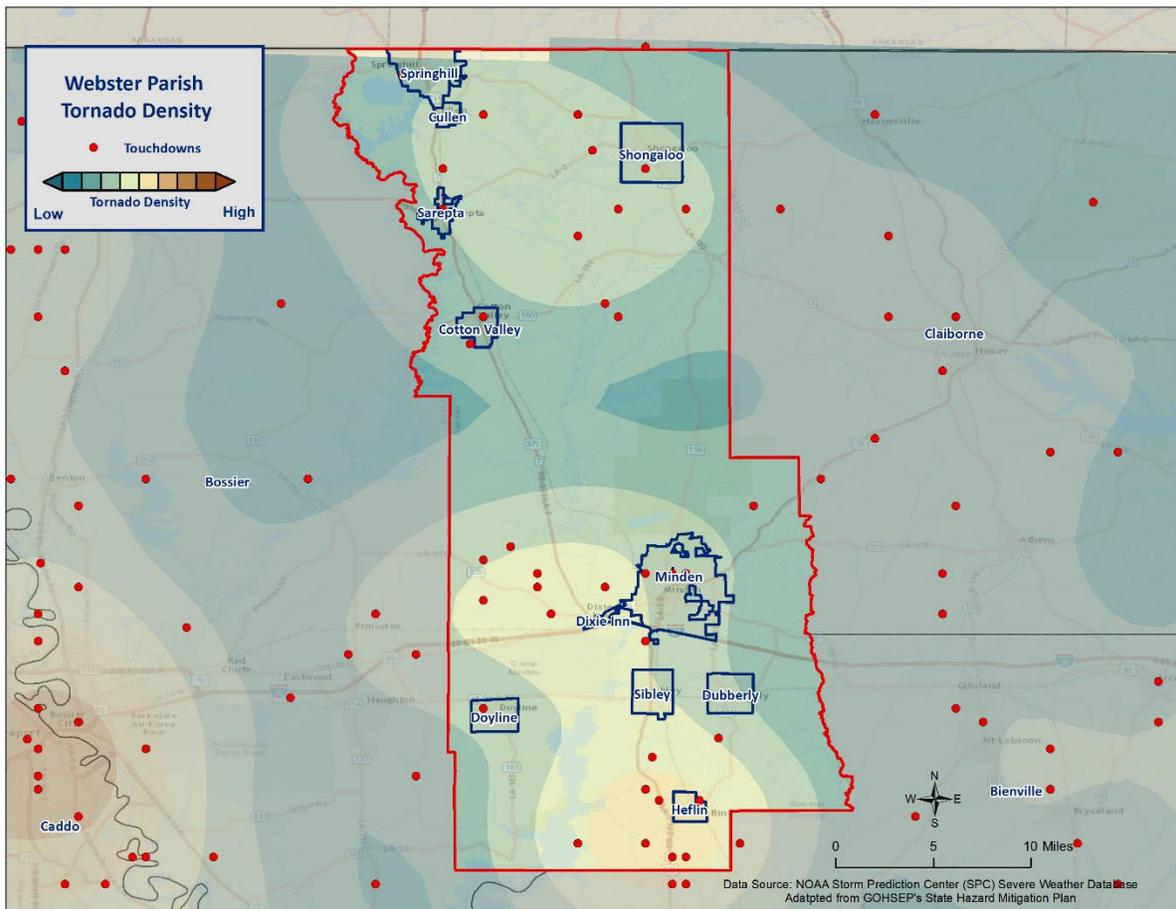


Figure 2-30: Location and Density of Tornadoes to Touchdown in Webster Parish (Source: NOAA/SPC Severe Weather Database)

Estimated Potential Losses

According to the SHELUDS database, there have been 12 tornadoes that have caused some level of property damage. The total damage from the actual claims for property is \$2,355,651, with an average cost of \$196,304 per tornado strike. When annualizing the total cost over the 25-year record, total annual losses based on tornadoes are estimated to be \$94,226. To provide an estimated annual estimated potential loss per jurisdiction, the 2010 Census population was used to assign the estimated potential losses proportionally across the jurisdictions. Based on the 2010 Census data, the table on the following page provides an annual estimate of potential losses for Webster Parish.

Table 2-51: Estimated Annual Property Losses in Webster Parish Resulting from Tornadoes

Estimated Annual Potential Losses from Tornadoes for Webster Parish					
Unincorporated Webster Parish (40.7% of Population)	Cotton Valley (2.4% of Population)	Cullen (2.8% of Population)	Dixie Inn (0.7% of Population)	Doyline (2.0% of Population)	Dubberly (0.7% of Population)
\$38,381	\$2,307	\$2,659	\$624	\$1,870	\$624

Table 2-51: Estimated Annual Property Losses in Webster Parish Resulting from Tornadoes (Continued)

Estimated Annual Potential Losses from Tornadoes for Webster Parish					
Heflin (0.6% of Population)	Minden (31.7% of Population)	Sarepta (2.2% of Population)	Shongaloo (0.4% of Population)	Sibley (3.0% of Population)	Springhill (12.8% of Population)
\$558	\$29,914	\$2,037	\$416	\$2,785	\$12,048

Table 2-52 presents an analysis of building exposure that is susceptible to tornadoes by general occupancy type for Webster Parish, along with the percentage of building stock that are mobile homes.

Table 2-52: Building Exposure by General Occupancy Type for Tornadoes in Webster Parish
(Source: FEMA's Hazus 2.2)

Building Exposure by General Occupancy Type for Tornadoes Exposure Types (\$1,000)							
Residential	Commercial	Industrial	Agricultural	Religion	Government	Education	Mobile Homes (%)
44,731	849,961	11,868	4,764,580	203,324	318,473	76,869	17.2%

The parish has suffered no injuries or fatalities as a result of tornadic activity during this 25-year period.

In assessing the overall risk to population, the most vulnerable population throughout the parish are those residing in manufacturing housing. Approximately 17.2% of all housing in Webster Parish consists of manufactured housing. Based on location data collected in a previous hazard mitigation project, there are 32 known locations where manufactured housing is concentrated. Each of those 32 locations have an overall number of manufactured houses ranging from one to 84. The location and density of manufactured houses can be seen in *Figure 2-31*.

Manufactured housing is more likely to sustain damage from a tornado than any other residential structure. The highest concentration of manufactured home parks is located in the unincorporated area of Webster Parish (*Table 2-53*). However, this does not influence the risk associated with a tornado event since they strike at random, making all structures and population within the planning area equally vulnerable.

Table 2-53: Manufactured Home Distribution throughout Webster Parish

Location	Number of Manufactured Home Parks	% of Manufactured Home Parks
Unincorporated Area	20	62.5%
Cotton Valley	1	3.1%
Cullen	0	0.0%
Dixie Inn	0	0.0%
Doyline	1	3.1%
Dubberly	0	0.0%
Heflin	1	3.1%
Minden	3	9.4%
Sarepta	0	0.0%
Shongaloo	0	0.0%
Sibley	2	6.3%
Springhill	4	12.5%

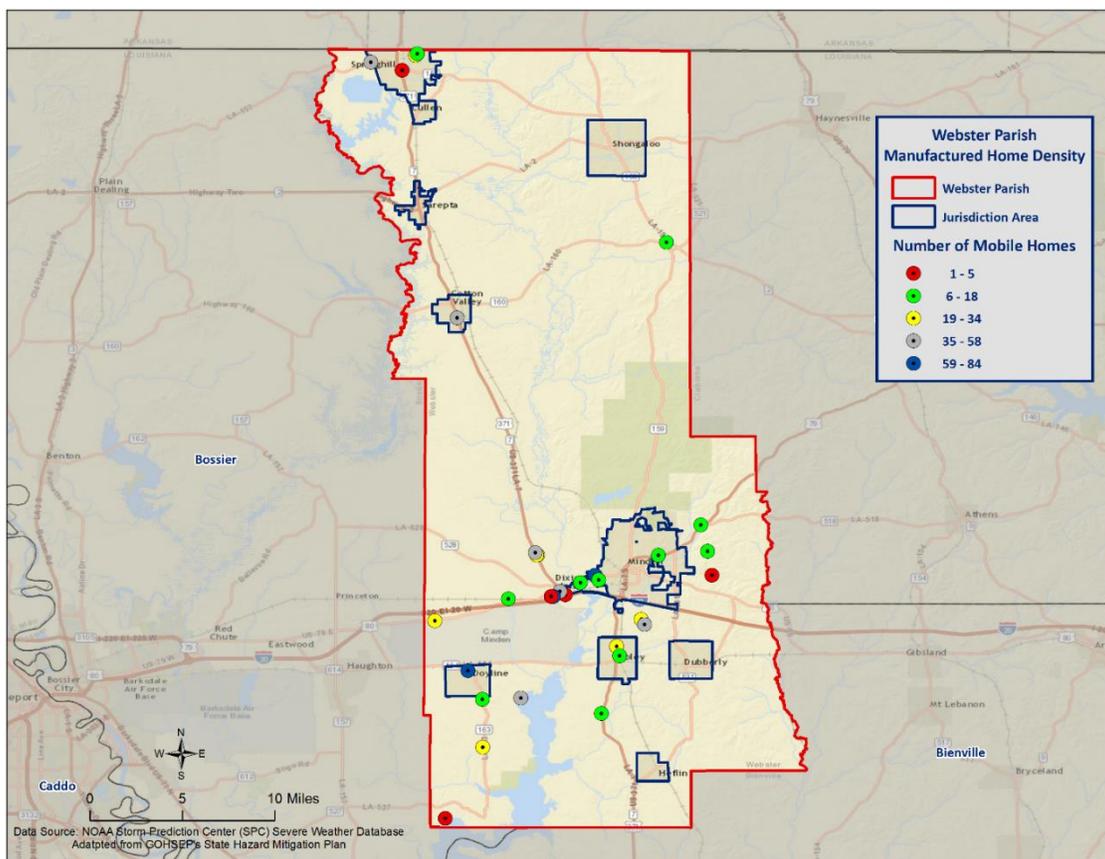


Figure 2-31: Location and Approximate Number of Units in Manufactured Housing Locations throughout Webster Parish

Vulnerability

See Appendix C for parish and municipality building exposure to tornado hazards.

Tropical Cyclones

Tropical cyclones are among the worst hazards that 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 2-54: 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 fresh water 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 hurricane having the potential to devastate multiple parishes at once, the risk of a tropical cyclone has the probability of impacting anywhere within the planning area for Webster Parish. As such, all jurisdictions are equally at risk for tropical cyclones.

Previous Occurrences / Extents

The central Gulf of Mexico coastline is among the most hurricane-prone locations in the United States, and hurricanes can affect every part of the state. The SHELDUS database reports a total of three tropical cyclone events occurring within the boundaries of Webster Parish between the years 2002 and 2015 (*Table 2-55*). The tropical cyclone events experienced in Webster Parish include depressions, storms, and hurricanes. As a worst case scenario, Webster Parish can expect to experience hurricanes at the Category 1 level in the future.

*Table 2-55: Historical Tropical Cyclone Events in Webster Parish from 2002- 2015
(Source: SHELDUS)*

Date	Name	Storm Type At Time of Impact
September 23, 2005	Rita	Tropical Storm
September 1, 2008	Gustav	Tropical Storm
September 12, 2008	Ike	Tropical Storm

Hurricane Rita (2005)

While Hurricane Katrina and resulting levee failures captured headlines worldwide, lesser known (but just as destructive) Hurricane Rita wreaked havoc on southwestern Louisiana less than a month later. The storm made landfall as a Category 3 hurricane in Cameron Parish. Across southeast Louisiana, the main effect from Hurricane Rita was the substantial storm surge flooding that occurred in low lying communities across coastal areas of southern Terrebonne, southern Lafourche, and southern Jefferson Parishes, where numerous homes and businesses were flooded. Some of the most substantial damage occurred in southern Terrebonne Parish, where storm surge of five to seven feet above normal overtopped or breached local drainage levees, inundating many small communities. Newspaper accounts indicated that approximately 10,000 structures were flooded in Terrebonne Parish. Lafitte and other communities in lower Jefferson Parish also suffered extensive storm surge flooding. Storm surge flooding also occurred in areas adjacent to Lake Pontchartrain and Lake Maurepas, affecting homes and businesses from Slidell to Mandeville and Madisonville. Approximately 1,500 structures were reported as flooded in Livingston Parish near Lake Maurepas. Repaired levees damaged by Hurricane Katrina in late August were overtopped or breached along the Industrial Canal in New Orleans, resulting in renewed flooding in adjacent portions of New Orleans and St. Bernard Parish. However, the flooding was much more limited in scope than during Hurricane Katrina.

Hurricane Rita was the most powerful hurricane to impact southwestern Louisiana since Hurricane Audrey in 1957. Estimated damages in southwest Louisiana totaled near \$4 billion, with the majority of those losses occurring in Cameron and Calcasieu Parishes. Entire towns were destroyed in Cameron Parish, including downtown Cameron, Creole, Holly Beach, and Grand Chenier. An estimated 90 to 95 percent of the homes in the parish were severely damaged or destroyed. Storm surge values were estimated around 15 feet in parts of Cameron Parish.

Hurricane Rita passed to the west side of Webster Parish, leaving the parish on the more damaging side of the storm. Damage was sporadic across the region with damage mostly consisting of downed trees and power lines as well as structural damage to homes, businesses, and automobiles from downed trees. Many residents lost power during the height of the storm.

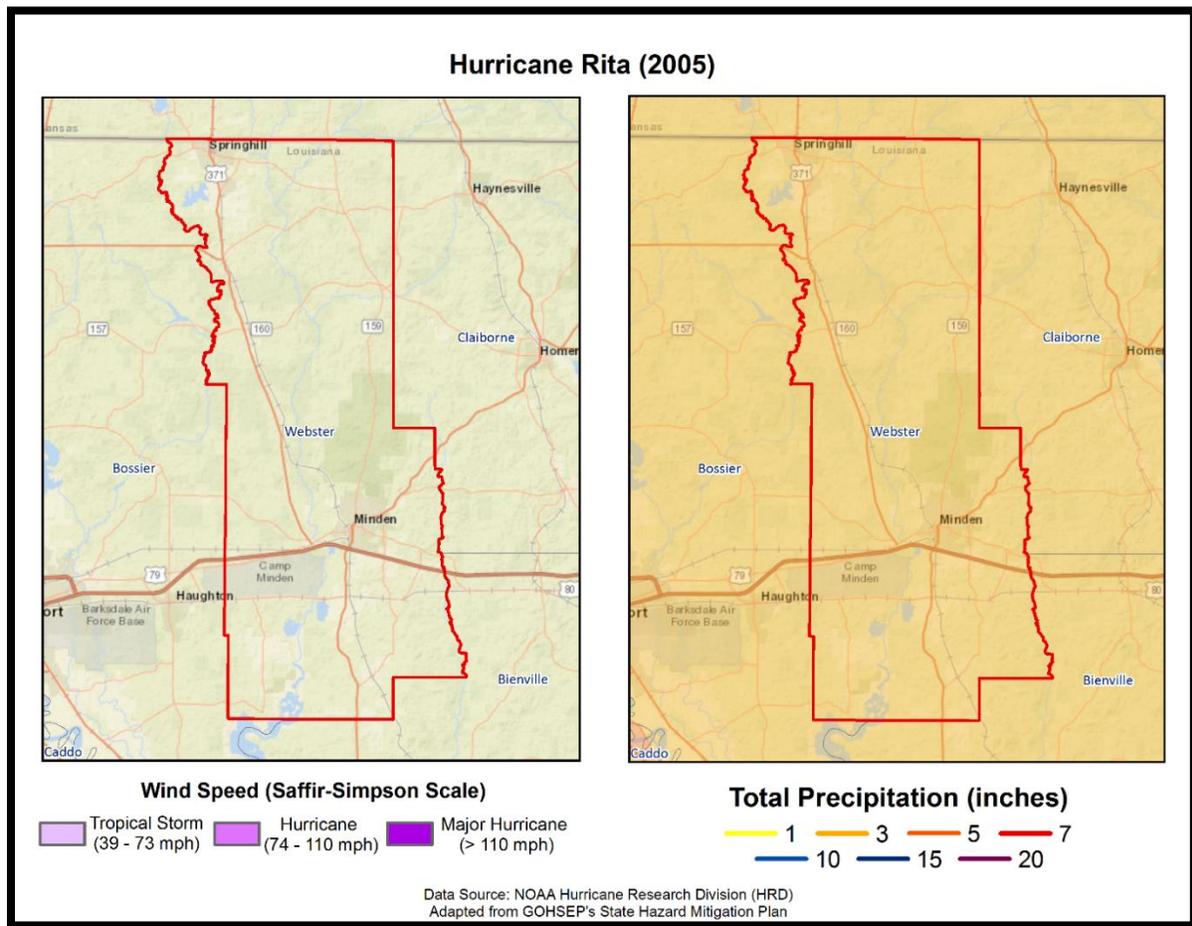


Figure 2-32: Wind Speed and Precipitation Totals in Webster Parish for Hurricane Rita

Hurricane Gustav (2008)

Hurricane Gustav entered the southeast Gulf of Mexico as a major Category 3 hurricane on August 31, 2008, after developing in the Caribbean Sea and moving across western Cuba. Gustav tracked northwestward across the Gulf toward Louisiana and made landfall as a Category 2 hurricane near Cocodrie, Louisiana, during the morning of September 1st. Gustav continued to move northwest across south Louisiana and weakened to a Category 1 storm over south central Louisiana later that day. The storm diminished to a tropical depression over northwestern Louisiana on September 2nd.

The highest wind gust recorded was 117 mph (102 kts) at a USGS site at the Houma Navigational Canal and at the Pilot Station East C-MAN near the Southwest Pass of the Mississippi River. The highest sustained wind of 91 mph was recorded at the Pilot's Station East C-MAN site. However, due to the failure of equipment at some observation sites during the storm, higher winds may have occurred. The minimum sea level pressure measured was 951.6 millibars at a USGS site at Caillou Lake, southwest of Dulac, and 954.5 millibars at the LUMCON facility near Dulac. Rainfall varied considerably across southeast Louisiana, ranging from around four inches to just over 11 inches.

Gustav produced widespread wind damage across southeast Louisiana, especially in the area from Houma and Thibodaux through the greater Baton Rouge area. Hurricane force wind gusts occurred also across the inland areas, including the Baton Rouge area and surrounding parishes. A peak wind gust of 91 mph was

recorded at the Baton Rouge (Ryan Field) Airport at 1:12 PM CST. This was only one mph less than the highest wind gust recorded during Hurricane Betsy in 1965. After the storm, the electric utility serving most of southeast Louisiana reported 75 to 100 percent of utility customers were without power, in areas ranging from Lafourche and Terrebonne Parishes northwest through the Baton Rouge area to central Louisiana and southwest Mississippi. Considerable damage occurred to many houses and structures as large tree limbs and trees were toppled by the hurricane force winds. Preliminary estimates from the American Red Cross indicated that around 13,000 single family dwellings were damaged by the hurricane in southeast Louisiana, and several thousand more apartments and mobile homes were also damaged. Early estimates from Louisiana Economic Development indicated that Gustav caused at least \$4.5 billion in property damage in Louisiana, including insured and uninsured losses.

In Webster Parish, the remnants of Hurricane Gustav downed numerous trees and power lines throughout the parish. One tree fell on top of a home in Minden, resulting in a small fire. There were no injuries. However, power outages were widespread across the parish.

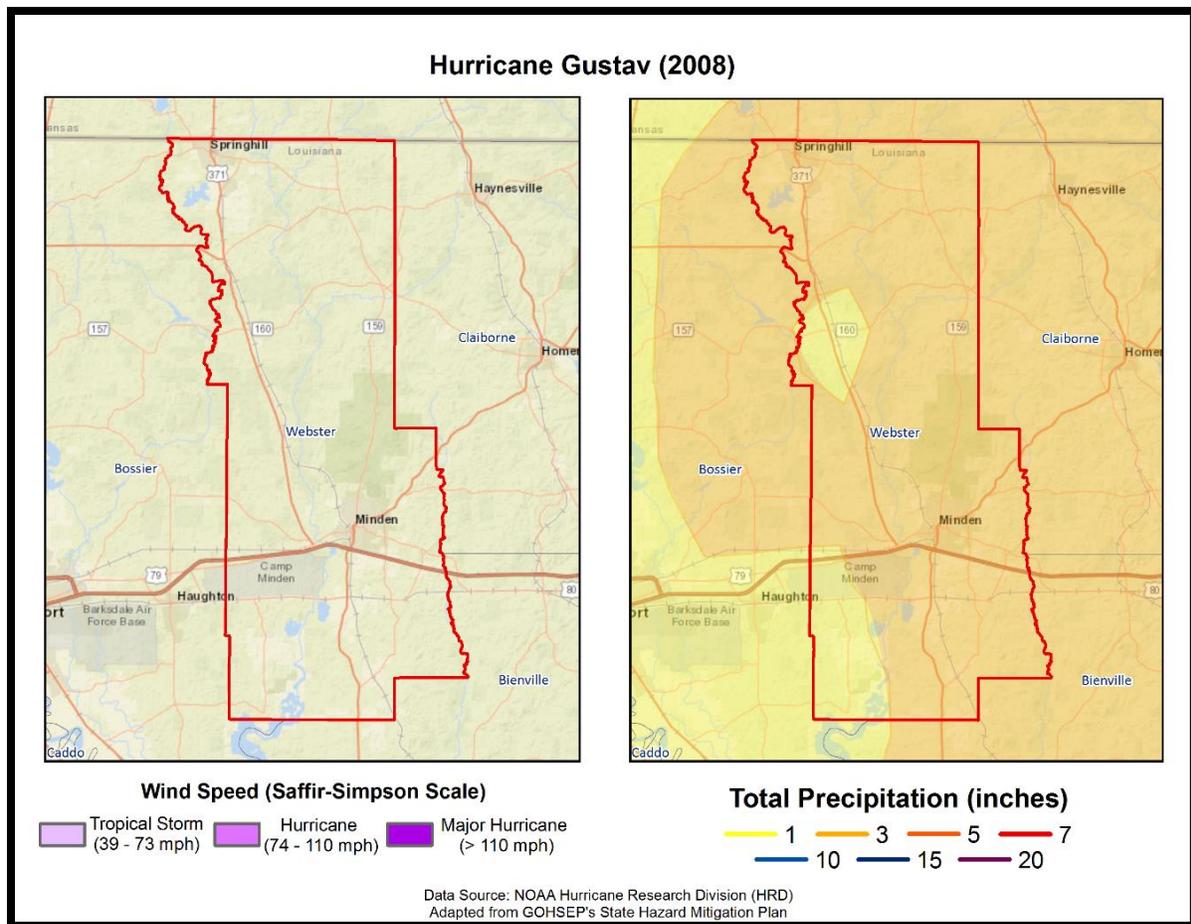


Figure 2-33: Wind Speed and Precipitation Totals in Webster Parish for Hurricane Gustav

Hurricane Ike (2008)

Hurricane Ike caused wind damage, storm surge flooding, and tornadoes across southwest Louisiana. Ike made landfall near Galveston, TX early in the morning on September 13, 2008, as a strong category 2 hurricane. Sustained hurricane force winds were confined to extreme western Cameron Parish. The highest

recorded winds in southwest Louisiana were experienced at Lake Charles Regional Airport, with sustained winds of 53 mph (46 kts) and gusts of 77 mph (67 kts). The lowest pressure reading occurred at Southland Field near Sulphur, LA, with a low of 994.6 millibars. Several tornadoes were reported across southwest Louisiana. The most significant one was near Mamou, where ten to fifteen homes were damaged, including one that lost its roof. Storm surge was a significant event. Water levels ranged from 14 feet in western Cameron Parish, to eight feet in St. Mary Parish. This resulted in widespread flooding of the same areas that flooded during Hurricane Rita in 2005. Most of Cameron Parish was under water. Over 3,000 homes were flooded. This extended north into Calcasieu Parish, where another 1,000 homes flooded in Lake Charles, Westlake, and Sulphur. In Vermilion Parish, at least 1,000 homes flooded in Pecan Island, Forked Island, Intracoastal City, and Henry. This extended east into Iberia Parish, where another 1,000 homes flooded south of Highway 14 and Highway 90. In St. Mary Parish, some of the worst flooding occurred in Franklin, where a man-made levee failed, flooding over 450 homes. Maximum storm total rainfall ranged from six to eight inches across Cameron, Calcasieu, and Beauregard Parishes. No fatalities were reported in southwest Louisiana. Total property damages, however, were high. Losses were estimated to be almost \$420 million across southwest Louisiana. Agricultural losses were over \$225 million.

In Webster Parish, the remnants of Tropical Storm Ike resulted in widespread trees and power lines downed throughout all of the parish. Power outages were widespread as well with numerous residents without power during the height of the storm and days afterward. A tree was reported down on a vehicle in the town of Minden. There were no reports of injuries.

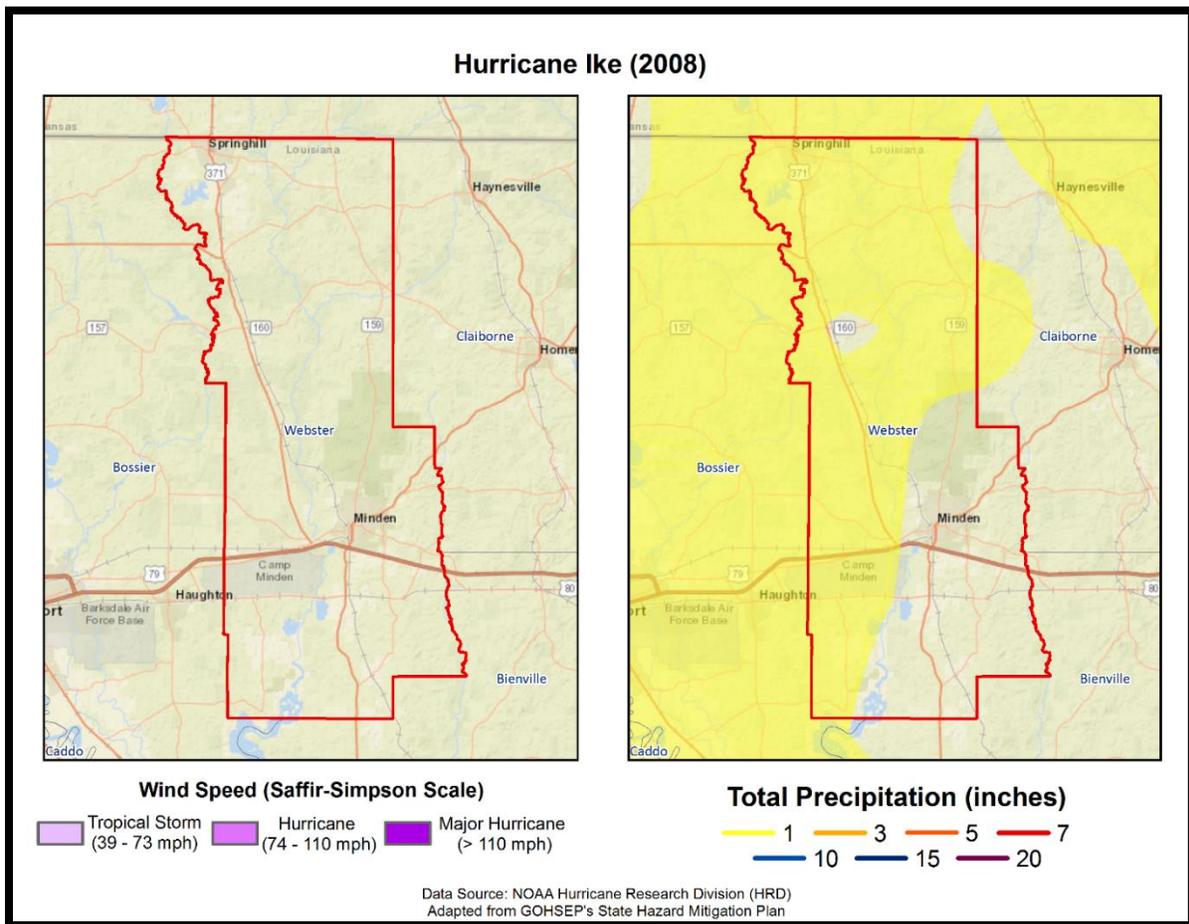


Figure 2-34: Wind Speed and Precipitation Totals in Webster Parish for Hurricane Ike

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

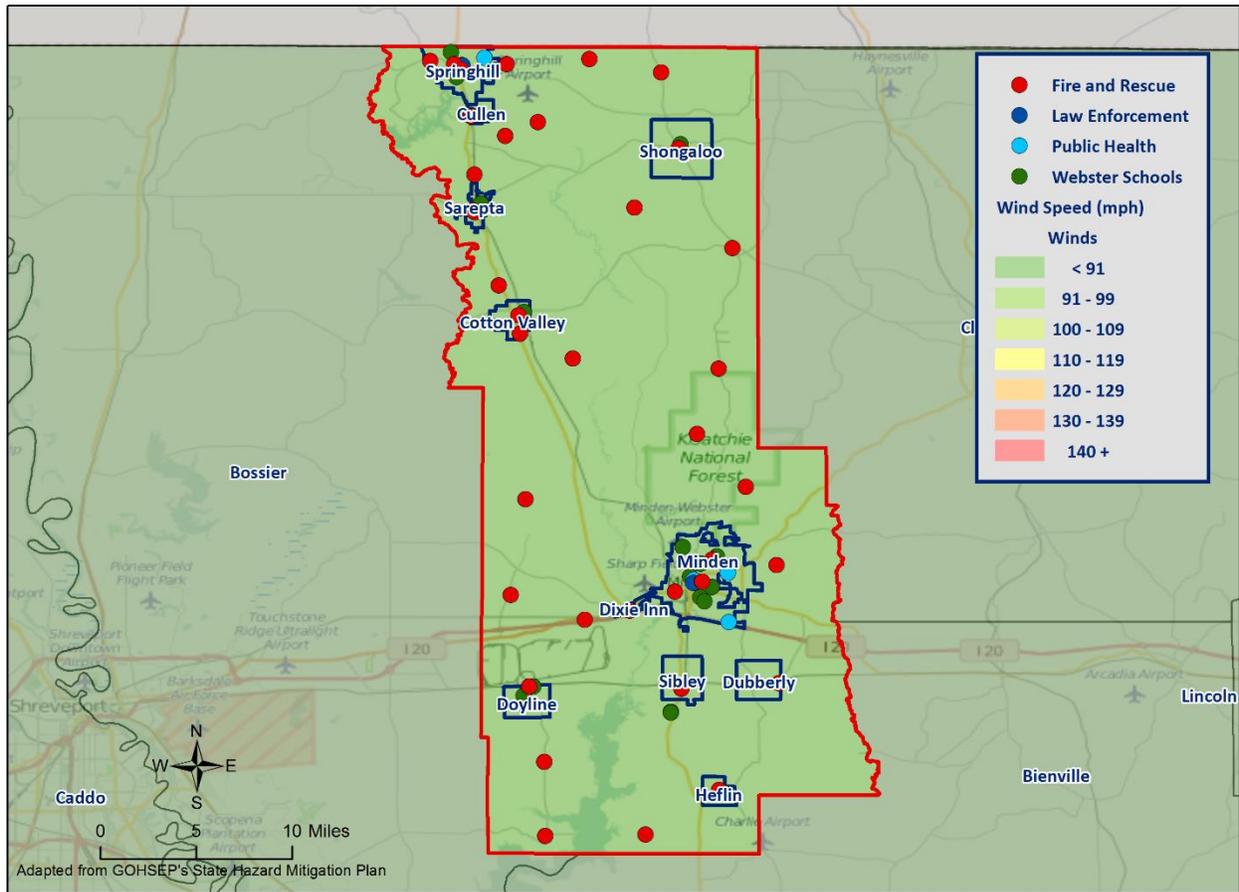


Figure 2-35: Winds Zones for Webster Parish in Relation to Critical Facilities

Frequency / Probability

Tropical cyclones are large natural hazard events that regularly impact Webster Parish. The annual chance of occurrence for a tropical cyclone is estimated at 12% for Webster Parish and its municipalities, with three events occurring within 25 years. 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

Estimated Potential Losses

Using Hazus 2.2 100-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 2-56: Total Estimated Losses for a 100-Year Hurricane Event
(Source: Hazus 2.2)

Jurisdiction	Estimated Total Losses from 100-Year Hurricane Event
Webster Parish (Unincorporated)	\$553,780
Cotton Valley	\$33,289
Cullen	\$38,370
Dixie Inn	\$9,007
Doyline	\$26,988
Dubberly	\$9,007
Heflin	\$8,050
Minden	\$431,609
Sarepta	\$29,396
Shongaloo	\$6,005
Sibley	\$40,185
Springhill	\$173,838
Total	\$1,359,524

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

Table 2-57: Ratio of Total Losses to Total Estimated Value of Assets for each Jurisdiction in Webster Parish
(Source: Hazus 2.2)

Jurisdiction	Estimated Total Losses from 100-Year Hurricane Event	Total Estimated Value of Assets	Ratio of Estimated Losses to Total Value
Unincorporated	\$553,780	\$2,424,468,000	0.0%
Cotton Valley	\$33,289	\$129,334,000	0.0%
Cullen	\$38,370	\$138,910,000	0.0%
Dixie Inn	\$9,007	\$48,305,000	0.0%
Doyline	\$26,988	\$122,123,000	0.0%
Dubberly	\$9,007	\$28,645,000	0.0%
Heflin	\$8,050	\$31,473,000	0.0%
Minden	\$431,609	\$2,120,483,000	0.0%
Sarepta	\$29,396	\$122,422,000	0.0%
Shongaloo	\$6,005	\$33,338,000	0.0%
Sibley	\$40,185	\$127,954,000	0.0%
Springhill	\$173,838	\$942,351,000	0.0%

Based on the Hazus 2.2 Hurricane Model, estimated total losses are less than 1% of the total estimated value of all assets for the unincorporated area of Webster Parish, and the incorporated areas of Cotton Valley, Cullen, Dixie, Inn, Doyline, Dubberly, Heflin, Minden, Sarepta, Shongaloo, Sibley, and Springhill.

The Hazus 2.2 Hurricane Model also provides a breakdown by jurisdiction for seven primary sectors (Hazus occupancy) throughout the parish. The losses for each jurisdiction by sector are listed in the following tables.

*Table 2-58: Estimated Losses in Unincorporated Webster Parish for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Webster Parish (Unincorporated)	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$0
Commercial	\$18
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$553,762
Schools	\$0
Total	\$553,780

*Table 2-59: Estimated Losses in Cotton Valley for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Cotton Valley	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$0
Commercial	\$1
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$33,288
Schools	\$0
Total	\$33,289

*Table 2-60: Estimated Losses in Cullen for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Cullen	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$0
Commercial	\$1
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$38,369
Schools	\$0
Total	\$38,370

*Table 2-61: Estimated Losses in Dixie Inn for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Dixie Inn	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$0
Commercial	\$0
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$9,007
Schools	\$0
Total	\$9,007

*Table 2-62: Estimated Losses in Doyline for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Doyline	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$0
Commercial	\$1
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$26,987
Schools	\$0
Total	\$26,988

*Table 2-63: Estimated Losses in Dubberly for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Dubberly	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$0
Commercial	\$0
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$9,007
Schools	\$0
Total	\$9,007

*Table 2-64: Estimated Losses in Heflin for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Heflin	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$0
Commercial	\$0
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$8,050
Schools	\$0
Total	\$8,050

*Table 2-65: Estimated Losses in Minden for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Minden	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$0
Commercial	\$15
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$431,594
Schools	\$0
Total	\$431,609

*Table 2-66: Estimated Losses in Sarepta for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Sarepta	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$0
Commercial	\$1
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$29,395
Schools	\$0
Total	\$29,396

*Table 2-67: Estimated Losses in Shongaloo for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Shongaloo	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$0
Commercial	\$1
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$6,004
Schools	\$0
Total	\$6,005

*Table 2-68: Estimated Losses in Sibley for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Sibley	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$0
Commercial	\$1
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$40,184
Schools	\$0
Total	\$40,185

*Table 2-69: Estimated Losses in Springhill for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Springhill	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$0
Commercial	\$6
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$173,832
Schools	\$0
Total	\$173,838

Threat to People

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

*Table 2-70: Number of People Susceptible to a 100-Year Hurricane Event in Webster Parish
(Source: Hazus 2.2)*

Number of People Exposed to Hurricane Hazards			
Jurisdiction	# in Community	# in Hazard Area	% in Hazard Area
Parish (Unincorporated)	16,785	16,785	100.0%
Cotton Valley	1,009	1,009	100.0%
Cullen	1,163	1,163	100.0%
Dixie Inn	273	273	100.0%
Doyline	818	818	100.0%
Dubberly	273	273	100.0%
Heflin	244	244	100.0%
Minden	13,082	13,082	100.0%
Sarepta	891	891	100.0%
Shongaloo	182	182	100.0%
Sibley	1,218	1,218	100.0%
Springhill	5,269	5,269	100.0%
Total	41,207	41,207	100.0%

The HAZUS-MH Hurricane Model was also extrapolated to provide an overview of vulnerable populations throughout the jurisdictions. These populations are illustrated in the following tables.

*Table 2-71: Vulnerable Populations in Unincorporated Webster Parish for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Webster Parish (Unincorporated)		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	16,785	100.0%
Persons Under 5 Years	1,073	6.4%
Persons Under 18 Years	3,956	23.6%
Persons 65 Years and Over	2,808	16.7%
White	10,781	64.2%
Minority	6,004	35.8%

*Table 2-72: Vulnerable Populations in Cotton Valley for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Cotton Valley		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	1,009	100.0%
Persons Under 5 Years	66	6.5%
Persons Under 18 Years	276	27.4%
Persons 65 Years and Over	146	14.5%
White	537	53.2%
Minority	472	46.8%

*Table 2-73: Vulnerable Populations in Cullen for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Cullen		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	1,163	100.0%
Persons Under 5 Years	83	7.1%
Persons Under 18 Years	330	28.4%
Persons 65 Years and Over	159	13.7%
White	154	13.2%
Minority	1,009	86.8%

*Table 2-74: Vulnerable Populations in Dixie Inn for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Dixie Inn		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	273	100.0%
Persons Under 5 Years	21	7.7%
Persons Under 18 Years	62	22.7%
Persons 65 Years and Over	26	9.5%
White	141	51.7%
Minority	132	48.4%

*Table 2-75: Vulnerable Populations in Doyline for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Doyline		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	818	100.0%
Persons Under 5 Years	65	8.0%
Persons Under 18 Years	212	25.9%
Persons 65 Years and Over	119	14.6%
White	656	80.2%
Minority	162	19.8%

*Table 2-76: Vulnerable Populations in Dubberly for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Dubberly		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	273	100.0%
Persons Under 5 Years	18	6.6%
Persons Under 18 Years	67	24.5%
Persons 65 Years and Over	36	13.2%
White	248	90.8%
Minority	25	9.2%

*Table 2-77: Vulnerable Populations in Heflin for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Heflin		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	244	100.0%
Persons Under 5 Years	21	8.6%
Persons Under 18 Years	62	25.4%
Persons 65 Years and Over	35	14.3%
White	210	86.1%
Minority	34	13.9%

*Table 2-78: Vulnerable Populations in Minden for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Minden		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	13,082	100.0%
Persons Under 5 Years	907	6.9%
Persons Under 18 Years	3,255	24.9%
Persons 65 Years and Over	2,247	17.2%
White	6,041	46.2%
Minority	7,041	53.8%

*Table 2-79: Vulnerable Populations in Sarepta for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Sarepta		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	891	100.0%
Persons Under 5 Years	55	6.2%
Persons Under 18 Years	241	27.1%
Persons 65 Years and Over	151	17.0%
White	880	98.8%
Minority	11	1.2%

*Table 2-80: Vulnerable Populations in Shongaloo for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Shongaloo		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	182	100.0%
Persons Under 5 Years	18	9.9%
Persons Under 18 Years	57	31.3%
Persons 65 Years and Over	15	8.2%
White	172	94.5%
Minority	10	5.5%

*Table 2-81: Vulnerable Populations in Sibley for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Sibley		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	1,218	100.0%
Persons Under 5 Years	85	7.0%
Persons Under 18 Years	329	27.0%
Persons 65 Years and Over	180	14.8%
White	873	71.7%
Minority	345	28.3%

*Table 2-82: Vulnerable Populations in Springhill for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Springhill		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	5,269	100.0%
Persons Under 5 Years	357	6.8%
Persons Under 18 Years	1,192	22.6%
Persons 65 Years and Over	1,026	19.5%
White	3,353	63.6%
Minority	1,916	36.4%

Vulnerability

See Appendix C 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. [Figure 2-36](#) displays the areas of wildland-urban interaction in Webster Parish.

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 2-83: Southern Group of State Foresters Wildfire Risk Assessment Fire Intensity Scale
(Source: Southern Wildfire Assessment Portal)

Fire Intensity Scale	
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 following figure displays the areas of wildland-urban interface and intermix in Webster Parish and its jurisdictions.

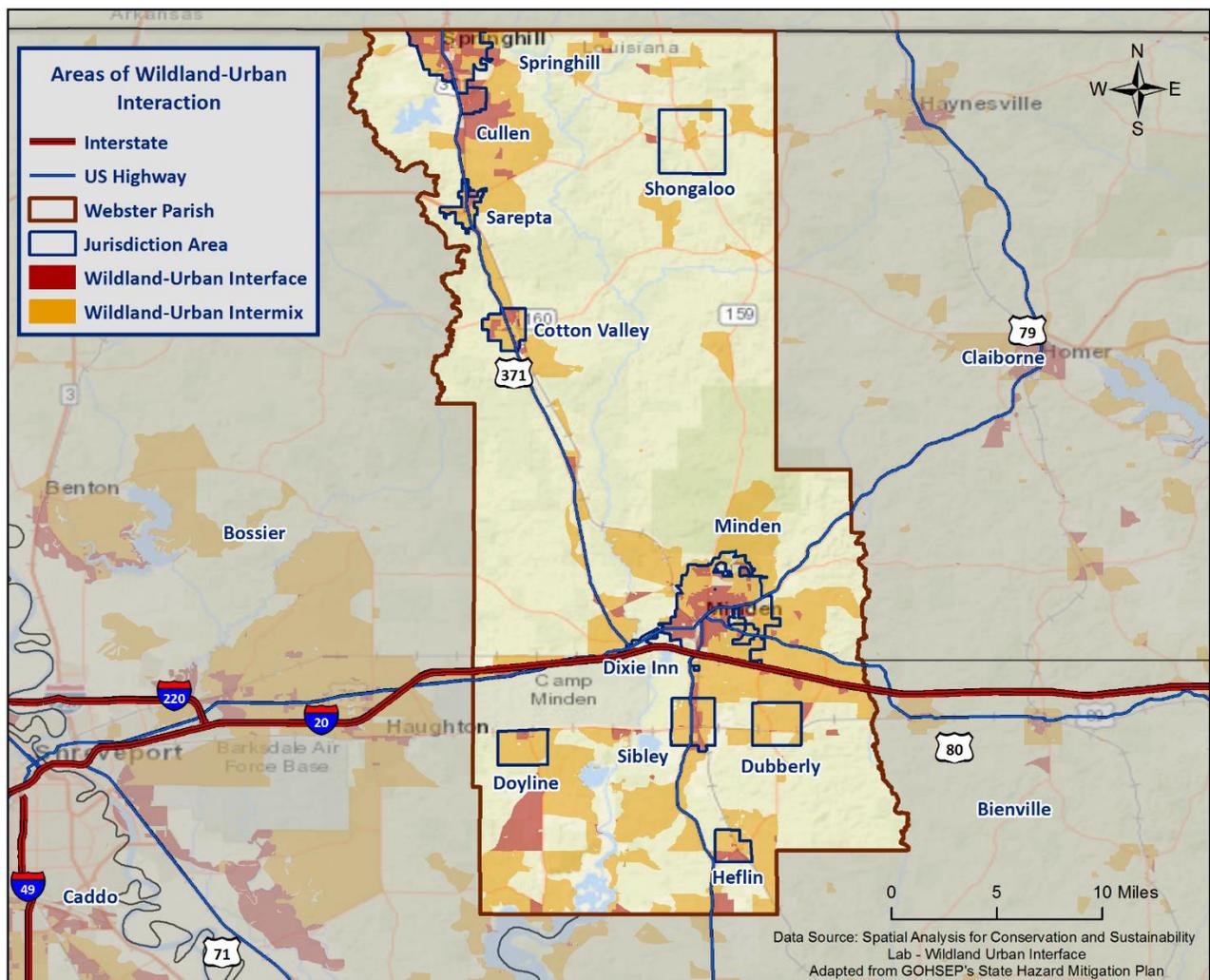


Figure 2-36: Wildland-Urban Interaction in Webster Parish

The incorporated areas of Cotton Valley, Doyline, Sibley, Sarepta, and Heflin along with the unincorporated areas of Webster Parish contain mostly wildland-urban intermix areas with some wildland-urban interface areas, while the incorporated areas of Dixie Inn, Minden, and Springhill contain mostly wildland-urban interface areas with some wildland-urban intermix. The incorporated areas of Shongaloo and Dubberly contain all wildland-urban intermix areas, while the incorporated area of Cullen contains all wildland-urban interface areas.

The jurisdiction of Sarepta is nearly 100% enveloped in Wildland-Urban Interface and Intermix areas. The wildland-urban interface area extends from the central area of the jurisdiction northward between US Highway 371 and LA Highway 2, ending at Providence Rd. to the east. The remainder of the jurisdiction is considered to be an area of wildland-urban intermix.

Approximately half of the jurisdiction of Dixie Inn is covered in wildland-urban interface area. The majority of this area is found off to the west and south along US Highway 79, from Dorcheat and Osbourne Streets to the westernmost and southernmost jurisdiction boundary. There is also an area of wildland-urban interface area south of US Highway 79, between Bayou Dorcheat and Dorcheat Landing Road. There is a small area of wildland-urban intermix north of US Highway 79, from Dorcheat Street to Bayou Dorcheat. The map below further details the wildland-urban interaction areas within the jurisdiction of Dixie Inn.

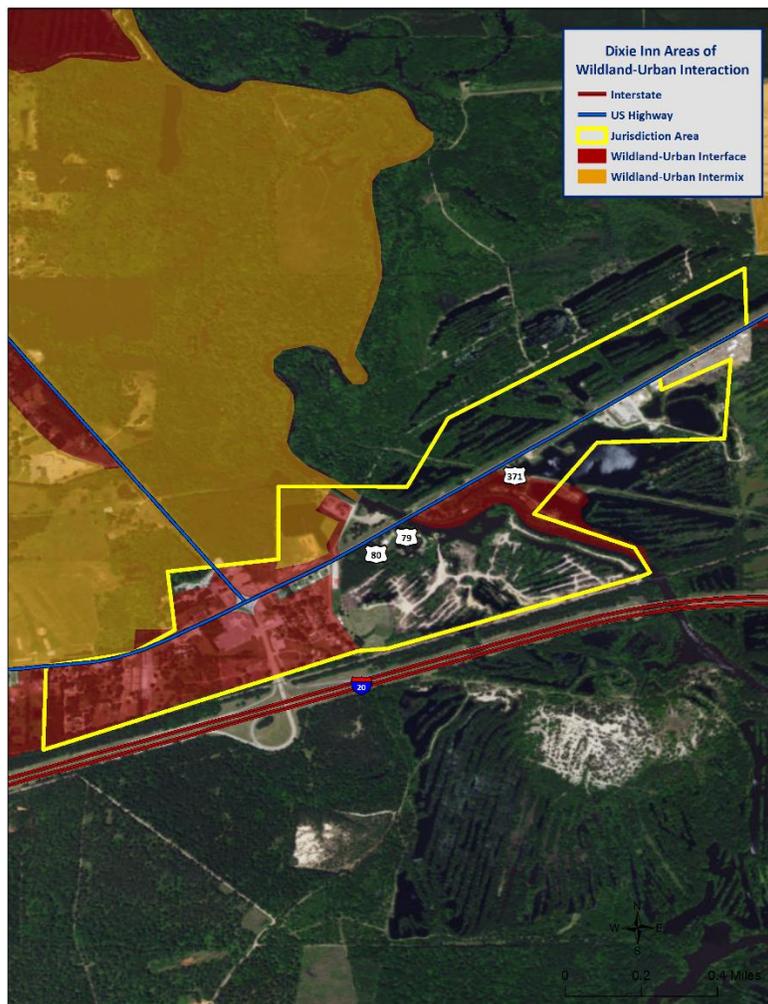


Figure 2-37: Wildland-Urban Interaction in Dixie Inn

Previous Occurrences / Extents

According to SHELDUS, there has been one reported wildfire event that have occurred within the boundaries of Webster Parish between the years of 1990 and 2015. The following table provides a brief synopsis of any events since 2010.

Table 2-84: Previous Occurrences for Wildfire Events

Date	Synopsis	Property Damage	Crop Damage
September 19, 2010	A wildfire burned approximately 258 acres of a ten year old pine plantation. No homes or structures were destroyed in the fire.	\$0	\$6,514

Since 2010, there have been no reported wildfire events in the incorporated areas of Cotton Valley, Cullen, Dixie Inn, Doyline, Dubberly, Heflin, Minden, Sarepta, Shongaloo, Sibley, and Springhill.

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

*Table 2-85: Potential Wildfire Intensity Levels for Webster Parish
(Source: Southern Wildfire Assessment Portal)*

Potential Wildfire Intensity	
Webster Parish (Unincorporated)	Highest Intensity Level 5
Cotton Valley	Moderate to High Intensity Level 3.5
Cullen	Low Intensity Level 2
Dixie Inn	Moderate to High Intensity Level 3.5
Doyline	Low Intensity Level 2
Dubberly	Moderate Intensity Level 3
Heflin	Moderate Intensity Level 3
Minden	Moderate Intensity Level 3
Sarepta	Moderate Intensity Level 3
Shongaloo	Low Intensity Level 2
Sibley	Moderate Intensity Level 3
Springhill	Low Intensity Level 2

Frequency / Probability

With one recorded event in 25 years, wildfire events within the boundaries of Webster Parish have an annual chance of occurrence calculated at 4% based on the SHELDUS dataset.

Estimated Potential Losses

According to the SHELDUS database, there has been one wildfire event that has caused property damage, crop damage, injuries, or fatalities in Webster Parish. In assessing the overall risk to population, the most vulnerable population throughout the parish consists of those residing in areas of wildland-urban interaction. Figure 2-36 displays the areas of wildland-urban interaction in Webster Parish.

Using Hazus 2.2, along with wildland-urban interaction areas, the table below presents an analysis of total building exposure that is located within the wildland-urban interaction areas.

*Table 2-86: Total Building Exposure by Wildland-Urban Interaction Areas
(Source: Hazus 2.2)*

Jurisdiction	Estimated Total Building Exposure
Webster Parish (Unincorporated)	\$2,177,986,000
Cotton Valley	\$129,894,000
Cullen	\$138,721,000
Dixie Inn	\$47,873,000
Doyline	\$122,123,000
Dubberly	\$28,645,000
Heflin	\$31,473,000
Minden	\$2,095,182,000
Sarepta	\$39,779,000
Shongaloo	\$31,035,000
Sibley	\$132,760,000
Springhill	\$880,493,000
Total	\$5,855,964,000

Hazus 2.2 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 tables below and on the following pages.

*Table 2-87: Estimated Exposure for Unincorporated Webster Parish by Sector
(Source: Hazus 2.2)*

Webster Parish (Unincorporated)	Estimated Total Building Exposure by Sector
Agricultural	\$5,220,000
Commercial	\$149,226,000
Government	\$11,560,000
Industrial	\$155,273,000
Religious / Non-Profit	\$45,432,000
Residential	\$1,792,315,000
Schools	\$18,960,000
Total	\$2,177,986,000

*Table 2-88: Estimated Exposure for Cotton Valley by Sector
(Source: Hazus 2.2)*

Cotton Valley	Estimated Total Building Exposure by Sector
Agricultural	\$0
Commercial	\$5,496,000
Government	\$1,432,000
Industrial	\$402,000
Religious / Non-Profit	\$5,854,000
Residential	\$115,764,000
Schools	\$946,000
Total	\$129,894,000

*Table 2-89: Estimated Exposure for Cullen by Sector
(Source: Hazus 2.2)*

Cullen	Estimated Total Building Exposure by Sector
Agricultural	\$0
Commercial	\$2,480,000
Government	\$0
Industrial	\$0
Religious / Non-Profit	\$0
Residential	\$136,241,000
Schools	\$0
Total	\$138,721,000

*Table 2-90: Estimated Exposure for Dixie Inn by Sector
(Source: Hazus 2.2)*

Dixie Inn	Estimated Total Building Exposure by Sector
Agricultural	\$0
Commercial	\$8,618,000
Government	\$844,000
Industrial	\$9,128,000
Religious / Non-Profit	\$4,060,000
Residential	\$25,223,000
Schools	\$0
Total	\$47,873,000

*Table 2-91: Estimated Exposure for Doyline by Sector
(Source: Hazus 2.2)*

Doyline	Estimated Total Building Exposure by Sector
Agricultural	\$140,000
Commercial	\$9,486,000
Government	\$948,000
Industrial	\$2,770,000
Religious / Non-Profit	\$10,282,000
Residential	\$91,715,000
Schools	\$6,782,000
Total	\$122,123,000

*Table 2-92: Estimated Exposure for Dubberly by Sector
(Source: Hazus 2.2)*

Dubberly	Estimated Total Building Exposure by Sector
Agricultural	\$0
Commercial	\$2,012,000
Government	\$432,000
Industrial	\$1,265,000
Religious / Non-Profit	\$1,488,000
Residential	\$21,526,000
Schools	\$1,922,000
Total	\$28,645,000

*Table 2-93: Estimated Exposure for Heflin by Sector
(Source: Hazus 2.2)*

Heflin	Estimated Total Building Exposure by Sector
Agricultural	\$0
Commercial	\$1,088,000
Government	\$408,000
Industrial	\$396,000
Religious / Non-Profit	\$850,000
Residential	\$28,731,000
Schools	\$0
Total	\$31,473,000

*Table 2-94: Estimated Exposure for Minden by Sector
(Source: Hazus 2.2)*

Minden	Estimated Total Building Exposure by Sector
Agricultural	\$3,590,000
Commercial	\$423,783,000
Government	\$18,877,000
Industrial	\$77,530,000
Religious / Non-Profit	\$79,816,000
Residential	\$1,460,202,000
Schools	\$31,384,000
Total	\$2,095,182,000

*Table 2-95: Estimated Exposure for Sarepta by Sector
(Source: Hazus 2.2)*

Sarepta	Estimated Total Building Exposure by Sector
Agricultural	\$8,000
Commercial	\$4,050,000
Government	\$26,000
Industrial	\$20,055,000
Religious / Non-Profit	\$882,000
Residential	\$10,334,000
Schools	\$4,424,000
Total	\$39,779,000

*Table 2-96: Estimated Exposure for Shongaloo by Sector
(Source: Hazus 2.2)*

Shongaloo	Estimated Total Building Exposure by Sector
Agricultural	\$0
Commercial	\$5,898,000
Government	\$346,000
Industrial	\$174,000
Religious / Non-Profit	\$1,242,000
Residential	\$19,683,000
Schools	\$3,692,000
Total	\$31,035,000

*Table 2-97: Estimated Exposure for Sibley by Sector
(Source: Hazus 2.2)*

Sibley	Estimated Total Building Exposure by Sector
Agricultural	\$0
Commercial	\$12,054,000
Government	\$1,038,000
Industrial	\$1,660,000
Religious / Non-Profit	\$5,030,000
Residential	\$112,978,000
Schools	\$0
Total	\$132,760,000

*Table 2-98: Estimated Exposure for Springhill by Sector
(Source: Hazus 2.2)*

Springhill	Estimated Total Building Exposure by Sector
Agricultural	\$1,660,000
Commercial	\$123,520,000
Government	\$2,498,000
Industrial	\$23,541,000
Religious / Non-Profit	\$35,314,000
Residential	\$685,201,000
Schools	\$8,759,000
Total	\$880,493,000

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 2-99: Populations Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)*

Number of People Located in Wildland-Urban Interaction Areas			
Location	# in Community	# in Area	% in Area
Webster (Unincorporated)	16,785	14,595	87.0%
Cotton Valley	1,009	1,009	100.0%
Cullen	1,163	1,163	100.0%
Dixie Inn	273	266	97.4%
Doyline	818	818	100.0%
Dubberly	273	273	100.0%
Heflin	244	244	100.0%
Minden	13,082	13,056	99.8%
Sarepta	891	829	93.0%
Shongaloo	182	182	100.0%
Sibley	1,218	1,218	100.0%
Springhill	5,269	5,063	96.1%
Total	41,207	38,716	94.0%

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

*Table 2-100: Population in Unincorporated Webster Parish Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)*

Webster Parish (Unincorporated)		
Category	Total Numbers	Percentage of People in Wildland-Urban Interaction Area
Number in Hazard Area	14,595	87.0%
Persons Under 5 Years	933	6.4%
Persons Under 18 Years	2,507	17.2%
Persons 65 Years and Over	2,442	16.7%
White	9,374	64.2%
Minority	5,221	35.8%

*Table 2-101: Population in Cotton Valley Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)*

Cotton Valley		
Category	Total Numbers	Percentage of People in Wildland-Urban Interaction Area
Number in Hazard Area	1,009	100.0%
Persons Under 5 Years	66	6.5%
Persons Under 18 Years	210	20.8%
Persons 65 Years and Over	146	14.5%
White	537	53.2%
Minority	472	46.8%

*Table 2-102: Population in Cullen Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)*

Cullen		
Category	Total Numbers	Percentage of People in Wildland-Urban Interaction Area
Number in Hazard Area	1,163	100.0%
Persons Under 5 Years	83	7.1%
Persons Under 18 Years	247	21.2%
Persons 65 Years and Over	159	13.7%
White	154	13.2%
Minority	1,009	86.8%

*Table 2-103: Population in Dixie Inn Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)*

Dixie Inn		
Category	Total Numbers	Percentage of People in Wildland-Urban Interaction Area
Number in Hazard Area	266	97.4%
Persons Under 5 Years	20	7.7%
Persons Under 18 Years	40	15.0%
Persons 65 Years and Over	25	9.5%
White	137	51.7%
Minority	129	48.4%

*Table 2-104: Population in Doyline Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)*

Doyline		
Category	Total Numbers	Percentage of People in Wildland-Urban Interaction Area
Number in Hazard Area	818	100.0%
Persons Under 5 Years	65	8.0%
Persons Under 18 Years	147	18.0%
Persons 65 Years and Over	119	14.6%
White	656	80.2%
Minority	162	19.8%

*Table 2-105: Population in Dubberly Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)*

Dubberly		
Category	Total Numbers	Percentage of People in Wildland-Urban Interaction Area
Number in Hazard Area	273	100.0%
Persons Under 5 Years	18	6.6%
Persons Under 18 Years	49	18.0%
Persons 65 Years and Over	36	13.2%
White	248	90.8%
Minority	25	9.2%

*Table 2-106: Population in Heflin Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)*

Heflin		
Category	Total Numbers	Percentage of People in Wildland-Urban Interaction Area
Number in Hazard Area	244	100.0%
Persons Under 5 Years	21	8.6%
Persons Under 18 Years	41	16.8%
Persons 65 Years and Over	35	14.3%
White	210	86.1%
Minority	34	13.9%

*Table 2-107: Population in Minden Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)*

Minden		
Category	Total Numbers	Percentage of People in Wildland-Urban Interaction Area
Number in Hazard Area	13,056	99.8%
Persons Under 5 Years	905	6.9%
Persons Under 18 Years	2,344	18.0%
Persons 65 Years and Over	2,243	17.2%
White	6,029	46.2%
Minority	7,027	53.8%

*Table 2-108: Population in Sarepta Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)*

Sarepta		
Category	Total Numbers	Percentage of People in Wildland-Urban Interaction Area
Number in Hazard Area	829	93.0%
Persons Under 5 Years	51	6.2%
Persons Under 18 Years	173	20.9%
Persons 65 Years and Over	141	17.0%
White	819	98.8%
Minority	10	1.2%

*Table 2-109: Population in Shongaloo Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)*

Shongaloo		
Category	Total Numbers	Percentage of People in Wildland-Urban Interaction Area
Number in Hazard Area	182	100.0%
Persons Under 5 Years	24	9.9%
Persons Under 18 Years	52	21.4%
Persons 65 Years and Over	20	8.2%
White	231	94.5%
Minority	13	5.5%

*Table 2-110: Population in Sibley Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)*

Sibley		
Category	Total Numbers	Percentage of People in Wildland-Urban Interaction Area
Number in Hazard Area	1,218	100.0%
Persons Under 5 Years	911	7.0%
Persons Under 18 Years	2,615	20.0%
Persons 65 Years and Over	1,930	14.8%
White	9,357	71.7%
Minority	3,699	28.3%

*Table 2-111: Population in Springhill Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)*

Springhill		
Category	Total Numbers	Percentage of People in Wildland-Urban Interaction Area
Number in Hazard Area	5,063	96.1%
Persons Under 5 Years	342	6.8%
Persons Under 18 Years	802	15.9%
Persons 65 Years and Over	986	19.5%
White	3,222	63.6%
Minority	1,841	36.4%

Vulnerability

See Appendix C 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 Storms

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

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

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

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

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

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

Table 2-112: 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 Webster Parish as all of the adjacent parishes, the entire planning area for Webster Parish is equally at risk for winter storms.

Previous Occurrences / Extents

According to SHEL DUS, there have been seven reported winter storm events that have occurred within the boundaries of Webster Parish between the years of 1990 and 2015. The table on the next page provides a brief synopsis of each event. Based on historic data, Webster Parish can expect an ice damage index of 2 on the Sperry-Piltz Ice Accumulation Index.

Table 2-113: Previous Occurrences for Winter Storm Events

Date	Synopsis	Property Damage	Crop Damage
March 13, 1993	Winds associated with a rapidly strengthening extratropical storm moved quickly through Louisiana coastal waters. There were numerous press reports of large trees, power lines, and power poles being blown down by these strong winds.	\$0	\$227,828
February 10, 1994	Freezing rain spread across much of north Louisiana. The combination of gusty winds and icing of one to two inches thick snapped power lines, power poles, and tree limbs. The weight from ice accumulations was also heavy enough to collapse a number of chicken houses. Over 100,000 people in north Louisiana were without electrical power on February 10 and 11.	\$1,540,359	\$0
January 7, 1997	A 92 year old man died of hypothermia after being hospitalized from exposure. Temperatures were hovering near freezing when he was found.	\$0	\$0
December 22, 1998	Ice accumulated mainly across exposed surfaces such as trees and powerlines as well as bridges and overpasses. Over a quarter million people were without power, some for over a week. Numerous minor injuries were reported from vehicle accidents caused by slippery roads.	\$85,433	\$0
December 12, 2000	Ice accumulations on average of one inch were common in northwest Louisiana. An estimated 235,000 residents lost power from snapped power lines. Upwards of 29 transmission lines atop "H" shaped steel towers were snapped due to the weight of the ice. Numerous traffic accidents were reported from ice covered roads and bridges. Much of northwest Louisiana was declared a disaster area.	\$10,158,049	\$0
December 24, 2000	Freezing rain accumulations ranged from ¼ to near 1 inch mainly north of Interstate 20. Widespread power outages were reported in Minden and the rest of Webster parish. 50,000 residents lost power due to ice accumulations on power lines and fallen trees and snapped tree limbs breaking power lines.	\$10,158,049	\$0
January 7, 2010	Overnight and early morning low temperatures were well into the teens with daytime high temperatures struggling to make it to the freezing mark. The cold temperatures froze water pipes of many homes throughout the parish. Some city and parish water lines burst as well resulting in many residents either without water for a short period of time or with reduced water pressure.	\$54,283	\$0

Based on previous winter storm events, the worst-case scenario for the unincorporated area of Webster Parish and the incorporated areas of Cotton Valley, Cullen, Dixie Inn, Doyline, Dubberly, Heflin, Minden, Sarepta, Shongaloo, Sibley, and Springhill is approximately four to six inches of snow accumulation and approximately one to two inches of ice accumulation.

Frequency / Probability

With seven recorded events in 25 years, winter storm events within the boundaries of Webster Parish have an annual chance of occurrence calculated at 28% based on the SHELDUS dataset.

Estimated Potential Losses

Since 1990, there have been seven reported winter weather events that have resulted in property and/or crop damages according to the SHELDUS database. The total property damages associated with these storms have totaled \$21,996,173. To estimate the potential losses of a winter weather event on an annual basis, the total damage recorded for winter weather events was divided by the total number of years of available winter weather data in SHELDUS (1990 – 2015). This provides an annual estimated potential loss of \$879,847. To assess potential losses to the participating jurisdictions, the 2010 Census population was used to assign the estimated potential losses proportionally across the jurisdictions. The following tables provides an estimate of potential property losses for Webster Parish based on the 2010 Census data:

Table 2-114: Estimated Annual Property Losses in Webster Parish Resulting from Winter Weather

Estimated Annual Potential Losses from Winter Weather in Webster Parish					
Unincorporated Webster Parish (40.7% of Population)	Cotton Valley (2.4% of Population)	Cullen (2.8% of Population)	Dixie Inn (0.7% of Population)	Doyline (2.0% of Population)	Dubberly (0.7% of Population)
\$358,391	\$21,544	\$24,832	\$5,829	\$17,466	\$5,829

Table 2-114: Estimated Annual Property Losses in Webster Parish Resulting from Winter Weather (Continued)

Estimated Annual Potential Losses from Winter Weather in Webster Parish					
Heflin (0.6% of Population)	Minden (31.7% of Population)	Sarepta (2.2% of Population)	Shongaloo (0.4% of Population)	Sibley (3.0% of Population)	Springhill (12.8% of Population)
\$5,210	\$279,325	\$19,025	\$3,886	\$26,007	\$112,503

From 1990 - 2015, there has been one fatality and no injuries as a result of winter weather in Webster Parish.

Vulnerability

See Appendix C for parish and municipality building exposure to winter weather hazards.

Dam Failure

Dams are water storage, control, or diversion barriers that impound water upstream in reservoirs. Dams are a vital part of our nation's infrastructure, providing drinking water, flood protection, renewable hydroelectric power, navigation, irrigation, and recreation. These critical daily benefits are also inextricably linked to the potential harmful consequences of a dam failure.

Dam failure is a collapse or breach in the structure. A dam failure can result in severe loss of life, economic disaster, and extensive environmental damage. While most dams have storage volumes small enough that failures have few repercussions, dams with large storage volumes can cause significant flooding downstream. Dam failures often have a rapid rate of onset, leaving little time for evacuation. The first signs of the failure may go unnoticed upon visual inspection of the dam structure. However, continual maintenance and inspection of dams often provide the opportunity to identify possible deficiencies in their early stages and can prevent a possible catastrophic failure event.

The duration of the flooding event caused by the failure depends largely on the amount of water and downstream topography. Given smaller volumes of water and a topography suited for transporting the water rapidly downstream, the event may only last hours. Because of the lack of seasonality and other predictive factors, a predictive frequency or likelihood of dam failures cannot be determined. However, the National Dam Safety Program (NDSP) produces hazard rankings (high, significant, and low) and definitions of dam structures, based on potential impact.

Dam/reservoir failures can result from any one of or a combination of the following causes:

- Prolonged periods of rainfall and flooding, which cause most failures;
- Inadequate spillway capacity, resulting in excess overtopping flows;
- Internal erosion caused by embankment or foundation leakage or piping;
- Improper maintenance, including failure to remove trees, repair internal seepage problems, replace lost material from the cross-section of the dam and abutments, or maintain gates, valves, and other operational components;
- Improper design, including the use of improper construction materials and construction practices;
- Negligent operation, including the failure to remove or open gates or valves during high flow periods;
- Failure of upstream dams on the same waterway;
- Landslides into reservoirs, which cause surges that result in overtopping;
- High winds, which can cause significant wave action and result in substantial erosion; and
- Earthquakes, which typically cause longitudinal cracks at the tops of the embankments that can weaken entire structures.

Location

Webster Parish is awaiting a response from the U.S. Army Corps of Engineers on dam locations within the Webster Parish Planning area. Currently, a data deficiency exists for dam failure in Webster Parish.

Previous Occurrences / Extents

There have been no reported dam failures in Webster Parish from 1990 to 2015. Dam information including the extent of dam failures has been requested from the USACE. Webster Parish is awaiting a response from the USACE, and will continue to work to update this information as new data is received.

Frequency / Probability

Based on the 25-year record, it is determined that a dam failure has less than a 1% annual chance of occurrence in the Webster Parish planning area. Webster Parish is awaiting a response from the USACE, and will continue to work to update this information as new data is received.

Levee Failure

Levees and floodwalls are flood control barriers constructed of earth, concrete, or other materials. For the purposes of this plan, levees are distinguished from smaller flood barriers (such as berms) by their size and extent. Berms are barriers that only protect a small number of structures, or at times only a single structure. Levees and floodwalls are barriers that protect significant areas of residential, commercial, or industrial development; at a minimum, they protect a neighborhood or small community. Levee failure involves the overtopping, breach, or collapse of the levee. Levee failure is especially destructive to nearby development during flood and hurricane events.

The northern half of Louisiana is protected by levees on the Ouachita River, under the authority of the Vicksburg District of the United States Army Corp of Engineers (USACE). The Vicksburg District encompasses 68,000 mi² in the states of Arkansas, Mississippi and Louisiana. They manage seven drainage basins, including the Yazoo, Pearl, Big Black, Red, Ouachita, and Mississippi Rivers; 12 locks and dams on the Pearl, Red, and Ouachita Rivers; 1,808 miles of levees, including 468 miles along the Mississippi River; and multiple lakes with 1,709 miles of shoreline.

Coastal and southern Louisiana are protected by an extensive levee system under the authority of the New Orleans District of the USACE. This system includes 30,000 mi² of Louisiana south of Alexandria, including 961 miles of river levees in the Mississippi River and Tributaries Project, 449 miles of river levees in the Atchafalaya Basin, and 340 miles of hurricane-protection levees. Other levees have been built along stretches of rivers throughout Louisiana by local levee districts and private citizens. The data regarding these non-federal levees are managed by the individual entity responsible for construction and subsequent maintenance and are not kept in a consistent format for comprehensive hazard analysis.

The effects of a levee failure on property is similar to that of a flood, as discussed in the flooding section. One major difference is that the velocity of the water is increased in the area of the breach, so the potential for property damage is higher in these areas.

A levee failure occurs during high water events, so the populace is normally alerted to the potential danger. Levees are normally monitored during these events and the population in danger is alerted to a possible levee failure. However, if people consider themselves safe once a levee has been breached and do not evacuate, the results could be deadly.

Location

There are no USACE levees within the Webster Parish planning area. Therefore, levee failure has no impact on the parish and is discounted.

3. Capability Assessment

This section summarizes the results of the Webster Parish jurisdictions and other agency efforts 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, Webster Parish and the participating jurisdictions are able to identify strengths that could be used to reduce losses and reduce risk throughout the community. 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

Webster Parish capabilities are unique to the parish, including planning, regulatory, administrative, technical, financial, and education and outreach resources. There are a number of mitigation-specific acts, plans, executive orders, and policies that lay out specific goals, objectives, and policy statements which already support or could support pre- and post-disaster hazard mitigation. Many of the ongoing plans and policies hold significant promise for hazard mitigation. They take an integrated and strategic look holistically at hazard mitigation in Webster Parish 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 in Webster Parish and its jurisdictions are shown in the table on the following page.

Table 3-1: Webster Parish Planning and Regulatory Capabilities

Planning and Regulatory													
Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place.													
	Webster Parish	Cotton Valley	Cullen	Dixie Inn	Doyline	Dubberly	Hefflin	Minden	Sarepta	Shongaloo	Sibley	Springhill	
Plans													Yes / No
Comprehensive / Master Plan	No	No	No	No	No	No	No	No	No	No	No	No	No
Capital Improvements Plan	No	No	No	No	No	No	No	Yes	Yes	No	No	No	No
Economic Development Plan	No	No	No	No	No	No	No	Yes	No	No	No	No	Yes
Local Emergency Operations Plan	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No	No	No
Continuity of Operations Plan	No	No	No	No	No	No	No	No	No	No	No	No	No
Transportation Plan	No	No	No	No	No	No	No	No	No	No	No	No	No
Stormwater Management Plan	No	No	No	No	No	No	No	No	No	No	No	No	No
Community Wildfire Protection Plan	No	No	No	No	No	No	No	Yes	No	No	No	No	No
Other plans (redevelopment, recovery, coastal zone management)	No	No	No	No	No	No	No	No	No	No	No	No	No
Building Code, Permitting and Inspections													Yes / No
Building Code	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	No	No	No	No	No	No	No	No	No	No	No	No
Fire Department ISO/PIAL rating per district	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Site plan review requirements	No	No	No	No	No	No	No	Yes	Yes	No	No	No	No
Land Use Planning and Ordinances													Yes / No
Zoning Ordinance	No	No	No	No	No	No	No	Yes	No	No	No	No	Yes
Subdivision Ordinance	No	No	No	No	No	No	Yes	Yes	No	No	No	No	No
Floodplain Ordinance	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	No	No	No	No	No	No	No	Yes	No	No	No	No	No
Flood Insurance Rate Maps	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes
Acquisition of land for open space and public recreation uses	No	Yes	No	No	No	No	No	No	No	No	No	No	Yes
Other	No	No	No	No	No	No	No	No	No	No	No	No	No

Building Codes, Permitting, Land Use Planning and Ordinances

The Webster Parish Police Jury provides oversight for building permits and codes for the unincorporated areas of the parish, as well as the jurisdictions of Cullen, Dixie Inn, Doyline, Dubberly, Minden, Sarepta, Shongaloo, Sibley, and Springhill. The Webster Parish Police Jury also provides land use planning oversight for the jurisdictions of Minden and Springhill, as well as oversight for parish ordinances in the jurisdictions when applicable.

As of the 2016 update, Webster Parish and its jurisdictions 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 Webster Parish Police Jury is also responsible for enforcing the Parish Ordinances relating to health and safety, property maintenance standards, and condemnation of unsafe structures.

The Webster Parish Police Jury meets regularly to consider any proposed ordinance changes, and to take final actions on proposed changes.

While local capabilities for mitigation can vary from community to community, Webster Parish as a whole has a system in place to coordinate and share these capabilities through Webster Parish Government 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

As a community, Webster Parish has administrative and technical capabilities in place that may be utilized in reducing hazard impacts or implementing hazard mitigation activities. Such capabilities include staff, skillset, and tools available in the community that may be accessed to implement mitigation activities and to effectively coordinate resources. The ability to access and coordinate these resources is also important. The table below shows examples of resources in place in Webster Parish and its jurisdictions.

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.													
	Webster Parish	Cotton Valley	Cullen	Dixie Inn	Doyline	Dubberly	Helfin	Minden	Sarepta	Stograloo	Sibley	Springhill	
Administration	Yes / No												
Planning Commission	No	No	No	No	No	No	No	Yes	No	No	No	No	No
Mitigation Planning Committee	Yes	No	No	No	No	No	No	No	No	No	No	No	No
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	No	No	No	No	No	No	Yes	No	No	No	Yes	
Mutual Aid Agreements													
Staff	Yes / No; FT/PT; % Hazard Mitigation												
Chief Building Official	No	No	No	No	No	No	No	Yes	No	No	No	No	No
Floodplain Administrator	Yes	No	No	No	No	No	No	Yes	No	No	No	No	No
Emergency Manager	Yes	No	No	No	No	No	No	Yes	No	No	No	No	No
Community Planner	No	No	No	No	No	No	No	No	No	No	No	No	No
Civil Engineer	Yes	No	No	No	No	No	No	No	No	No	No	No	No
GIS Coordinator	Yes	No	No	No	No	No	No	Yes	No	No	No	No	No
Grant Writer	Yes	No	No	No	No	No	No	No	Yes	No	No	No	No
Other													
Technical	Yes / No												
Warning Systems / Service (Reverse 911, outdoor warning signals)	No	No	No	No	No	No	No	No	No	No	No	No	No
Hazard Data & Information	Yes	No	No	No	No	No	No	No	No	No	No	No	No
Grant Writing	Yes	No	No	No	No	No	No	No	Yes	No	No	No	No
Hazus Analysis	Yes	No	No	No	No	No	No	No	No	No	No	No	No

Table 3-2: Webster Parish Administrative and Technical Capabilities

Financial capabilities are the resources that Webster 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 jurisdictions may vary from little/no cost actions, such as outreach efforts, to substantial action costs such acquisition of flood prone properties.

The following funding resources are available to fund mitigation actions in Webster Parish and its jurisdictions:

Table 3-3: Webster Parish Financial Capabilities

Financial													
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.													
	Webster Parish	Cotton Valley	Cullen	Dixie Inn	Doyline	Dubberly	Helfin	Minden	Sarepta	Stograloo	Sibley	Springhill	
Funding Resource	Yes / No												
Capital Improvements project funding	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Authority to levy taxes for specific purposes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fees for water, sewer, gas, or electric services	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes
Impact fees for new development	No	No	No	No	No	No	No	No	No	No	No	No	N
Stormwater Utility Fee	No	No	No	No	No	No	No	No	No	No	No	No	N
Community Development Block Grant (CDBG)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other Funding Programs	Yes	Yes	LGAP GWEF	No	No	Yes	No	Yes	No	No	No	Yes	Yes

Education and Outreach

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

Webster Parish and its jurisdictions have existing education and outreach programs to implement mitigation activities, as well as to communicate risk and hazard related information to its communities. The existing programs are as follows:

Table 3-4: Webster Parish 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.													
	Webster Parish	Cotton Valley	Cullen	Dixie Inn	Doyline	Dubberly	Hellin	Minden	Sarepta	Shreveport	Sibley	Springhill	
Program / Organization	Yes / No												
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	No	No	No	No	No	No	No	No	No	No	No	No
program (responsible water use, fire safety, household preparedness, environmental education)	No	No	No	No	No	No	No	Yes	No	No	No	No	No
Natural Disaster or safety related school	Yes	No	No	No	No	No	No	No	No	No	No	No	No
Storm Ready certification	No	No	No	No	No	No	No	No	No	No	No	No	No
Firewise Communities certification	No	No	No	No	No	No	No	No	No	No	No	No	No
Public/Private partnership initiatives addressing disaster-related issues	No	No	No	No	No	No	No	No	No	No	No	Yes	

In some cases, the jurisdictions rely on Webster Parish OHSEP and/or Webster Parish Government Agencies for the above listed planning and regulatory, administrative and technical, financial, and education and outreach capabilities. Comments regarding the jurisdictions utilization or intentions to utilize and leverage the capabilities of the parish government can be found in Appendix E in the jurisdictional specific worksheets. As reflected in the aforementioned existing regulatory mechanisms, programs, and resources within each jurisdiction, Webster Parish and its jurisdiction remains committed to expanding and improving on the existing capabilities within the parish. All participating jurisdictions will work toward increased participation in funding opportunities and available mitigation programs. Should funding become available, the hiring of additional personnel to dedicate to hazard mitigation initiatives and programs, as well as increasing ordinances within the jurisdictions, will help to enhance and expand risk reduction measures within the parish.

With the sharing of these capabilities, the following municipalities and entities are recognized by the Parish of Webster under the Hazard Mitigation Plan, allowing them to apply for available hazard mitigation funding for as long as these municipalities and entities notify the parish of their intentions and the parish concurs:

- Town of Cotton Valley
- Town of Cullen
- Village of Dixie Inn
- Village of Doyline

- Village of Dubberly
- Village of Heflin
- City of Minden
- Town of Sarepta
- Village of Shongaloo
- Town of Sibley
- City of Springhill

Flood Insurance and Community Rating System

Webster Parish is not a participant in the Community Rating System (CRS), nor are any of its jurisdictions. Obtaining the CRS rating for the parish and participating jurisdictions is recognized as an eventual goal by the Hazard Mitigation Steering Committee. Participation in the CRS strengthens local capabilities by lowering flood insurance premiums for jurisdictions that exceed NFIP minimum requirements.

Under the Federal Emergency Management Agency (FEMA), the National Flood Insurance Program (NFIP) administers the Community Rating System. 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.

During the last update, 38 Louisiana communities participated in the CRS. Mandeville, Shreveport, and Jefferson and East Baton Rouge Parishes had the best classifications in the state, class 7. As of the 2016 update, Jefferson, East Baton Rouge, and Terrebonne Parishes all lead the state with best classifications, class 6.

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.

* In determining CRS Premium Discounts, all AR and A99 Zones are treated as non-SFHAs.

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

As of May 2012, 310 communities in the State of Louisiana participate in the Federal Emergency Management Agency’s NFIP. Of these communities, 41 (or 13%) participate in the Community Rating System (CRS). 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.

First, 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 1st of each year. That report must be made available to the media and the public.

Second, the parish must annually recertify to FEMA that it is continuing to implement its CRS credited activities. Failure to maintain the same level of involvement in flood protection can result in a loss of CRS credit points and a resulting increase in flood insurance rates to residents.

In 2011¹, the National Flood Insurance Program (NFIP) completed a comprehensive review of the Community Rating System that will result 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 in order to evaluate the CRS and refine the program to meet its stated goals.

The upcoming changes will drive new achievements in the following six core flood loss reduction areas important to the NFIP: (1) reduce liabilities to the NFIP Fund; (2) improve disaster resiliency and sustainability of communities; (3) integrate a whole community approach to addressing emergency management; (4) promote natural and beneficial functions of floodplains; (5) increase understanding of risk, and; (6) strengthen adoption and enforcement of disaster-resistant building codes.

The 2013 CRS Coordinator's Manual changes will impact each CRS community differently. Some communities will see an increase in the points they receive since points for certain activities have increased (e.g., Activity 420 Open Space Preservation). Other communities will 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 will have to identify new CRS credits in order to remain in the CRS.

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 2013 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 and when the 2013 manual will impact their community.

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

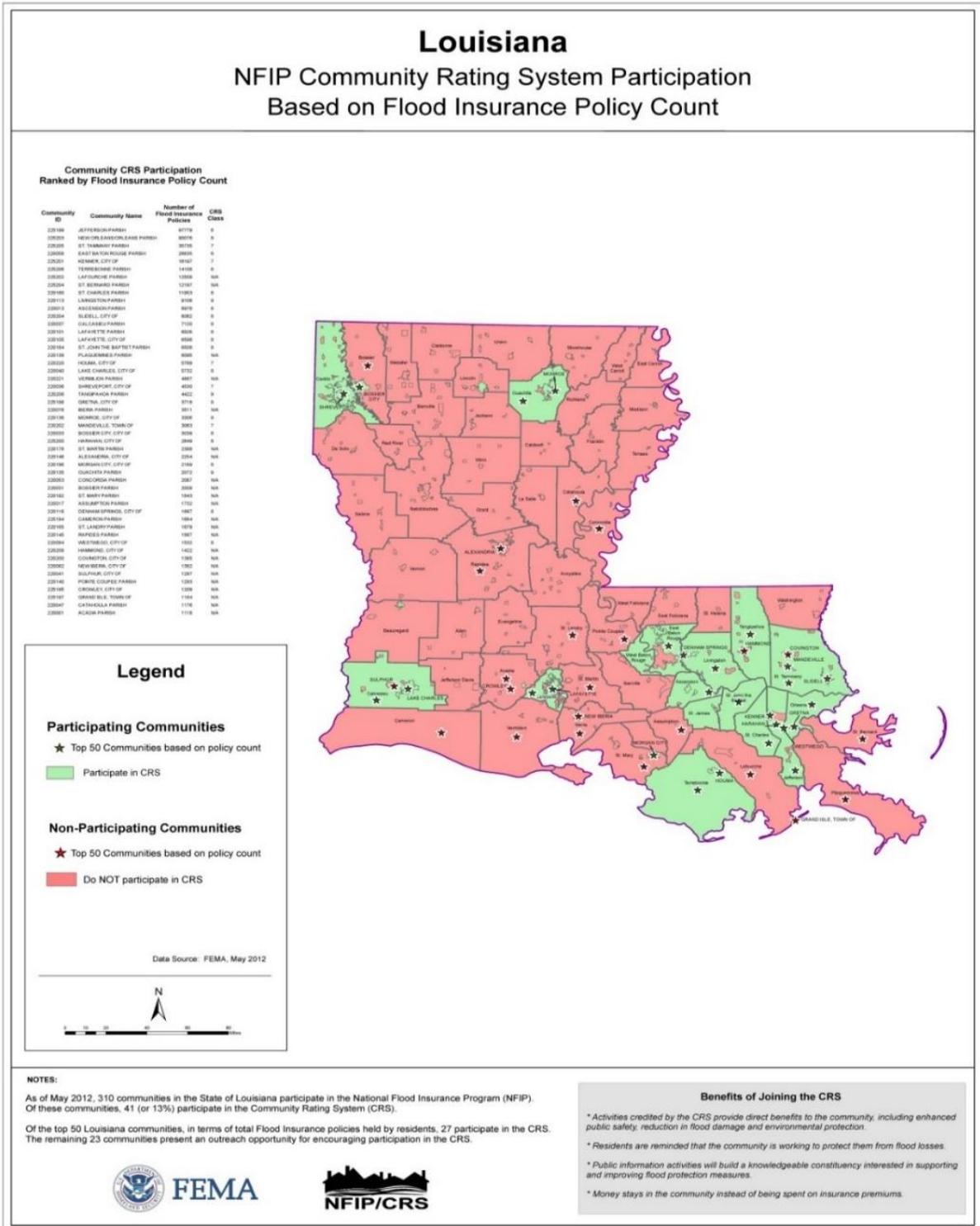


Figure 3-2: Louisiana CRS NFIP Participation
(Source: FEMA²)

² http://www.fema.gov/media-library-data/20130726-2128-31471-9581/ks_ky_la_crs_may_2012_508.zip

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 programs 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.

More information on the Community Rating System can be found at www.fema.gov/nfip/crs.shtm

NFIP Worksheets

Parish and participating jurisdiction NFIP worksheets can be found in Appendix E: State Required Worksheets

4. Mitigation Strategy

Introduction

Webster Parish's Hazard Mitigation Strategy has a common guiding principle and is the demonstration of the parish's and participating jurisdictions' 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.

Webster Parish confirmed the goals, objectives, actions, and projects over the period of the Hazard Mitigation Plan Update process. The mitigation actions and projects in this 2016 update are a product of analysis and review of the Webster Parish Hazard Mitigation Plan Steering Committee, under the coordination of the Webster Parish Office of Homeland Security and Emergency Preparedness. The committee was presented a list of projects and actions, new and from the 2011 plan, for review from February 2016 to June 2016

An online public opinion survey was conducted of Webster Parish residents between February and June 2016. The survey was designed to capture public perceptions and opinions regarding natural hazards in Webster Parish. In addition, the survey sought to collect information regarding the methods and techniques preferred by the respondents for reducing the risks and losses associated with local hazards.

This activity was created in an effort to confirm that the goals and action items developed by the Webster Parish Hazard Mitigation Plan Steering Committee are representative of the outlook of the community at large. However, because there were no responses to the survey, this public feedback could not be incorporated into the plan. The full Webster Parish survey can be found at the following link:

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

During the public meeting in June, the committee provided a status of the projects from 2011 and the proposed actions for the 2016 update. Committee members then agreed on the submission of each project based on feasibility for funding, ease of completion and other community specific factors. The actions were later prioritized.

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 Webster 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, Webster Parish and its jurisdictions 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 Webster Parish Hazard Mitigation Plan Update Steering Committee represent long-term commitments by the parish and its jurisdictions. After assessing these goals, the committee decided that the current six goals remain valid, with an edit to the sixth goal which took out specific reference to manmade disasters.

The goals are as follows:

- Reduce or prevent injury and loss of life
- Reduce or prevent damage to property and material assets
- Reduce or prevent future damage to critical facilities essential for protection and public safety including: fire, rescue, law enforcement, communications, command and control
- Reduce or prevent future damage to special facilities and commercial facilities including: schools, nursing homes, hospitals and clinics, prisons, historical and cultural resources
- Reduce or prevent future damage to infrastructure including: stormwater conveyance structures, utility systems, pipelines, railroads, highways, bridges, and waterways
- Reduce or prevent future damage to facilities that if damaged, could endanger people, damage the environment, or harm the local economy.

The Mitigation Action Plan focuses on actions to be taken by Webster Parish and its jurisdictions. All of the activities in the Mitigation Action Plan will be focused on helping the parish and its municipalities 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 and each jurisdiction 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.

[2016 Mitigation Actions and Update on Previous Plan Actions](#)

The Webster Parish Hazard Mitigation Plan Steering Committee and participating jurisdictions each identified actions that would reduce and/or prevent future damage within Webster Parish and their respective communities. In that effort, each jurisdiction focused on a comprehensive range of specific mitigation actions. These actions were identified in thorough fashion by the consultant team, the committee, and the individual jurisdictions by way of frequent and open communications and meetings held throughout the planning process.

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.

The established and agreed upon parish and jurisdiction actions relative to the parish-wide goals are below. Additionally, action updates from the previous plan updates can be found in the first table below.

Webster 2011 Hazard Mitigation Action Update

Webster Parish-Unincorporated Areas					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
W1: Elevate Structures	Elevate existing repetitive loss and structures susceptible to flooding and/or dam and levee failure.	RFC, SRL, FMA, HMGP, PDM	Webster Parish Police Jury	Flood, Dam-Levee Failure	COMPLETE
W2: Upgrade Bridges	Upgrade bridges and elevate roadways at locations prone to flooding.	HMGP, PDM, DoTD, Louisiana Capital Outlay, CDBG	Webster Parish Police Jury	Flood, Dam-Levee Failure	PENDING
W3: Mitigate Storm Damage	Retrofit critical facilities to mitigate storm damage and maintain functionality during storm events. Retrofit projects can include but are not limited to installation of window shutters or glass protective film, roof anchoring devices, reinforced doors, flood protection measures, power surge protection and data back-up systems, generators for back-up power source, et al. Implement general	HMGP, PDM, DoTD, Louisiana Capital Outlay, CDBG	Webster Parish Police Jury	Earthquake, Hurricane, Thunderstorm, Tornado	IN PROGRESS

Webster Parish-Unincorporated Areas					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
	policy to install storm hardened features on future public facilities in cases where it is cost-effective to do so.				
W4: Upgrade Culverts and Elevate Roads	Install, upgrade, or upsize road crossing culverts and elevate roadway approaches at locations prone to flooding.	HMGP, PDM, DoTD, Louisiana Capital Outlay, CDBG	Webster Parish Police Jury	Flood, Dam-Levee Failure	NO ACTION
W5: Drainage Improvements	Construct drainage improvement projects involving widening and deepening stormwater conveyance channels, upsizing culverts.	HMGP, PDM, FMA	Webster Parish Police Jury	Flood, Dam-Levee Failure	PENDING
W6: Relocation for Properties	Pursue voluntary acquisition-relocation for properties susceptible to flooding and/or dam and levee failure.	RFC, SRL, FMA, HMGP, PDM	Webster Parish Police Jury	Flood, Dam-Levee Failure	NO ACTION
W7: Minor Flood Control	Install minor flood control structures including berms and floodwalls to protect critical facilities.	HMGP, PDM, FMA	Webster Parish Police Jury	Flood, Dam-Levee Failure	NO ACTION
W8: Prevention of Electricity Loss	Install generators to prevent electricity loss to critical facilities. Equip future facilities with back up power capability in cases where it is cost effective to do so.	HMGP, PDM, FMA	Webster Parish Police Jury	All hazards (except drought)	COMPLETE

Webster Parish-Unincorporated Areas					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
W9: National Flood Insurance	<p>Identify and implement necessary actions and steps to initiate and/or supplement each community's participation in the National Flood Insurance Program (NFIP) and Community Rating System (CRS). Implementation of this activity can include:</p> <ul style="list-style-type: none"> · Adopting flood damage prevention ordinances (communities that have not yet done so) · Adopting Flood Insurance Rate Maps (FIRMs) (communities that have not yet done so) · Continued improvement of floodplain mapping · Implementing higher regulatory standards for floodplain development · Developing stormwater management plans and standards for future development 	N/A	Webster Parish Police Jury	General requirement, Flood, Dam-Levee Failure	COMPLETE
W10: Distribute Handouts	<p>Distribute handouts describing appropriate mitigation measures individuals can take pursuant to damage prevention and disaster preparation. Handouts can be available at local libraries, included as an insert in utility bills, and as a link on</p>	N/A	Webster Parish Police Jury	All hazards	NO ACTION

Webster Parish-Unincorporated Areas					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
	websites of participating jurisdictions				
W11: Implement SOP	Develop and implement SOP for data collection/sharing to provide extent for dam failure as funds become available. Compile and review existing and future dam failure studies and incorporate findings into future iterations of hazard mitigation plan.	N/A	Webster Parish Police Jury	Dam/Levee Failure	NO ACTION
W12: Select Representatives	Select representatives from Webster Parish to meet with the Claiborne Parish group that is studying construction of a Claiborne-Webster Lake that could be formed by impounding waters flowing in Flat Lick Bayou. Determine feasibility and cost of constructing the proposed reservoir, and its potential for benefiting the Sparta Aquifer.	N/A	Webster Parish Police Jury	Drought	NOT HAPPENING (RESEVOIR PROJECT CANCELLED)
W13: Improve Surface Water Supply	Pursue construction of strategically located reservoirs to improve surface water supply for Webster and Claiborne Parishes and mitigate drought impacts.	USACE	Webster Parish Police Jury	Drought	NOT HAPPENING (RESEVOIR PROJECT CANCELLED)

Webster Parish-Unincorporated Areas					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
W14: Drought Awareness Educational Program	Develop drought awareness educational program to be presented in schools, staffed by LSU Ag Center staff in cooperation with Webster School Board and	PDM; HMGP	Webster Parish Police Jury	Drought	COMPLETE
W15: Retrofit Community Rooms	Retrofit rooms in community facilities to serve as heating or cooling centers for vulnerable populations.	N/A	Webster Parish Police Jury	Winter Storm, Extreme Heat	NO ACTION
W16: Educate the Public	Develop educational handouts describing appropriate preparation and response to extreme heat conditions.	HMGP; PDM	Webster Parish Police Jury	Extreme Heat	NO ACTION
W17: Develop Database	Develop database of contact information for residents vulnerable to extreme heat and solicit volunteers to make check-in calls.	N/A	Webster Parish Police Jury	Extreme Heat	NO ACTION
W18: Internal Site Review Process	Implement internal site review process for future public facilities or infrastructure that could increase vulnerability to hazardous material accidents.	HMGP; PDM	Webster Parish Police Jury	Hazardous materials	PENDING
W19: Implement Techniques	Identify and implement techniques and measures to reduce potential for hazardous materials accidents.	N/A	Webster Parish Police Jury	Hazardous materials	COMPLETE

Webster Parish-Unincorporated Areas					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
W20: Relocate Electric Lines	Relocate electric and communications lines that serve critical facilities underground to minimize the risk of loss of services. Institute general policy to install underground electric and communications lines for future public facilities in cases where it is cost-effective to do so.	Utilities, public works (parish and municipalities)	Webster Parish Police Jury	Hurricane, Thunderstorm, Tornado, Winter Storm	NO ACTION
W21: Install Frangible Pole Connections	Install frangible (break away) pole connections for power line networks to reduce potential for electrical transmission loss.	Utilities, public works	Webster Parish Police Jury	Hurricane, Thunderstorm, Tornado, Winter Storm	NO ACTION
W22: Public Education and Community Awareness Program	Develop a public education and community awareness program detailing the importance of maintaining defensible space near homes, the locations of wildfire prone areas in the parish, and general wildfire mitigation.	PDM; HMGP	Webster Parish Police Jury	Wildfire	NO ACTION
W23: Mechanical Fuels Reduction Projects	Implement mechanical fuels reduction projects in urban-wildland interface	PDM; HMGP	Webster Parish Police Jury	Wildfire	NO ACTION
W24: Safe Shelters	Construct/install safe shelters in public buildings capable of providing protection from severe tornados, extreme straight line winds in accordance with FEMA Publication 320 and/or National Performance Criteria for Tornado Shelters	PDM; HMGP	Webster Parish Police Jury	Tornado, Thunderstorm, Hurricane	NO ACTION

Webster Parish-Unincorporated Areas					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
W25: Homeowner Safe Shelters	Develop incentives and provide instruction for homeowners to construct/install safe shelters capable of providing protection from severe tornados, extreme straight line winds, and hailstorms in accordance with FEMA Publication 320 and/or National Performance Criteria for Tornado Shelters specifications	PDM; HMGP	Webster Parish Police Jury	Tornado, Thunderstorm, Hurricane	NO ACTION
W26: Water Efficient Fixtures	Coordinate with water districts to establish incentives for installing water efficient fixtures and landscaping in new construction. Institute general parish policy to consider water efficiency in construction of new infrastructure and facilities.	Water Districts, WPPJ Public Works	Webster Parish Police Jury	Drought	NO ACTION
W27: Pilot Reconstruction	Pursue pilot reconstruction for repetitive loss homes in cases where it is not cost effective to elevate to adequate height (1' above base flood elevation).	PDM; HMGP; FMA	Webster Parish Police Jury	Flood, Dam-Levee Failure	NO ACTION

Unincorporated Webster New Mitigation Actions

Webster Unincorporated - New Mitigation Actions							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
W1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after natural hazard events.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes	1,2,3,4,5,6	New
W2: Drainage Improvement	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP	Flooding, High Wind, Tropical Cyclones	1,2,3,4,5,6	New
W3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP	Flooding, Tropical Cyclones, Dam Failure	1,2,4,6	New
W4: Safe Room Projects	Construction of a safe room for first responders located in Webster Parish. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones, Wildfires	1	New

Webster Unincorporated - New Mitigation Actions							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
W5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclone, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Drought, Sinkholes, Dam Failure, and Winter Storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Sinkholes, Dam Failure	1,2,3,4,5,6	New
W6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Extreme Heat, Sinkholes	1,2,3,4,5,6	New
W7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP	Lightning	1,2,3,4,6	New
W8: Warning Systems	Update/upgrade public warning system components throughout Webster Parish as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP	Winter storms, Wildfires, Tornadoes, Tropical Cyclones, Dam Failure, Sinkholes	1,2,3,4,5,6	New
W9: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in Parish, and provide protection of potable water supply by acquisition/installation of backflow preventers	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes, Drought, Extreme Heat	1	New

Webster Unincorporated - New Mitigation Actions							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
	at appropriate critical locations.						
W10: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP	Tropical Cyclones, Flooding	1,2	New
W11: Flood Control Measures	Install and/or upgrade minor flood control structures including berms and floodwalls to protect critical facilities.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	1,2,3,4,5,6	New
W12: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a dam failure.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP and Mayors	Dam Failure, Flooding	1,2,3,4,5,6	New

Town of Cotton Valley - New Mitigation Actions

Town of Cotton Valley							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
C1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after natural hazard events.	FEMA HMGP, Local	1-5 years	Town of Cotton Valley/Webster Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes	1,2,3,4,5,6	New
C2: Drainage Improvement	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA HMGP, Local	1-5 years	Town of Cotton Valley/Webster Parish OHSEP	Flooding, High Wind, Tropical Cyclones	1,2,3,4,5,6	New
C3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties.	FEMA HMGP, Local	1-5 years	Town of Cotton Valley/Webster Parish OHSEP	Flooding, Tropical Cyclones, Dam Failure	1,2,4,6	New
C4: Safe Room Projects	Construction of a safe room for first responders located in Cotton Valley. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Town of Cotton Valley/Webster Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones, Wildfires	1	New

Town of Cotton Valley							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
C5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclone, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Drought, Sinkholes, Dam Failure, and Winter Storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA HMGP, Local	1-5 years	Town of Cotton Valley/Webster Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Sinkholes, Dam Failure	1,2,3,4,5,6	New
C6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Town of Cotton Valley/Webster Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Extreme Heat, Sinkholes	1,2,3,4,5,6	New
C7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA HMGP, Local	1-5 years	Town of Cotton Valley/Webster Parish OHSEP	Lightning	1,2,3,4,6	New
C8: Warning Systems	Update/upgrade public warning system components throughout Cotton Valley as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Town of Cotton Valley/Webster Parish OHSEP	Winter storms, Wildfires, Tornadoes, Tropical Cyclones, Dam Failure, Sinkholes	1,2,3,4,5,6	New

Town of Cotton Valley							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
C9: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in Parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.	FEMA HMGP, Local	1-5 years	Town of Cotton Valley/Webster Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes, Drought, Extreme Heat	1	New
C10: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	FEMA HMGP, Local	1-5 years	Town of Cotton Valley/Webster Parish OHSEP	Tropical Cyclones, Flooding	1,2	New
C11: Flood Control Measures	Install and/or upgrade minor flood control structures including berms and floodwalls to protect critical facilities.	FEMA HMGP, Local	1-5 years	Town of Cotton Valley/Webster Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	1,2,3,4,5,6	New
C12: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a dam Failure.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP and Mayors	Dam Failure, Flooding	1,2,3,4,5,6	New

Town of Cullen – New Mitigation Actions

Town of Cullen							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
C1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after natural hazard events.	FEMA HMGP, Local	1-5 years	Town of Cullen/Webster Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes	1,2,3,4,5,6	New
C2: Drainage Improvement	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA HMGP, Local	1-5 years	Town of Cullen/Webster Parish OHSEP	Flooding, High Wind, Tropical Cyclones	1,2,3,4,5,6	New
C3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties.	FEMA HMGP, Local	1-5 years	Town of Cullen/Webster Parish OHSEP	Flooding, Tropical Cyclones, Dam Failure	1,2,4,6	New
C4: Safe Room Projects	Construction of a safe room for first responders located in Cullen. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Town of Cullen/Webster Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones, Wildfires	1	New

Town of Cullen							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
C5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclone, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Drought, Sinkholes, Dam Failure, and Winter Storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA HMGP, Local	1-5 years	Town of Cullen/Webster Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Sinkholes, Dam Failure	1,2,3,4,5,6	New
C6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Town of Cullen/Webster Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Extreme Heat, Sinkholes	1,2,3,4,5,6	New
C7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA HMGP, Local	1-5 years	Town of Cullen/Webster Parish OHSEP	Lightning	1,2,3,4,6	New
C8: Warning Systems	Update/upgrade public warning system components throughout Cullen as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Town of Cullen/Webster Parish OHSEP	Winter storms, Wildfires, Tornadoes, Tropical Cyclones, Dam Failure, Sinkholes	1,2,3,4,5,6	New

Town of Cullen							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
C9: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in Parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.	FEMA HMGP, Local	1-5 years	Town of Cullen/Webster Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes, Drought, Extreme Heat	1	New
C10: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	FEMA HMGP, Local	1-5 years	Town of Cullen/Webster Parish OHSEP	Tropical Cyclones, Flooding	1,2	New
C11: Flood Control Measures	Install and/or upgrade minor flood control structures including berms and floodwalls to protect critical facilities.	FEMA HMGP, Local	1-5 years	Town of Cullen/Webster Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	1,2,3,4,5,6	New
C12: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a dam failure.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP and Mayors	Dam Failure, Flooding	1,2,3,4,5,6	New

Village of Dixie Inn – New Mitigation Actions

Village of Dixie Inn							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
D1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after natural hazard events.	FEMA HMGP, Local	1-5 years	Village of Dixie Inn/Webster Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes	1,2,3,4,5,6	New
D2: Drainage Improvement	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA HMGP, Local	1-5 years	Village of Dixie Inn/Webster Parish OHSEP	Flooding, High Wind, Tropical Cyclones	1,2,3,4,5,6	New
D3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties. .	FEMA HMGP, Local	1-5 years	Village of Dixie Inn/Webster Parish OHSEP	Flooding, Tropical Cyclones, Dam Failure	1,2,4,6	New
D4: Safe Room Projects	Construction of a safe room for first responders located in Dixie Inn. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Village of Dixie Inn/Webster Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones, Wildfires	1	New

Village of Dixie Inn							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
D5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclone, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Drought, Sinkholes, Dam Failure, and Winter Storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA HMGP, Local	1-5 years	Village of Dixie Inn/Webster Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Sinkholes, Dam Failure	1,2,3,4,5,6	New
D6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Village of Dixie Inn/Webster Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Extreme Heat, Sinkholes	1,2,3,4,5,6	New
D7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA HMGP, Local	1-5 years	Village of Dixie Inn/Webster Parish OHSEP	Lightning	1,2,3,4,6	New
D8: Warning Systems	Update/upgrade public warning system components throughout Dixie Inn as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Village of Dixie Inn/Webster Parish OHSEP	Winter storms, Wildfires, Tornadoes, Tropical Cyclones, Dam Failure, Sinkholes	1,2,3,4,5,6	New

Village of Dixie Inn							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
D9: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in Parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.	FEMA HMGP, Local	1-5 years	Village of Dixie Inn/Webster Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes, Drought, Extreme Heat	1	New
D10: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	FEMA HMGP, Local	1-5 years	Village of Dixie Inn/Webster Parish OHSEP	Tropical Cyclones, Flooding	1,2	New
D11: Flood Control Measures	Install and/or upgrade minor flood control structures including berms and floodwalls to protect critical facilities.	FEMA HMGP, Local	1-5 years	Village of Dixie Inn/Webster Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	1,2,3,4,5,6	New
D12: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a dam failure.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP and Mayors	Dam Failure, Flooding	1,2,3,4,5,6	New

Village of Doyline – New Mitigation Actions

Village of Doyline							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
D1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after natural hazard events.	FEMA HMGP, Local	1-5 years	Village of Doyline/Webster Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes	1,2,3,4,5,6	New
D2: Drainage Improvement	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA HMGP, Local	1-5 years	Village of Doyline/Webster Parish OHSEP	Flooding, High Wind, Tropical Cyclones	1,2,3,4,5,6	New
D3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties.	FEMA HMGP, Local	1-5 years	Village of Doyline/Webster Parish OHSEP	Flooding, Tropical Cyclones, Dam Failure	1,2,4,6	New
D4: Safe Room Projects	Construction of a safe room for first responders located in Doyline. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Village of Doyline/Webster Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones, Wildfires	1	New

Village of Doyline							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
D5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclone, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Drought, Sinkholes, Dam Failure, and Winter Storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA HMGP, Local	1-5 years	Village of Doyline/Webster Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Sinkholes, Dam Failure	1,2,3,4,5,6	New
D6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Village of Doyline/Webster Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Extreme Heat, Sinkholes	1,2,3,4,5,6	New
D7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA HMGP, Local	1-5 years	Village of Doyline/Webster Parish OHSEP	Lightning	1,2,3,4,6	New
D8: Warning Systems	Update/upgrade public warning system components throughout Doyline as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Village of Doyline/Webster Parish OHSEP	Winter storms, Wildfires, Tornadoes, Tropical Cyclones, Dam Failure, Sinkholes	1,2,3,4,5,6	New

Village of Doyline							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
D9: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in Parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.	FEMA HMGP, Local	1-5 years	Village of Doyline/Webster Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes, Drought, Extreme Heat	1	New
D10: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	FEMA HMGP, Local	1-5 years	Village of Doyline/Webster Parish OHSEP	Tropical Cyclones, Flooding	1,2	New
D11: Flood Control Measures	Install and/or upgrade minor flood control structures including berms and floodwalls to protect critical facilities.	FEMA HMGP, Local	1-5 years	Village of Doyline/Webster Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	1,2,3,4,5,6	New
D12: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a dam failure.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP and Mayors	Dam Failure, Flooding	1,2,3,4,5,6	New

Village of Dubberly – New Mitigation Actions

Village of Dubberly							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
D1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after natural hazard events.	FEMA HMGP, Local	1-5 years	Village of Dubberly/Webster Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes	1,2,3,4,5,6	New
D2: Drainage Improvement	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA HMGP, Local	1-5 years	Village of Dubberly/Webster Parish OHSEP	Flooding, High Wind, Tropical Cyclones	1,2,3,4,5,6	New
D3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties. .	FEMA HMGP, Local	1-5 years	Village of Dubberly/Webster Parish OHSEP	Flooding, Tropical Cyclones, Dam Failure	1,2,4,6	New
D4: Safe Room Projects	Construction of a safe room for first responders located in Dubberly. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Village of Dubberly/Webster Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones, Wildfires	1	New

Village of Dubberly							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
D5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclone, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Drought, Sinkholes, Dam Failure, and Winter Storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA HMGP, Local	1-5 years	Village of Dubberly/Webster Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Sinkholes, Dam Failure	1,2,3,4,5,6	New
D6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Village of Dubberly/Webster Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Extreme Heat, Sinkholes	1,2,3,4,5,6	New
D7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA HMGP, Local	1-5 years	Village of Dubberly/Webster Parish OHSEP	Lightning	1,2,3,4,6	New
D8: Warning Systems	Update/upgrade public warning system components throughout Dubberly as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Village of Dubberly/Webster Parish OHSEP	Winter storms, Wildfires, Tornadoes, Tropical Cyclones, Dam Failure, Sinkholes	1,2,3,4,5,6	New

Village of Dubberly							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
D9: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in Parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.	FEMA HMGP, Local	1-5 years	Village of Dubberly/Webster Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes, Drought, Extreme Heat	1	New
D10: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	FEMA HMGP, Local	1-5 years	Village of Dubberly/Webster Parish OHSEP	Tropical Cyclones, Flooding	1,2	New
D11: Flood Control Measures	Install and/or upgrade minor flood control structures including berms and floodwalls to protect critical facilities.	FEMA HMGP, Local	1-5 years	Village of Dubberly/Webster Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	1,2,3,4,5,6	New
D12: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a dam failure.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP and Mayors	Dam Failure, Flooding	1,2,3,4,5,6	New

Village of Heflin – New Mitigation Actions

Village of Heflin							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
H1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after natural hazard events.	FEMA HMGP, Local	1-5 years	Village of Heflin/Webster Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes	1,2,3,4,5,6	New
H2: Drainage Improvements	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA HMGP, Local	1-5 years	Village of Heflin/Webster Parish OHSEP	Flooding, High Wind, Tropical Cyclones	1,2,3,4,5,6	New
H3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties. .	FEMA HMGP, Local	1-5 years	Village of Heflin/Webster Parish OHSEP	Flooding, Tropical Cyclones, Dam Failure	1,2,4,6	New
H4: Safe Room Projects	Construction of a safe room for first responders located in Heflin. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Village of Heflin/Webster Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones, Wildfires	1	New
H5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by	FEMA HMGP, Local	1-5 years	Village of Heflin/Webster Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes,	1,2,3,4,5,6	New

Village of Heflin							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
	increasing awareness of risks and safety for Flooding, Tropical Cyclone, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Drought, Sinkholes, Dam Failure, and Winter Storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.					Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Sinkholes, Dam Failure	
H6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Village of Heflin/Webster Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Extreme Heat, Sinkholes	1,2,3,4,5,6	New
H7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA HMGP, Local	1-5 years	Village of Heflin/Webster Parish OHSEP	Lightning	1,2,3,4,6	New
H8: Warning Systems	Update/upgrade public warning system components throughout Heflin as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Village of Heflin/Webster Parish OHSEP	Winter storms, Wildfires, Tornadoes, Tropical Cyclones, Dam Failure, Sinkholes	1,2,3,4,5,6	New
H9: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in Parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.	FEMA HMGP, Local	1-5 years	Village of Heflin/Webster Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes, Drought, Extreme Heat	1	New

Village of Heflin							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
H10: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	FEMA HMGP, Local	1-5 years	Village of Heflin/Webster Parish OHSEP	Tropical Cyclones, Flooding	1,2	New
H11: Flood Control Measures	Install and/or upgrade minor flood control structures including berms and floodwalls to protect critical facilities.	FEMA HMGP, Local	1-5 years	Village of Heflin/Webster Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	1,2,3,4,5,6	New
H12: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a dam failure.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP and Mayors	Dam Failure, Flooding	1,2,3,4,5,6	New

City of Minden – New Mitigation Actions

City of Minden							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
M1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after natural hazard events.	FEMA HMGP, Local	1-5 years	City of Minden/Webster Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes	1,2,3,4,5,6	New
M2: Drainage Improvements	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA HMGP, Local	1-5 years	City of Minden/Webster Parish OHSEP	Flooding, High Wind, Tropical Cyclones	1,2,3,4,5,6	New
M3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties. .	FEMA HMGP, Local	1-5 years	City of Minden/Webster Parish OHSEP	Flooding, Tropical Cyclones, Dam Failure	1,2,4,6	New
M4: Safe Room Projects	Construction of a safe room for first responders located in Minden. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	City of Minden/Webster Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones, Wildfires	1	New

City of Minden							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
M5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclone, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Drought, Sinkholes, Dam Failure, and Winter Storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA HMGP, Local	1-5 years	City of Minden/Webster Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Sinkholes, Dam Failure	1,2,3,4,5,6	New
M6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	City of Minden/Webster Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Extreme Heat, Sinkholes	1,2,3,4,5,6	New
M7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA HMGP, Local	1-5 years	City of Minden/Webster Parish OHSEP	Lightning	1,2,3,4,6	New
M8: Warning Systems	Update/upgrade public warning system components throughout Minden as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	City of Minden/Webster Parish OHSEP	Winter storms, Wildfires, Tornadoes, Tropical Cyclones, Dam Failure, Sinkholes	1,2,3,4,5,6	New

City of Minden							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
M9: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in Parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.	FEMA HMGP, Local	1-5 years	City of Minden/Webster Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes, Drought, Extreme Heat	1	New
M10: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	FEMA HMGP, Local	1-5 years	City of Minden/Webster Parish OHSEP	Tropical Cyclones, Flooding	1,2	New
M11: Flood Control Measures	Install and/or upgrade minor flood control structures including berms and floodwalls to protect critical facilities.	FEMA HMGP, Local	1-5 years	City of Minden/Webster Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	1,2,3,4,5,6	New
M12: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a dam failure.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP and Mayors	Dam Failure, Flooding	1,2,3,4,5,6	New

Town of Sarepta – New Mitigation Actions

Town of Sarepta							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
S1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after natural hazard events.	FEMA HMGP, Local	1-5 years	Town of Sarepta/Webster Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes	1,2,3,4,5,6	New
S2: Drainage Improvements	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA HMGP, Local	1-5 years	Town of Sarepta/Webster Parish OHSEP	Flooding, High Wind, Tropical Cyclones	1,2,3,4,5,6	New
S3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties. .	FEMA HMGP, Local	1-5 years	Town of Sarepta/Webster Parish OHSEP	Flooding, Tropical Cyclones, Dam Failure	1,2,4,6	New
S4 Safe Room Projects	Construction of a safe room for first responders located in Sarepta. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Town of Sarepta/Webster Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones, Wildfires	1	New

Town of Sarepta							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
S5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclone, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Drought, Sinkholes, Dam Failure, and Winter Storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA HMGP, Local	1-5 years	Town of Sarepta/Webster Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Sinkholes, Dam Failure	1,2,3,4,5,6	New
S6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Town of Sarepta/Webster Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Extreme Heat, Sinkholes	1,2,3,4,5,6	New
S7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA HMGP, Local	1-5 years	Town of Sarepta/Webster Parish OHSEP	Lightning	1,2,3,4,6	New
S8: Warning Systems	Update/upgrade public warning system components throughout Sarepta as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years+D10:D11	Town of Sarepta/Webster Parish OHSEP	Winter storms, Wildfires, Tornadoes, Tropical Cyclones, Dam Failure, Sinkholes	1,2,3,4,5,6	New

Town of Sarepta							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
S9: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in Parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.	FEMA HMGP, Local	1-5 years	Town of Sarepta/Webster Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes, Drought, Extreme Heat	1	New
S10: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	FEMA HMGP, Local	1-5 years	Town of Sarepta/Webster Parish OHSEP	Tropical Cyclones, Flooding	1,2	New
S11: Flood Control Measures	Install and/or upgrade minor flood control structures including berms and floodwalls to protect critical facilities.	FEMA HMGP, Local	1-5 years	Town of Sarepta/Webster Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	1,2,3,4,5,6	New
S12: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a dam failure.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP and Mayors	Dam Failure, Flooding	1,2,3,4,5,6	New

Village of Shongaloo – New Mitigation Actions

Village of Shongaloo							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
S1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after natural hazard events.	FEMA HMGP, Local	1-5 years	Village of Shongaloo/Webster Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes	1,2,3,4,5,6	New
S2: Drainage Improvements	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA HMGP, Local	1-5 years	Village of Shongaloo/Webster Parish OHSEP	Flooding, High Wind, Tropical Cyclones	1,2,3,4,5,6	New
S3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties. .	FEMA HMGP, Local	1-5 years	Village of Shongaloo/Webster Parish OHSEP	Flooding, Tropical Cyclones, Dam Failure	1,2,4,6	New
S4 Safe Room Projects	Construction of a safe room for first responders located in Shongaloo. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Village of Shongaloo/Webster Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones, Wildfires	1	New

Village of Shongaloo							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
S5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclone, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Drought, Sinkholes, Dam Failure, and Winter Storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA HMGP, Local	1-5 years	Village of Shongaloo/Webster Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Sinkholes, Dam Failure	1,2,3,4 ,5,6	New
S6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Village of Shongaloo/Webster Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Extreme Heat, Sinkholes	1,2,3,4 ,5,6	New
S7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA HMGP, Local	1-5 years	Village of Shongaloo/Webster Parish OHSEP	Lightning	1,2,3,4 ,6	New
S8: Warning Systems	Update/upgrade public warning system components throughout Shongaloo as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years+D10:D11	Village of Shongaloo/Webster Parish OHSEP	Winter storms, Wildfires, Tornadoes, Tropical Cyclones, Dam Failure, Sinkholes	1,2,3,4 ,5,6	New
S9: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in Parish, and provide protection of potable water supply by acquisition/installation of backflow	FEMA HMGP, Local	1-5 years	Village of Shongaloo/Webster Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes, Drought, Extreme Heat	1	New

Village of Shongaloo							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
	preventers at appropriate critical locations.						
S10: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	FEMA HMGP, Local	1-5 years	Village of Shongaloo/Webster Parish OHSEP	Tropical Cyclones, Flooding	1,2	New
S11: Flood Control Measures	Install and/or upgrade minor flood control structures including berms and floodwalls to protect critical facilities.	FEMA HMGP, Local	1-5 years	Village of Shongaloo/Webster Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	1,2,3,4,5,6	New
S12: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a dam failure.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP and Mayors	Dam Failure, Flooding	1,2,3,4,5,6	New

Town of Sibley – New Mitigation Actions

Town of Sibley							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
S1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after natural hazard events.	FEMA HMGP, Local	1-5 years	Town of Sibley/Webster Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes	1,2,3,4,5,6	New
S2: Drainage Improvements	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA HMGP, Local	1-5 years	Town of Sibley/Webster Parish OHSEP	Flooding, High Wind, Tropical Cyclones	1,2,3,4,5,6	New
S3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties.	FEMA HMGP, Local	1-5 years	Town of Sibley/Webster Parish OHSEP	Flooding, Tropical Cyclones, Dam Failure	1,2,4,6	New
S4 Safe Room Projects	Construction of a safe room for first responders located in Sibley. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Town of Sibley/Webster Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones, Wildfires	1	New

Town of Sibley							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
S5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclone, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Drought, Sinkholes, Dam Failure, and Winter Storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA HMGP, Local	1-5 years	Town of Sibley/Webster Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Sinkholes, Dam Failure	1,2,3,4,5,6	New
S6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Town of Sibley/Webster Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Extreme Heat, Sinkholes	1,2,3,4,5,6	New
S7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA HMGP, Local	1-5 years	Town of Sibley/Webster Parish OHSEP	Lightning	1,2,3,4,6	New
S8: Warning Systems	Update/upgrade public warning system components throughout Sibley as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years+D10:D11	Town of Sibley/Webster Parish OHSEP	Winter storms, Wildfires, Tornadoes, Tropical Cyclones, Dam Failure, Sinkholes	1,2,3,4,5,6	New

Town of Sibley							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
S9: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in Parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.	FEMA HMGP, Local	1-5 years	Town of Sibley/Webster Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes, Drought, Extreme Heat	1	New
S10: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	FEMA HMGP, Local	1-5 years	Town of Sibley/Webster Parish OHSEP	Tropical Cyclones, Flooding	1,2	New
S11: Flood Control Measures	Install and/or upgrade minor flood control structures including berms and floodwalls to protect critical facilities.	FEMA HMGP, Local	1-5 years	Town of Sibley/Webster Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	1,2,3,4,5,6	New
S12: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a dam failure.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP and Mayors	Dam Failure, Flooding	1,2,3,4,5,6	New

City of Springhill – New Mitigation Actions

City of Springhill							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
S1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after natural hazard events.	FEMA HMGP, Local	1-5 years	Town of Springhill/Webster Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes	1,2,3,4, 5,6	New
S2: Drainage Improvements	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA HMGP, Local	1-5 years	Town of Springhill/Webster Parish OHSEP	Flooding, High Wind, Tropical Cyclones	1,2,3,4, 5,6	New
S3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties.	FEMA HMGP, Local	1-5 years	Town of Springhill/Webster Parish OHSEP	Flooding, Tropical Cyclones, Dam Failure	1,2,4,6	New
S4 Safe Room Projects	Construction of a safe room for first responders located in Springhill. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Town of Springhill/Webster Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones, Wildfires	1	New

City of Springhill							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
S5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclone, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Drought, Sinkholes, Dam Failure, and Winter Storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA HMGP, Local	1-5 years	Town of Springhill/Webster Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfires, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Sinkholes, Dam Failure	1,2,3,4,5,6	New
S6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Town of Springhill/Webster Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Extreme Heat, Sinkholes	1,2,3,4,5,6	New
S7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA HMGP, Local	1-5 years	Town of Springhill/Webster Parish OHSEP	Lightning	1,2,3,4,6	New
S8: Warning Systems	Update/upgrade public warning system components throughout Springhill as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Town of Springhill/Webster Parish OHSEP	Winter storms, Wildfires, Tornadoes, Tropical Cyclones, Dam Failure, Sinkholes	1,2,3,4,5,6	New

City of Springhill							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
S9: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in Parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.	FEMA HMGP, Local	1-5 years	Town of Springhill/Webster Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes, Drought, Extreme Heat	1	New
S10: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	FEMA HMGP, Local	1-5 years	Town of Springhill/Webster Parish OHSEP	Tropical Cyclones, Flooding	1,2	New
S11: Flood Control Measures	Install and/or upgrade minor flood control structures including berms and floodwalls to protect critical facilities.	FEMA HMGP, Local	1-5 years	Town of Springhill/Webster Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	1,2,3,4, 5,6	New
S12: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a dam failure.	FEMA HMGP, Local	1-5 years	Webster Parish OHSEP and Mayors	Dam Failure, Flooding	1,2,3,4, 5,6	New

Action Prioritization

During the prioritization process, each jurisdiction and 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, many projects were prioritized with these factors in mind.

In all cases, the jurisdictions 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 met internally for mitigation action meetings to review and approve Webster Parish and the jurisdiction's mitigation actions. On-going actions, as well as actions which can be undertaken by existing parish or local staff without need for additional funding, were given high priority. The actions with high benefit and 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 with relatively longer completion time were given low priority. There have been no changes in financial, legal and political priorities within the past 5 years, with the methodology and prioritization process remaining the same.

Webster Parish and the participating jurisdictions will implement and administer the identified actions based off of 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, such as changing regulations. This plan is intended to offer priorities based on an examination of hazards.

Appendix A: Planning Process

Purpose

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

The Webster Parish Hazard Mitigation Plan Update

The Webster Parish Hazard Mitigation Plan Update process began in January 2016 with a series of meetings and collaborations between the contractor (SDMI) and the participating jurisdictions. Update activities were intended to give each jurisdiction the opportunity to shape the plan to best fit their community's goals. Community stakeholders and the general public were invited to attend and contribute information to the planning process during specific time periods or meetings.

Webster Parish includes eleven incorporated municipalities that participated in the plan update process – the Town of Cotton Valley, Town of Cullen, Village of Dixie Inn, Village of Doyline, Village of Dubberly, Village of Heflin, City of Minden, Town of Sarepta, Village of Shongaloo, Town of Sibley, and City of Springhill. Webster Parish Office of Homeland Security and Emergency Preparedness (OHSEP) invited communities' representatives to meetings, where they supplied critical infrastructure data and reviewed work-in-progress for the plan update.

Similar to the development of the original Hazard Mitigation Plan, the role of the steering committee members during the plan update was to attend the planning meetings and provide valuable information on the parish, develop parts of the plan update, and review the results of research conducted by SDMI. Tasks completed by the steering committee include:

- Reviewing and revising the list of potential hazards included in the plan update
- Assembling a list of critical facilities, such as hospitals, police stations, and shelters
- Updating mitigation goals and objectives
- Determining prudent mitigation measures
- Prioritization of identified mitigation measures

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

Date	Meeting or Outreach	Location	Public Invited	Purpose
1/22/2016	Initial Coordination	Telephone/ Email	No	Discuss with Parish HM coordinator and any Steering Committee members expectations and requirements of the project.
2/17/2016	Kick-Off Meeting	Minden, LA	No	Discuss with the plan steering committee expectations and requirements of the project. Assign plan worksheets to jurisdictions.
6/16/2016	Risk Assessment Overview	Minden, LA	No	Discuss and review the risk assessment with the steering committee discuss and review expectations for public meeting.
6/16/2016	Public Meeting	Minden, LA	Yes	The public meeting allowed the public and community stakeholders to participate and provide input into the hazard mitigation planning process. Maps of the Webster Parish communities were provide for the meeting attendees to identify specific areas where localized hazards occur.
Ongoing	Public Survey Tool	Online	Yes	This survey asked participants about public perceptions and opinions regarding natural hazards in Webster Parish. In addition, we asked about the methods and techniques preferred for reducing the risks and losses associated with these hazards. Survey Results: https://www.surveymonkey.com/r/WebsterParish
2 Week Period	Public Plan Review (Digital)		Yes	Parish Website and Webster Parish OHSEP

Planning

The plan update process consisted of several phases:

Phase	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Plan Revision	[Grey]					
Data Collection	[Grey]					
Risk Assessment	[Grey]					
Public Input				[Grey]		
Mitigation Strategy and Actions				[Grey]		
Plan Review by GOHSEP and FEMA					[Grey]	
Plan Adoption						[Yellow]
Plan Approval						[Green]

Coordination

The Webster Parish OHSEP oversaw the coordination of the 2016 Hazard Mitigation Plan Update Steering Committee during the update process. The Webster Parish OHSEP and participating jurisdictions were responsible for identifying members for the committee.

The Parish Director and SDMI were jointly responsible for inviting the Steering Committee and key stakeholders to all planned meetings and activities by phone calls, email invitations, and calendar invites. SDMI assisted the Parish Director with meeting notices, website and social media statements for notification to the media and general public for public meetings and public outreach activities.

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

Neighboring Community, Local and Regional Planning Process Involvement

From the outset of the planning process, the Hazard Mitigation Team encouraged participation from a broad range of jurisdictional 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 Team meetings at the local and parish level
- Sharing local data and information
- Local action item development

- Plan document draft review
- Formal adoption of the Hazard Mitigation Plan document by each jurisdiction following provisional approval by The State of Louisiana and FEMA

The 2016 Hazard Mitigation Plan Update Steering Committee consisted of representatives from the following parish, municipal, or community stakeholders:

- Webster Parish Government
- Webster Parish Office of Homeland Security and Emergency Preparedness
- Webster Parish Sheriff's Office
- Webster Parish School Board
- Minden Fire Department
- City of Minden
- City of Springhill
- Town of Cotton Valley
- Town of Cullen
- Town of Sarepta
- Town of Sibley
- Village of Dixie Inn
- Village of Doyline
- Village of Dubberly
- Village of Heflin
- Village of Shongaloo

The Parish OHSEP Director, Dennis Butcher of Claiborne Parish was invited by the Webster Parish OHSEP via email invitation and phone call to participate in all meetings and activities as well in an effort to collaborate with neighboring communities. In addition, the participation of the GOHSEP Region 7 Coordinator during the process also contributed to neighboring community representation.

As part of the coordination and planning process, each jurisdiction was provided the State Required Hazard Mitigation Plan Update Worksheet. Jurisdictions with the capability to complete and return these worksheets returned them to assist with the 2016 update. The completed worksheets can be found in Appendix E – State Required Plan Update Worksheets.

Below is a detailed list of the 2016 Hazard Mitigation Plan Update Steering Committee:

Name	Title	Agency	Address	Email	Phone
Jenny Reynolds	Director, OHSEP	Webster Parish Police Jury	410 Main St Minden, LA 71055	ohsep@websterparish.la.org	318-464-5060
Gary Sexton	Sheriff	Webster Parish Sheriff's Office	401 Main St Minden, LA 71055	gsexton@webstersheriff.org	318-377-1515
Kip Mourad	Chief	Minden Fire Department	1213 Sheppard St Minden, LA 71055	eng1@suddenlinkmail.com	318-371-4232
Buster Flowers	Director, Transportation	Webster Parish School Board	1442 Sheppard St Minden, LA 71055	bflowers@websterpsb.org	318-426-6631
Jim Bonsal	President	Webster Parish Police Jury	410 Main St Minden, LA 71055	rcarnahan@suddenlinkmail.com	318-377-7564
Tommy Davis	Mayor	City of Minden	520 Broadway St Minden, LA 71055	mayor@mindenusa.com	318-377-2144

Name	Title	Agency	Address	Email	Phone
Carroll Breaux	Mayor	City of Springhill	101 Machen Dr Springhill, LA 71075	mayorbreaux@centurylink.net	318-539-5681
Comerdis Phillips	Mayor	Town of Cotton Valley	478 Resident St Cotton Valley, LA 71018	N/A	318-832-4283
Ray Mills	Mayor	Town of Cullen	405 Coyle Ave Cullen, LA 71021	N/A	318-994-2191
Peggy Adkins	Mayor	Town of Sarepta	24444 Highway 371 Sarepta, LA 71071	sareptamayor@gmail.com	318-453-4598
Jimmy Williams	Mayor	Town of Sibley	345 N. Main St Sibley, LA 71073	sibleymayor@suddenlinkmail.com	318-377-0345
Ava Neil McWhorter	Mayor	Village of Dixie Inn	60 Shell St Dixie Inn, LA 71055	N/A	318-377-6855
Gary T. Carter	Mayor	Village of Doyline	624 College St Doyline, LA 71023	N/A	318-745-2625
W.C. Hirth	Mayor	Village of Dubberly	3465 LA 531 Dubberly, LA 71024	N/A	318-371-9528
Ralph James	Mayor	Village of Heflin	122 N. Church St Heflin, LA 71039	N/A	318-377-9799
Tim L. Mouser	Mayor	Village of Shongaloo	119 Highway Alt 2 Shongaloo, LA 71072	N/A	318-846-2876

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 Webster Parish programs and planning.

A measure of integration and coordination is achieved through the Hazard Mitigation Plan participation of steering committee members and community stakeholders, who administer programs such as floodplain management under the National Flood Insurance Program (NFIP) and parish planning and zoning and building code enforcement.

Opportunities to integrate the requirements of this Hazard Mitigation Plan into other local planning mechanisms will continue to be identified through future meetings of the parish and jurisdictions, and through the five-year review process described in the Plan Maintenance section. 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 city/town plans that require specific planning and administrative tasks (e.g. risk assessment, plan amendments, ordinance revisions, capital improvement projects, etc.).

The members of the Webster Parish Hazard Mitigation 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 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, the U.S. Army Corps of Engineers (USACE or Corps), 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 2005 Hazard Mitigation Plan was also used in the planning process. Other existing parish and jurisdiction data and plans reviewed and/or incorporated into the planning process include those listed below:

- Emergency Operations Plan
- State of Louisiana Hazard Mitigation Plan
- Flood Insurance Rate Maps

Further information on other plans and capabilities reviewed can be found in the Capabilities Assessment, Section 3.

Meeting Documentation and Public Outreach Activities

The following pages contain information from the meetings and public outreach activities conducted during this Hazard Mitigation Plan Update for Webster Parish.

Meeting #1: Coordination Discussion

Date: January 22, 2016

Location: Email

Purpose: Discuss with the Hazard Mitigation Lead for the parish (OHSEP Director) the expectations and requirements of the Hazard Mitigation Plan Update process and to establish an initial project timeline.

Public Initiation: No

Invitees Included: Webster Parish OHSEP, SDMI Staff

Meeting #2: Hazard Mitigation Plan Update Kick-Off

Date: February 17, 2016**Location:** Minden, Louisiana**Purpose:** Discuss the expectations and requirements of the Hazard Mitigation Plan Update process and to establish and initial project timeline with the parish's Hazard Mitigation Plan Steering Committee. Assign each individual jurisdiction and the parish data collection for the plan update.**Public Initiation:** No**Invitees Included:**

Name	Title	Agency
Jenny Reynolds	Director, OHSEP	Webster Parish Police Jury
Gary Sexton	Sheriff	Webster Parish Sheriff's Office
Kip Mourad	Chief	Minden Fire Department
Buster Flowers	Director, Transportation	Webster Parish School Board
Jim Bonsal	President	Webster Parish Police Jury
Dennis Butcher	Director, OHSEP	Claiborne Parish
Tommy Davis	Mayor	City of Minden
Carroll Breaux	Mayor	City of Springhill
Comerdis Phillips	Mayor	Town of Cotton Valley
Ray Mills	Mayor	Town of Cullen
Peggy Adkins	Mayor	Town of Sarepta
Jimmy Williams	Mayor	Town of Sibley
Ava Neil McWhorter	Mayor	Village of Dixie Inn
Gary T. Carter	Mayor	Village of Doyline
W.C. Hirth	Mayor	Village of Dubberly
Ralph James	Mayor	Village of Heflin
Tim L. Mouser	Mayor	Village of Shongaloo

Meeting #3: Risk Assessment Overview

Date: June 16, 2016**Location:** Minden, LA**Purpose:** Members of the Hazard Mitigation Plan Update Steering Committee were invited and were presented the results of the most recent risk assessment and an overview of the public meeting presentation during this overview. The assessment was conducted based on hazards identified during previous plans.**Public Initiation:** No**Invitees Included:**

Name	Title	Agency
Jenny Reynolds	Director, OHSEP	Webster Parish Police Jury
Gary Sexton	Sheriff	Webster Parish Sheriff's Office
Kip Mourad	Chief	Minden Fire Department
Buster Flowers	Director, Transportation	Webster Parish School Board
Jim Bonsal	President	Webster Parish Police Jury
Dennis Butcher	Director, OHSEP	Claiborne Parish
Tommy Davis	Mayor	City of Minden
Carroll Breaux	Mayor	City of Springhill
Comerdis Phillips	Mayor	Town of Cotton Valley
Ray Mills	Mayor	Town of Cullen
Peggy Adkins	Mayor	Town of Sarepta
Jimmy Williams	Mayor	Town of Sibley
Ava Neil McWhorter	Mayor	Village of Dixie Inn
Gary T. Carter	Mayor	Village of Doyline
W.C. Hirth	Mayor	Village of Dubberly
Ralph James	Mayor	Village of Heflin
Tim L. Mouser	Mayor	Village of Shongaloo

Meeting #4: Public Meeting

Date: June 16, 2016**Location:** Minden, LA**Purpose:** The public meeting allowed the public and community stakeholders to participate and provide input into the hazard mitigation planning process. Maps of the Webster Parish communities were provided for the meeting attendees to identify specific areas where localized hazards occur.**Public Initiation:** Yes**Invitees Included:**

Name	Title	Agency
Jenny Reynolds	Director, OHSEP	Webster Parish Police Jury
Gary Sexton	Sheriff	Webster Parish Sheriff's Office
Kip Mourad	Chief	Minden Fire Department
Buster Flowers	Director, Transportation	Webster Parish School Board
Jim Bonsal	President	Webster Parish Police Jury
Dennis Butcher	Director, OHSEP	Claiborne Parish
Tommy Davis	Mayor	City of Minden
Carroll Breaux	Mayor	City of Springhill
Comerdis Phillips	Mayor	Town of Cotton Valley
Ray Mills	Mayor	Town of Cullen
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Jimmy Williams	Mayor	Town of Sibley
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Gary T. Carter	Mayor	Village of Doyline
W.C. Hirth	Mayor	Village of Dubberly
Ralph James	Mayor	Village of Heflin
Tim L. Mouser	Mayor	Village of Shongaloo

****Subject Matter Experts from parish government were present to answer specific questions about proposed projects from any citizens****

Meeting Public Notice

WEBSTER PARISH OFFICE OF HOMELAND SECURITY & EMERGENCY PREPAREDNESS

PUBLIC MEETING NOTICE – June 16, 2016

Webster Parish to hold Public Meetings for Hazard Mitigation Plan Update

Minden, LA – Webster Parish Office of Homeland Security & Emergency Preparedness is in the process of updating the Webster Parish Hazard Mitigation Plan and are required to hold public meetings on the plan update. The Public meeting will be held on June 16, 2016 in the Webster Parish Court House Meeting Room located at 410 Main Street from 2:30PM to 3:30PM.

Natural hazards have the potential to cause property loss, loss of life, economic hardship, and threats to public health and safety. While an important aspect of emergency management deals with disaster recovery (the actions that a community takes to repair damages), an equally important aspect of emergency management involves hazard mitigation - sustained actions taken to reduce long-term risk to life and property. They are things we do today to be more protected in the future. For example, elevating buildings in flood hazard areas, installing hurricane clips and storm shutters, relocating critical facilities out of hazard areas, using fire-resistant construction materials in wildfire hazard areas, etc. Hazard mitigation actions are essential to breaking the typical disaster cycle of damage, reconstruction, and repeated damage. With careful selection, they can be long-term, cost-effective means of reducing risk and helping to create a more sustainable and disaster-resilient community.

A hazard mitigation plan describes an area's vulnerability to the various natural hazards that are typically present, along with an array of actions and projects for reducing key risks. While natural disasters cannot be prevented from occurring, the continued implementation of mitigation strategies identified in the plan will gradually, but steadily, make our communities more sustainable and disaster-resilient.

The Disaster Mitigation Act of 2000 (DMA 2000) requires all states and local governments to have a hazard mitigation plan in order to be eligible to apply for certain types of federal hazard mitigation project grants. Hazard mitigation plans must be: (a) implemented on an ongoing basis, and (b) updated every five years to ensure that they remain applicable representations of local risk and locally-preferred risk reduction strategies.

Webster Parish is in the beginning stages of updating its hazard mitigation plan. Public meeting will be held on June 16, 2016 for all citizens interested in learning about and participating in discussions concerning the Webster Parish Hazard Mitigation Plan.

Residents of Webster 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 <https://www.surveymonkey.com/r/WebsterParish>

For more information, please contact: Webster Parish OHSEP Office – Jenny Reynolds, Director (318) 464-5060

Outreach Activity #1: Public Opinion Survey

Date: Ongoing throughout planning process

Location: Web Survey

Public Initiation: Yes

Outreach Activity #2: Incident Questionnaire

Date: Public Meeting Activity

Location: Public Meeting

Public Initiation: Yes

Outreach Activity #3: Mapping Activities

Public meeting attendees were asked to identify areas on jurisdictional maps provided that were “problem areas”. They were also asked to indicate any areas of new development. This activity gave the public an opportunity to interact with SDMI’s GIS Mapping section, as well as provide valuable input on areas that may flood repeatedly during rain events that may not get reported to local emergency managers as significant events.

Public Plan Review Documentation

The Webster Parish Hazard Mitigation Draft Plan was placed on the Webster Parish website to collect comments and feedback from the public. No feedback or public comment was received during this time. This outreach provided the public an opportunity to comment on the plan during the drafting stage and prior to plan approval.

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 Webster Parish Planning 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 comprehensive or capital improvement plans. This process provides for continued public participation through the diverse resources of the parish to help in achieving the goals and objectives of the plan. Public participation will be achieved through availability of copies of HMP in parish public library and parish website. This section describes the whole update process which includes the following:

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

Responsible Parties

Webster 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

Webster Parish has developed a method to ensure monitoring, evaluating, and updating of the HMP occurs during the five-year cycle of the plan. The planning committee will become a permanent body and will be responsible for monitoring, evaluating, and updating of the plan. The planning committee meeting will be held annually in order to monitor, evaluate, and update the plan. The Webster Parish OHSEP Director will be responsible for conducting the annual planning 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 updated every five years. The annual maintenance, monitoring and evaluation of the plan will be conducted in the annual planning committee meeting. The planning committee will review each goal and objective 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 planning 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) Are there any procedures that can be done more efficiently
- 4) Are there more ways to gain more diverse and widespread cooperation
- 5) Are there 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 planning 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 Webster 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 Public Library.

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.

2016 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 2016 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 Webster Parish Hazard Mitigation Plan Steering Committee and participating jurisdictions to determine additional implementation procedures when appropriate. This may include integrating the requirements of the Webster Parish Hazard Mitigation Plan into each jurisdiction's planning documents, processes, or mechanisms as follows:

- Ordinances, Resolutions, Regulations
- Floodplain Ordinances (Parish and Jurisdictions)
- Emergency Operations Plan

Opportunities to integrate the requirements of this plan into other local planning mechanisms will continue to be identified through future meetings of the Webster 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 meet with Department Heads to discuss what should be included in the changes that are necessary before the changes are introduced to the city council or police jury meetings. Steering committee members 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 Webster 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 jurisdictions of the Town of Cotton Valley, Town of Cullen, Village of Dixie Inn, Village of Doyline, Village of Dubberly, Village of Heflin, City of Minden, Town of Sarepta, Village of Shongaloo, Town of Sibley, and City of Springhill, Webster 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:

Webster Unincorporated

Local Emergency Operations Plan/Updated as needed/Webster Parish OHSEP

Town of Cotton Valley

There are no additional plans within this jurisdiction for the Hazard Mitigation Plan to be integrated.

Town of Cullen

Local Emergency Operations Plan/Updated as needed/Webster Parish OHSEP and Mayor of Cullen

Village of Dixie Inn

There are no additional plans within this jurisdiction for the Hazard Mitigation Plan to be integrated.

Village of Doyline

There are no additional plans within this jurisdiction for the Hazard Mitigation Plan to be integrated.

Village of Dubberly

There are no additional plans within this jurisdiction for the Hazard Mitigation Plan to be integrated.

Village of Heflin

There are no additional plans within this jurisdiction for the Hazard Mitigation Plan to be integrated.

City of Minden

Capital Improvement Plan/Updated as needed/Webster Parish Police Jury and Mayor of Minden
Economic Development Plan/Update as needed/ Webster Parish Police Jury and Mayor of Minden
Local Emergency Operations Plan/Updated as needed/Webster Parish OHSEP and Mayor of Minden
Community Wildfire Protection Plan/Update as needed/Webster Parish OHSEP and Mayor of Minden

Town of Sarepta

Capital Improvement Plan/Updated as needed/Webster Parish Police Jury and Mayor of Sarepta
Local Emergency Operations Plan/Updated as needed/Webster Parish OHSEP and Mayor of Sarepta

Village of Shongaloo

There are no additional plans within this jurisdiction for the Hazard Mitigation Plan to be integrated.

Town of Sibley

There are no additional plans within this jurisdiction for the Hazard Mitigation Plan to be integrated.

City of Springhill

Economic Development Plan/Update as needed/ Webster Parish Police Jury and Mayor of Springhill

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 will include at least one of the following:

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

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Appendix C: Essential Facilities

Webster Parish Essential Facilities – All Jurisdictions

Webster Unincorporated Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
Fire and Rescue	Evergreen Volunteer Fire Department					X	X	X	X	X		
	Fire Dept					X	X	X	X	X	X	
	Fire Dept					X	X	X	X	X	X	
	Fire Dept					X	X	X	X	X	X	
	Fire Dept					X	X	X	X	X	X	
	Fire Dept					X	X	X	X	X	X	
	Fire Dept					X	X	X	X	X		
	Fire Dept					X	X	X	X	X		
	Fire Dept					X	X	X	X	X		
	Fire Dept					X	X	X	X	X		
	Fire Station					X	X	X	X	X		
	Heflin Fire Dept Station No 2					X	X	X	X	X		
	Shongaloo Fire District 9					X	X	X	X	X	X	
	Shongaloo Fire					X	X	X	X	X		

Webster Unincorporated Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
	Department No 3											
	Webster Parish Fire District					X	X	X	X	X		
	Webster Parish Fire District 3 Station 2					X	X	X	X	X	X	
	Webster Parish Fire District 3 Station 3					X	X	X	X	X	X	
	Webster Parish Fire District 7 Station 2					X	X	X	X	X		
Government	LA DOTD Project Engineers Office			X		X	X	X	X	X		
	LA Department of Wildlife and Fisheries					X	X	X	X	X		
	Webster Parish					X	X	X	X	X		

Webster Unincorporated Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
	Assessor's Office											
	Webster Parish Department of Public Works					X	X	X	X	X		
	Webster Parish Disposal					X	X	X	X	X		
	Webster Parish Landfill					X	X	X	X	X		
Corrections	Prison and Corrections					X	X	X	X	X	X	
Schools	Lakeside High School					X	X	X	X	X		
	Lakeside Junior High School					X	X	X	X	X		

Cotton Valley Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
Fire and Rescue	Cotton Valley Fire District 8					X	X	X	X	X	X	
	Fire Station					X	X	X	X	X	X	
Schools	North Webster Upper Elementary					X	X	X	X	X	X	

Cullen Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
Fire and Rescue	Fire Department					X	X	X	X	X	X	
Government	Cullen Municipal Building					X	X	X	X	X	X	
Law Enforcement	Cullen Police Department					X	X	X	X	X	X	

Dixie Inn Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
Fire and Rescue	Webster Parish Fire District 7					X	X	X	X	X		
Government	Village of Dixie Inn Municipal Building					X	X	X	X	X		
Law Enforcement	Dixie Inn Police Department					X	X	X	X	X		

Doyline Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
Fire and Rescue	Webster Parish Fire District No 3					X	X	X	X	X	X	
	Webster Parish Fire District No 3 Doyline					X	X	X	X	X	X	
Government	Doyline Town Hall					X	X	X	X	X	X	
Schools	Doyline High School					X	X	X	X	X	X	
	Union Elementary School					X	X	X	X	X	X	

Dubberly Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
Fire and Rescue	Dubberly Volunteer Fire Department					X	X	X	X	X		
Government	Dubberly Town Hall					X	X	X	X	X	X	
	Dubberly Water Department					X	X	X	X	X	X	

Heflin Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
Fire and Rescue	Heflin Fire Department					X	X	X	X	X	X	
Government	Heflin Town Hall					X	X	X	X	X	X	
	Heflin Water Department					X	X	X	X	X	X	
Law Enforcement	Heflin Police Department					X	X	X	X	X	X	

Minden Essential Facilities

Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
Fire and Rescue	City of Minden Central Fire Station					X	X	X	X	X	X	
	Fire Station					X	X	X	X	X	X	
	MFD Station 3					X	X	X	X	X	X	
Government	26th JDC Public Defender's Office					X	X	X	X	X	X	
	Department of Public Safety - OMV					X	X	X	X	X	X	
	Department of Public Safety and Corrections					X	X	X	X	X		
	Extension Service Webster Parish Office					X	X	X	X	X		
	LA DOTD Office			X		X	X	X	X	X		
	Minden Animal Control					X	X	X	X	X	X	
	Minden Chamber of Commerce					X	X	X	X	X	X	

Minden Essential Facilities

Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
	Minden City Hall					X	X	X	X	X		
	Social Security Administration					X	X	X	X	X	X	
	Town of Minden Central Warehouse			X		X	X	X	X	X		
	USDA Service Center					X	X	X	X	X	X	
	Webster Parish Assessor's Office					X	X	X	X	X	X	
	Webster Parish Community Services					X	X	X	X	X		
	Webster Parish Council on Aging					X	X	X	X	X	X	
	Webster Parish Courthouse					X	X	X	X	X	X	
	Webster Parish District Attorney's Office					X	X	X	X	X	X	

Minden Essential Facilities

Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
	Webster Parish Motor Pool			X		X	X	X	X	X	X	
	Webster Parish Office of Family Support			X		X	X	X	X	X	X	
	Webster Parish Police Jury					X	X	X	X	X		
	Webster Parish Sales Tax Commission					X	X	X	X	X		
	Webster Parish School Board Offices					X	X	X	X	X	X	
Law Enforcement	Minden Police Department and Marshal's Office					X	X	X	X	X		
Public Health	Fresenius Medical Center					X	X	X	X	X	X	
	Highland Cancer Center					X	X	X	X	X	X	
	Minden Medical Center					X	X	X	X	X	X	

Minden Essential Facilities

Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
Schools	E.S. Richardson Elementary School					X	X	X	X	X	X	
	Glenbrook School					X	X	X	X	X	X	
	J.E. Harper School					X	X	X	X	X	X	
	JA Phillips Middle School					X	X	X	X	X	X	
	JL Jones Elementary					X	X	X	X	X	X	
	Minden High School					X	X	X	X	X	X	
	Webster Junior High					X	X	X	X	X	X	

Sarepta Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
Fire and Rescue	Fire Dept					X	X	X	X	X	X	
	Fire Dept					X	X	X	X	X	X	
Government	Sarepta Municipal Building					X	X	X	X	X	X	
Schools	North Webster Junior High					X	X	X	X	X	X	
	Sarepta High School					X	X	X	X	X	X	

Shongaloo Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
Fire and Rescue	Shongaloo Fire Department					X	X	X	X	X	X	
Government	Shongaloo Civic Center					X	X	X	X	X	X	
Schools	North Webster Lower Elementary					X	X	X	X	X	X	

Sibley Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
Fire and Rescue	Sibley Volunteer Fire Dept					X	X	X	X	X	X	
Government	Sibley Town Hall					X	X	X	X	X	X	

Springhill Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
Fire and Rescue	Springhill Fire Department					X	X	X	X	X		
	Springhill Fire Department No 2					X	X	X	X	X	X	
	Webster Parish Fire District					X	X	X	X	X	X	
Government	City Maintenance Building			X		X	X	X	X	X	X	
	Department of Motor Vehicles					X	X	X	X	X		
	Department of Public Safety					X	X	X	X	X		

Springhill Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
Law Enforcement	Springhill Chamber of Commerce					X	X	X	X	X	X	
	Springhill City Court					X	X	X	X	X		
	Springhill City Hall					X	X	X	X	X		
	Springhill Civic Center					X	X	X	X	X		
	Springhill Police Department					X	X	X	X	X		
	Webster Parish Sheriff's Office Substation					X	X	X	X	X		
Schools	Browning Elementary School					X	X	X	X	X	X	
	Charles Brown Upper Elementary					X	X	X	X	X	X	
	North Webster High School					X	X	X	X	X		

Springhill Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding	Sinkhole*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*
Public Health	Springhill Medical Center					X	X	X	X	X	X	

* There are no critical facilities vulnerable to the hazard.

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Appendix D: Plan Adoption

WEBSTER PARISH POLICE JURY

RESOLUTION #011- 2016

A RESOLUTION ADOPTING THE
WEBSTER PARISH HAZARD MITIGATION PLAN 2016

WHEREAS the PARISH OF WEBSTER has prepared a multi-hazard mitigation plan hereby known as the WEBSTER PARISH HAZARD MITIGATION PLAN 2016 in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS THE WEBSTER PARISH POLICE JURY has participated in the process to prepare a DMA compliant Hazard Mitigation Plan based in the FEMA guidance available in the How to Guides;

WHEREAS THE WEBSTER PARISH POLICE JURY is participating in the Hazard Mitigation Plan prepared by the WEBSTER Parish Government under the oversight of a Steering Committee comprised of Parish-Wide representatives;

WHEREAS WEBSTER Parish and local city representatives and governments have participated in the mitigation planning process;

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

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

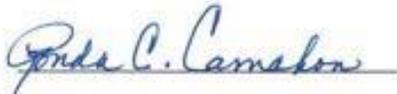
WHEREAS adoption of the Plan is required prior to further consideration for FEMA funding under the following programs:

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

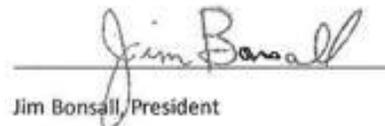
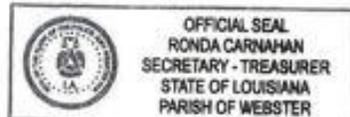
Therefore, THE WEBSTER PARISH POLICE JURY does hereby adopt the WEBSTER Parish Hazard Mitigation Plan Update 2016.

ADOPTED by a vote of 12 YEA and 0 NAY, and 0 ABSENT,

on this the 6th day of September, 2016.



Ronda C. Carnahan, Secretary-Treasurer



Jim Bonsall, President

WEBSTER PARISH POLICE JURY

TOWN OF COTTON VALLEY
RESOLUTION
A RESOLUTION ADOPTING THE
WEBSTER PARISH HAZARD MITIGATION PLAN 2016

WHEREAS the PARISH OF WEBSTER has prepared a multi-hazard mitigation plan hereby known as the WEBSTER PARISH HAZARD MITIGATION PLAN 2016 in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS THE TOWN OF COTTON VALLEY has participated in the process to prepare a DMA compliant Hazard Mitigation Plan based in the FEMA guidance available in the How to Guides;

WHEREAS, THE TOWN OF COTTON VALLEY is participating in the Hazard Mitigation Plan prepared by the WEBSTER Parish Government under the oversight of a Steering Committee comprised of Parish-Wide representatives;

WHEREAS WEBSTER Parish and local city representatives and governments have participated in the mitigation planning process;

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

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

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

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

Therefore, the TOWN OF COTTON VALLEY does hereby adopt the WEBSTER Parish Hazard Mitigation Plan Update 2016.

ADOPTED by a vote of 5 in favor and 0 against, and 0 abstaining, on this the 13
day of Sept, 2016.

Comandis Phelgins

Myra Felburna

TOWN OF CULLEN

RESOLUTION

A RESOLUTION ADOPTING THE
WEBSTER PARISH HAZARD MITIGATION PLAN 2016

WHEREAS the PARISH OF WEBSTER has prepared a multi-hazard mitigation plan hereby known as the WEBSTER PARISH HAZARD MITIGATION PLAN 2016 in accordance with the Disaster Mitigation Act of 2000; and

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

WHEREAS the Town of Cullen is participating in the Hazard Mitigation Plan prepared by the WEBSTER Parish Government under the oversight of a Steering Committee comprised of Parish-Wide representatives;

WHEREAS WEBSTER Parish and local city representatives and governments have participated in the mitigation planning process;

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

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

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

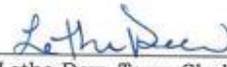
- Pre-Disaster Mitigation
- Hazard Mitigation Grant Program
- Flood Mitigation Assistance Program

Therefore, the Town of Cullen does hereby adopt the WEBSTER Parish Hazard Mitigation Plan Update 2016.

CERTIFICATION

Said resolution was read and considered for adoption by the Mayor and the Board of Alderman on the 26th day of September, 2016, upon Motion of **GARY SULLIVAN** and second by **BARBARA GREEN**, and was adopted with the following vote:

YEA: (4) ABSENT: (1) NAY: (0) ABSTAIN: (0)


Letha Dew, Town Clerk

RESOLUTION

A Resolution of the Municipalities of the Parish of Webster adopting the approved 2016 Webster Parish Hazard Mitigation Plan and therefore establishing and unifying the Parish of Webster under on Hazard Mitigation Plan as provided by State and Federal Regulations.

WHEREAS: The Webster Parish Police Jury and the Webster Parish Office of Homeland Security has developed a Hazard Mitigation Plan for the Parish of Webster, State of Louisiana, and

WHEREAS: The Hazard Mitigation Plan for Webster Parish has been Submitted and approved by the Department of Justice of the United States of America, and

WHEREAS: The Village of Dixie Inn as a municipality of the Parish of Webster, State of Louisiana, and in accordance with all current State and Federal Regulations, and

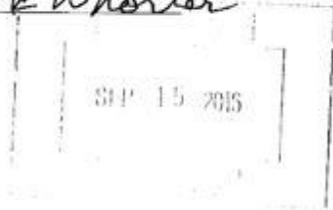
WHEREAS: The Village of Dixie Inn is in complete agreement with the terms and conditions of the approved Webster Parish Hazard Mitigation Plan and the impact of the Hazard Mitigation Plan for all of Webster Parish.

THEREFORE BE IT RESOLVED, that on this the 12 TH day of SEPTEMBER, 2012, the Dixie Inn Council does hereby adopt the approved Hazard Mitigation Plan of Webster Parish for the Village of Dixie Inn, on a motion made by KAY STRATTON, duly seconded by CONNIE WOODS and approved by the following vote:

Yea: 3 Nay: 0 Abstain: 0 Absent: 0

Lane Rogers
Clerk

Ora Nell McWhorter
Mayor



VILLAGE OF DOYLINE**RESOLUTION****A RESOLUTION ADOPTING THE
WEBSTER PARISH HAZARD MITIGATION PLAN 2016**

WHEREAS the PARISH OF WEBSTER has prepared a multi-hazard mitigation plan hereby known as the WEBSTER PARISH HAZARD MITIGATION PLAN 2016 in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the VILLAGE OF DOYLINE has participated in the process to prepare a DMA compliant Hazard Mitigation Plan based in the FEMA guidance available in the How to Guides;

WHEREAS the VILLAGE OF DOYLINE is participating in the Hazard Mitigation Plan prepared by the WEBSTER Parish Government under the oversight of a Steering Committee comprised of Parish-Wide representatives;

WHEREAS WEBSTER Parish and local city representatives and governments have participated in the mitigation planning process;

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

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

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

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

Therefore, the VILLAGE OF DOYLINE does hereby adopt the WEBSTER Parish Hazard Mitigation Plan Update 2016.

ADOPTED by a vote of 2 in favor and 0 against, 0 abstaining, and Jim Brown Jr. absent on this the 12th day of September, 2016.

A handwritten signature in black ink, appearing to read "Gary J. Carter", written over a horizontal line.

Mayor Gary Carter

VILLAGE OF DUBBERLY

RESOLUTION

A RESOLUTION ADOPTING THE
WEBSTER PARISH HAZARD MITIGATION PLAN 2016

WHEREAS the PARISH OF WEBSTER has prepared a multi-hazard mitigation plan hereby known as the WEBSTER PARISH HAZARD MITIGATION PLAN 2016 in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS THE VILLAGE OF DUBBERLY has participated in the process to prepare a DMA compliant Hazard Mitigation Plan based in the FEMA guidance available in the How to Guides;

WHEREAS THE VILLAGE OF DUBBERLY is participating in the Hazard Mitigation Plan prepared by the WEBSTER Parish Government under the oversight of a Steering Committee comprised of Parish-Wide representatives;

WHEREAS WEBSTER Parish and local city representatives and governments have participated in the mitigation planning process;

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

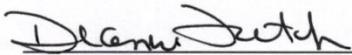
WHEREAS the Plan has been recommended for adoption by the steering committee;

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

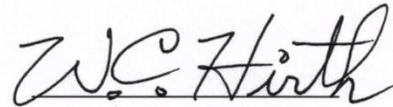
- Pre-Disaster Mitigation
- Hazard Mitigation Grant Program
- Flood Mitigation Assistance Program

Therefore, the VILLAGE OF DUBBERLY does hereby adopt the WEBSTER Parish Hazard Mitigation Plan Update 2016.

ADOPTED by a vote of 3 in favor and 0 against, and 0 abstaining, on this the 12TH day of SEPT, 2016.



Dianne Futch – Clerk



W. C. Hirth - Mayor

VILLAGE OF HEFLIN**RESOLUTION 2016 – 005****A RESOLUTION ADOPTING THE
WEBSTER PARISH HAZARD MITIGATION PLAN 2016**

WHEREAS the PARISH OF WEBSTER has prepared a multi-hazard mitigation plan hereby known as the WEBSTER PARISH HAZARD MITIGATION PLAN 2016 in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS **VILLAGE OF HEFLIN** has participated in the process to prepare a DMA compliant Hazard Mitigation Plan based in the FEMA guidance available in the How to Guides;

WHEREAS **VILLAGE OF HEFLIN** is participating in the Hazard Mitigation Plan prepared by the WEBSTER Parish Government under the oversight of a Steering Committee comprised of Parish-Wide representatives;

WHEREAS WEBSTER Parish and local city representatives and governments have participated in the mitigation planning process;

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

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

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

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

Therefore, the **VILLAGE OF HEFLIN** does hereby adopt the WEBSTER Parish Hazard Mitigation Plan Update 2016.

The above and foregoing Resolution was read in full at open legal session convened, was on motion of by Matt Austin and duly seconded by Catherine Lee, and adopted on the 19th day of September 2016 by the following vote:

AYES: Mr. Matt Austin and Mrs. Catherine Lee

Nays: none

Absent: Mr. Todd Leake

Abstain: none


Ralph L. James, Mayor
Sherry Limosnefo, Village Clerk

The following Resolution offered and adopted:

CITY OF MINDEN

RESOLUTION

A RESOLUTION ADOPTING THE
WEBSTER PARISH HAZARD MITIGATION PLAN 2016

WHEREAS, the PARISH OF WEBSTER has prepared a multi-hazard mitigation plan hereby known as the WEBSTER PARISH HAZARD MITIGATION PLAN 2016 in accordance with the Disaster Mitigation Act of 2000; and

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

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

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

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

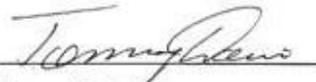
WHEREAS, the Plan has been recommended for adoption by the steering committee;

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

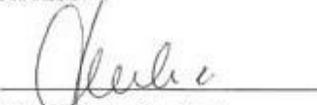
- Pre-Disaster Mitigation
- Hazard Mitigation Grant Program
- Flood Mitigation Assistance Program

Therefore, the City of Minden does hereby adopt the WEBSTER Parish Hazard Mitigation Plan Update 2016.

ADOPTED by a vote of five in favor and none against, and no one abstaining, on this the 6th day of September, 2016.


Tommy Davis, Mayor

ATTEST:


Michael Fluhr, City Clerk

FROM:Town of Sarepta TO:3711788 09/21/2016 15:45:38 #650 P.002/002

TOWN OF SAREPTA

RESOLUTION

A RESOLUTION ADOPTING THE
WEBSTER PARISH HAZARD MITIGATION PLAN 2016

WHEREAS the PARISH OF WEBSTER has prepared a multi-hazard mitigation plan hereby know as the WEBSTER PARISH HAZARD MITIGATION PLAN 2016 in accordance with Disaster Mitigation Act of 2000, and

WHEREAS TOWN OF SAREPTA has participated in the process to prepare a MMA compliant Hazard Mitigation Plan based on the FEMA guidance available in the How to Guides;

WHEREAS TOWN OF SAREPTA is participating in the Hazard Mitigation Plan prepared by the WEBSTER Parish Government under the oversight of a Steering Committee comprised of Parish-wide representatives;

WHEREAS WEBSTER Parish and local city representatives and governments have participated in mitigation planning process;

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

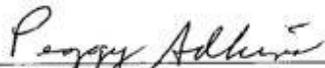
WHEREAS the plan has been recommended for adoption by the steering committee;

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

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

Therefore, the TOWN OF SAREPTA does hereby adopt the WEBSTER Parish Hazard Mitigation Plan Update 2016.

ADOPTED by a vote of 3 in favor and 0 against, 2 absent, on this 13th day of September, 2016.



Peggy Adkins, Mayor

Village of Shongaloo

RESOLUTION

A RESOLUTION ADOPTING THE
WEBSTER PARISH HAZARD MITIGATION PLAN 2016

WHEREAS the PARISH OF WEBSTER has prepared a multi-hazard mitigation plan hereby known as the WEBSTER PARISH HAZARD MITIGATION PLAN 2016 in accordance with the Disaster Mitigation Act of 2000; and

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

WHEREAS Village of Shongaloo is participating in the Hazard Mitigation Plan prepared by the WEBSTER Parish Government under the oversight of a Steering Committee comprised of Parish-Wide representatives;

WHEREAS WEBSTER Parish and local city representatives and governments have participated in the mitigation planning process;

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

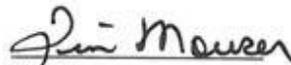
WHEREAS the Plan has been recommended for adoption by the steering committee;

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

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

Therefore, the Village of Shongaloo does hereby adopt the WEBSTER Parish Hazard Mitigation Plan Update 2016.

ADOPTED by a vote of 3 in favor and 0 against, and 0 abstaining, on this the 12th day of September, 2016.


Mayor



Town Of Sibley

P.O. Box 128
 345 N. Main Street
 Sibley, Louisiana 71073
 Phone (318) 377-0345 Fax (318) 377-0361

RESOLUTION NO. 2016-13

A RESOLUTION ADOPTING THE WEBSTER PARISH HAZARD MITIGATION PLAN 2016

MAYOR
 Jimmy Williams
 TOWN CLERK
 Sherry McCann, LMMC

ALDERMEN
 Doyle Chanler
 Richard Davis
 John Langford
 Larry Merritt
 Alan Myers

WHEREAS the PARISH OF WEBSTER has prepared a multi-hazard mitigation plan hereby known as the WEBSTER PARISH HAZARD MITIGATION PLAN 2016 in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the TOWN OF SIBLEY has participated in the process to prepare a DMA compliant Hazard Mitigation Plan based in the FEMA guidance available in the How to Guides;

WHEREAS the TOWN OF SIBLEY is participating in the Hazard Mitigation Plan prepared by the WEBSTER Parish Government under the oversight of a Steering Committee comprised of Parish-Wide representatives;

WHEREAS WEBSTER Parish and local city representatives and governments have participated in the mitigation planning process;

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

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

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

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

Therefore, the TOWN OF SIBLEY does hereby adopt the WEBSTER Parish Hazard Mitigation Plan Update 2016.

ADOPTED by a vote of 4 in favor and 0 against, and 1 abstaining, on this the 13 day of Sept, 2016.

Jimmy Williams, Mayor

This institution is an equal opportunity provider and employer

City of Springhill**RESOLUTION****A RESOLUTION ADOPTING THE
WEBSTER PARISH HAZARD MITIGATION PLAN 2016**

WHEREAS the PARISH OF WEBSTER has prepared a multi-hazard mitigation plan hereby known as the WEBSTER PARISH HAZARD MITIGATION PLAN 2016 in accordance with the Disaster Mitigation Act of 2000; and

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

WHEREAS the City of Springhill is participating in the Hazard Mitigation Plan prepared by the WEBSTER Parish Government under the oversight of a Steering Committee comprised of Parish-Wide representatives;

WHEREAS WEBSTER Parish and local city representatives and governments have participated in the mitigation planning process;

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

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

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

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

Therefore, the City of Springhill does hereby adopt the WEBSTER Parish Hazard Mitigation Plan Update 2016.

ADOPTED by a vote of 5 in favor and 0 against, and 0 abstaining, on this the 12th day of September, 2016.

Appendix E: State Required Worksheets

During the planning process (Appendix A) the Hazard Mitigation Plan Update Steering Committee was provided state-required plan update process worksheets to be filled out by each jurisdiction. The worksheets were presented at the Kickoff Meeting by the contractor as tools for assisting in the update of the Hazard Mitigation Plan. The plan update worksheets allowed for collection of information such as planning team members, community capabilities, critical infrastructure and vulnerable populations and NFIP information. The following pages contain documentation of the worksheets.

Mitigation Planning Team

Name	Title	Agency	Address	Email	Phone
Jenny Reynolds	Director, OHSEP	Webster Parish Police Jury	410 Main St Minden, LA 71055	ohsep@websterparishla.org	318-464-5060
Gary Sexton	Sheriff	Webster Parish Sheriff's Office	401 Main St Minden, LA 71055	gsexton@webstersheriff.org	318-377-1515
Kip Mourad	Chief	Minden Fire Department	1213 Sheppard St Minden, LA 71055	eng1@suddenlinkmail.com	318-371-4232
Buster Flowers	Director, Transportation	Webster Parish School Board	1442 Sheppard St Minden, LA 71055	bflowers@websterpsb.org	318-426-6631
Jim Bonsal	President	Webster Parish Police Jury	410 Main St Minden, LA 71055	rcarnahan@suddenlinkmail.com	318-377-7564
Dennis Butcher	Director	Claiborne Parish OHSEP	507 W. Main Street, Homer, LA 71040	Claiborne.oep@claiborneparish.org	318-927-9118
Tommy Davis	Mayor	City of Minden	520 Broadway St Minden, LA 71055	mayor@mindenusa.com	318-377-2144
Carroll Breaux	Mayor	City of Springhill	101 Machen Dr Springhill, LA 71075	mayorbreaux@centurylink.net	318-539-5681
Comerdis Phillips	Mayor	Town of Cotton Valley	478 Resident St Cotton Valley, LA 71018	N/A	318-832-4283
Ray Mills	Mayor	Town of Cullen	405 Coyle Ave Cullen, LA 71021	N/A	318-994-2191
Peggy Adkins	Mayor	Town of Sarepta	24444 Highway 371 Sarepta, LA 71071	sareptamayor@gmail.com	318-453-4598
Jimmy Williams	Mayor	Town of Sibley	345 N. Main St Sibley, LA 71073	sibleymayor@suddenlinkmail.com	318-377-0345
Ava Neil McWhorter	Mayor	Village of Dixie Inn	60 Shell St Dixie Inn, LA 71055	N/A	318-377-6855
Gary T. Carter	Mayor	Village of Doyline	624 College St Doyline, LA 71023	N/A	318-745-2625

Name	Title	Agency	Address	Email	Phone
W.C. Hirth	Mayor	Village of Dubberly	3465 LA 531 Dubberly, LA 71024	N/A	318-371-9528
Ralph James	Mayor	Village of Heflin	122 N. Church St Heflin, LA 71039	N/A	318-377-9799
Tim L. Mouser	Mayor	Village of Shongaloo	119 Highway Alt 2 Shongaloo, LA 71072	N/A	318-846-2876

Capability Assessment

Webster Unincorporated

Worksheet 4.1: 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.

Webster Unincorporated

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

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	Yes	
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	
Staff		
Chief Building Official	No	
Floodplain Administrator	Yes	
Emergency Manager	Yes	
Community Planner	No	
Civil Engineer	Yes	
GIS Coordinator	Yes	
Grant Writer	Yes	
Other	No	
Technical		

Warning Systems / Service (Reverse 911, outdoor warning signals)	No	
Hazard Data & Information	Yes	
Grant Writing	Yes	
Hazus Analysis	Yes	
Other	No	
Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes/No	Comments
Capital Improvements project funding	No	
Authority to levy taxes for specific purposes	Yes	
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	
Other Funding Programs	Yes	
Education and Outreach		
Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.		
Program / Organization	Yes/No	Comments
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	No	
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 Cotton Valley

Worksheet 4.1: 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.		
Cotton Valley		
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		

Building Code	No	
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	
Fire Department ISO/PIAL rating	Yes	
Site plan review requirements	No	
Land Use Planning and Ordinances		
Zoning Ordinance	No	
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	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	No	Relies on parish
Mitigation Planning Committee	No	Relies on parish
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	No	Relies on parish
Staff		
Chief Building Official	No	
Floodplain Administrator	No	Relies on parish
Emergency Manager	No	Relies on parish

Community Planner	No	
Civil Engineer	No	Relies on parish
GIS Coordinator	No	Relies on parish
Grant Writer	No	Relies on parish
Other		
Technical		
Warning Systems / Service (Reverse 911, outdoor warning signals)	No	
Hazard Data & Information	No	Relies on parish
Grant Writing	No	Relies on parish
Hazus Analysis	No	Relies on parish
Other		
Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes/No	Comments
Capital Improvements project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	Yes	
Impact fees for new development	No	
Stormwater Utility Fee	No	
Community Development Block Grant (CDBG)	Yes	
Other Funding Programs	Yes	
Education and Outreach		
Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.		
Program / Organization	Yes/No	Comments

Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	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	

Town of Cullen

Worksheet 4.1: 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.		
Cullen		
Plans	Yes/No	Comments
Comprehensive / Master Plan	No	
Capital Improvements Plan	No	
Economic Development Plan	No	
Local Emergency Operations Plan	Yes	
Continuity of Operations Plan	No	

Transportation Plan	No	
Stormwater Management Plan	No	
Community Wildfire Protection Plan	No	
Other plans (redevelopment, recovery, coastal zone management)	No	
Building Code, Permitting and Inspections		
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	
Fire Department ISO/PIAL rating	Yes	
Site plan review requirements	No	
Land Use Planning and Ordinances		
Zoning Ordinance	No	
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		
<p>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.</p>		
Administration	Yes/No	Comments
Planning Commission	No	Relies on parish
Mitigation Planning Committee	No	Relies on parish

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

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	

Village of Dixie Inn

Worksheet 4.1: 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.		
Dixie Inn		
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		
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	
Fire Department ISO/PIAL rating	Yes	
Site plan review requirements	No	
Land Use Planning and Ordinances		
Zoning Ordinance	No	
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	Relies on parish
Mitigation Planning Committee	No	Relies on parish
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	No	Relies on parish
Staff		
Chief Building Official	No	
Floodplain Administrator	No	Relies on parish
Emergency Manager	No	Relies on parish
Community Planner	No	
Civil Engineer	No	Relies on parish
GIS Coordinator	No	Relies on parish
Grant Writer	No	Relies on parish
Other		
Technical		
Warning Systems / Service (Reverse 911, outdoor warning signals)	No	
Hazard Data & Information	No	Relies on parish
Grant Writing	No	Relies on parish
Hazus Analysis	No	Relies on parish
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.	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	

Village of Doyline

Worksheet 4.1: 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.

Doyline

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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		
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	
Fire Department ISO/PIAL rating	Yes	
Site plan review requirements	No	
Land Use Planning and Ordinances		
Zoning Ordinance	No	
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	Relies on parish
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	No	Relies on parish
Staff		
Chief Building Official	No	
Floodplain Administrator	No	Relies on parish
Emergency Manager	No	Relies on parish
Community Planner		
Civil Engineer	No	Relies on parish
GIS Coordinator	No	Relies on parish
Grant Writer	No	Relies on parish
Other	No	
Technical		
Warning Systems / Service (Reverse 911, outdoor warning signals)	No	
Hazard Data & Information	No	Relies on parish
Grant Writing	No	Relies on parish
Hazus Analysis	No	Relies on parish
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.	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	

Village of Dubberly

Worksheet 4.1: 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.

DUBBERLY

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		
Building Code	Yes	Relies on parish
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	
Fire Department ISO/PIAL rating	Yes	
Site plan review requirements	No	
Land Use Planning and Ordinances		
Zoning Ordinance	No	
Subdivision Ordinance	No	

Floodplain Ordinance	No	
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	No	
Flood Insurance Rate Maps	No	
Acquisition of land for open space and public recreation uses	No	
Other	No	
Administration and Technical		
Identify whether your community has the following administrative and technical capabilities. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.		
Administration	Yes/No	Comments
Planning Commission	No	
Mitigation Planning Committee	No	Relies on parish
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	No	
Staff		
Chief Building Official	No	
Floodplain Administrator	No	Relies on parish
Emergency Manager	No	Relies on parish
Community Planner	No	
Civil Engineer	No	Relies on parish
GIS Coordinator	No	Relies on parish
Grant Writer	No	Relies on parish
Other		
Technical		
Warning Systems / Service (Reverse 911, outdoor warning signals)	No	

Hazard Data & Information	No	Relies on parish
Grant Writing	No	Relies on parish
Hazus Analysis	No	Relies on parish
Other	No	
Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes/No	Comments
Capital Improvements project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	Yes	
Impact fees for new development	No	
Stormwater Utility Fee	No	
Community Development Block Grant (CDBG)	Yes	
Other Funding Programs	Yes	
Education and Outreach		
Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.		
Program / Organization	Yes/No	Comments
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	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	

Village of Heflin

Worksheet 4.1: 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.		
Heflin		
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		
Building Code	No	
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	
Fire Department ISO/PIAL rating	Yes	

Site plan review requirements	No	
Land Use Planning and Ordinances		
Zoning Ordinance	No	
Subdivision Ordinance	Yes	
Floodplain Ordinance	No	
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	No	
Flood Insurance Rate Maps	No	
Acquisition of land for open space and public recreation uses	No	
Other	No	
Administration and Technical		
<p>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.</p>		
Administration	Yes/No	Comments
Planning Commission	No	
Mitigation Planning Committee	No	
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	No	
Staff		
Chief Building Official	No	
Floodplain Administrator	No	Relies on parish
Emergency Manager	No	Relies on parish
Community Planner	No	
Civil Engineer	No	Relies on parish
GIS Coordinator	No	Relies on parish
Grant Writer	No	Relies on parish

Other	No	
Technical		
Warning Systems / Service (Reverse 911, outdoor warning signals)	No	
Hazard Data & Information	No	Relies on parish
Grant Writing	No	Relies on parish
Hazus Analysis	No	Relies on parish
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	No	
Impact fees for new development	No	
Stormwater Utility Fee	No	
Community Development Block Grant (CDBG)	Yes	
Other Funding Programs		
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	

City of Minden

Worksheet 4.1: 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.

Minden		
Plans	Yes/No	Comments
Comprehensive / Master Plan	No	
Capital Improvements Plan	Yes	
Economic Development Plan	Yes	
Local Emergency Operations Plan	Yes	
Continuity of Operations Plan	No	
Transportation Plan	No	
Stormwater Management Plan	No	
Community Wildfire Protection Plan	Yes	

Other plans (redevelopment, recovery, coastal zone management)	No	
Building Code, Permitting and Inspections		
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	
Fire Department ISO/PIAL rating	Yes	
Site plan review requirements	Yes	
Land Use Planning and Ordinances		
Zoning Ordinance	Yes	
Subdivision Ordinance	Yes	
Floodplain Ordinance	Yes	
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	Yes	
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	Yes	
Mitigation Planning Committee	No	Relies on Parish
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	
Staff		
Chief Building Official	Yes	

Floodplain Administrator	Yes	
Emergency Manager	Yes	
Community Planner		
Civil Engineer	No	Relies on Parish
GIS Coordinator	Yes	
Grant Writer	No	Relies on Parish
Other	No	
Technical		
Warning Systems / Service (Reverse 911, outdoor warning signals)	No	
Hazard Data & Information	No	Relies on Parish
Grant Writing	No	Relies on Parish
Hazus Analysis	No	Relies on Parish
Other		
Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes/No	Comments
Capital Improvements project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	Yes	
Impact fees for new development	No	
Stormwater Utility Fee	No	
Community Development Block Grant (CDBG)	Yes	
Other Funding Programs	Yes	
Education and Outreach		
Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.		

Program / Organization	Yes/No	Comments
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	Yes	
Natural Disaster or safety related school program	No	
Storm Ready certification	No	
Firewise Communities certification	No	
Public/Private partnership initiatives addressing disaster-related issues	No	
Other	No	

Town of Sarepta

Worksheet 4.1: 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.		
Sarepta		
Plans	Yes/No	Comments
Comprehensive / Master Plan	No	
Capital Improvements Plan	Yes	
Economic Development Plan	No	
Local Emergency Operations Plan	Yes	

Continuity of Operations Plan	No	
Transportation Plan	No	
Stormwater Management Plan	No	
Community Wildfire Protection Plan	No	
Other plans (redevelopment, recovery, coastal zone management)	No	
Building Code, Permitting and Inspections		
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	
Fire Department ISO/PIAL rating	Yes	
Site plan review requirements	No	
Land Use Planning and Ordinances		
Zoning Ordinance	No	
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	
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	Relies on parish

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

Village of Shongaloo

Worksheet 4.1: 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.

Shongaloo

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		
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score		
Fire Department ISO/PIAL rating	Yes/No	
Site plan review requirements	No	
Land Use Planning and Ordinances		
Zoning Ordinance	No	
Subdivision Ordinance	No	

Floodplain Ordinance	No	
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	No	
Flood Insurance Rate Maps	No	
Acquisition of land for open space and public recreation uses	No	
Other	No	
Administration and Technical		
Identify whether your community has the following administrative and technical capabilities. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.		
Administration	Yes/No	Comments
Planning Commission	No	
Mitigation Planning Committee	No	Relies on parish
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	No	
Staff		
Chief Building Official	No	
Floodplain Administrator	No	Relies on parish
Emergency Manager	No	Relies on parish
Community Planner	No	
Civil Engineer	No	Relies on parish
GIS Coordinator	No	Relies on parish
Grant Writer	No	Relies on parish
Other	No	
Technical		
Warning Systems / Service (Reverse 911, outdoor warning signals)	No	

Hazard Data & Information	No	Relies on parish
Grant Writing	No	Relies on parish
Hazus Analysis	No	Relies on parish
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	No	
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.	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	

Town of Sibley

Worksheet 4.1: 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.		
Sibley		
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		
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	no	
Fire Department ISO/PIAL rating	Yes	

Site plan review requirements	No	
Land Use Planning and Ordinances		
Zoning Ordinance	No	
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		
<p>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.</p>		
Administration	Yes/No	Comments
Planning Commission	No	
Mitigation Planning Committee	No	Relies on parish
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	No	Relies on parish
Staff		
Chief Building Official	No	
Floodplain Administrator	No	Relies on parish
Emergency Manager	No	Relies on parish
Community Planner	No	
Civil Engineer	No	Relies on parish
GIS Coordinator	No	Relies on parish
Grant Writer	No	Relies on parish

Other	No	
Technical		
Warning Systems / Service (Reverse 911, outdoor warning signals)	No	
Hazard Data & Information	No	Relies on parish
Grant Writing	No	Relies on parish
Hazus Analysis	No	Relies on parish
Other		
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.	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	

City of Springhill

Worksheet 4.1: 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.

Springhill

Plans	Yes/No	Comments
Comprehensive / Master Plan	No	
Capital Improvements Plan	No	
Economic Development Plan	Yes	
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		
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	
Fire Department ISO/PIAL rating	Yes	
Site plan review requirements	No	
Land Use Planning and Ordinances		
Zoning Ordinance	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	Yes	
Other	No	
Administration and Technical		
<p>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.</p>		
Administration	Yes/No	Comments
Planning Commission	No	
Mitigation Planning Committee	No	Relies on parish
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	
Staff		

Chief Building Official	No	
Floodplain Administrator	No	Relies on parish
Emergency Manager	No	Relies on parish
Community Planner	No	
Civil Engineer	No	Relies on parish
GIS Coordinator	No	Relies on parish
Grant Writer	No	Relies on parish
Other	No	
Technical		
Warning Systems / Service (Reverse 911, outdoor warning signals)	No	
Hazard Data & Information	No	Relies on parish
Grant Writing	No	Relies on parish
Hazus Analysis	No	Relies on parish
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	N	
Stormwater Utility Fee	N	
Community Development Block Grant (CDBG)	Yes	
Other Funding Programs	Yes	
Education and Outreach		
Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.		

Program / Organization	Yes/No	Comments
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	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	Yes	
Other	No	

	Fire Dept	Fire Search and Rescue	224 West McKinley Avenue	Dixie Inn	32.5865 0998	- 93.36813 48	150,000	2009	Metal
	Webster Parish Fire District 3 Station No. 3	Fire Search and Rescue	120 West McKinley Avenue	Dixie Inn	32.4237 4505	- 93.39799 804	above includes price	N/A	
	Dixie Inn Police Department	Law Enforcement	Nearby: 60-63 Shell Street	Dixie Inn	32.5934 3647	- 93.33432 737	\$8,000	N/A	Unreinforced Masonry
	Dixie Inn Town Hall	Government	60 Shell Street	Dixie Inn	32.5933 53	- 93.33471 3	above includes value	N/A	Unreinforced Masonry
Doyline									
	Doyline High School	Education	376 College	Doyline	32.5363 8386	- 93.40694 156	368,000	N/A	Reinforced Masonry
	Webster Parish Fire District No. 3 - Doyline Volunteer Fire Dept.	Fire Search and Rescue	Nearby: 261 Main Street	Doyline	32.5363 1318	- 93.41033 913	3000	N/A	Metal
	Webster Parish Fire District 3 Station No. 2	Fire Search and Rescue	Nearby: 4330-4498 Harold Montgomery Crossing	Doyline	32.4796 4236	- 93.39888 195	500	N/A	Metal
	Doyline City Hall	Civil Government	624 College	Doyline	32.5359 34	- 93.41000 25	1500	N/A	Unreinforced Masonry
Dubberly									
	Dubberly Town Hall	Government	3465 Hwy 531	Dubberly	32.5374 23	- 93.24220 8	4,990	N/A	Unreinforced Masonry
	Dubberly Fire Department	Fire Protection	838 Hwy 532	Dubberly	32.5387 53	- 93.22201 5	16230	2004	Metal
Heflin									
	Heflin Fire Dept. Station No. 2	Fire Search and Rescue	2328 Lake Road	Heflin	32.4239 59	- 93.32248 1	495,499	N/A	Metal
	Heflin Fire Dept. Station No. 3	Fire Search and Rescue	190 Memorial Park Drive	Heflin	32.4594 71	- 93.26827 8		N/A	Metal
	Heflin Fire Dept. Station No. 1	Fire Search and Rescue	245 Memorial Park Drive	Heflin	32.4585 09	- 93.26701 5		N/A	Metal
	Heflin Police Department	Law Enforcement	122 North Church St	Heflin	32.4574 96	-93.26689		N/A	Unreinforced Masonry
	Heflin Town Hall	Civil Government	122 North Church St	Heflin	32.4574 96	-93.26689		N/A	Unreinforced Masonry

	Heflin Water Dept.	Services	Water	202 Memorial Park Drive	Heflin	32.4594 57	93.26777 8		N/A	Unreinforced Masonry
Minden										
	Northwest Louisiana Technical College	Education		Nearby: 109 Harvey's Way	Minden	32.5857 5851	93.26302 202	698,000	2013	Steel
	Webster Jr. High	Education		700 East Union Street	Minden	32.6114 2795	93.27242 483	225000	N/A	Concrete
	J.E. Harper School	Education		Germantown Road	Minden	32.6346 7686	93.26862 796	150000	N/A	Concrete
	E.S. Richardson Elementary School	Education		West Todd Street	Minden	32.6289 7626	93.28094 963	65000	N/A	Concrete
	Minden High School	Education		400 South College Street	Minden	32.6192 948	93.28887 045	710000	N/A	Concrete
	JL Jones Elementary	Education		District Drive	Minden	32.6036 0979	93.28130 363	87000	N/A	Concrete
	JA Phillips Middle School	Education		Durwood Drive	Minden	32.6006 7197	93.27827 764	46000	N/A	Concrete
	Webster Parish Achievement Center	Education		Constable Street	Minden	32.6254 8479	93.29120 423	80000	N/A	Concrete
	Webster Parish Office of Communications District One	Emergency Operations Center		Homer Road	Minden	32.6219 9903	93.26676 518	1200	N/A	Concrete
	City of Minden Central Fire Station	Fire Search and Rescue		1213 Sheppard Street	Minden	32.6153 4872	93.27981 306	75000	N/A	Concrete
	MFD Station 3	Fire Search and Rescue		Nearby: Rosehill Lane	Minden	32.6319 9816	93.27226 918	30000	N/A	Concrete
	MFD Station 2	Fire Search and Rescue		Nearby: 111-199 North Middle Landing Road	Minden	32.6079 0107	93.30038 126	20000	N/A	Concrete
	Minden Police Department & Marshal's Office	Law Enforcement		Nearby: 204-208 Gleason Street	Minden	32.6142 4941	93.28650 978	50970	N/A	Concrete
	Extension Service Webster Parish Office	Civil Government		Nearby: Temple Drive	Minden	32.6234 5846	93.25363 243	92000	N/A	Concrete

	Webster Parish Community Services - Head Start Administration Center	Civil Government	Nearby: Chevrolet Street	Minden	32.6162 9474	- 93.28416 694	60000	N/A	Concrete
	USDA Service Center	Civil Government	216 Broadway Street	Minden	32.6116 607	- 93.28950 698	74000	N/A	Concrete
	Minden City Hall	Civil Government	Nearby: 204-208 Gleason Street	Minden	32.6143 9919	- 93.28626 784	50970	N/A	Concrete
	Webster Parish Office of Family Support	Civil Government	Nearby: 301-321 Pine Street	Minden	32.6167 2837	- 93.29116 995	200000	N/A	Concrete
	Webster Parish Assessor's Office	Civil Government	103 South Monroe Street	Minden	32.6164 0443	- 93.28784 501	60000	N/A	Concrete
	Webster Parish Courthouse	Civil Government	410 Main Street	Minden	32.6136 4736	- 93.28833 589	310760	N/A	Concrete
	26th JDC Public Defender's Office	Civil Government	Nearby: 221 Main Street	Minden	32.6126 092	- 93.29020 719	8350	N/A	Concrete
	Webster Parish District Attorney's Office - Juveniles Division	Civil Government	sibley road	Minden	32.6067 2657	- 93.28920 091	6180	N/A	Concrete
	Department of Public Safety and Corrections	Civil Government	Nearby: 100-646 Industrial Drive	Minden	32.5935 8189	- 93.28966 401	42120	N/A	metal
	Webster Parish School Board Offices and Educational Services Center	Civil Government	1442 Sheppard Street	Minden	32.6178 9121	- 93.27190 968	713660	N/A	Concrete
	Webster Parish Sheriff Office	Law Enforcement	401 Main st	Minden	32.6138 89	- 93.28895 4	292530	N/A	Concrete
	Minden Airport	Airports and Airfields	341 Par Road 116	Minden	32.6421 7669	- 93.30045 034	320000	N/A	metal
Sarepta									
	North Webster Junior High	Education	6041 Louisiana Hwy 2	Sarepta	32.9003 05	- 93.44666 4	523,000	2010	Reinforced Masonry
	Webster Parish Fire District	Fire Search and Rescue	227 Sexton St.	Sarepta	32.8953 06	- 93.45288 5	2000	N/A	Metal
	Parish Maintenance Barn	Maintenance	6041 Louisiana 2	Sarepta	32.9022 5	- 93.44445 9	1500	N/A	Metal

	Sarepta Municipal Building	Civil Government	24444 Highway 371	Sarepta	32.8934 9055	- 93.45003 262	36680	N/A	Unreinforced Masonry
Shongalo o									
	North Webster Lower Elementary	Education	229 Louisiana 2 Alternate	Shongaloo	32.9450 5228	- 93.29618 361	390,000	2000	Unreinforced Masonry
	Shongaloo Fire Department	Fire Search and Rescue	14745 Louisiana 159	Shongaloo	32.9420 6644	- 93.29751 606	3,500	N/A	Metal
	Shongaloo Fire District 9 Station No. 2	Fire Search and Rescue	Nearby: 1385 Hill Top Road	Shongaloo	33.0093 5191	- 93.36473 072	1900	N/A	Metal
	Shongaloo Fire District 9	Fire Search and Rescue	14745 Louisiana 159	Shongaloo	32.9991 1066	- 93.31078 171	2800	N/A	Metal
	Shongaloo Civic Center	Civil Government	Nearby: Civic Center	Shongaloo	32.9420 7465	- 93.29755 713	3000	N/A	Unreinforced Masonry
Sibley									
	Lakeside Junion-Senior High School	Education	9090 U.S. Highway 371	Sibley	32.5172 7045	- 93.30327 217	378,000	2003	Reinforced Masonry
	Sibley Volunteer Fire Dept.	Fire Search and Rescue	Hinton Street	Sibley	32.5346 3909	- 93.29538 659	750	N/A	Metal
	Sibley Town Hall	Civil Government	345 North Main	Sibley	32.5427 32	- 93.29567 4	99500	N/A	Unreinforced Masonry
	Civic Center	Public Service & Library	163 SE 4th Avenue	Sibley	32.5346 71	- 93.29391 3	15000	N/A	Unreinforced Masonry
Springhil l									
	Browning Elementary School	Education	505 Herrington Drive	Springhill	33.0146 0146	- 93.46901 549	180,000	N/A	Concrete
	North Webster High School	Education	101 South Arkansas Street	Springhill	33.0027 9697	- 93.46612 314	601610	N/A	Concrete
	Brown Upper Elementary	Education	804 4th Street Southwest	Springhill	32.9958 5303	- 93.46495 903	201450	N/A	Concrete
	Springhill Fire Department	Fire Search and Rescue	110 South Main Street	Springhill	33.0013 4958	- 93.46143 29	29150	N/A	Concrete

	Springhill Fire Department No. 2	Fire Search and Rescue	Nearby: 100-538 14th Street Northwest	Springhill	33.0079 069	- 93.48473 139	see above	N/A	
	Springhill Police Department	Law Enforcement	Nearby: 1-99 Clinic Street	Springhill	33.0046 4909	- 93.46066 457	see above	N/A	
	Webster Parish Assesor's Office	Webster Parish Tax Assessor	1302 S. Arkansas	Springhill	32.9576 9095	- 93.45513 997	9900	N/A	Concrete
	Springhill Airport	Airports and Airfields	367 Springhill Airport Road	Springhill	32.9885 8847	- 93.41216 889	156000	N/A	Concrete
	Springhill City Hall	Civil Government	101 Machen	Springhill	33.0054 3	- -93.45964	29150	N/A	Concrete

Vulnerable Populations

Vulnerable Populations Worksheet

Webster Parish

Name	Street	City	Zip Code	Latitude	Longitude
All Hospitals (Private or Public)					
Minden Medical Center	1 Medical Plaza	Minden	71055	32.61638244	-93.28610013
Springhill Medical Center	2001 Doctors Drive	Springhill	71075	33.01023471	-93.44377379
Nursing Homes (Private or Public)					
Town and Country Nursing Home	614 Weston St	Minden	71055	32.616591	-93.305284
Meadowview Healthcare	400 Meadowview	Minden	71055	32.619756	-93.272811
Carrington Place	Nearby: 215 1st Street Northeast	Springhill	71075	33.00442524	-93.45986273
Mobile Home Parks					
RV Park	5970 Louisiana 2	Cotton Valley	71071	32.80883426	-93.42008792
Hallmark Village	Nearby: 1-99 East Street	Dixie Inn	71055	32.59220244	
Cinnamon Creek RV Park	12996 U.S. Highway 371	Dixie Inn	71055	32.59487348	-93.3353756
Southfield Mobile Home Village	Nearby: 101-149 Southfield Park Road	Dixie Inn	71055	32.59087106	-93.33967472
Lakeside RV Park	Hwy 80	Dixie Inn	71055		-93.3446797
Mclver RV Park	1167 Louisiana 163	Doyline	71023	32.51037207	-93.40026742
Culberson Trailer Park	Nearby: 1529 Shreveport Road	Minden	71055	32.607565	-93.312043

Pine Hills Trailer Park	915 Homer Rd	Minden	71055	32.623434	-93.262452
Robertson Trailer Park	Nearby: Robertson Drive	Minden	71055	32.604605	-93.310281
Leton RV and Trailer Park	Nearby: 9534-9764 Louisiana 2	Shongaloo	71072	32.86782191	-93.25616294
Colby Trailer Park	Nearby: 100-114 Colby Lane	Sibley	71073	32.55168813	-93.29528195
Madden RV Park	8440 U.S. Highway 371	Sibley	71073	32.49913994	-93.30714228
RW's RV Park	294 N.E. 4th St.	Sibley	71073	32.5444099	-93.29286783
Unknown	Nearby: 22085 State Highway 157	Springhill	71075	33.00878514	-93.48757195
Ratliff Mobile Home Park	Nearby: 101-127 Penny Circle	Springhill	71075	33.01413263	-93.45260937
Ratliff Mobile Home Park & Apartments	Nearby: 2-32 Reiny Circle	Springhill	71075	33.01541691	-93.45117925
Frank Anthony RV Park	301 West Church Street	Springhill	71075	33.00253742	-93.46300152

National Flood Insurance Program (NFIP)

Webster Parish

National Flood Insurance Program (NFIP)

	Unincorp.	Cotton Valley	Cullen	Dixie Inn	Doyline	Dubberly
Insurance Summary						
How many NFIP policies are in the community? What is the total premium and coverage?	66 policies; \$12,461,000.00 coverage;	0	0	0	0	0
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?	117; \$3440173.00	0	0	0	1; \$16035.75	0
How many structures are exposed to flood risk with in the community?	300	0	0	0	approx 150	0
Describe any areas of flood risk with limited NFIP policy coverage.	None known	None Known	None Known	None	few areas in need of remapping; many below meander line; many less value than coverage amount	None
Staff Resources						
Is the Community FPA or NFIP Coordinator certified?	Yes	yes	No	NO	Yes - Parish provided	YES
Is flood plain management an auxiliary	Yes	yes	yes	YES	Yes - Parish provided	YES - PARISH
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	permit review, GIS, inspections	Permit review is conducted via parish's contractor for floodplain	Parish provided services	parish floodplain contractor ensures permitting is within federal standards	Parish floodplain management contractor ensures permits are within	PARISH PROVIDED; PERMITTING
What are the barriers to running an effective NFIP program in the community, if any?	none	understaffed	understaffed/underfunded	underfunded/understaffed	underfunded/understaffed	UNDERSTAFFED
Compliance History						
Is the community in good standing with the NFIP?	Yes	yes	yes	yes	yes	Yes
Are there any outstanding compliance issues(i.e., current violations)?	none	no	no	no	no	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact(CAC)?	unknown	unknown	unknown	unknown	unknown	UNKNOWN
Is a CAV or CAC scheduled or needed? If so when?	no	no	no	no	no	NO
Regulation						
When did the community enter the NFIP?	7/15/1988	1977	7/15/1988	7/15/1988	7/15/1988	7/15/1977
Are the FIRMs digital or paper?	both	paper	paper	paper	paper	PAPER
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	meet	parish floodplain management contractor ensures permitting meets the federal standards	parish floodplain management contractor ensures permitting is within federal min	parish floodplain contractor ensures permitting is within federal standards	minimum standards	MINIMUM
Community Rating System (CRS)						
Does the community participate in CRS?	No	no	no	no	no	No
What is the community's CRS Class	N/A	N/A	N/A	N/A	N/A	N/A
Does the plan include CRS planning requirements?	N/A	N/A	N/A	N/A	N/A	N/A

	Heflin	Minden	Sarepta	Shongaloo	Sibley	Springhill
Insurance Summary						
How many NFIP policies are in the community? What is the total premium and coverage?	0	31 policies for \$ 5,985,000.00 premium \$32,062.00	0	0	2 policies \$218,200.00 coverage premium total \$617.00	27 policies, \$7,265,300.00 coverage and
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?	0	29; \$552,956.33	0	0	2; \$52504.09	16; \$542435.57
How many structures are exposed to flood risk with in the community?	0	40	0	0	22	30
Describe any areas of flood risk with limited NFIP policy coverage.	None	some homes valued less than cost of coverage	None	None	new flood records have proven new risk	no issue
Staff Resources						
Is the Community FPA or NFIP Coordinator certified?	no	No	Parish provided	Parish provided	Parish provided	no
Is flood plain management an auxiliary	yes	Yes	Yes	Yes	Yes	yes - parish
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	parish provided permitting	GIS	permitting	parish permitting	parish permitting	parish permitting
What are the barriers to running an effective NFIP program in the community, if any?	underfunded/understaffed	none	none	understaffed	understaffed	underfunded
Compliance History						
Is the community in good standing with the NFIP?	yes	Yes	yes	yes	yes	yes
Are there any outstanding compliance issues(i.e., current violations)?	no	no	no	no	No	no
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact(CAC)?	4 years ago	unknown	unknown	unknown	unknown	unknown
Is a CAV or CAC scheduled or needed? If so when?	no	no	no	no	no	no
Regulation						
When did the community enter the NFIP?	1988	7/15/1988	7/15/1988	7/15/1988	7/15/1988	7/15/1988
Are the FIRMs digital or paper?	paper	both	paper	paper	paper	paper
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	parish floodplain contractor ensures permitting meets federal standards	meet	meet	meet	meet	meet
Community Rating System (CRS)						
Does the community participate in CRS?	no	no	no	no	No	no
What is the community's CRS Class	N/A	N/A	N/A	N/A	N/A	N/A
Does the plan include CRS planning requirements?	N/A	N/A	N/A	N/A	N/A	N/A