Jefferson Davis

PARISH HAZARD MITIGATION UPDATE – 2016

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JEFFERSON DAVIS PARISH

HAZARD MITIGATION PLAN UPDATE

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October 14, 2016

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ACKNOWLEDGMENTS

This 2016 Jefferson Davis Parish Hazard Mitigation Plan Update was coordinated by the Jefferson Davis 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:

Jefferson Davis Parish
Village of Elton
Village of Fenton
City of Jennings
Town of Lake Arthur
Town of Welsh

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

Name	Title	Agency
Terry Duhon	Mayor of Jennings	City of Jennings
Cathy Hollingsworth	Mayor of Elton	Town of Elton
Robert B. Bertrand	Mayor of Lake Arthur	Town of Lake Arthur
Carolyn Louviere	Mayor of Welsh	Town of Welsh
Eddie Alfred, Jr.	Mayor of Fenton	Village of Fenton
Renee Hicks	Asst. Secretary/Treasurer	Jefferson Davis Parish Police Jury
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The 2016 Jefferson Davis Parish Hazard Mitigation Plan Update was written by the Stephenson Disaster Management Institute, Louisiana State University. Further comments should be directed to the Jefferson Davis Parish Office of Homeland Security and Emergency Preparedness: 304 N. State St, Jennings LA 70546

Contents

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 Jefferson Davis 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 Jefferson Davis 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 Jefferson Davis Parish Hazard Mitigation Plan is a multi-jurisdictional plan that includes the unincorporated areas of the parish, as well as the following jurisdictions which participated in the planning process:

- Village of Elton
- Village of Fenton
- City of Jennings
- Town of Lake Arthur
- Town of Welsh

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 Jefferson Davis 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

Jefferson Davis Parish, located in southwest Louisiana, possesses a total area of approximately 659 square miles (421,760 acres). Jennings, the Parish seat, is located 37 miles east of Lake Charles and 41 miles west of Lafayette along Interstate 10. The parish is adjacent to Calcasieu and Beauregard Parishes to the west, Allen Parish to the north, Evangeline and Acadia Parishes to the east, and Cameron and Vermilion Parishes to the south.

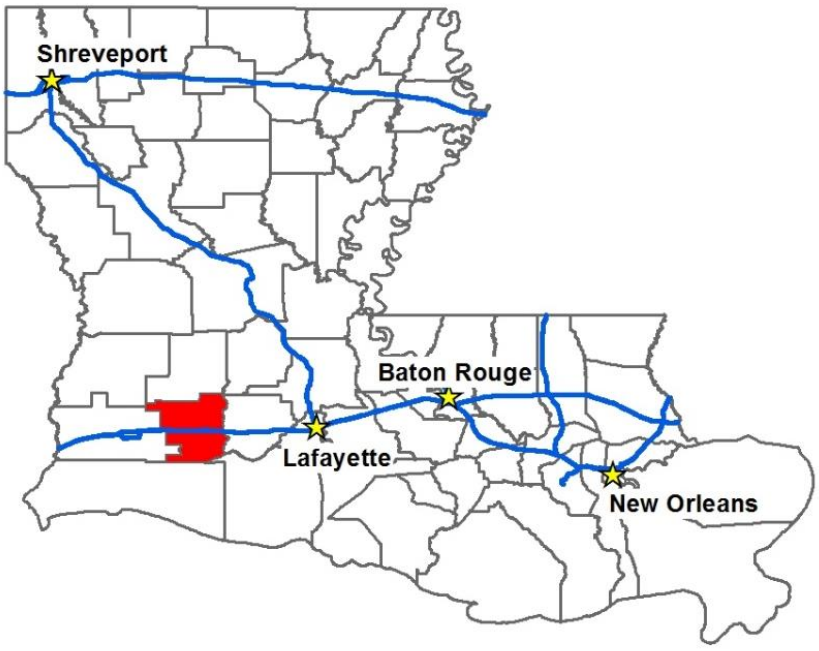


Figure 1-1: Location of Jefferson Davis Parish within the State of Louisiana

Most traffic traveling through Jefferson Davis Parish is concentrated on U.S. Interstate 10, which is an east-west axis in the center of the parish. U.S. Highway 90 parallels I-10. Other east-west roads include U.S. Highway 190 in the northernmost part of the parish, State Highway 109, which travels east from Fenton in the northern half of the parish, and State Highway 14, which travels along the southern border of the parish. State Highways 26 and 99 are the primary north-south routes, both traveling the length of the parish and intersecting all of the major east-west roads. U.S. Highway 165 also travels northeast-southwest, intersecting I-10 just before the western parish border.

Jefferson Davis Parish sits in an area of ecological transition, with vast prairies extending across hundreds of thousands of acres. Several bayous and lakes are in the Parish, including Lake Arthur, Bayou Chene, Bayou Lacassine, Bayou Queue de Tortue, and Bayou Nezpique, which forms most of the eastern parish border. The terrain of the parish consists of mostly flat land with elevations that range from 5 feet along the southwestern portion of the parish to approximately 50 feet in the northeast portion.

Jefferson Davis Parish is located in Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) Region 5.

As noted above, Jefferson Davis Parish is located in the central region of Louisiana.

Figure 1-2: Louisiana Homeland Security Regions

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

	2010 Census	2014 Census	Current Year (If Available)	Percent Change 2010 - 2014
Total Population	31,594	31,477	____	-0.40%
Population Density (Pop/Sq. Mi.)	48.5	____	____	____
Total Households	13,306	13,564	____	____

Economy

A hard working labor force, an excellent transportation network, abundant raw materials, and land for commercial and industrial development make Jefferson Davis Parish an ideal prospect for business investment. The parish's economic base is composed of health care services, shipbuilding, construction, agriculture, and oil field services. While health care is the fastest growing industry in Jefferson Davis Parish, the parish has historically been based in agriculture. Major agricultural products of the parish are soybeans, sweet potatoes, oats, cotton, rice, poultry, dairy goods, and catfish. Industry data for business patterns in Jefferson Davis Parish can be found in the table on the next page.

Table 1-2: Business Patterns in Jefferson Davis 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	1,461	126	32,074
Manufacturing	250-499	14	___
Health Care and Social Assistance	1,504	71	49,393
Mining, Quarrying, Oil and Gas Extraction	179	19	8,110
Transportation and Warehousing	324	32	13,581
Construction	413	59	18,153
Administration and Support and Waste Management and Remediation Services	168	22	7,197
Real Estate and Rental and Leasing	312	19	16,714
Wholesale Trade	383	32	14,285
Other Services (except Public Administration)	335	61	6,047
Accommodation and Food Services	696	47	8,213
Financial and Insurance	325	52	12,679
Professional, Scientific, and Technical Services	346	72	16,881
Information	32	6	1,495
Educational Services	20-99	2	___
Arts, Entertainment, and Recreation	34	6	409
Management of Companies and Enterprises	96	5	4,530
Agriculture, Forestry, Fishing and Hunting	20-99	8	1,646
Utilities	20-99	4	___

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 Jefferson Davis 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 Jefferson Davis 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 Jefferson Davis 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 Jefferson Davis Hazard Mitigation Plan were as follows:

- Section One Introduction
- Section Two Parish Profile
- Section Three Planning Process
- Section Four Risk Assessment
- Section Five Mitigation Strategy
- Section Six Plan Maintenance Procedures
- Section Seven Formal Approval and Adoption
- Tables
- 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 Jefferson Davis 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 Jefferson Davis Parish Hazard Mitigation Plan. The current goals are as follows:

- Reduce exposure to damage from flooding
- Ensure the delivery of critical services to the residents of the parish communities before, during, and after a hazard event
- Guide development to reduce the exposure of new and existing improvements to hazard events
- Enhance structures and infrastructure to reduce the impact of hazard events
- Increase public awareness and support of hazard mitigation

This plan update makes a number of textual changes throughout, but the most obvious changes are data related and structural edits. First, the 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: Introduction	Section 1: Introduction
Section 2: Community Profile	Section 1: Introduction
Section 3: Planning Process	Appendix A: Planning Process
Section 4: Risk Assessment	Section 2: Hazard Identification and Risk Assessment, Section 3: Capability Assessment
Section 5: Mitigation Strategy	Section 4: Mitigation Strategy
Section 6: Plan Maintenance	Appendix B: Plan Maintenance
Section 7: Formal Approval and Adoption	Appendix D: Plan Adoption
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 Jefferson Davis Parish and its municipalities. The extent of this risk is dictated primarily by its geographic location. Most significantly, Jefferson Davis Parish remains at high risk of water inundation from various sources, including flooding, tornadoes, and tropical cyclone 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 Jefferson Davis 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 Jefferson Davis 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			
Expansive Soils			
Fog			
Flooding	X	X	X
Extreme Heat			
Sinkholes			
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			
Levee Failure	X		X

+ Data deficiency

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 levee failure. Dam and levee failure both claim a data deficiency.

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

a) Drought
b) Flooding (backwater, riverine, localized stormwater event)
c) Thunderstorms (hail, lightning, wind)
d) Tornadoes
e) Tropical Cyclones (flooding and high winds)
f) Wildfires
g) Winter Storms
h) 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 and wildfires

The potential destructive power of tropical cyclones and flooding were determined to be the most prevalent hazards to the parish. Thirteen of the sixteen Presidential Declarations Jefferson Davis Parish has received resulted from either tropical cyclones (9 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 asses 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 Jefferson Davis is included in the hurricane risk assessment.

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

Table 2-2: Jefferson Davis Parish Major Disaster Declarations

Disaster Declaration Number	Date	Type of Disaster
315	10/13/1971	Tropical Cyclone – Hurricane Edith
3031	2/22/1977	Drought and Freezing
622	5/21/1980	Severe Storms and Flooding
835	7/17/1989	Tropical Cyclone – Tropical Storm Allison
956	8/26/1992	Tropical Cyclone – Hurricane Andrew
1169	3/18/1997	Severe Winter Storm
2337	9/11/2000	LA – Western Louisiana Fire Complex – 9/8/00
1437	10/3/2002	Tropical Cyclone – Hurricane Lili
1521	6/8/2004	Severe Storms and Flooding
1603	8/29/2005	Tropical Cyclone – Hurricane Katrina
1607	9/24/2005	Tropical Cyclone – Hurricane Rita
1668	11/2/2006	Severe Storms and Flooding
1786	9/2/2008	Tropical Cyclone – Hurricane Gustav
1792	9/13/2008	Tropical Cyclone – Hurricane Ike
4080	8/29/2012	Tropical Cyclone – Hurricane Isaac
4102	2/22/2013	Severe Storms and Flooding

Probability of Future Hazard Events

The probability of a hazard event occurring in Jefferson Davis Parish is estimated in the table on the following page. The percent chance of an event happening during any given year was calculated by posting past events and dividing by the time period. Unless otherwise indicated, the time period used to access probability followed the method used in the State of Louisiana's most current Hazard Mitigation Plan. The primary source for historical data used throughout the plan is the 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 table 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					
	Jefferson Davis (Unincorporated)	Elton	Fenton	Jennings	Lake Arthur	Welsh
Drought	12%	12%	12%	12%	12%	12%
Flooding	32%	12%	4%	36%	8%	8%
Thunderstorms (Hail)	8%	8%	8%	8%	8%	8%
Thunderstorms (Lightning)	48%	48%	48%	48%	48%	48%
Thunderstorms (Wind)	100%	100%	100%	100%	100%	100%
Tornadoes	72%	72%	72%	72%	72%	72%
Tropical Cyclones	20%	20%	20%	20%	20%	20%
Wildfires	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%
Winter Storms	16%	16%	16%	16%	16%	16%
Levee Failure	< 1%	< 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%). Tornadoes have a 72% annual chance of reoccurrence, followed by lightning (48%), and flooding for the incorporated area of Jennings (36%). Flood events in the remaining incorporated areas have a slightly lower chance of occurring annually. Tropical cyclones have a 20% annual chance of reoccurrence, followed by winter storms (16%), drought (12%), and hailstorms (8%). Wildfires (< 1%)and levee failure (<1%) have the lowest annual chance of occurrence in Jefferson Davis Parish.

Inventory of Assets for the Entire Parish

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

Within the entire planning area, there is an estimated value of $4,693,737,000 in structures throughout the parish. The tables on the following page provide the total estimated value for each type of structure by occupancy.

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

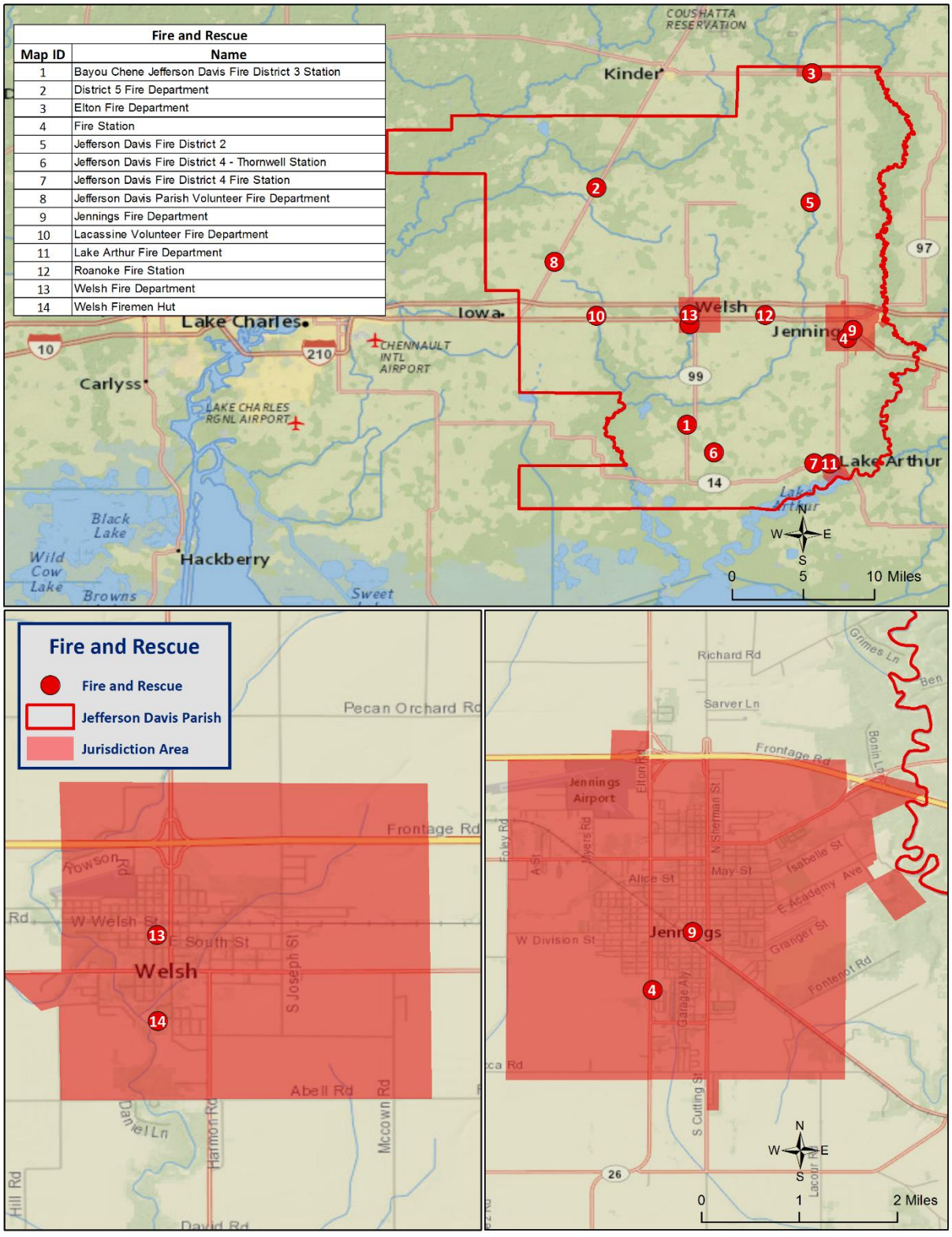
Occupancy	Jefferson Davis Parish	Unincorporated Jefferson Davis	Elton	Fenton
Agricultural	$45,320,000	$35,902,000	$176,000	$596,000
Commercial	$608,529,000	$125,115,000	$17,188,000	$7,082,000
Government	$38,808,000	$12,060,000	$942,000	$352,000
Industrial	$106,856,000	$47,341,000	$2,121,000	$1,310,000
Religion	$143,376,000	$35,066,000	$11,914,000	$90,000
Residential	$3,651,389,000	$1,646,610,000	$124,111,000	$52,550,000
Education	$99,459,000	$20,416,000	$3,306,000	$0
Total	$4,693,737,000	$1,922,510,000	$159,758,000	$61,980,000

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

Occupancy	Jennings	Lake Arthur	Welsh
Agricultural	$4,722,000	$426,000	$3,498,000
Commercial	$328,840,000	$48,152,000	$82,152,000
Government	$22,708,000	$1,576,000	$1,170,000
Industrial	$35,048,000	$10,786,000	$10,250,000
Religion	$68,260,000	$14,506,000	$13,540,000
Residential	$1,248,463,000	$266,709,000	$312,946,000
Education	$64,033,000	$7,010,000	$4,694,000
Total	$1,772,074,000	$349,165,000	$428,250,000

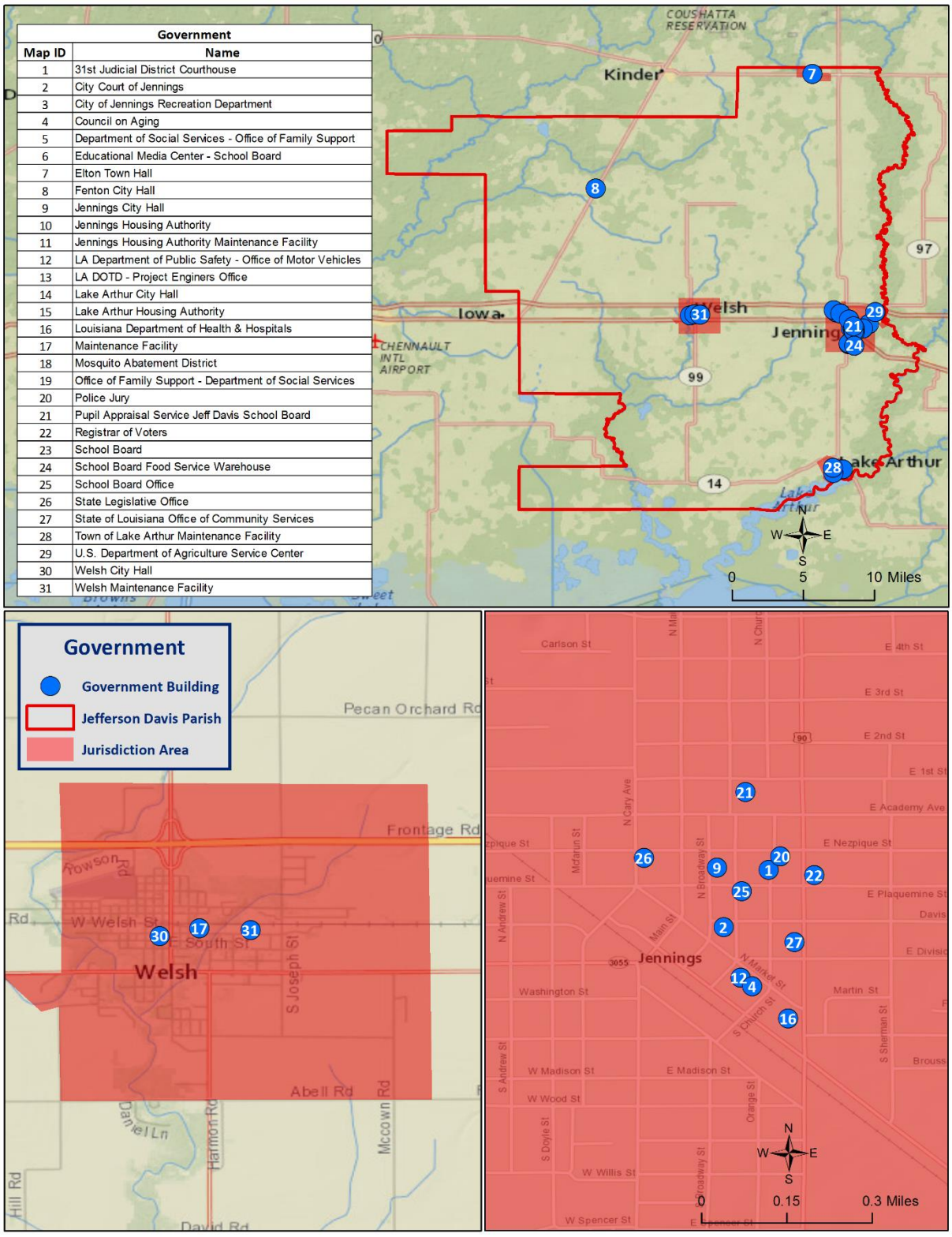
Essential Facilities of the Parish

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



Fire and Rescue	
Map ID	Name
1	Bayou Chene Jefferson Davis Fire District 3 Station
2	District 5 Fire Department
3	Elton Fire Department
4	Fire Station
5	Jefferson Davis Fire District 2
6	Jefferson Davis Fire District 4 - Thornwell Station
7	Jefferson Davis Fire District 4 Fire Station
8	Jefferson Davis Parish Volunteer Fire Department
9	Jennings Fire Department
10	Lacassine Volunteer Fire Department
11	Lake Arthur Fire Department
12	Roanoke Fire Station
13	Welsh Fire Department
14	Welsh Firemen Hut

Figure 2-1: Fire and Rescue in Jefferson Davis Parish



Government	
Map ID	Name
1	31st Judicial District Courthouse
2	City Court of Jennings
3	City of Jennings Recreation Department
4	Council on Aging
5	Department of Social Services - Office of Family Support
6	Educational Media Center - School Board
7	Elton Town Hall
8	Fenton City Hall
9	Jennings City Hall
10	Jennings Housing Authority
11	Jennings Housing Authority Maintenance Facility
12	LA Department of Public Safety - Office of Motor Vehicles
13	LA DOTD - Project Enginers Office
14	Lake Arthur City Hall
15	Lake Arthur Housing Authority
16	Louisiana Department of Health & Hospitals
17	Maintenance Facility
18	Mosquito Abatement District
19	Office of Family Support - Department of Social Services
20	Police Jury
21	Pupil Appraisal Service Jeff Davis School Board
22	Registrar of Voters
23	School Board
24	School Board Food Service Warehouse
25	School Board Office
26	State Legislative Office
27	State of Louisiana Office of Community Services
28	Town of Lake Arthur Maintenance Facility
29	U.S. Department of Agriculture Service Center
30	Welsh City Hall
31	Welsh Maintenance Facility

Figure 2-2: Government Buildings in Jefferson Davis Parish

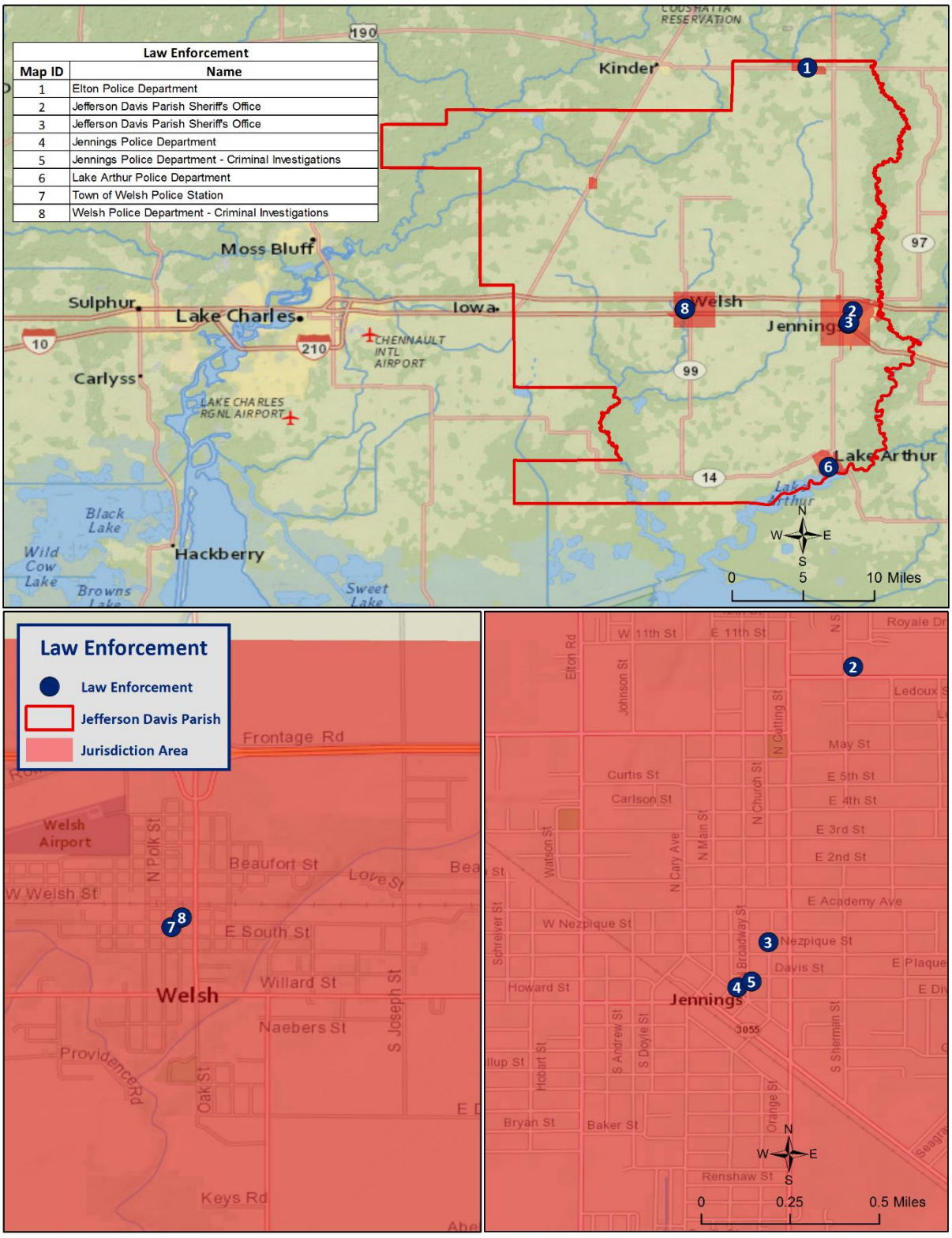


Figure 2-3: Law Enforcement Buildings in Jefferson Davis Parish

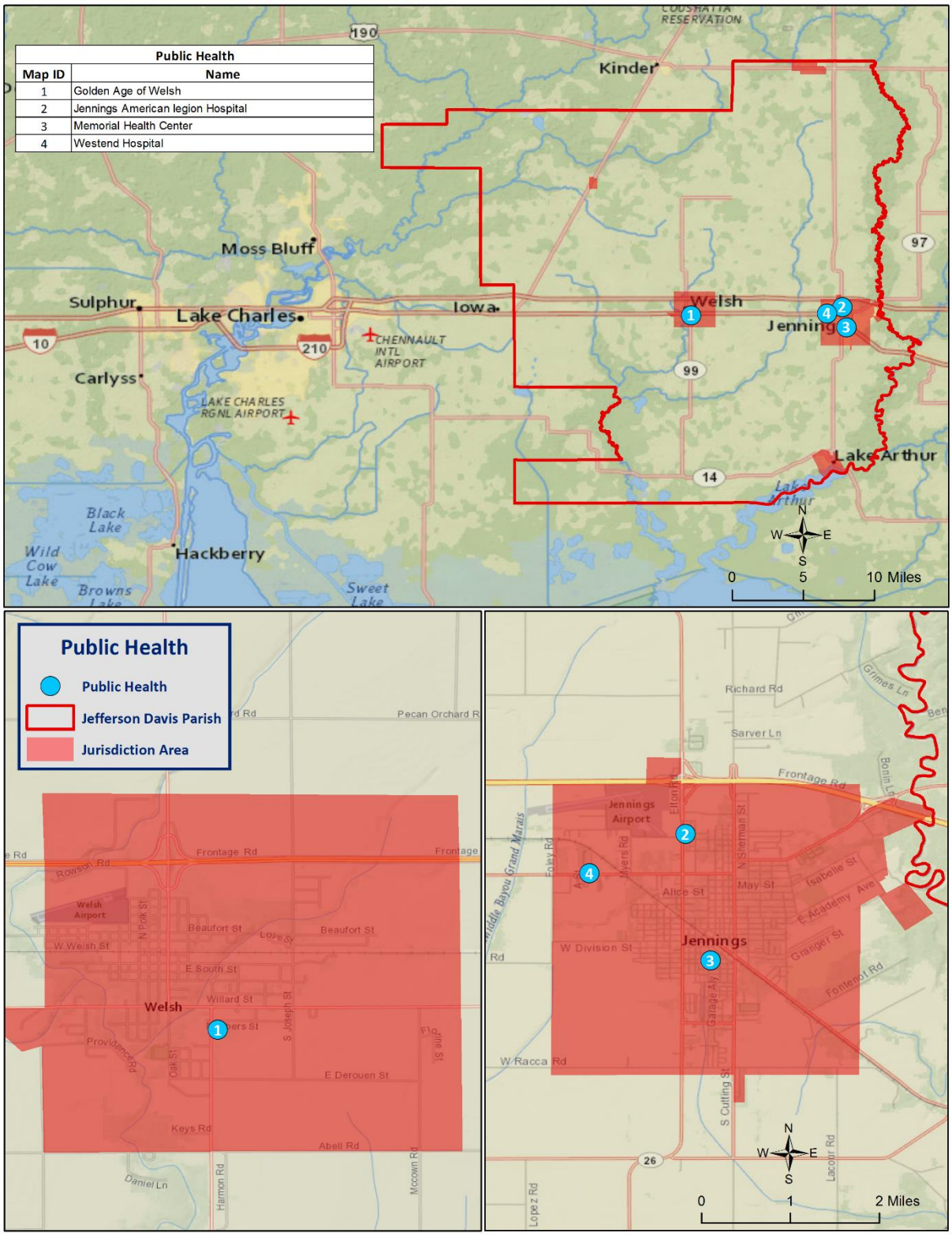


Figure 2-4: Public Health Buildings in Jefferson Davis Parish

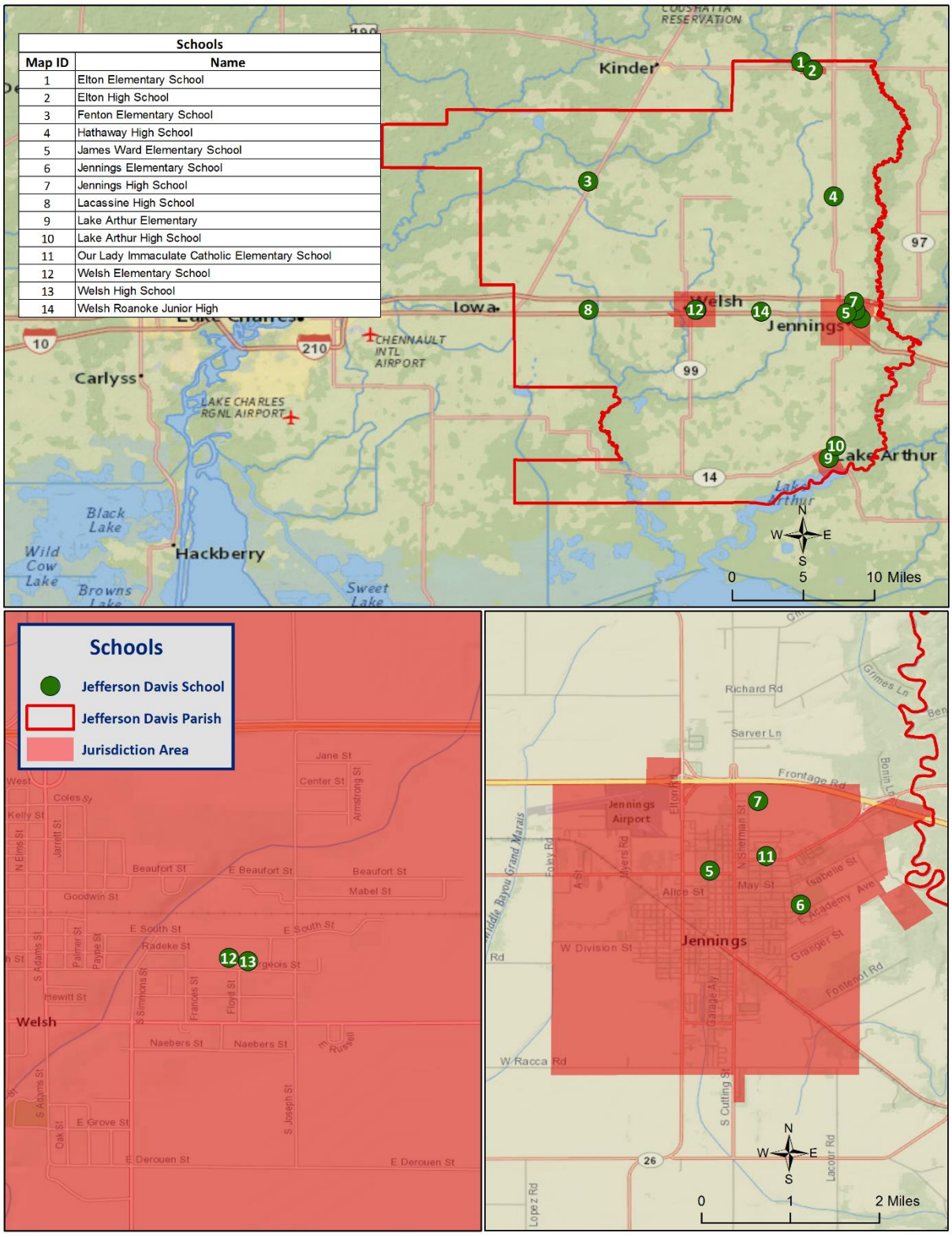


Figure 2-5: School Buildings in Jefferson Davis Parish

Future Development Trends

Jefferson Davis Parish experienced a decline in population and a growth in housing between the years of 2000 and 2014, going from a population of 31,506 with 12,824 housing units in 2000 to a population of 31,492 with 12,444 housing units in 2014. This decline in population was largely in the incorporated areas of Elton and Lake Arthur from the years 2000 to 2010, and in the incorporated areas of Fenton and Jennings from 2010 to 2014. The unincorporated area of Jefferson Davis Parish experienced a growth in population from the years of 2000 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 Jefferson Davis Parish

Total Population	Jefferson Davis Parish	Jefferson Davis Parish (Unincorporated)	Elton	Fenton	Jennings	Lake Arthur	Welsh
1-Apr-00	31,506	12,451	1,255	373	11,036	2,984	3,407
1-Apr-10	31,605	13,745	1,128	379	10,387	2,739	3,227
1-Jul-14	31,492	13,759	1,141	359	10,265	2,739	3,229
Population Growth between 2000 – 2010	0.3%	10.4%	-10.1%	1.6%	-5.9%	-8.2%	-5.3%
Average Annual Growth Rate between 2000 – 2010	0.0%	1.0%	-1.0%	0.2%	-0.6%	-0.8%	-0.5%
Population Growth between 2010 – 2014	-0.4%	0.1%	1.2%	-5.3%	-1.2%	0.0%	0.1%
Average Annual Growth Rate between 2010 – 2014	-0.09%	0.03%	0.29%	-1.32%	-0.29%	0.00%	0.02%

Table 2-6: Housing Growth Rate for Jefferson Davis Parish

Total Housing Units	Jefferson Davis Parish	Jefferson Davis Parish (Unincorporated)	Elton	Fenton	Jennings	Lake Arthur	Welsh
1-Apr-00	12,824	4,821	574	153	4,541	1,365	1,370
1-Apr-10	13,306	5,500	569	159	4,432	1,272	1,374
1-Jul-14	13,444	5,688	577	195	4,405	1,184	1,395
Housing Growth between 2000 – 2010	3.8%	14.1%	-0.9%	3.9%	-2.4%	-6.8%	0.3%
Average Annual Growth Rate between 2000 – 2010	0.4%	1.4%	-0.1%	0.4%	-0.2%	-0.7%	0.0%
Housing Growth between 2010 – 2014	1.0%	3.4%	1.4%	22.6%	-0.6%	-6.9%	1.5%
Average Annual Growth Rate between 2010 – 2014	0.3%	0.9%	0.4%	5.7%	-0.2%	-1.7%	0.4%

As shown in the previous tables, Jefferson Davis Parish has experienced slight growth in housing units and a decline in population from 2000 to 2014. Housing growth rates grew at 0.4% annually from 2000 to 2010, and at 0.3% annually from 2010 to 2014. Population grew from 2000 to 2010 at a rate less than 0.1% annually and decline at a rate of -0.09% annually from 2010 to 2014. From 2000 to 2010, the incorporated area of Elton had the largest decline in population at -10.1% overall, followed by the incorporated area of Lake Arthur at -8.2% overall. From 2010 to 2014, the incorporated area of Fenton had the largest decrease in population at -35.3%.

The unincorporated area of Jefferson Davis Parish experienced the largest increase in housing units from 2000 to 2010 at 14.1%, followed by the incorporated area of Fenton at 3.9%. From 2010 to 2014, the incorporated area of Fenton had the largest increase in housing units at 22.6% overall, followed by the unincorporated area of Jefferson Davis Parish at 3.4% overall.

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 Jefferson Davis 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	13,479	2,960	2,999	3,030
Value of Structures	$4,753,907,244	$1,043,951,651	$1,112,602,795	$1,170,760,215
# of People	31,523	6,923	6,957	6,985
Tropical Cyclones				
Structures	13,479	13,479	13,655	13,797
Value of Structures	$4,753,907,244	$4,753,907,244	$5,066,528,209	$5,331,363,250
# of People	31,523	31,523	31,681	31,808

Land Use

The Jefferson Davis Parish Land Use table is provided below. Residential, commercial, and industrial areas account for only 8% of the parish's land use. Agricultural land is the largest category at 331,111 acres, accounting for 74% of parish land. At 45,354 acres, wetlands account for 11% of parish lands, while 25,974 acres of forested areas account for 6% of parish lands. The parish also consists of 4,156 acres of water areas, accounting for 1% of all parish lands.

Table 2-8: Jefferson Davis Land Use
(Source: USGS Land Use Map)

Land Use	Acres	Percentage
Agricultural Land, Cropland, and Pasture	313,111	74%
Wetlands	45,354	11%
Forest Land (not including forested wetlands)	25,974	6%
Urban/Development	32,812	8%
Water	4,156	1%

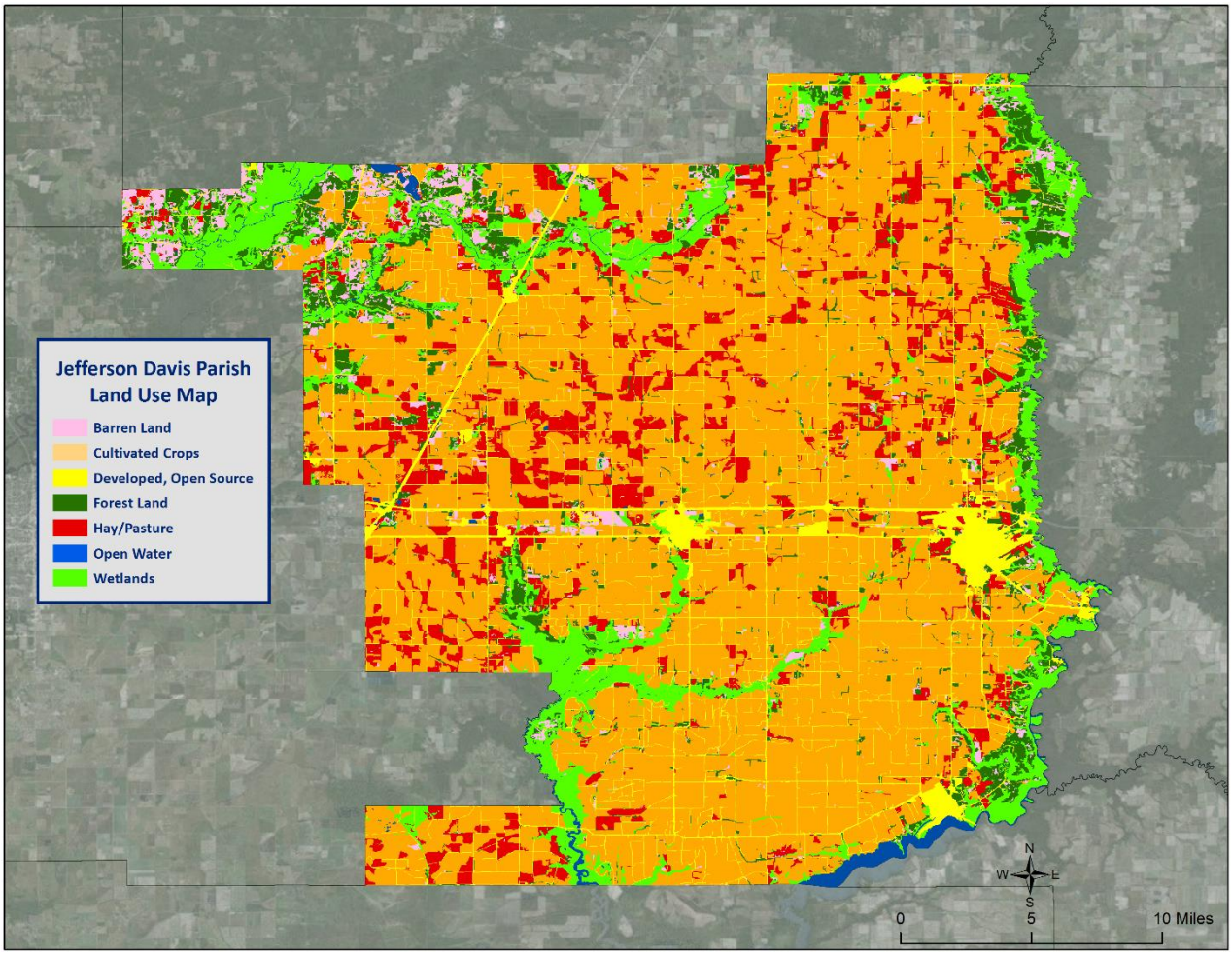


Figure 2-6: Jefferson Davis Parish Land Use Map
(Source: USGS Land Use Map)

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.

Below, *Table 2-9* displays the range and Palmer classifications of the PDSI index. *Figure 2-7* on the next page 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 Jefferson Davis Parish at the time this plan went to publication (*Figure 2-7*).

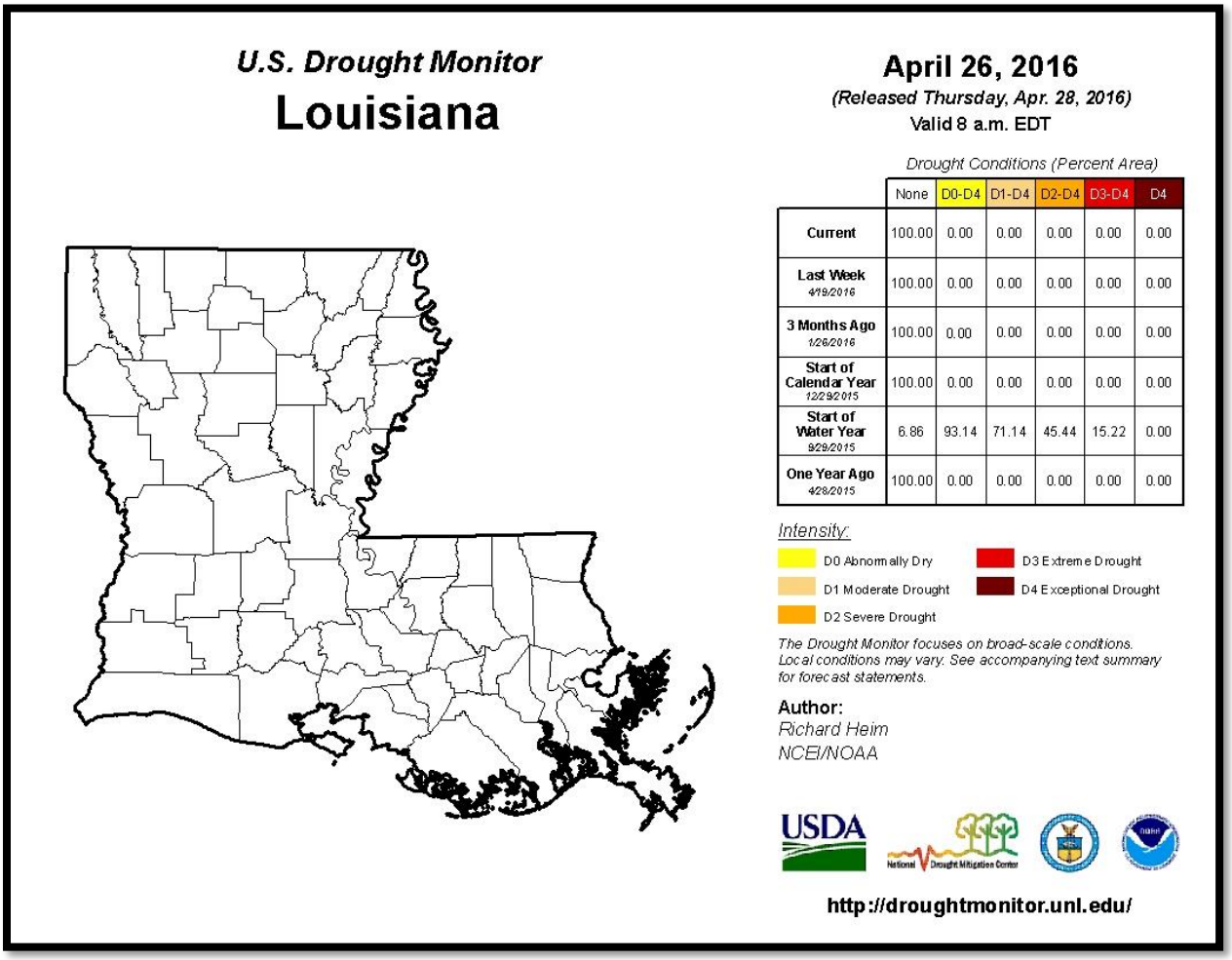


Figure 2-7: United States Drought Monitor for the State of Louisiana and its Parishes (Source: The National Drought Mitigation Center)

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 Jefferson Davis Parish is on the agricultural community.

Previous Occurrences / Extents

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

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

Date	Crop Damage	Palmer Classification
May 1996	$94,302	Moderate Drought
August 1998	$15,406,274	Severe Drought
December 2000	$14,572,599	Severe Drought

Frequency / Probability

Based on previous occurrences of three drought events in 25 years, the probability of drought occurrence in the planning area in any given year is 12%.

Estimated Potential Losses

According to the SHELDUS database, there have been three drought events that have caused some level of crop damage. The total agricultural damage from these events is $30,073,175, with an average cost of $10,024,392 per drought event. When annualizing the total cost over the 25-year record, total annual losses based on drought is estimated to be $1,202,927. *Table 2-11* presents an analysis of agricultural exposure that is susceptible to drought by major crop type for Jefferson Davis Parish.

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

Agricultural Exposure by Type for Drought						
Rice	Hay	Soybeans	Sod	Sugarcane	Wheat	Total
$90,976,689	$16,592,000	$9,050,019	$4,250,000	$859,618	$419,068	$122,147,394

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

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 2-8*.

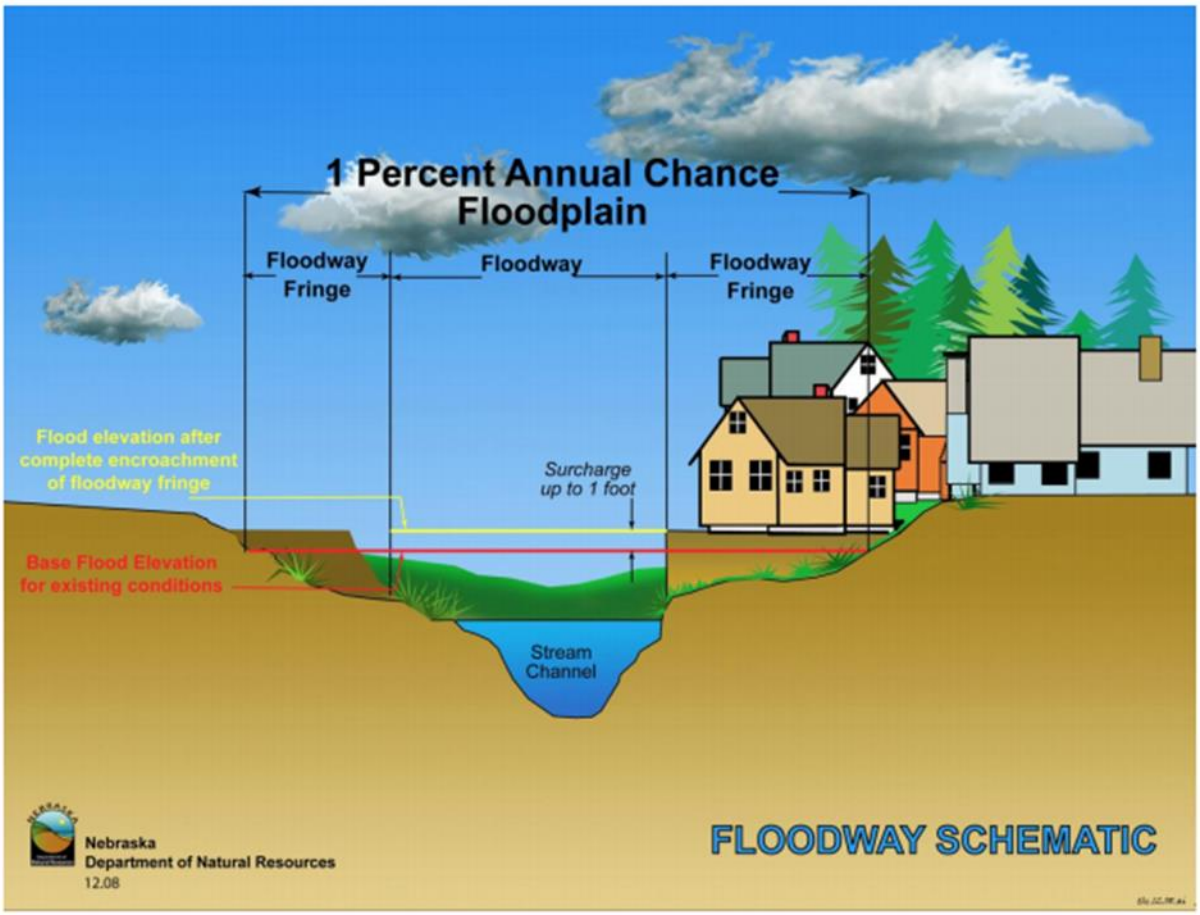


Figure 2-8: Schematic of 100-Year Floodplain. The Special Flood Hazard Area (SFHA) extends to the end of the floodway fringe.
(Source: Nebraska Department of Natural Resources)

A SFHA is the land area covered by the floodwaters of the base flood (red line in *Figure 2-8*), where the NFIP's floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies.

Property Damage

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

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

Soaking can also cause extensive damage to household goods. Wooden furniture may become warped, making it unusable, while other furnishings such as books, carpeting, mattresses, and upholstery 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 Jefferson Davis Parish are provided in the table below:

Table 2-12: Repetitive Loss Structures for Jefferson Davis Parish

Jurisdiction	Number of Structures	Residential	Commercial	Government	Total Claims	Total Claims Paid	Average Claim Paid
Jefferson Davis Parish (Unincorporated)	4	4	0	0	18	$173,953	$9,664
Elton	0	0	0	0	0	$0	$0
Fenton	0	0	0	0	0	$0	$0
Jennings	2	2	0	0	2	$16,945	$8,472
Lake Arthur	3	3	0	0	7	$90,574	$12,939
Welsh	1	1	0	0	2	$19,416	$9,708
Total	10	10	0	0	27	$281,472	$10,425

All 10 repetitive loss structures were able to be geocoded in order to provide an overview of where the repetitive loss structures were located throughout the parish. *Figure 2-9* shows the approximate location of the 10 structures, while *Figure 2-10* 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 and around the incorporated area of Lake Arthur.

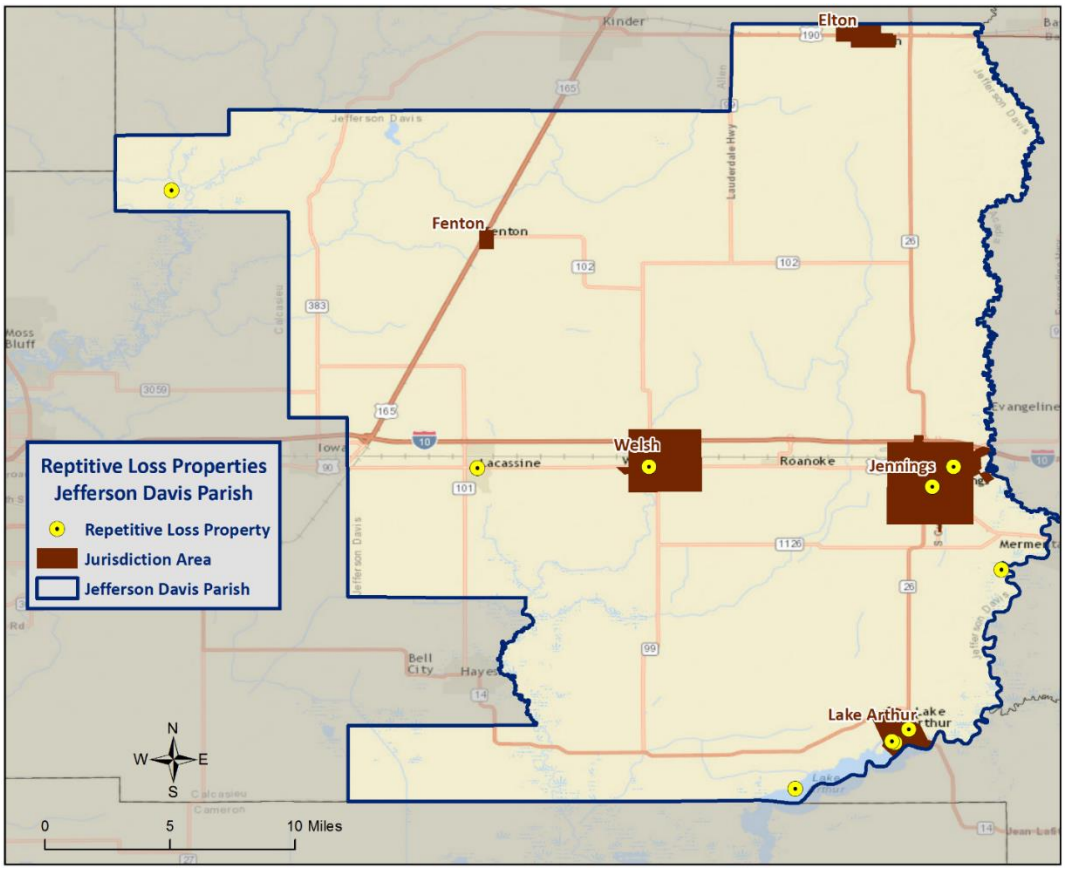


Figure 2-9: Repetitive Loss Properties in Jefferson Davis Parish

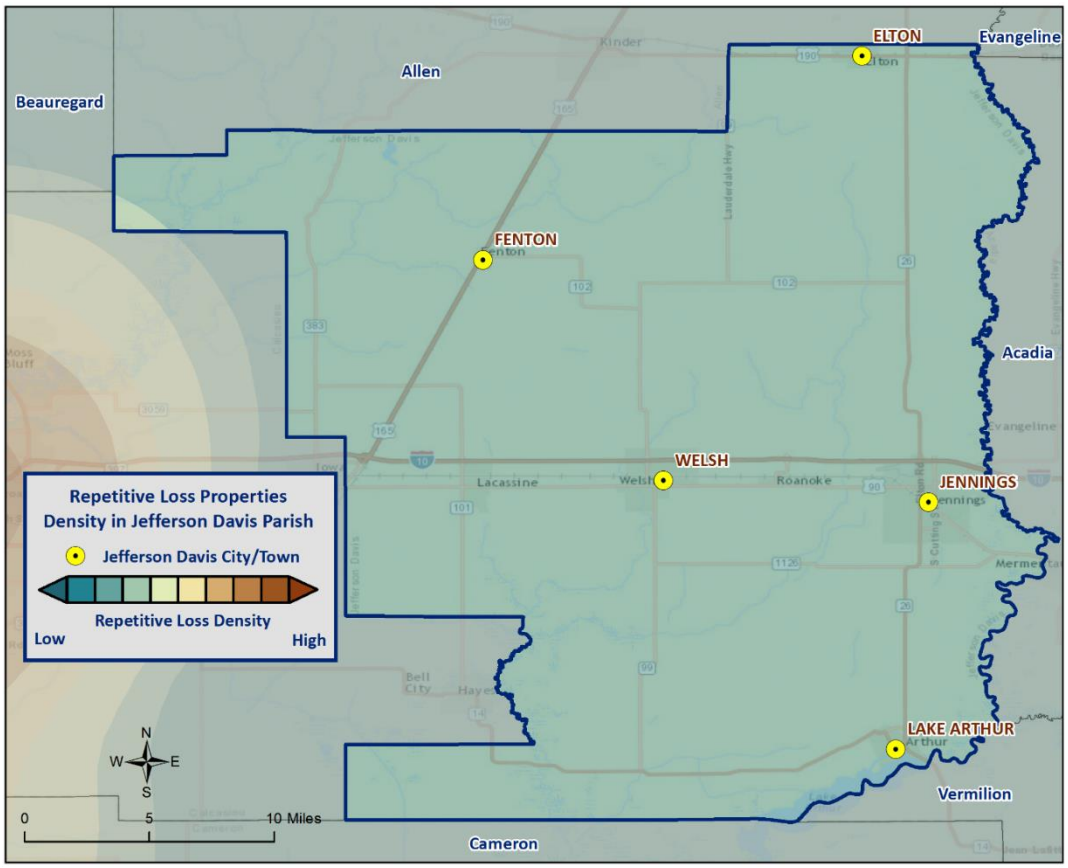


Figure 2-10: Repetitive Loss Property Densities in Jefferson Davis Parish

National Flood Insurance Program

Flood insurance statistics indicate that Jefferson Davis Parish has 971 flood insurance policies with the NFIP, with total annual premiums of $650,898. Jefferson Davis Parish and the incorporated areas of Elton, Fenton, Jennings, Lake Arthur, and Welsh are all participants in the NFIP. Jefferson Davis 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 Jefferson Davis Parish are provided in the tables on the next page.

Jefferson Davis 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 for Fenton, Jennings, Lake Arthur, and Welsh will continue to seek and attend floodplain management and NFIP continuing education.

Table 2-13: Summary of NFIP Policies for Jefferson Davis Parish

Location	No. of Insured Structures	Total Insurance Coverage Value	Annual Premiums Paid	No. of Insurance Claims Filed Since 1978	Total Loss Payments
Jefferson Davis Parish (Unincorporated)	572	$109,325,300	$398,835	157	$2,632,267
Elton	8	$1,607,000	$2,876	3	$1,133
Fenton	2	$315,000	$579	0	$0
Jennings	130	$29,752,400	$71,920	15	$145,882
Lake Arthur	116	$22,193,700	$83,249	32	$159,910
Welsh	143	$23,087,200	$93,439	20	$255,879
Total	971	$186,280,600	$650,898	227	$3,195,071

*While the unincorporated areas of Jefferson Davis Parish, as well as the incorporated areas of Elton, Fenton, Jennings, Lake Arthur, and Welsh all have active NFIP policies, the jurisdictions will continue to promote NFIP participation through education and outreach.

Table 2-14: Summary of Community Flood Maps for Jefferson Davis Parish

CID	Community Name	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Date Joined the NFIP	Tribal
220096#	Elton	3/15/1974	2/3/1982	7/22/2010	2/3/1982	No
220097#	Fenton	-	7/22/2010	(NSFHA)	7/22/2010	No
220095#	Jefferson Davis Parish*	5/17/1977	6/15/1988	7/22/2010	6/15/1988	No
220098#	Jennings	2/1/1974	4/15/1981	7/22/2010	4/15/1981	No
220099#	Lake Arthur	1/9/1974	4/15/1981	7/22/2010	4/15/1981	No
220100#	Welsh	5/24/1974	7/16/1981	7/22/2010	7/16/1981	No

*denotes unincorporated areas of the parish

According to the Community Rating System (CRS) list of eligible communities, Jefferson Davis Parish and its incorporated areas 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 Jefferson Davis 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 Jefferson Davis 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 Mermentau River crests at flood stage levels, causing extensive flooding in low-lying areas.

Coastal Flooding: Coastal flooding occurs when ocean water is pushed inland by hurricane winds and/or high tides. The severity of coastal flooding can be compounded by the riverine flooding that typically accompanies major tropical cyclone systems.

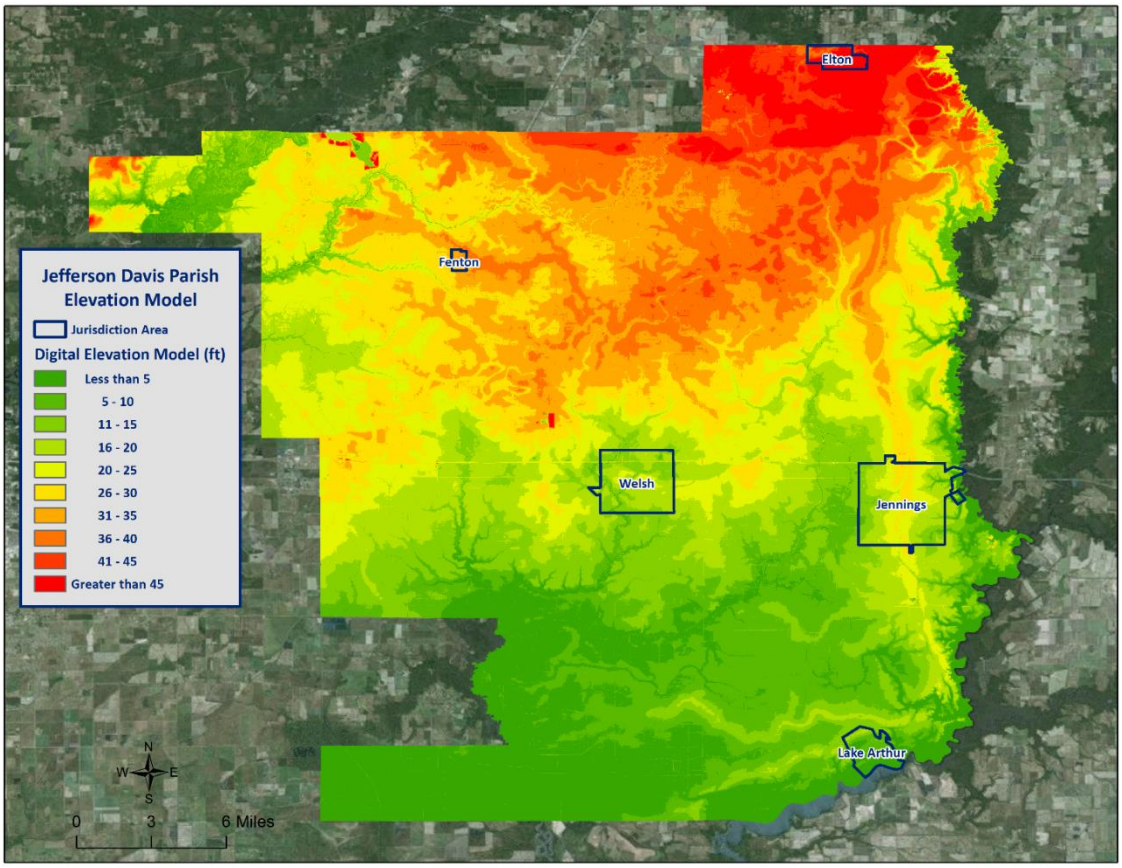


Figure 2-11: Elevation throughout Jefferson Davis Parish

Looking at the digital elevation model (DEM) in the figure above for Jefferson Davis Parish is instructive in visualizing where the low lying and high risk areas are for the parish. Elevations in the parish range from less than 5 feet to over 45 feet. The highest elevations in the parish are approximately 49 feet, located in the incorporated area of Elton. The other incorporated areas range in elevation from 7 to 33 feet, with Lake Arthur averaging seven feet, Welsh averaging 23 feet, Jennings averaging 26 feet, and Fenton averaging 33 feet.

Location

Jefferson Davis Parish has experienced significant flooding in its history and can expect more in the future. Many parts of the parish are located in the 100-year floodplain, which includes significant portions of the area in the northwest area of the parish and the southern portions of the parish.

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

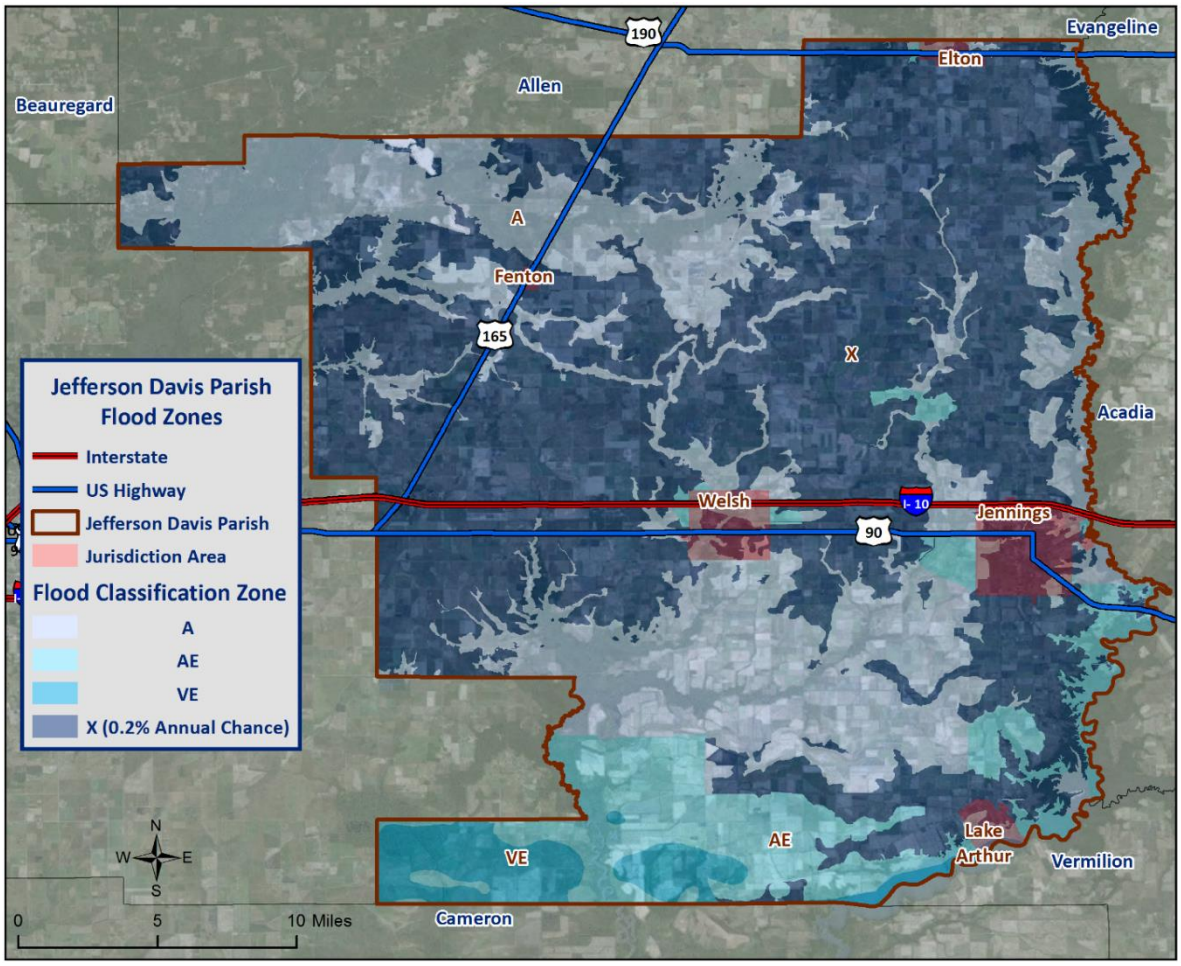


Figure 2-12: Jefferson Davis Parish Areas within the Flood Zones

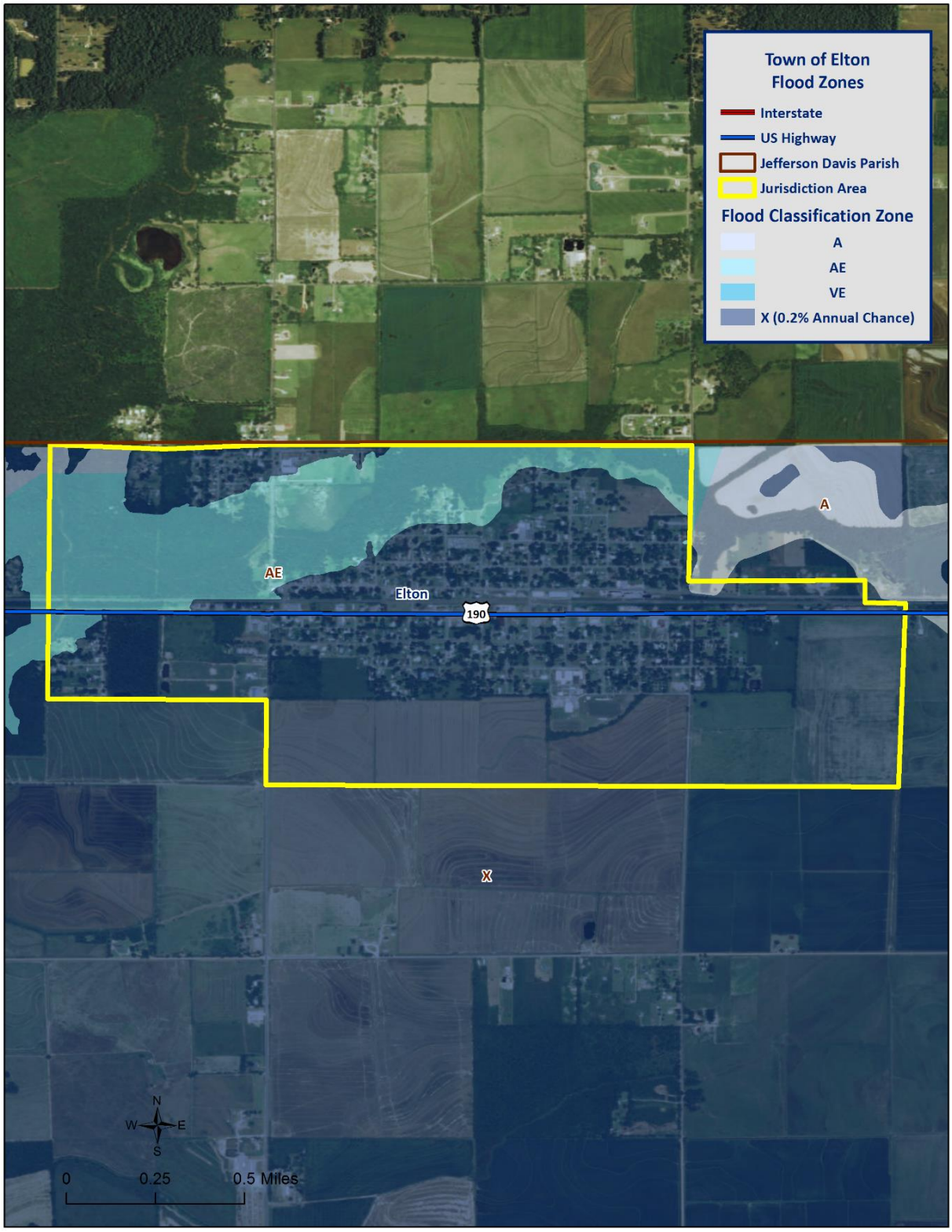


Figure 2-13: Town of Elton Areas within the Flood Zones

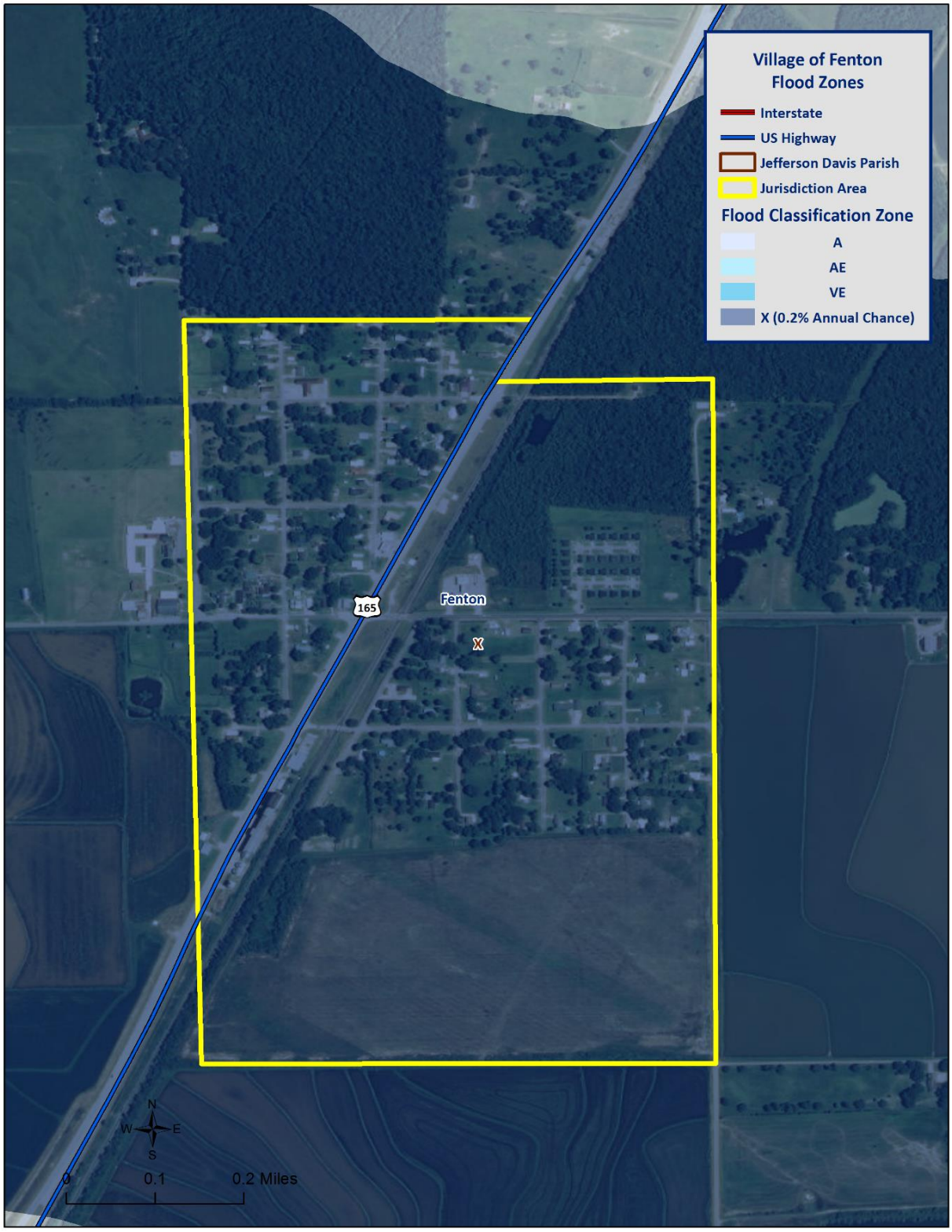


Figure 2-14: Village of Fenton Areas within the Flood Zones

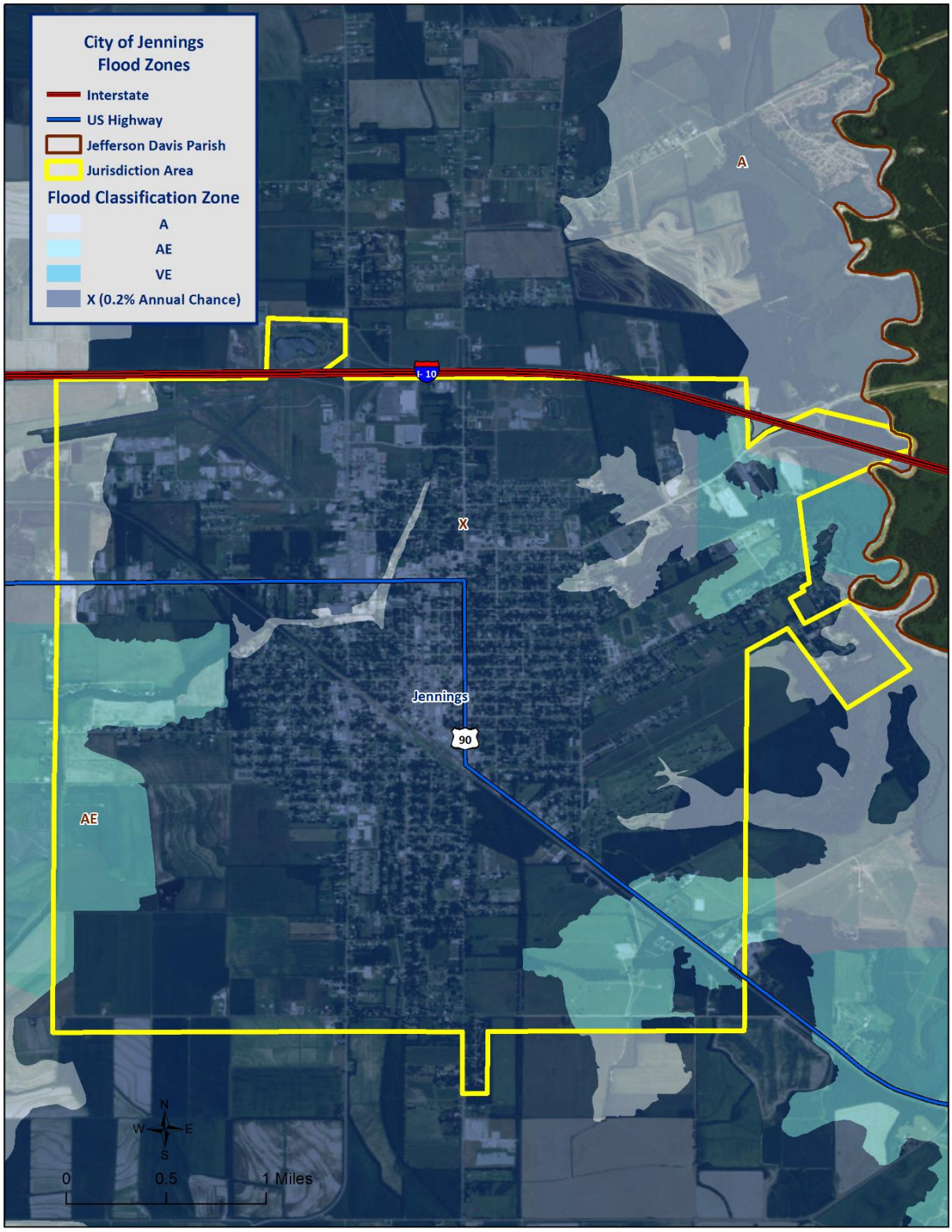


Figure 2-15: City of Jennings Areas within the Flood Zones

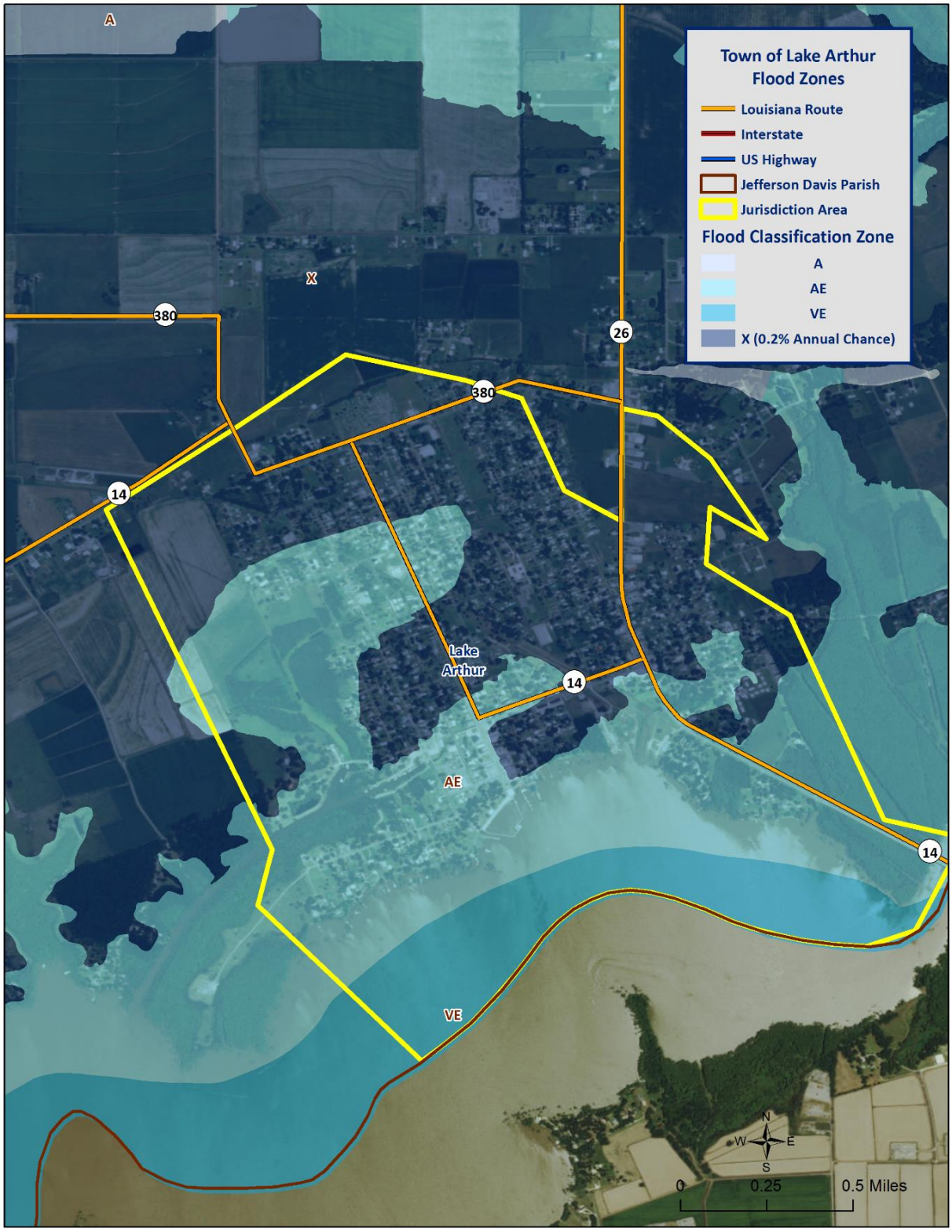


Figure 2-16: Town of Lake Arthur Areas within the Flood Zones

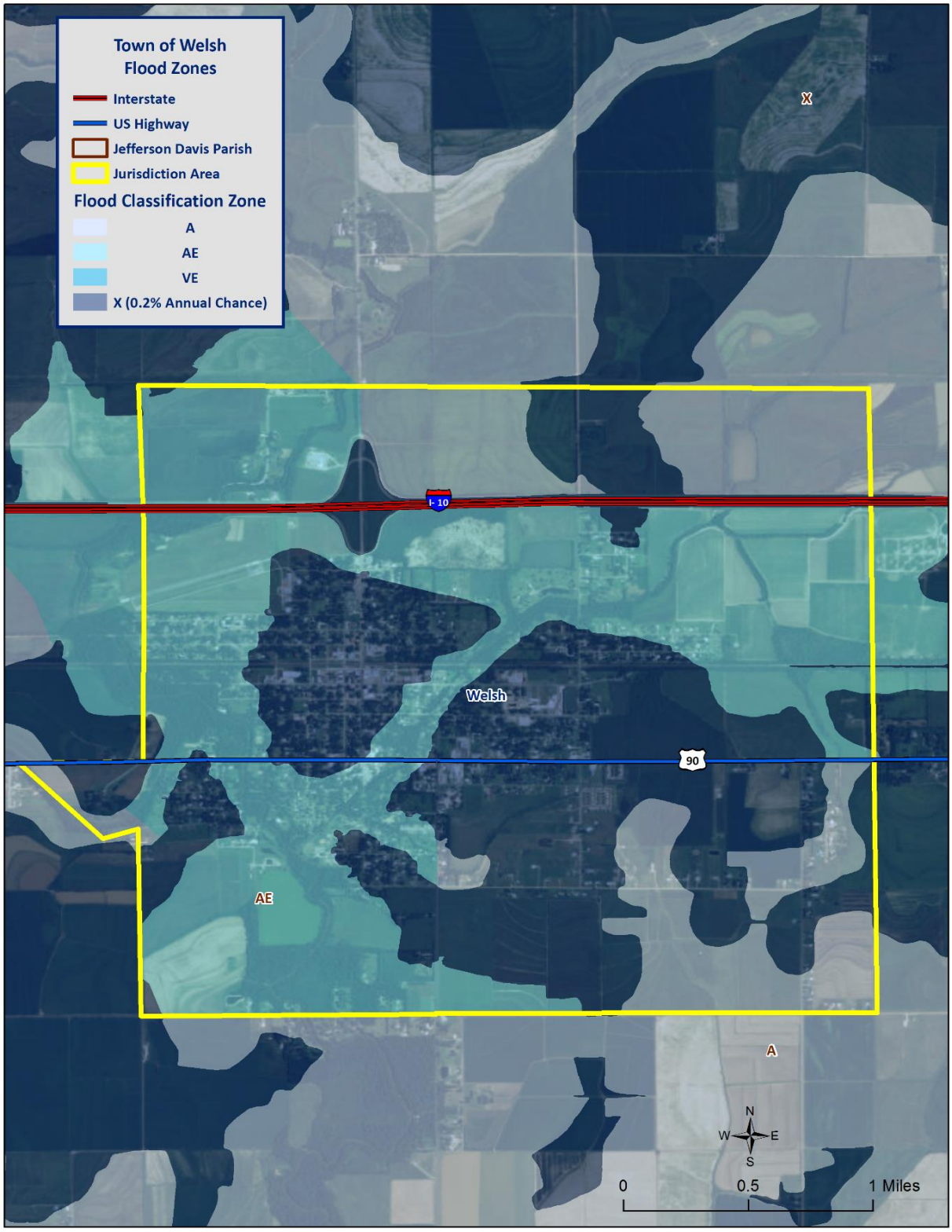


Figure 2-17: Town of Welsh Areas within the Flood Zones

Previous Occurrences / Extents

Historically, there have been 20 flooding events that have created significant flooding in Jefferson Davis Parish between 1990 and 2015. Below is a brief synopsis of the five flooding events that have occurred since 2010, including flooding events that have occurred since the parish's last planning update.

Table 2-15: Historical Floods in Jefferson Davis Parish with Locations from 2010 - 2015

Date	Extents	Type of Flooding	Estimated Damages	Location
August 5, 2010	Widespread street flooding was reported throughout the city of Jennings due to heavy rainfall from afternoon thunderstorms.	Flood	$1,087	JENNINGS ARPT
January 9, 2013	Streets were closed during the evening of the 9th. By the morning of the 10th, most streets in Jennings contained various depths of water.	Flash Flood	$0	ELTON
January 10, 2013	Flood waters from rainfall slowly drained across the Mermentau Basin. Most of the damage from flooding occurred over the southeast portions of the parish from Lake Arthur to Jennings. 85 homes flooded.	Flood	$16,889,307	LAKE ARTHUR
September 20, 2013	Multiple houses along Marsh Bayou from Gillis to Topsy flooded.	Flash Flood	$101,743	WOODLAWN
May 28, 2014	Roadways flooded due to high rainfall rates. Some residents were unable to leave their homes. At least one home was flooded.	Flash Flood	$10,012	WOODLAWN

Since 2010, there have been no significant flooding events in the incorporated areas of Fenton and Welsh.

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 eight feet can be expected in the unincorporated areas of the parish. The incorporated areas of Elton, Jennings, Lake Arthur, and Welsh can expect flood depths from three to six feet, while the incorporated area of Fenton can expect flooding levels of approximately one to two feet.

Frequency / Probability

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

Table 2-16: Annual Flood Probabilities for Jefferson Davis Parish

Jurisdiction	Annual Probability	Return Frequency
Jefferson Davis Parish (Unincorporated)	32%	3 – 4 years
Elton	12%	8 – 9 years
Fenton	4%	25 years
Jennings	36%	2 – 3 years
Lake Arthur	8%	12 – 13 years
Welsh	8%	12 – 13 years

Based on historical record, the overall flooding probability for the entire Jefferson Davis Parish planning area is 80%, with 20 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 2-17* shows the total economic losses that would result from this occurrence.

Table 2-17: Estimated Losses in Jefferson Davis Parish from a 100-Year Flood Event (Source: Hazus 2.2)

Jurisdiction	Estimated Total Losses from 100-Year Flood Event
Jefferson Davis Parish (Unincorporated)	$16,464,000
Elton	$1,638,000
Fenton	$0
Jennings	$2,964,000
Lake Arthur	$2,375,000
Welsh	$1,546,000
Total	$24,987,000

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 2-18: Estimated 100-Year Flood Losses for Unincorporated Jefferson Davis Parish by Sector (Source: Hazus 2.2)

Jefferson Davis Parish (Unincorporated)	Estimated Total Losses from 100-Year Flood Event
Agricultural	$188,000
Commercial	$618,000
Government	$123,000
Industrial	$271,000
Religious / Non-Profit	$242,000
Residential	$15,010,000
Schools	$12,000
Total	$16,464,000

Table 2-19: Estimated 100-Year Flood Losses for Elton by Sector (Source: Hazus 2.2)

Elton	Estimated Total Losses from 100-Year Flood Event
Agricultural	$0
Commercial	$141,000
Government	$17,000
Industrial	$0
Religious / Non-Profit	$127,000
Residential	$1,265,000
Schools	$88,000
Total	$1,638,000

Table 2-20: Estimated 100-Year Flood Losses for Jennings by Sector (Source: Hazus 2.2)

Jennings	Estimated Total Losses from 100-Year Flood Event
Agricultural	$0
Commercial	$250,000
Government	$15,000
Industrial	$0
Religious / Non-Profit	$43,000
Residential	$2,438,000
Schools	$218,000
Total	$2,964,000

Table 2-21: Estimated 100-Year Flood Losses for Lake Arthur by Sector
(Source: Hazus 2.2)

Lake Arthur	Estimated Total Losses from 100-Year Flood Event
Agricultural	$0
Commercial	$225,000
Government	$0
Industrial	$19,000
Religious / Non-Profit	$67,000
Residential	$2,013,000
Schools	$51,000
Total	$2,375,000

Table 2-22: Estimated 100-Year Flood Losses for Welsh by Sector
(Source: Hazus 2.2)

Welsh	Estimated Total Losses from 100-Year Flood Event
Agricultural	$33,000
Commercial	$452,000
Government	$0
Industrial	$0
Religious / Non-Profit	$39,000
Residential	$1,016,000
Schools	$6,000
Total	$1,546,000

Threat to People

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

Table 2-23: Vulnerable Populations Susceptible to a 100-Year Flood Event
(Source: Hazus 2.2)

Number of People Exposed to Flood Hazards			
Location	**# in Community**	**# in Hazard Area**	**% in Hazard Area**
Jefferson Davis Parish (Unincorporated)	**13,740**	**4,933**	**35.9%**
Elton	**1,128**	**193**	**17.1%**
Fenton	**379**	**0**	**0%**
Jennings	**10,383**	**676**	**6.5%**
Lake Arthur	**2,738**	**402**	**14.7%**
Welsh	**3,226**	**734**	**22.8%**
Total	**31,594**	**6,938**	**22%**

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

Table 2-24: Vulnerable Populations Susceptible to a 100-Year Flood Event in Unincorporated Jefferson Davis Parish
(Source: Hazus 2.2)

Jefferson Davis Parish (Unincorporated)		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	4,933	35.9%
Persons Under 5 Years	361	7.3%
Persons Under 18 Years	951	19.3%
Persons 65 Years and Over	716	14.5%
White	3,923	79.5%
Minority	1,010	20.5%

Table 2-25: Vulnerable Populations Susceptible to a 100-Year Flood Event in Elton
(Source: Hazus 2.2)

Elton		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	193	17.1%
Persons Under 5 Years	12	6.5%
Persons Under 18 Years	37	19.1%
Persons 65 Years and Over	35	18.4%
White	108	56.1%
Minority	85	43.9%

Table 2-26: Vulnerable Populations Susceptible to a 100-Year Flood Event in Jennings
(Source: Hazus 2.2)

Jennings		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	676	6.5%
Persons Under 5 Years	52	7.6%
Persons Under 18 Years	122	18.1%
Persons 65 Years and Over	118	17.4%
White	463	68.5%
Minority	213	31.6%

Table 2-27: Vulnerable Populations Susceptible to a 100-Year Flood Event in Lake Arthur (Source: Hazus 2.2)

Lake Arthur		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	402	14.7%
Persons Under 5 Years	29	7.1%
Persons Under 18 Years	78	19.4%
Persons 65 Years and Over	60	14.9%
White	344	85.6%
Minority	58	14.4%

Table 2-28: Vulnerable Populations Susceptible to a 100-Year Flood Event in Welsh (Source: Hazus 2.2)

Welsh		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	734	22.8%
Persons Under 5 Years	56	7.7%
Persons Under 18 Years	136	18.6%
Persons 65 Years and Over	119	16.2%
White	569	77.5%
Minority	165	22.5%

Vulnerability

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

Thunderstorms

The term "thunderstorm" is usually used as a catch-all term for several kinds of storms. Here, "thunderstorm" is defined to include any precipitation event in which thunder is heard or lightning is seen. Thunderstorms are often accompanied by heavy rain and strong winds, and depending on conditions, occasionally by hail or snow. Thunderstorms form when humid air masses are heated, which causes them to become convectively unstable. 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 2-29: TORRO Hailstorm Intensity Scale

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

Table 2-30: Spectrum of Hailstone Diameters and their Everyday Description (Source: National Weather Service)

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

Hailstorms can cause widespread damage to 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 2-31: High Winds Categorized by Source, Frequency, and Duration
(Source: Making Critical Facilities Safe from High Wind, FEMA)

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

The only high winds of present concern are thunderstorm winds and downbursts. Straight-line winds are common but are a relatively insignificant hazard (on land) compared to other high winds. Downslope winds are common but relatively insignificant in the 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 2-32: Beaufort Wind Scale
(Source: NOAA's SPC)

Beaufort Wind Scale			
Force	**Wind (MPH)**	**WMO Classification**	**Appearance of Wind Effects on Land**
			Calm, smoke rises vertically
1	1-3	Light Air	Smoke drift indicates wind direction, still wind vanes
2	4-7	Light Breeze	Wind felt on face, leaves rustle, vanes begin to move
3	8-12	Gentle Breeze	Leaves and small twigs constantly moving, light flags extended
4	13-17	Moderate Breeze	Dust, leaves, and loose paper lifted, small tree branches move
5	18-24	Fresh Breeze	Small trees in leaf begin to sway
6	25-30	Strong Breeze	Larger tree branches moving, whistling in wires
7	31-38	Near Gale	Whole trees moving, resistance felt walking against wind
8	39-46	Gale	Twigs breaking off trees, generally impedes progress
9	47-54	Strong Gale	Slight structural damage occurs, slate blows off roofs
10	55-63	Storm	Seldom experienced on land, trees broken or uprooted, "considerable structural damage"
11	54-73	Violent Storm	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 2-33: Lightning Activity Level (LAL) Grids

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

Hazard Profile

Hailstorms

Location

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

Previous Occurrences / Extents

The SHELDUS database reports two significant hailstorm events occurring within the boundaries of Jefferson Davis Parish between the years of 1990 - 2015. According to the National Climatic Data Center, hailstorm diameters experienced in Jefferson Davis Parish have ranged from 0.75 inches to 1.75 inches since 1960. The most frequently recorded hail size has been 1 inch diameters. *Figure 2-18* displays the density of hailstorms in Jefferson Davis Parish and adjacent parishes. Based on the National Climatic Data Center dataset, *Table 2-34* provides an overview of hailstorms that have impacted the Jefferson Davis Parish planning area since 2010. Jefferson Davis Parish can expect to experience hail up to 1.75 inches in diameter for future events.

Table 2-34: Previous Occurrences of Hailstorms in Jefferson Davis Parish (Source: NCDC)

Date	Recorded Hail Size (inches)	Location
December 23, 2014	0.75	JENNINGS

Since 2010, there have been no significant hailstorm events in the incorporated areas of Elton, Fenton, Lake Arthur, and Welsh, and the unincorporated areas of Jefferson Davis Parish.

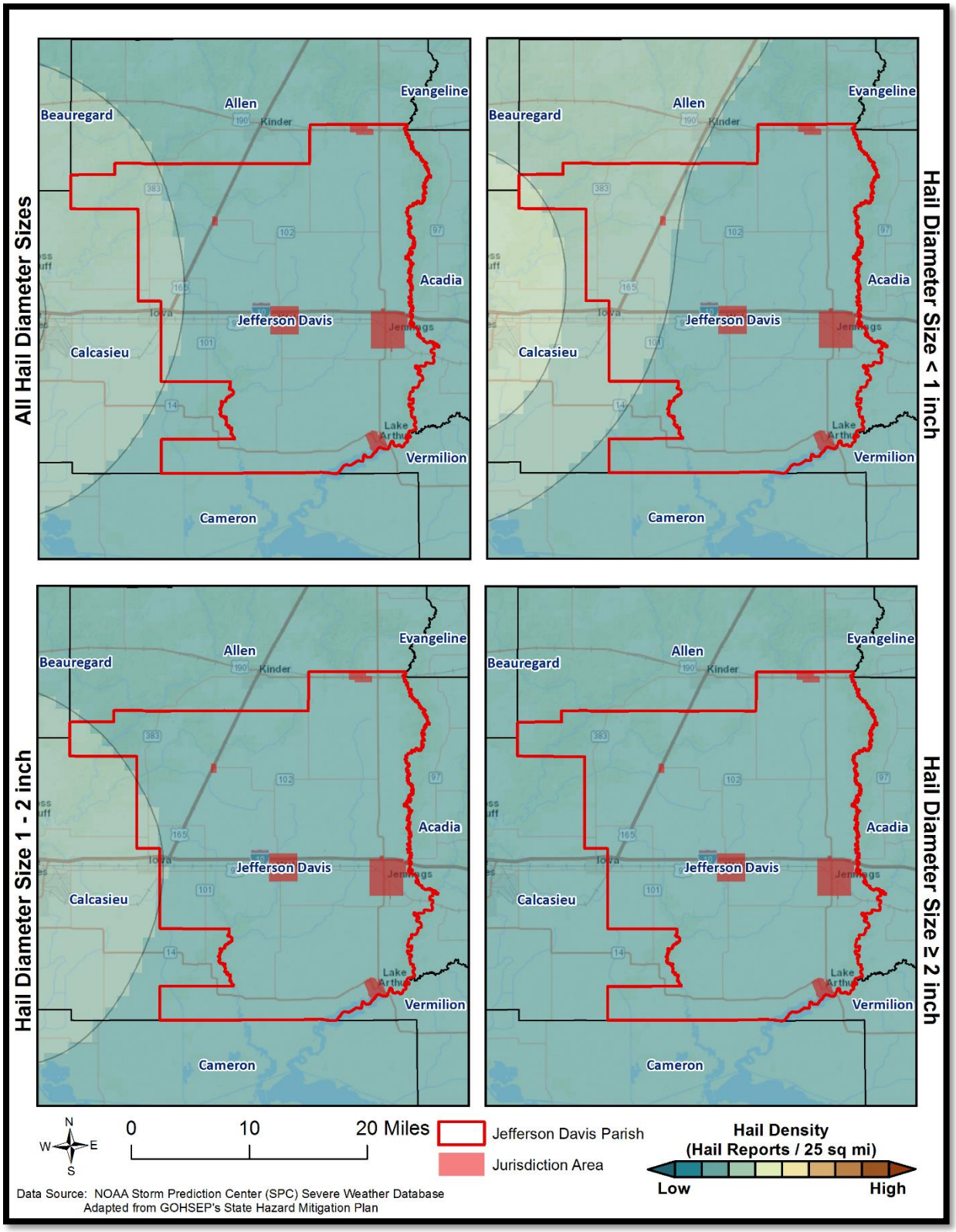


Figure 2-18: Density of Hailstorms by Diameter from 1950-2012
(Source: State of Louisiana Hazard Mitigation Plan 2014)

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 8%. The probability was determined based on a review of significant hail data that has caused damages in the last 25 years, in which Jefferson Davis Parish has had two recorded events.

Estimated Potential Losses

According to the SHELDUS database, property damage due to hailstorms in Jefferson Davis Parish have totaled approximately $14,860 since 1990. To estimate the potential losses of a hail event on an annual basis, the total damages recorded for hail events was divided by the total number of years of available hail data in SHELDUS (1990 – 2015). This provides an annual estimated potential loss of $594. *Table 2-35* provides an estimate of potential property losses for Jefferson Davis Parish.

Table 2-35: Estimated Annual Property Losses in Jefferson Davis Parish from Hailstorms

Estimated Annual Potential Losses from Hailstorms for Jefferson Davis Parish					
Unincorporated Jefferson Davis Parish (43.5% of Population)	Elton (3.6% of Population)	Fenton (1.2% of Population)	Jennings (32.9% of Population)	Lake Arthur (8.7% of Population)	Welsh (10.2% of Population)
$259	$21	$7	$195	452	$61

There have been no deaths or injuries due to hailstorms from 1990 – 2015 in Jefferson Davis 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 Jefferson Davis Parish is equally at risk for high winds.

Previous Occurrences / Extents

The SHELDUS database reports a total of 71 thunderstorm wind events occurring within the boundaries of Jefferson Davis Parish between the years of 1990 to 2015. The significant thunderstorm wind events experienced in Jefferson Davis Parish have ranged in wind speed from 57 mph to 75 mph. Jefferson Davis Parish can expect to receive thunderstorm winds up to 75 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 2-36: Previous Occurrences for Thunderstorm High Wind Events

Location	Date	Recorded Wind Speeds (mph)	Property Damage	Crop Damage
ROANOKE	March 25, 2010	60	$3,261	$0
LAKE ARTHUR	May 26, 2010	70	$21,739	$0
WOODLAWN	October 12, 2010	60	$2,174	$0
COVERDALE	June 4, 2011	57	$21,074	$0
JENNINGS	December 22, 2011	75	$316,108	$0
JENNINGS	February 18, 2012	75	$258,083	$0
JENNINGS	March 11, 2012	60	$0	$0
JENNINGS ARPT	April 24, 2013	57	$2,035	$0
WOODLAWN	April 4, 2014	57	$3,052	$0
HATHAWAY	August 25, 2014	57	$1,017	$0

Since 2010, there have been no significant high wind events in the incorporated areas of Elton, Fenton, and Welsh.

Frequency

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

Estimated Potential Losses

Since 1990, there have been 71 significant wind events that have resulted in property damages according to the SHELDUS database. The total property damages associated with those storms have totaled $2,127,003. 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 $85,080. The following table provides an estimate of potential property losses for Jefferson Davis Parish:

Table 2-37: Estimated Annual Property Losses in Jefferson Davis Parish Resulting from High Winds

Estimated Annual Potential Losses from Thunderstorm Winds for Jefferson Davis Parish					
Unincorporated Jefferson Davis Parish (43.5% of Population)	Elton (3.6% of Population)	Fenton (1.2% of Population)	Jennings (32.9% of Population)	Lake Arthur (8.7% of Population)	Welsh (10.2% of Population)
$104,647	$3,920	$3,631	$87,244	$24,734	$3,892

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 Jefferson Davis Parish.

Previous Occurrences / Extents

The SHELDUS database reports a total of 12 lightning events occurring within the boundaries of Jefferson Davis 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 Jefferson Davis 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 2-38: Previous Occurrences of Significant Lightning Strikes in Jefferson Davis Parish from 2010 – 2015 (Source: NCDC and SHELDUS)

Location	Date	Summary	Property Damage
JENNINGS	August 13, 2010	Lightning struck three large oil storage tanks south of Jennings and set them on fire. Three fire departments responded and put out the blaze.	$271,739

Since 2010, there have been no lightning events that have caused property damage or loss of life in unincorporated Jefferson Davis Parish or the incorporated areas of Elton, Fenton, Lake Arthur, and Welsh.

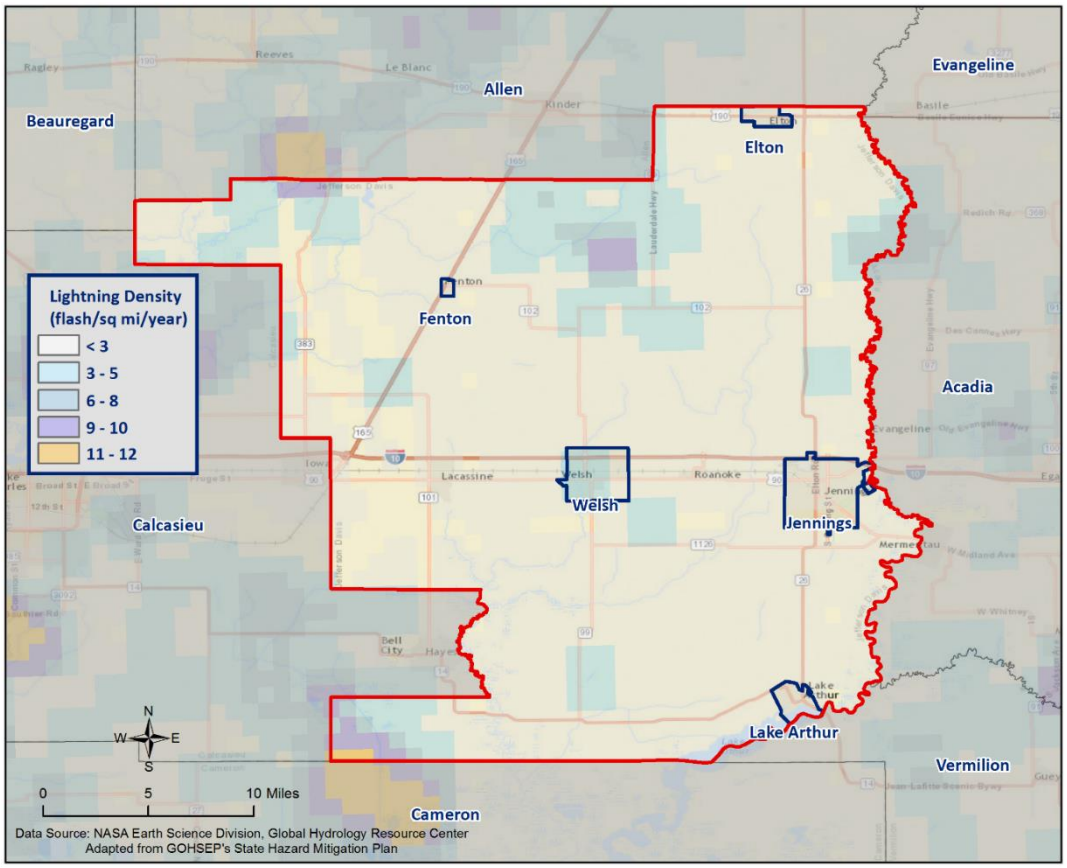


Figure 2-19: Lightning Density Reports for Jefferson Davis Parish

Frequency

Lightning can strike anywhere and is produced by every thunderstorm, so the chance of lightning occurring in Jefferson Davis 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 12 lightning events that have caused property damages or injuries over the last 25 years, establishing an annual probability of 48%.

Estimated Potential Losses

Since 1990, there have been 12 significant lightning events that have resulted in property damages according to the SHELDUS database. The total property damages associated with lightning events totaled $612,850. 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 $24,514. The table on the next page provides an estimate of potential property losses for Jefferson Davis Parish.

Table 2-39: Estimated Annual Property Losses in Jefferson Davis Parish from Lightning

Estimated Annual Potential Losses from Lightning for Jefferson Davis Parish					
Unincorporated Jefferson Davis Parish (43.5% of Population)	Elton (3.6% of Population)	Fenton (1.2% of Population)	Jennings (32.9% of Population)	Lake Arthur (8.7% of Population)	Welsh (10.2% of Population)
$10,661	$875	$294	$8,056	$2,124	$2,503

There has been one reported injury and no fatalities in Jefferson Davis Parish as a result of 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 2-40* shows the EF scale in comparison with the old Fujita (F) Scale, which was used prior to February 1, 2007. When discussing past tornadoes, the scale used at the time of the hazard is used. Damage and adjustment between scales can be made using the following tables.

Table 2-40: Comparison of the Enhanced Fujita (EF) Scale to the Fujita (F) Scale

	Enhanced Fujita Scale					
	EF0	**EF1**	**EF2**	**EF3**	**EF4**	**EF5**
Wind Speed (mph)	65-85	86-110	111-135	136-165	166-200	>200
	Fujita Scale					
	F0	**F1**	**F2**	**F3**	**F4**	**F5**
	<73	73-112	113-157	158-206	207-260	>261

Table 2-41: Fujita and Enhanced Fujita Tornado Damage Scale

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

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

Previous Occurrences / Extents

SHELDUS reports a total of 18 tornadoes or waterspouts occurring within the boundaries of Jefferson Davis Parish between the years of 1990 - 2015. The tornadoes experienced in Jefferson Davis Parish have from ranged EF0 to EF1 on the EF scale, and ranged from F0 to F1 on the F scale. The worst case scenario Jefferson Davis Parish can expect in the future is an EF1 tornado.

The tornado that caused the most damage to property occurred on March 21, 2012. The EF1 tornado damaged 30 to 40 homes and businesses in Lake Arthur. Most of the damage was roof damage, although several homes had windows and walls damaged from flying debris. The water tower had a large radio antenna fall from it. Numerous trees and power lines were down.

Table 2-42: Historical Tornadoes in Jefferson Davis Parish with Locations from 1990 - 2015

Date	Impacts	Property Damage	Location	Magnitude
March 29, 1990	0.3 mile path with a width of 25 yards. A barn was heavily damaged.	$45,336	IOWA	F1
May 8, 1991	0.1 mile path with a width of 20 yards. Destroyed a mobile home and tree cars parked nearby.	$43,505	JENNINGS	F0
June 3, 1991	0.1 mile path with a width of 10 yards. Occurred on the runway of Jennings Airport.	$43,505	JENNINGS ARPT	F0
October 23, 1997	5 mile path with a width of 10 yards. Two homes lost shingles. Numerous trees and power lines were blown down.	$36,919	FENTON	F0
September 11, 1998	1 mile path with a width of 10 yards. One home had several windows blown out and a wall damaged and a camp next door destroyed. Debris from the camp was strewn across a field for over a half mile.	$109,057	LAKE ARTHUR	F1
January 2, 1999	1 mile path with a width of 50 yards. Ripped a portion of a roof off a home and destroyed a garage. Tops of nearby trees were sheared off. Five other homes and several mobile homes reported minor damage.	$142,267	JENNINGS	F1
April 3, 2000	3 mile path with a width of 20 yards. Destroyed one mobile home and damaged at least twenty other homes and barns. A car wash under construction lost its tin roof and two brick walls.	$344,101	HATHAWAY	F1
April 3, 2000	2 mile path with a width of 10 yards. Several mobile homes were damaged and trees were uprooted.	$55,056	PANCHOVILLE	F0
November 1, 2004	0.5 mile path with a width of 10 yards. Damaged a mobile home's roof and destroyed a storage shed.	$31,368	WELSH	F0
November 22, 2004	1 mile path with a width of 10 yards. Two doors and a roof were ripped off a home.	$31,368	FENTON	F0
October 22, 2009	8.05 mile path with a width of 50 yards. Damaged several trees and homes and blew around some outdoor furniture.	$22,096	LAKE ARTHUR LAKE	EF0

Date	Impacts	Property Damage	Location	Magnitude
October 22, 2009	16.22 mile path with a width of 800 yards. Damaged the roof of a farm house and a barn. Destroyed a metal silo. Blew an 18 wheeler and several cars into the median of a highway; the driver of the 18 wheeler was injured and required hospitalization.	$276,196	ROANOKE	EF1
October 22, 2009	3.78 mile path with a width of 500 yards. Damaged a shed. Several homes received minor roof damage, with a few poorly constructed homes and mobile homes losing their entire tin roofs.	$662,870	ELTON	EF1
November 25, 2010	2.78 mile path with a width of 75 yards. A pine tree fell onto a house, causing a large hole in the roof. Three homes lost many shingles, and another home had its carport blown onto its roof.	$163,043	JENNINGS	EF0
March 5, 2011	4.82 mile path with a width of 25 yards. Power lines were blown down and several farm buildings received minor damage with sheet metal blown across roadways.	$10,537	NIBLETT	EF0
March 5, 2011	2.73 mile path with a width of 25 yards. Several power poles were knocked down. A mobile home lost part of its roof. Tree limbs were blown down along the path.	$10,537	ROANOKE	EF0
March 21, 2012	3.92 mile path with a width of 40 yards. At least 30-40 homes and businesses were damaged. The water tower had a large radio antenna fall from it.	$3,096,993	LAKE ARTHUR	EF1
June 27, 2014	4.62 mile path with a width of 300 yards. A couple of power lines were bent and one was snapped. A larger barn was destroyed.	$10,012	THRONWELL LYON ARPT	EF0

The incorporated areas of Elton, Fenton, and Welsh 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, Jefferson Davis Parish has had four tornadoes touchdown; one in Lake Arthur and three in the unincorporated areas of the parish.

The following is a brief synopsis of these events:

March 5, 2011 – EF0 Tornado in Niblett

NWS Storm Survey confirmed an EF0 tornado began southwest of the Highway 99 and Marceaux Road intersection and ended east of Highway 382. Power lines were blown down on Highway 99, and several farm buildings received minor damage along Highway 382 with sheet metal blown across the roadway.

March 5, 2011 – EF0 Tornado in Roanoke

NWS Storm Survey confirmed an EF0 tornado began southwest of the Lyons Road and Mouton Road intersection and ended northwest of Highway 26 and Bobby Road. Several power poles were knocked down along Mouton Road and Lyons Road. A mobile home lost part of its roof on Bobby Road, and tree limbs were blown down along the path.

March 21, 2012 – EF1 Tornado in Lake Arthur

At least 30-40 homes and businesses were damaged when a tornado tore through Lake Arthur. Most of the damage was roof damage, although several homes had windows and walls damaged from flying debris. The water tower had a large radio antenna fall from it. Numerous trees and power lines were down.

June 27, 2014 – EF0 tornado near Thornwell Lyon Airport

A tornado touched down in rural Jefferson Davis Parish near Thornwell. It was videotaped by several people. The tornado touched down on Goose Island Road where it blew trees down. When it crossed Highway 14 it damaged a small barn and several trees. The tornado paralleled Highway 99 as it moved north remaining over mostly crawfish and rice fields. A couple of power lines were bent and one was snapped. A larger barn was destroyed along Highway 99 and several more trees snapped. The tornado dissipated along west Niblett Road where it blew a tree across a driveway.

Frequency / Probability

Tornadoes are a sporadic occurrence within Jefferson Davis Parish, with an annual chance of occurrence calculated at 72% based on the records for the past 25 years (1990 - 2015). The figure on the next page displays the density of tornado touch downs in Jefferson Davis Parish and neighboring parishes.

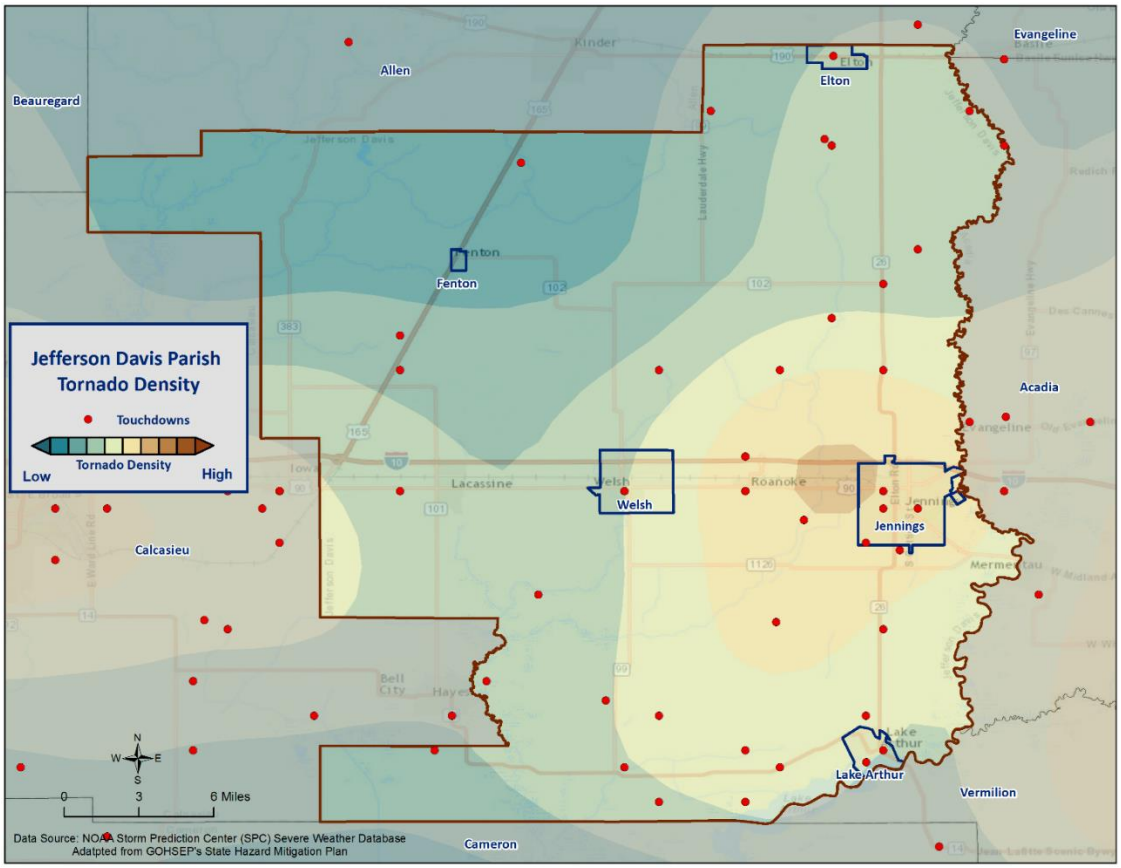


Figure 2-20: Location and Density of Tornadoes to Touch Down in Jefferson Davis Parish (Source: NOAA/SPC Severe Weather Database)

Estimated Potential Losses

According to the SHELDUS database, there have been 16 tornadoes that have caused some level of property damage. The total damage from the actual claims for property is $5,296,867, with an average cost of $331,054 per tornado strike. When annualizing the total cost over the 25-year record, total annual loses based on tornadoes are estimated to be $211,875. 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 following table provides an annual estimate of potential losses for Jefferson Davis Parish.

Table 2-43: Estimated Annual Losses from Tornadoes in Jefferson Davis Parish

Estimated Annual Potential Losses from Tornadoes for Jefferson Davis Parish					
Unincorporated Jefferson Davis Parish (43.5% of Population)	Elton (3.6% of Population)	Fenton (1.2% of Population)	Jennings (32.9% of Population)	Lake Arthur (8.7% of Population)	Welsh (10.2% of Population)
$92,143	$7,565	$2,542	$69,630	$18,361	$21,634

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

Table 2-44: Building Exposure by General Occupancy Type for Tornadoes in Jefferson Davis 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 (%)
3,651,389	608,529	106,856	45,320	143,376	38,808	99,459	18.3%

The parish has suffered through a total of two days in which tornadoes or waterspouts have accounted for three injuries and no fatalities during this 25-year period (*Table 2-45*). The average number of injuries per event for Jefferson Davis Parish is 0.19 per tornado, with an average of 0.12 per year for the 25-year period.

Table 2-45: Tornadoes in Jefferson Davis Parish by Magnitude that Caused Injuries or Deaths

Date	Magnitude	Deaths	Injuries
November 21, 1992	F3	0	2
October 22, 2009	EF0	0	1

In assessing the overall risk to population, the most vulnerable population throughout the parish are those residing in manufacturing housing. Approximately 18.3% of all housing in Jefferson Davis Parish consists of manufactured housing. Based on location data collected in a previous hazard mitigation project, there are 10 known locations where manufactured housing is concentrated. Each of those ten locations have an overall number of manufactured houses ranging from one to 47. The location and density of manufactured houses can be seen in *Figure 2-21*.

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 Jefferson Davis Parish and the incorporated area of Welsh (*Table 2-46*). 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 2-46: Manufactured Home Distribution throughout Jefferson Davis Parish

Location	Number of Manufactured Home Parks	% of Manufactured Home Parks
Unincorporated Area	4	40%
Elton	0	0%
Fenton	0	0%
Jennings	2	20%
Lake Arthur	0	0%
Welsh	4	40%

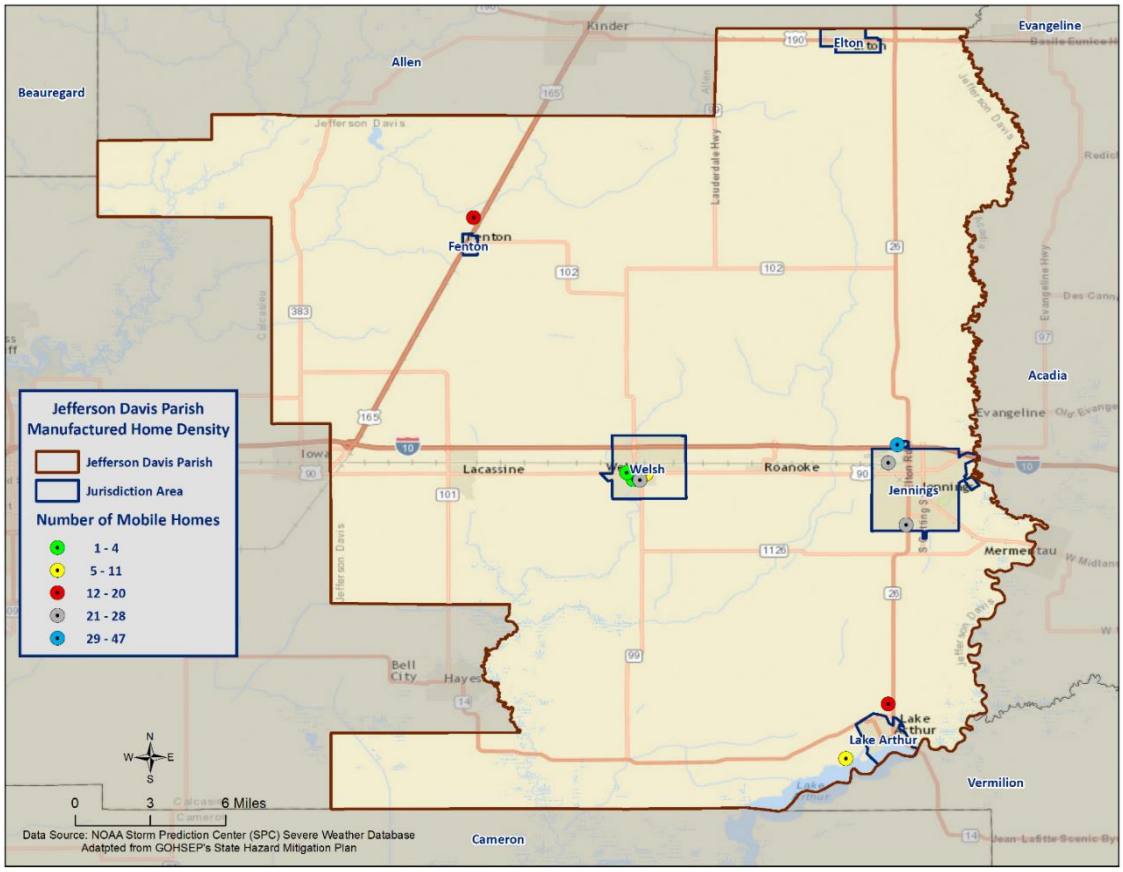


Figure 2-21: Location and Approximate Number of Units in Manufactured Housing Locations throughout Jefferson Davis Parish.

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 2-47: 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 Louisiana. With any hurricane having the potential to devastate multiple parishes at once, a tropical cyclone has the probability of impacting anywhere within the planning area for Jefferson Davis 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 five tropical cyclone events occurring within the boundaries of Jefferson Davis Parish between the years 2002 and 2014 (*Table 2-48*). The tropical cyclone events experienced in Jefferson Davis Parish include depressions, storms, and hurricanes. As a worst case scenario, Jefferson Davis Parish can expect to experience hurricanes at the Category 4 level in the future.

Table 2-48: Historical Tropical Cyclone Events in Jefferson Davis Parish from 2002 - 2015 (Source: SHELDUS)

Date	Name	Storm Type At Time of Impact
October 3, 2002	Lili	Hurricane –Category 1
September 23, 2005	Rita	Hurricane – Category 3
September 1, 2008	Gustav	Tropical Storm
September 12, 2008	Ike	Tropical Storm
September 3, 2011	Lee	Tropical Storm

Hurricane Lili (2002)

Hurricane Lili made landfall on the Louisiana coast on October 3, 2002, with an estimated intensity of 80 knots. Although Lili weakened considerably before making landfall on the central Louisiana coast, it caused significant wind and flood damage in the area. Strong winds toppled trees onto houses and into roadways, stripped shingles from roofs, and blew out windows. The wind and driving rain flattened sugarcane fields throughout southern Louisiana. A combination of storm surge and rain caused levees to fail in Montegut and Franklin, Louisiana. Lili also temporarily curtailed oil production in the Gulf of Mexico.

In Jefferson Davis Parish, wind gusts of up to 90 mph were recorded. Cooperative rainfall observers noted up to four inches of rainfall through the height of the storm. Preliminary numbers indicate that 15 homes were destroyed and 200 more were damaged across the parish, mainly from falling trees and flying debris. A low to moderate fish kill was reported on the Mermentau River near Lake Arthur.

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.

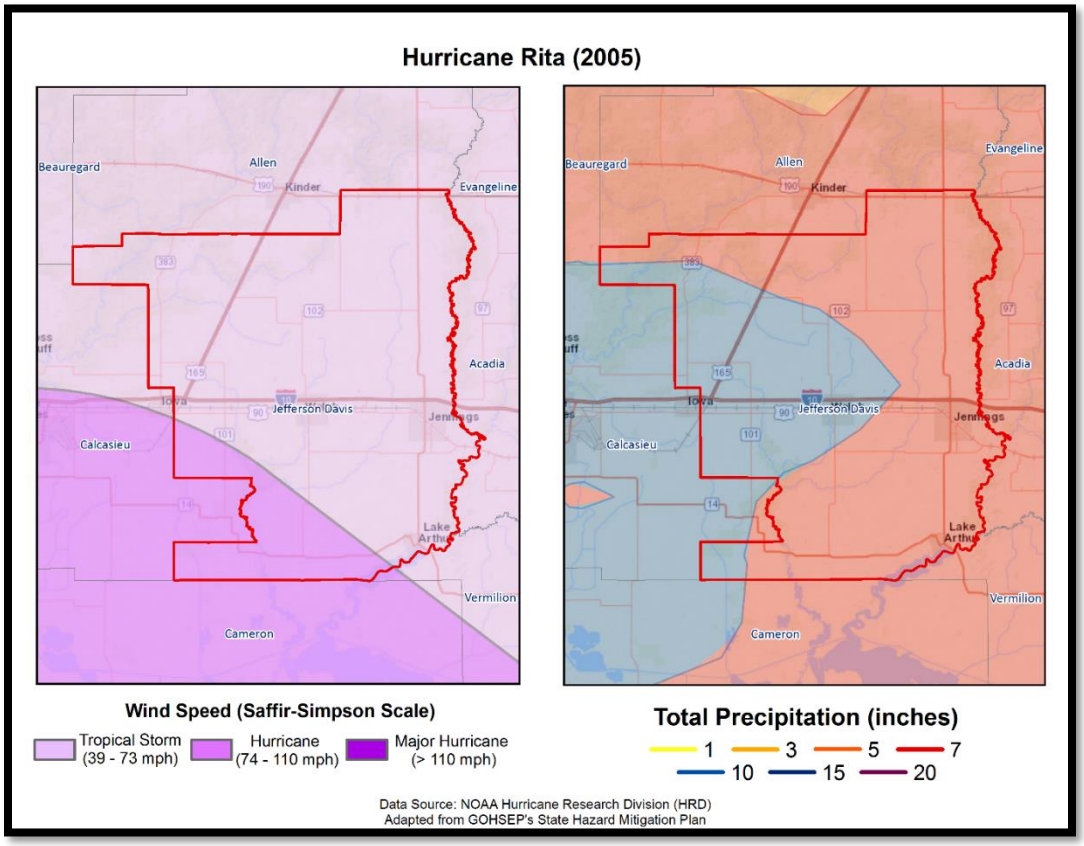


Figure 2-22: Wind Speed and Precipitation Totals in Jefferson Davis Parish for Hurricane Rita

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.

In Jefferson Davis Parish, wind gusts over 90 mph were recorded in parts of the parish. These winds, which coupled with the extensive rainfalls the area experienced, led to total devastation. Countless homes and businesses were damaged or destroyed by the storm.

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.

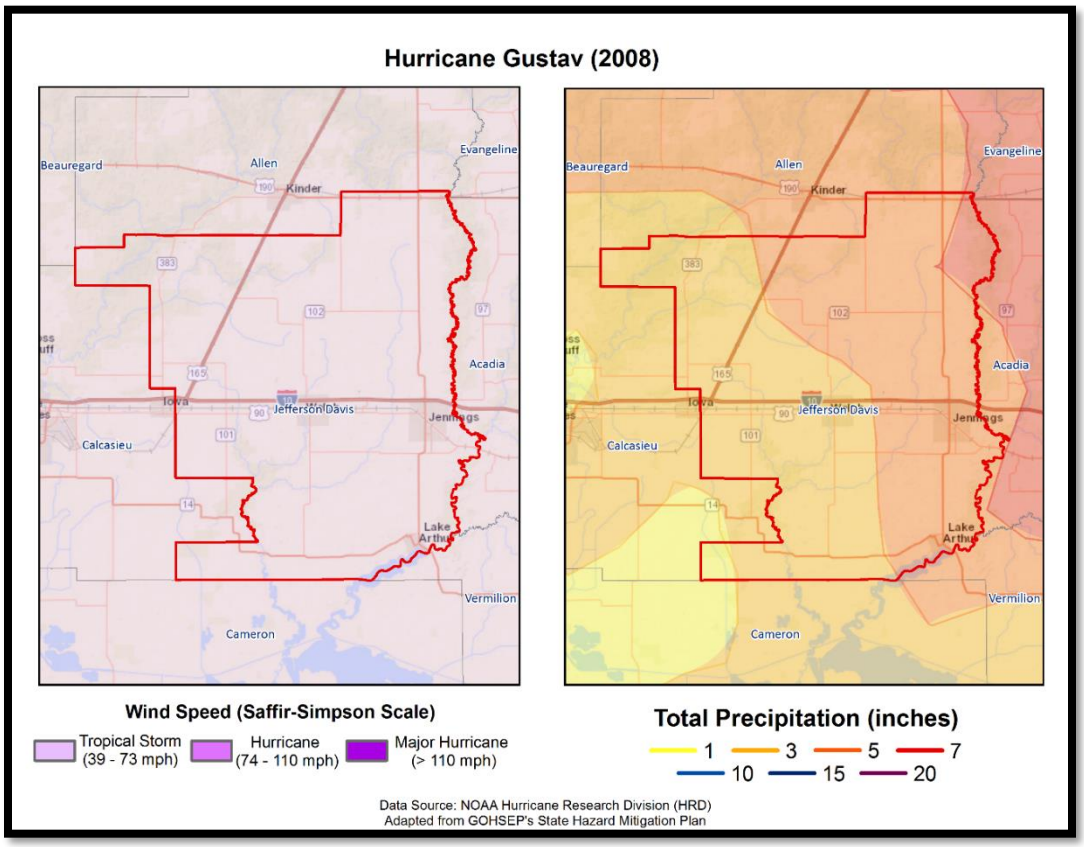


Figure 2-23: Wind Speed and Precipitation Totals in Jefferson Davis Parish for Hurricane Gustav

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.

Hurricane Gustav caused tropical storm force winds in Jefferson Davis Parish, resulting in scattered trees and power lines downed.

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.

Hurricane Ike caused tropical storm wind gusts of 50 to 60 mph, resulting in minor wind damage across Jefferson Davis Parish.

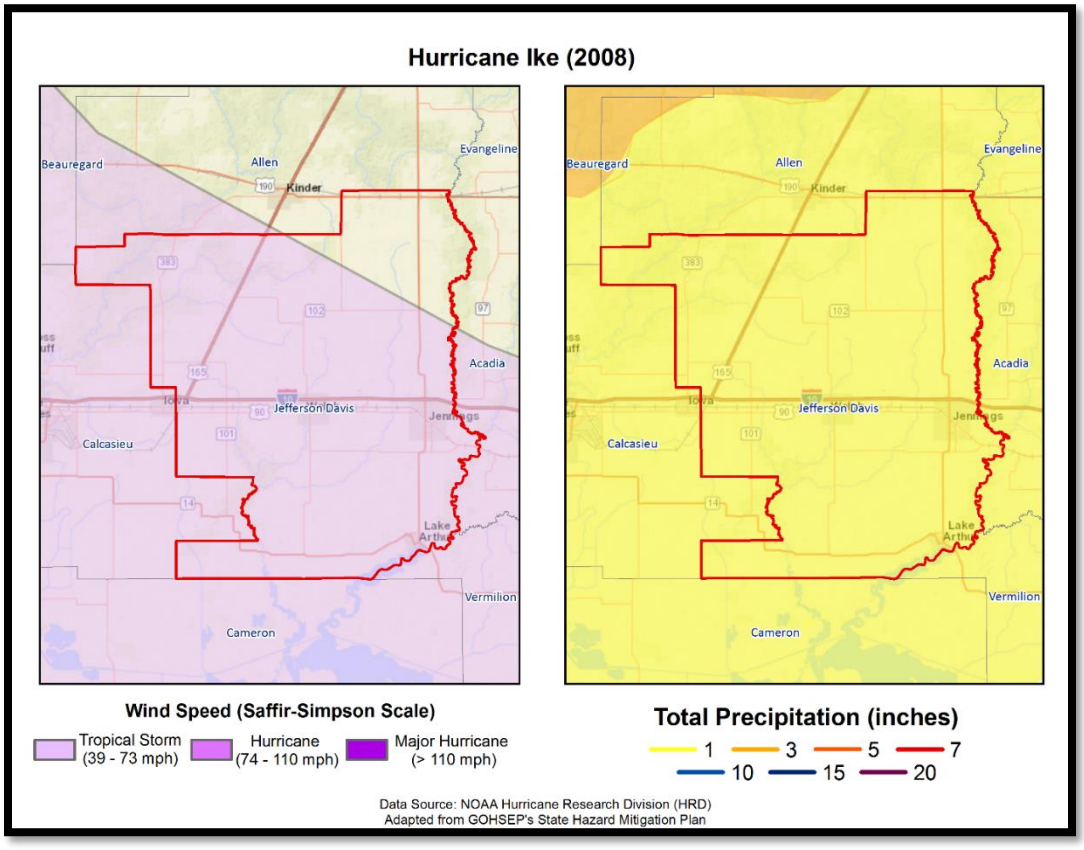


Figure 2-24: Wind Speed and Precipitation Totals in Jefferson Davis Parish for Hurricane Ike

Tropical Storm Lee (2011)

Tropical Storm Lee initially developed as Tropical Depression Thirteen in the middle of the Gulf of Mexico on the evening of Thursday, September 1, 2011. The depression moved slowly north and gradually strengthened, eventually reaching Tropical Storm strength just south of the Louisiana coast on Friday afternoon September 2, 2011. Tropical Storm Lee made only slow and haltingly northward progress over the next 24 hours, eventually moving onshore at the Louisiana coast Saturday night, September 3, 2011, with a maximum sustained wind estimated around 60 mph. Lee moved slowly inland to the north of Baton Rouge late Sunday September 4, 2011, and eventually weakened to a tropical depression Sunday evening. Tropical Depression Lee then moved steadily northeast throughout Monday, September 5, 2011, taking on extra-tropical characteristics over the next 24 hours as it interacted with an upper level disturbance moving through the region. The maximum winds observed in Louisiana were a southerly wind of 46 mph (40 kts) sustained, with a 58 mph (50 kts) gust at New Orleans Lakefront Airport on September 4, 2012, at 0528CST. The lowest minimum central pressure was 993.2 millibars, recorded at Baton Rouge Ryan Field on September 4, 2012, at 0959CST. As Tropical Depression Lee was moving northeast and taking on mid-latitude characteristics, strong northerly winds were experienced across the region, occasionally gusting to higher levels than experienced when Lee was characterized as a tropical cyclone. No fatalities or injuries were associated with any Tropical Storm Lee hazards.

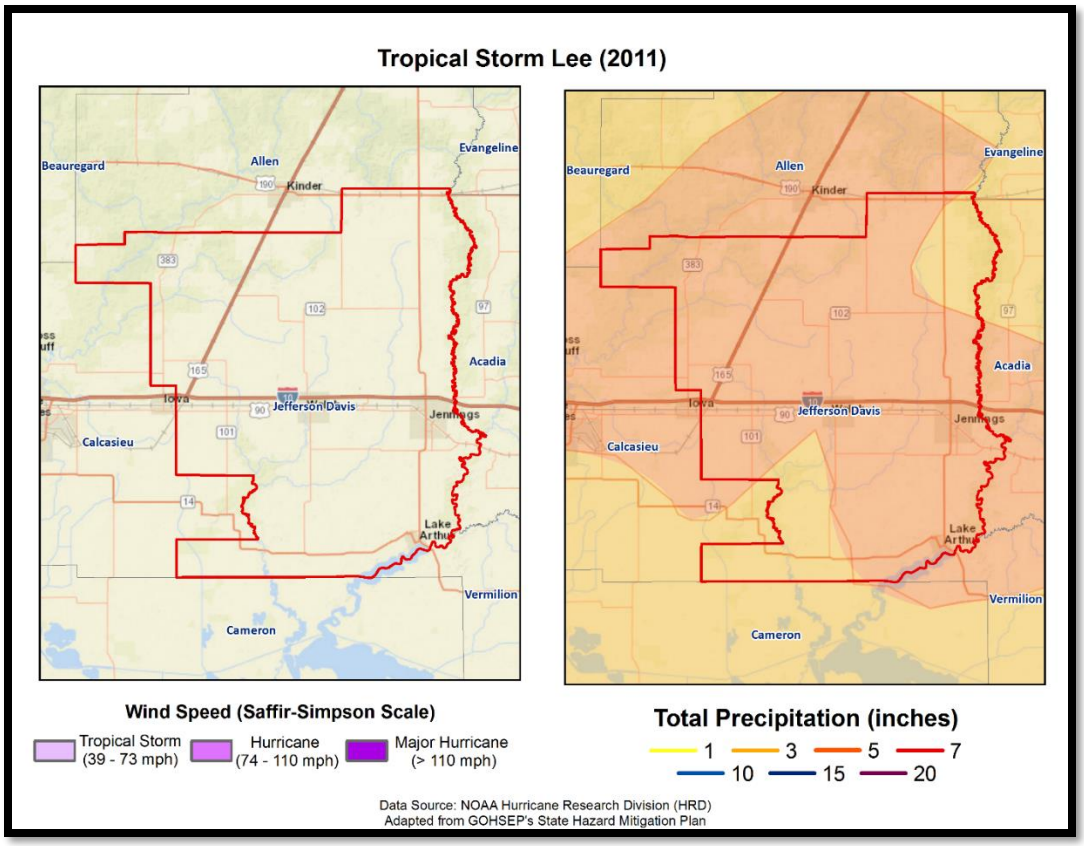


Figure 2-25: Wind Speed and Precipitation Totals in Jefferson Davis Parish for Tropical Storm Lee

The main impacts associated with Tropical Storm Lee were storm surge and rainfall. Both of these impacts were related to its slow speed as it crossed the region, which allowed the circulation to linger over the area for several days. Storm surge associated with Lee caused storm tides three to five feet above normal, resulting in lowland flooding. Additional detailed information about Tropical Storm Lee's storm surge is

contained in the separate storm surge report. Four day rainfall totals ranged from seven to 15 inches across the area. A maximum of 15.48 inches was recorded near Holden in Livingston Parish. Due to dry antecedent conditions, river flooding was minimal for the amount of rainfall that occurred. Wind impacts were generally minimal due to only tropical cyclone strength winds being recorded, resulting in tree limbs being blown down and weak trees toppling, causing power outages.

Isolated power outages were reported due to a few trees blown down across Jefferson Davis Parish.

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

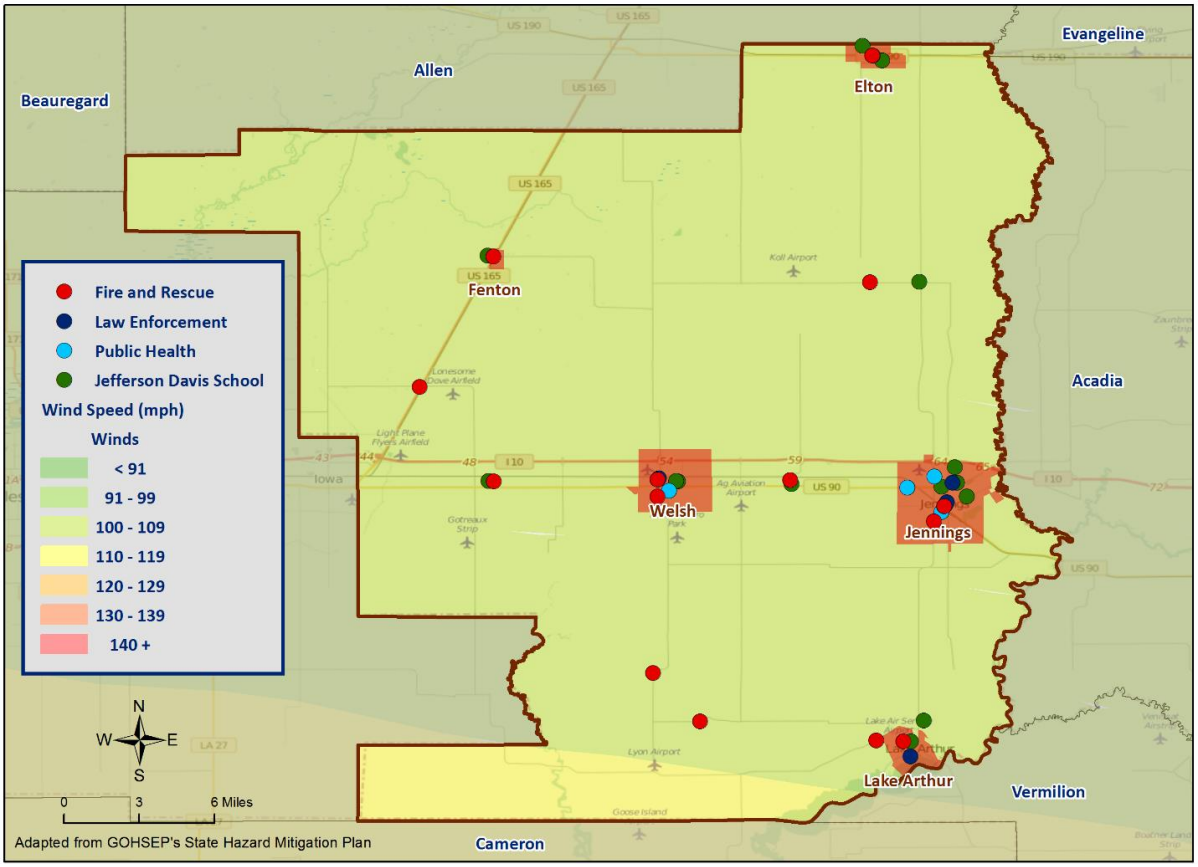


Figure 2-26: Winds Zones for Jefferson Davis Parish in Relation to Critical Facilities

Frequency / Probability

Tropical cyclones are large natural hazard events that regularly impact Jefferson Davis Parish. The annual chance of occurrence for a tropical cyclone is estimated at 20% for Jefferson Davis Parish and its municipalities, with five 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. Based on geographical location alone, Jefferson Davis Parish is highly vulnerable to tropical cyclones. This area has experienced several tropical cyclone events in the past and can expect more in the future.

Estimated Potential Losses

Using Hazus 2.2 100-Year Hurricane Model, the 100-year hurricane scenario was analyzed to determine losses from this worst-case scenario. The following table shows the total economic losses that would result from this occurrence.

Table 2-49: Total Estimated Losses for a 100-Year Hurricane Event
(Source: Hazus 2.2)

Jurisdiction	Estimated Total Losses from 100-Year Hurricane Event
Jefferson Davis Parish (Unincorporated)	$30,497,221
Elton	$2,503,702
Fenton	$841,226
Jennings	$23,046,044
Lake Arthur	$6,077,248
Welsh	$7,160,410
Total	$70,125,851

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 2-50: Ratio of Total Losses to Total Estimated Value of Assets for each Jurisdiction in Jefferson Davis 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	$30,497,221	$1,922,510,000	1.6%
Elton	$2,503,702	$159,758,000	1.6%
Fenton	$841,226	$61,980,000	1.4%
Jennings	$23,046,044	$1,772,074,000	1.3%
Lake Arthur	$6,077,248	$349,165,000	1.7%
Welsh	$7,160,410	$428,250,000	1.7%

Based on the Hazus 2.2 Hurricane Model, estimated total losses range from 1.3% to 1.7% of the total estimated value of all assets in Jefferson Davis Parish.

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 tables on the following pages.

Table 2-51: Estimated Losses in Unincorporated Jefferson Davis Parish for a 100-Year Hurricane Event (Source: Hazus 2.2)

Jefferson Davis Parish (Unincorporated)	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	$372,751
Commercial	$2,295,534
Government	$241,589
Industrial	$315,853
Religious / Non-Profit	$423,598
Residential	$26,561,398
Schools	$286,499
Total	$30,497,221

Table 2-52: Estimated Losses in Elton for a 100-Year Hurricane Event (Source: Hazus 2.2)

Elton	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	$30,601
Commercial	$188,454
Government	$19,833
Industrial	$25,930
Religious / Non-Profit	$34,776
Residential	$2,180,586
Schools	$23,520
Total	$2,503,702

Table 2-53: *Estimated Losses in Fenton for a 100-Year Hurricane Event (Source: Hazus 2.2)*

Fenton	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	$10,282
Commercial	$63,319
Government	$6,664
Industrial	$8,712
Religious / Non-Profit	$11,684
Residential	$732,662
Schools	$7,903
Total	$841,226

Table 2-54: Estimated Losses in Jennings for a 100-Year Hurricane Event (Source: Hazus 2.2)

Jennings	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	$281,679
Commercial	$1,734,682
Government	$182,563
Industrial	$238,683
Religious / Non-Profit	$320,103
Residential	$20,071,834
Schools	$216,500
Total	$23,046,044

Table 2-55: Estimated Losses in Lake Arthur for a 100-Year Hurricane Event (Source: Hazus 2.2)

Lake Arthur	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	$74,279
Commercial	$457,436
Government	$48,142
Industrial	$62,941
Religious / Non-Profit	$84,411
Residential	$5,292,948
Schools	$57,091
Total	$6,077,248

Table 2-56: Estimated Losses in Welsh for a 100-Year Hurricane Event (Source: Hazus 2.2)

Welsh	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	$87,518
Commercial	$538,966
Government	$56,722
Industrial	$74,159
Religious / Non-Profit	$99,456
Residential	$6,236,322
Schools	$67,267
Total	$7,160,410

Threat to People

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

Table 2-57: Number of People Susceptible to a 100-Year Hurricane Event in Jefferson Davis Parish (Source: Hazus 2.2)

Number of People Exposed to Hurricane Hazards			
Location	**# in Community**	**# in Hazard Area**	**% in Hazard Area**
Parish (Unincorporated)	**13,740**	**13,740**	**100.0%**
Elton	**1,128**	**1,128**	**100.0%**
Fenton	**379**	**379**	**100.0%**
Jennings	**10,383**	**10,383**	**100.0%**
Lake Arthur	**2,738**	**2,738**	**100.0%**
Welsh	**3,226**	**3,226**	**100.0%**
Total	**31,594**	**31,594**	**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 2-58: Vulnerable Populations in Unincorporated Jefferson Davis Parish for a 100-Year Hurricane Event (Source: Hazus 2.2)

Jefferson Davis Parish (Unincorporated)		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	13,740	100.0%
Persons Under 5 Years	1,004	7.3%
Persons Under 18 Years	2,649	19.3%
Persons 65 Years and Over	1,994	14.5%
White	10,926	79.5%
Minority	2,814	20.5%

Table 2-59: Vulnerable Populations in Elton for a 100-Year Hurricane Event (Source: Hazus 2.2)

Elton		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	1,128	100.0%
Persons Under 5 Years	73	6.5%
Persons Under 18 Years	215	19.1%
Persons 65 Years and Over	207	18.4%
White	633	56.1%
Minority	495	43.9%

Table 2-60: Vulnerable Populations in Fenton for a 100-Year Hurricane Event (Source: Hazus 2.2)

Fenton		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	379	100.0%
Persons Under 5 Years	34	9.0%
Persons Under 18 Years	75	19.8%
Persons 65 Years and Over	46	12.1%
White	139	36.7%
Minority	240	63.3%

Table 2-61: Vulnerable Populations in Jennings for a 100-Year Hurricane Event (Source: Hazus 2.2)

Jennings		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	10,383	100.0%
Persons Under 5 Years	793	7.6%
Persons Under 18 Years	1,881	18.1%
Persons 65 Years and Over	1,811	17.4%
White	7,107	68.5%
Minority	3,276	31.6%

Table 2-62: Vulnerable Populations in Lake Arthur for a 100-Year Hurricane Event (Source: Hazus 2.2)

Lake Arthur		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	2,738	100.0%
Persons Under 5 Years	195	7.1%
Persons Under 18 Years	531	19.4%
Persons 65 Years and Over	409	14.9%
White	2,343	85.6%
Minority	395	14.4%

Table 2-63: Vulnerable Populations in Welsh for a 100-Year Hurricane Event (Source: Hazus 2.2)

Welsh		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	3,226	100.0%
Persons Under 5 Years	248	7.7%
Persons Under 18 Years	599	18.6%
Persons 65 Years and Over	523	16.2%
White	2,500	77.5%
Minority	726	22.5%

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 2-27* displays the areas of wildland-urban interaction in Jefferson Davis 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 2-64: 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 Jefferson Davis Parish and its jurisdictions.

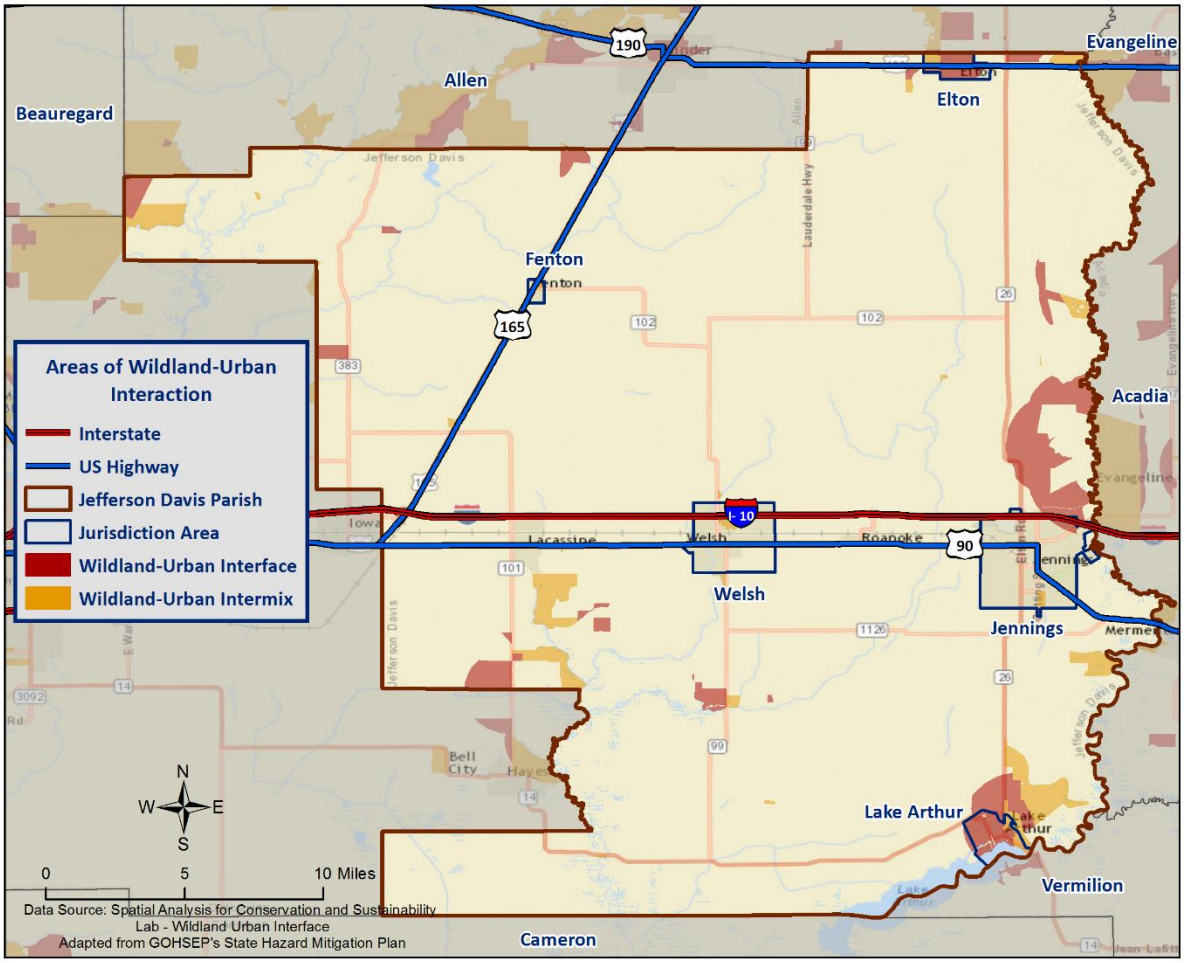


Figure 2-27: Wildland-Urban Interaction in Jefferson Davis Parish

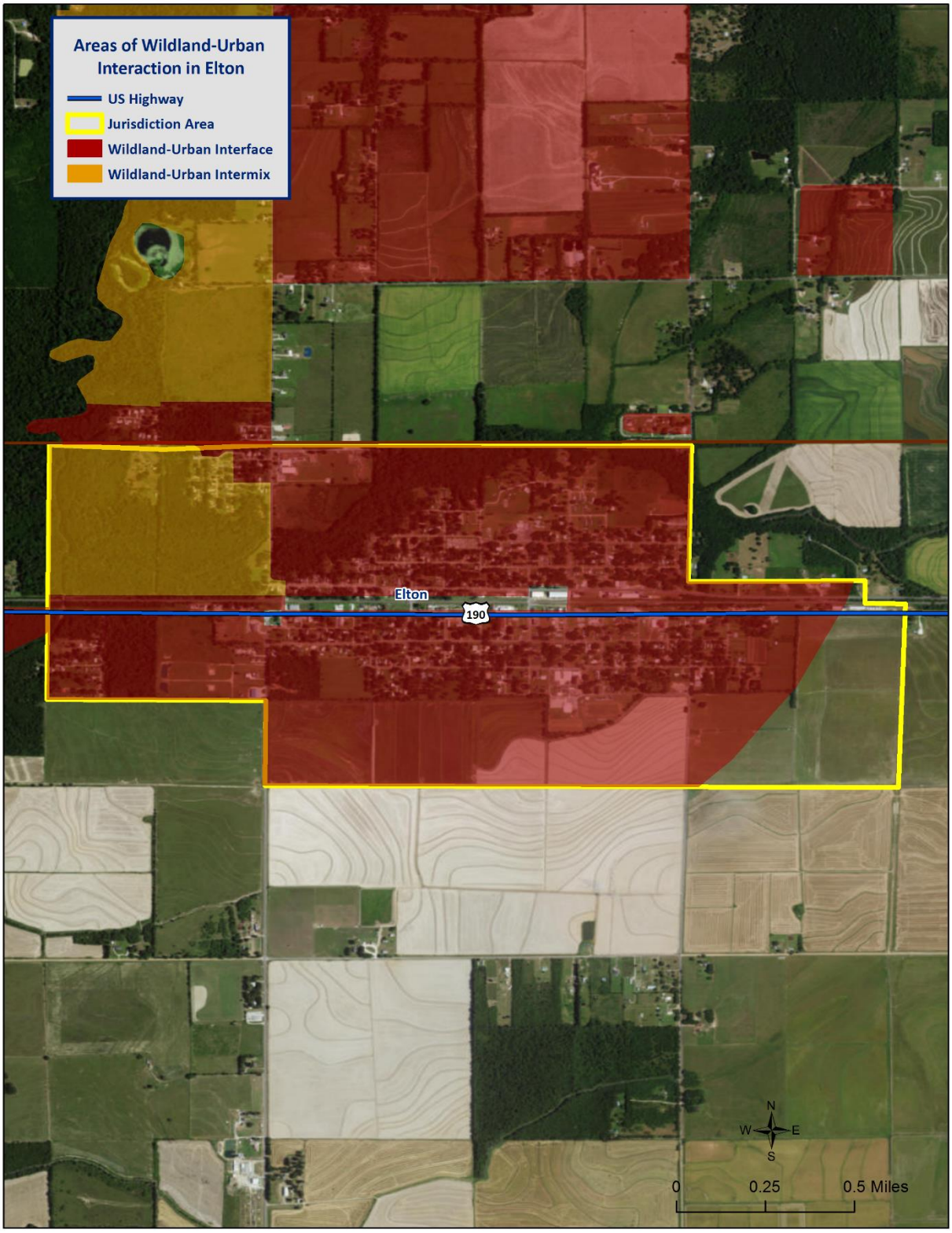


Figure 2-28: Wildland-Urban Interaction in Elton

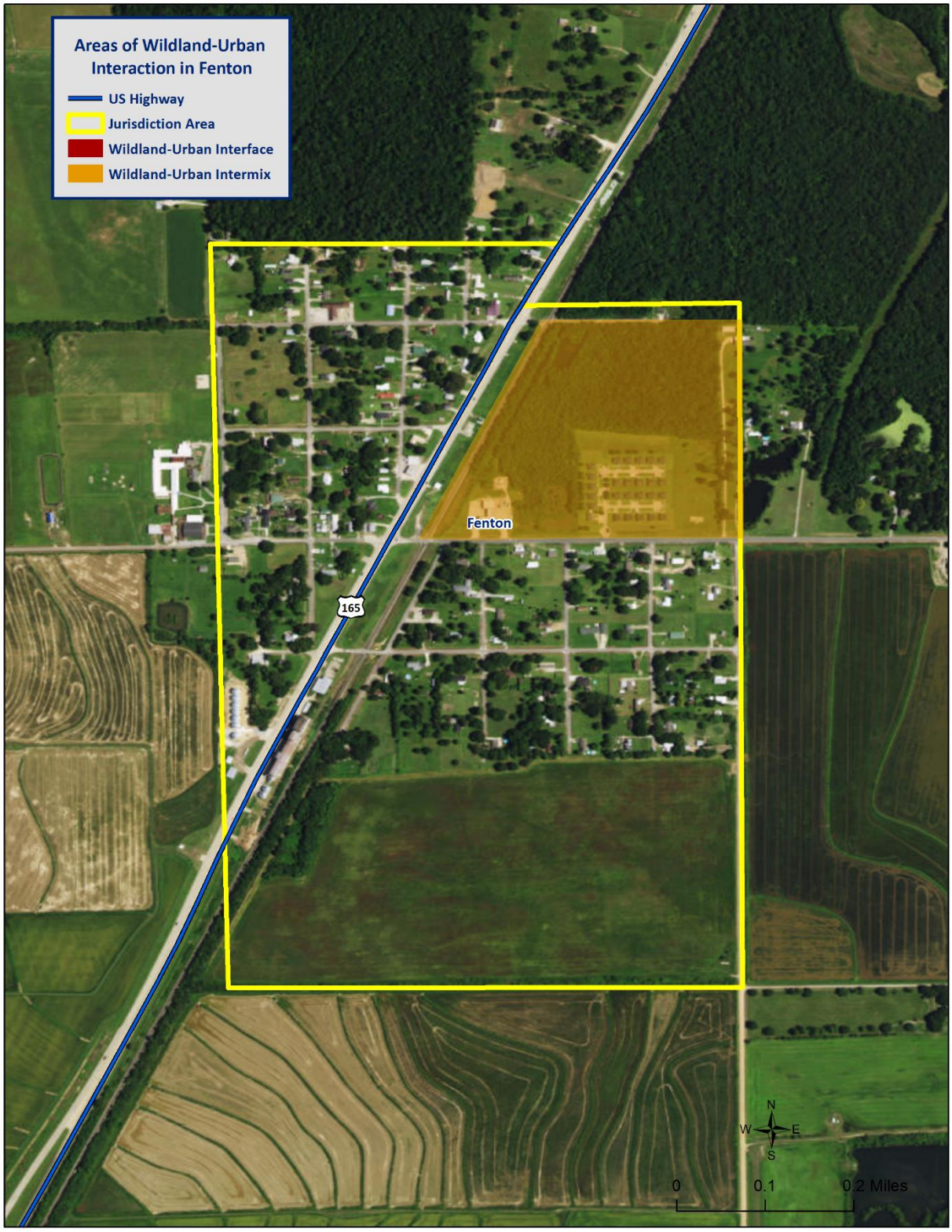


Figure 2-29: Wildland-Urban Interaction in Fenton

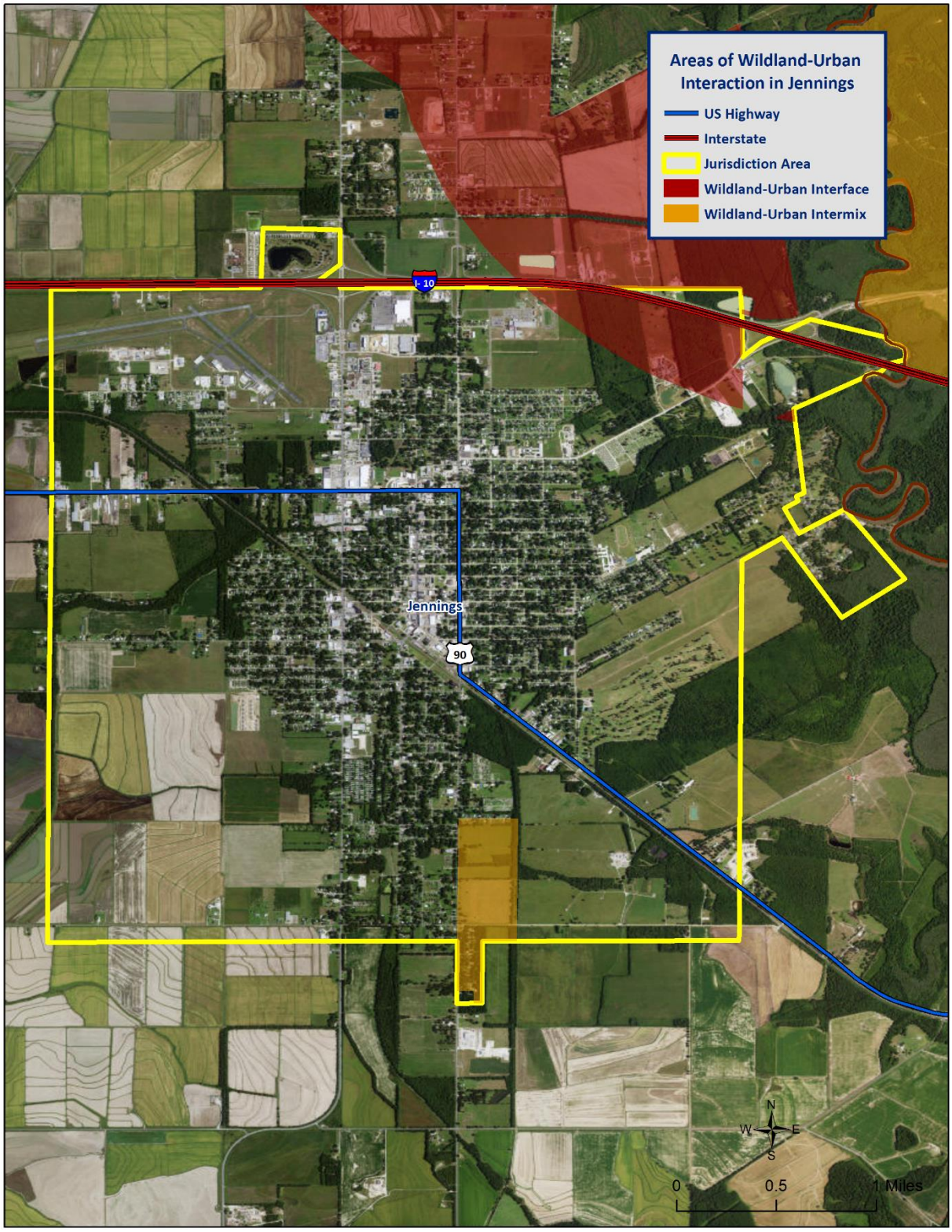


Figure 2-30: Wildland-Urban Interaction in Jennings

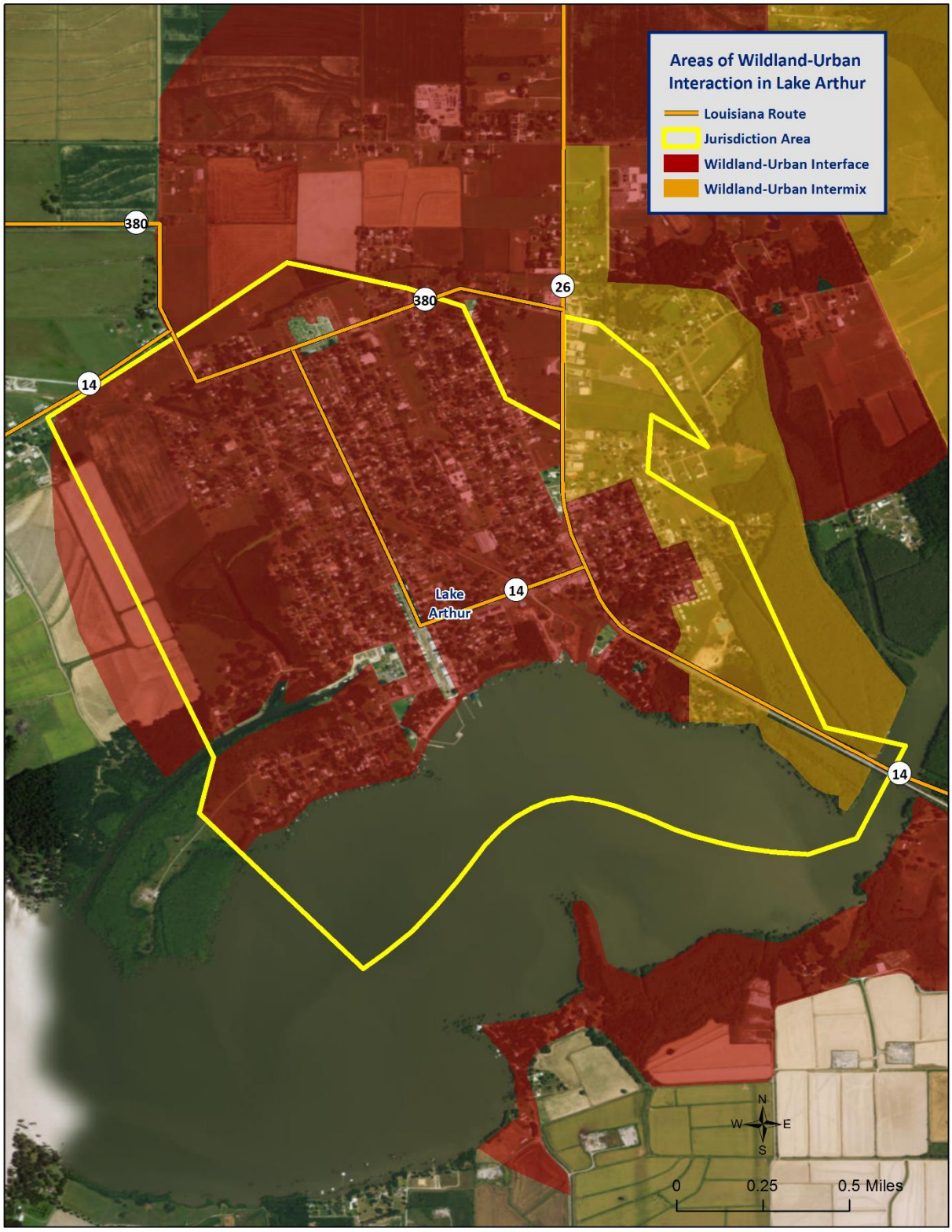


Figure 2-31: Wildland-Urban Interaction in Lake Arthur

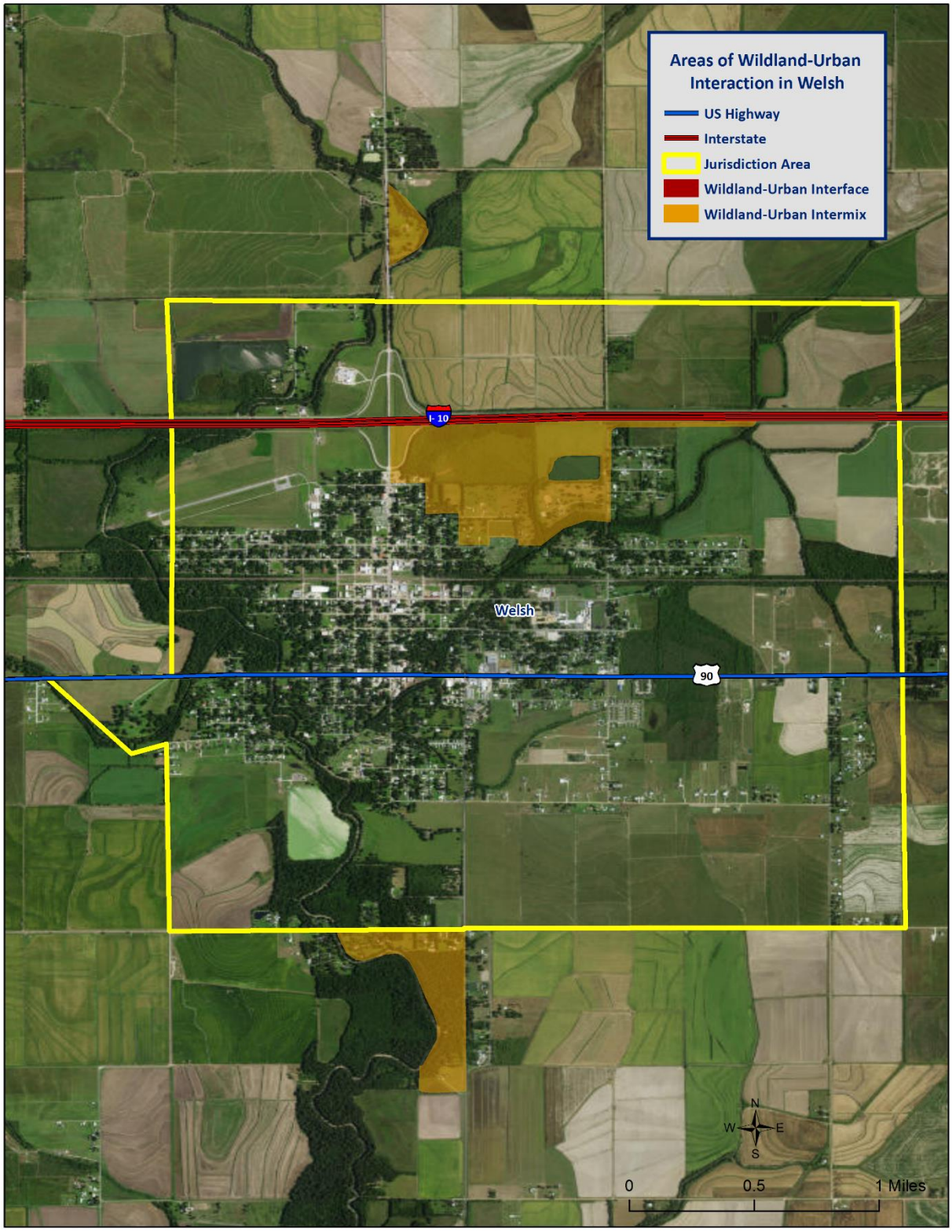


Figure 2-32: Wildland-Urban Interaction in Welsh

Previous Occurrences / Extents

There have been no reported wildfire events that have occurred within the boundaries of Jefferson Davis Parish between the years of 1990 and 2015. Since 2010, there have been no reported wildfire events in the incorporated areas of Elton, Fenton, Jennings, Lake Arthur, and Welsh.

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

Table 2-65: Potential Wildfire Intensity Levels for Jefferson Davis Parish
(Source: Southern Wildfire Assessment Portal)

Potential Wildfire Intensity	
Jefferson Davis Parish (Unincorporated)	Highest Intensity Level 5
Elton	Moderate Intensity Level 3
Fenton	Moderate Intensity Level 3
Jennings	Moderate to High Intensity Level 3.5
Lake Arthur	Low Intensity Level 2
Welsh	Moderate Intensity Level 3

Frequency / Probability

With no recorded events in 25 years, wildfire events within the boundaries of Jefferson Davis Parish have an annual chance of occurrence calculated at less than 1%.

Estimated Potential Losses

There have been no wildfire events that have caused property damage, crop damage, injuries, or fatalities in Jefferson Davis 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 2-27* displays the areas of wildland-urban interaction in Jefferson Davis Parish.

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

Table 2-66: Total Building Exposure by Wildland-Urban Interaction Areas
(Source: Hazus 2.2)

Jurisdiction	Estimated Total Building Exposure
Jefferson Davis Parish (Unincorporated)	$687,165,000
Elton	$159,758,000
Fenton	$9,918,000
Jennings	$186,825,000
Lake Arthur	$341,169,000
Welsh	$26,328,000
Total	$1,411,163,000

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 following tables:

Table 2-67: Estimated Exposure for Unincorporated Jefferson Davis Parish by Sector (Source: Hazus 2.2)

Jefferson Davis Parish (Unincorporated)	Estimated Total Building Exposure by Sector
Agricultural	$8,778,000
Commercial	$38,525,000
Government	$1,931,000
Industrial	$12,148,000
Religious / Non-Profit	$8,756,000
Residential	$613,013,000
Schools	$4,014,000
Total	$687,165,000

Table 2-68: Estimated Exposure for Elton by Sector (Source: Hazus 2.2)

Elton	Estimated Total Building Exposure by Sector
Agricultural	$176,000
Commercial	$17,188,000
Government	$942,000
Industrial	$2,121,000
Religious / Non-Profit	$11,914,000
Residential	$124,111,000
Schools	$3,306,000
Total	$159,758,000

Table 2-69: Estimated Exposure for Fenton by Sector (Source: Hazus 2.2)

Fenton	Estimated Total Building Exposure by Sector
Agricultural	$0
Commercial	$264,000
Government	$176,000
Industrial	$390,000
Religious / Non-Profit	$90,000
Residential	$8,998,000
Schools	$0
Total	$9,918,000

Table 2-70: Estimated Exposure for Jennings by Sector
(Source: Hazus 2.2)

Jennings	Estimated Total Building Exposure by Sector
Agricultural	$0
Commercial	$7,468,000
Government	$244,000
Industrial	$540,000
Religious / Non-Profit	$4,682,000
Residential	$166,263,000
Schools	$7,628,000
Total	$186,825,000

Table 2-71: Estimated Exposure for Lake Arthur by Sector
(Source: Hazus 2.2)

Lake Arthur	Estimated Total Building Exposure by Sector
Agricultural	$426,000
Commercial	$40,642,000
Government	$1,576,000
Industrial	$10,300,000
Religious / Non-Profit	$14,506,000
Residential	$266,709,000
Schools	$7,010,000
Total	$341,169,000

Table 2-72: Estimated Exposure for Welsh by Sector
(Source: Hazus 2.2)

Welsh	Estimated Total Building Exposure by Sector
Agricultural	$428,000
Commercial	$2,408,000
Government	$0
Industrial	$0
Religious / Non-Profit	$806,000
Residential	$22,686,000
Schools	$0
Total	$26,328,000

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 2-73: Populations Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)

Number of People Located in Wildland-Urban Interaction Area			
Location	**# in Community**	**# in Area**	**% in Area**
Jefferson Davis Parish (Unincorporated)	**13,740**	**5,365**	**39%**
Elton	**1,128**	**1,128**	**100%**
Fenton	**379**	**69**	**18.2%**
Jennings	**10,383**	**1,190**	**11.5%**
Lake Arthur	**2,738**	**2,738**	**100%**
Welsh	**3,226**	**292**	**9.1%**
Total	**31,594**	**10,782**	**34.1%**

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 2-74: Population in Unincorporated Jefferson Davis Parish Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)

Jefferson Davis Parish (Unincorporated)		
Category	**Total Numbers**	**Percentage of People in Wildland-Urban Interaction Area**
Number in Hazard Area	5,365	39.0%
Persons Under 5 Years	392	7.3%
Persons Under 18 Years	1,034	19.3%
Persons 65 Years and Over	778	14.5%
White	4,266	79.5%
Minority	1,099	20.5%

Table 2-75: Population in Elton Located within a Wildland-Urban Interaction Area (Source: 2010 U.S. Census Data)

Elton		
Category	**Total Numbers**	**Percentage of People in Wildland-Urban Interaction Area**
Number in Hazard Area	1,128	100.0%
Persons Under 5 Years	73	6.5%
Persons Under 18 Years	215	19.1%
Persons 65 Years and Over	207	18.4%
White	633	56.1%
Minority	495	43.9%

Table 2-76: Population in Fenton Located within a Wildland-Urban Interaction Area (Source: 2010 U.S. Census Data)

Fenton		
Category	**Total Numbers**	**Percentage of People in Wildland-Urban Interaction Area**
Number in Hazard Area	69	18.2%
Persons Under 5 Years	6	9.0%
Persons Under 18 Years	14	19.8%
Persons 65 Years and Over	8	12.1%
White	25	36.7%
Minority	44	63.3%

Table 2-77: Population in Jennings Located within a Wildland-Urban Interaction Area (Source: 2010 U.S. Census Data)

Jennings		
Category	**Total Numbers**	**Percentage of People in Wildland-Urban Interaction Area**
Number in Hazard Area	1,190	11.5%
Persons Under 5 Years	91	7.6%
Persons Under 18 Years	216	18.1%
Persons 65 Years and Over	208	17.4%
White	815	68.5%
Minority	375	31.6%

Table 2-78: Population in Lake Arthur Located within a Wildland-Urban Interaction Area (Source: 2010 U.S. Census Data)

Lake Arthur		
Category	**Total Numbers**	**Percentage of People in Wildland-Urban Interaction Area**
Number in Hazard Area	2,738	100.0%
Persons Under 5 Years	195	7.1%
Persons Under 18 Years	531	19.4%
Persons 65 Years and Over	409	14.9%
White	2,343	85.6%
Minority	395	14.4%

Table 2-79: Population in Welsh Located within a Wildland-Urban Interaction Area (Source: 2010 U.S. Census Data)

Welsh		
Category	**Total Numbers**	**Percentage of People in Wildland-Urban Interaction Area**
Number in Hazard Area	292	9.1%
Persons Under 5 Years	22	7.7%
Persons Under 18 Years	54	18.6%
Persons 65 Years and Over	47	16.2%
White	226	77.5%
Minority	66	22.5%

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 2-80: 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 Jefferson Davis Parish as all of the adjacent parishes, the entire planning area for Jefferson Davis Parish is equally at risk for winter storms.

Previous Occurrences / Extents

According to SHELDUS, there have been four reported winter storm events that have occurred within the boundaries of Jefferson Davis 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, Jefferson Davis Parish can expect an ice damage index of 2 on the Sperry-Piltz Ice Accumulation Index.

Table 2-81: Previous Occurrences for Winter Storm Events

Date	Synopsis	Property Damage	Crop Damage
March 14, 1993	A widespread, damaging freeze occurred. Temperatures fell into the upper teens across the northern parishes and into the 20s elsewhere. Total agricultural losses are estimated to be about $8.9 million.	$0	$227,828
January 12, 1997	A record ice storm hit southwest Louisiana. Over 40,000 electric customers were without power for up to six days due to the number of downed trees and power lines. Numerous traffic accidents were attributed to icy roadways. Millions of tons of debris were removed, taking over two months to pick up in some areas. Hundreds of homes received minor roof damage.	$2,900,815	$0
December 11, 2008	A cold upper level low pressure system moved across southwest Louisiana. This rare snow event lasted from 5 to 7 hours with numerous reports of large snowflakes to the size of half dollars, along with a few reports of thundersnow. A reporter in Welsh observed two inches of snowfall. This was only the second time in history measurable snow has occurred in the month of December.	$3,927	$0
February 3, 2011	A mix of freezing rain, sleet, and snow spread across the area. Most of central Louisiana along and north of US Highway 190 received over one quarter of an inch of ice accumulation, with some areas seeing up to one half inch of ice. This resulted in widespread power outages. Further to the south, areas received from around one tenth to nearly one quarter of an inch of ice accumulation.	$10,524	$0

Based on previous winter storm events, the worst-case scenario for Jefferson Davis Parish and its incorporated areas is approximately one to two inches of snow accumulation and approximately one quarter to one half inch of ice accumulation.

Frequency / Probability

With four recorded events in 25 years, winter storm events within the boundaries of Jefferson Davis Parish have an annual chance of occurrence calculated at 16% based on the SHELDUS dataset.

Estimated Potential Losses

Since 1990, there have been four 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 $2,915,266. 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 $116,611. 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 table below provides an estimate of potential property losses for Jefferson Davis Parish based on the 2010 Census data.

Table 2-82: Estimated Annual Losses for Winter Weather Events in Jefferson Davis Parish

Estimated Annual Potential Losses from Winter Weather for Jefferson Davis Parish					
Unincorporated Jefferson Davis Parish (43.5% of Population)	Elton (3.6% of Population)	Fenton (1.2% of Population)	Jennings (32.9% of Population)	Lake Arthur (8.7% of Population)	Welsh (10.2% of Population)
$51,883	$1,944	$1,800	$43,254	$12,263	$1,930

From 1990 - 2015, there have been two injuries and no fatalities as a result of winter weather in Jefferson Davis Parish.

Vulnerability

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

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 mi^2 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 mi^2 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

The incorporated area of Lake Arthur is the only area in Jefferson Davis Parish planning area that has levees. The Town of Lake Arthur is in the southeastern most corner of Jefferson Davis Parish, along the north side of Lake Arthur, on the border with Vermilion Parish. Most of the development in this community is concentrated in a one-mile area just north of the easternmost portion of the lake. The remaining land is mostly farmland, with a few scattered isolated communities along the lake front. Just east of The Narrows, a pinch point in the center of the lake that divides it into equal halves, a canal cuts through the forested land on the north side of the lake, bending parallel to the lake and continuing toward the downtown area. The canal and lakefront carve out a neighborhood community in the southwest corner of the main population center, just west of the boardwalk and downtown commercial area. The levees in Lake Arthur are concentrated in this area and structured in such a way that they protect both the neighborhood and the commercial district from flooding along the canal and lake. Per the Broadmore Gravity Drainage District, these levees are eight feet in height and constructed of clay material.

Previous Occurrences / Extents

There have been no reported levee failures in Jefferson Davis Parish from 1990 to 2015. Per the Broadmore Gravity Drainage District, a levee failure would result in a flood depth of approximately two to eight feet, and flood waters would inundate everything east of Highway 26 and south of 3rd Street in the town of Lake Arthur. The worst case scenario for the town of Lake Arthur would be flood depths of approximately 8 feet.

Frequency / Probability

Based on the 25-year record, it is determined that a levee failure has less than a 1% annual chance of occurrence in the Jefferson Davis Parish planning area.

Estimated Potential Losses

Per the Broadmore Drainage District, it is estimated that if a levee were to fail, many homes, businesses, and a church would be flooded causing approximately $10 million in damage.

Vulnerability

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

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3. Capability Assessment

This section summarizes the results of the Jefferson Davis 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, Jefferson Davis 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

Jefferson Davis 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 Jefferson Davis 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 Jefferson Davis Parish and its jurisdictions are shown in the table on the following page.

Table 3-1: Jefferson Davis Parish Planning and Regulatory Capabilities

Planning and Regulatory							
Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place.							
	Jefferson Davis Parish	Elton	Fenton	Jennings	Lake Arthur	Welsh	
Plans					Yes / No		
Comprehensive / Master Plan	YES	Yes	YES	YES	no	NO	
Capital Improvements Plan	YES	NO	YES	YES	no	NO	
Economic Development Plan	YES	YES	YES	YES	no	NO	
Local Emergency Operations Plan	YES	NO	YES	YES	yes	YES	
Continuity of Operations Plan	NO	NO	YES	YES	yes	NO	
Transportation Plan	NO	NO	YES	NO	no	NO	
Stormwater Management Plan	NO	NO	NO	NO	no	NO	
Community Wildfire Protection Plan	NO	NO	NO	NO	no	NO	
Other plans (redevelopment, recovery, coastal zone management)	NO	NO	NO	NO	no	NO	
Building Code, Permitting and Inspections					Yes / No		
Building Code	YES	YES	YES	YES	yes	YES	
Building Code Effectiveness Grading Schedule (BCEGS) Score	NO	NO	NO	NO	no	NO	
Fire Department ISO/PIAL rating	YES	YES	NO	YES	yes	YES	
Site plan review requirements	YES	YES	YES	YES	yes	YES	
Land Use Planning and Ordinances					Yes / No		
Zoning Ordinance	YES	NO	NO	YES	no	YES	
Subdivision Ordinance	YES	NO	NO	YES	no	YES	
Floodplain Ordinance	YES	YES	YES	YES	yes	YES	
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	NO	NO	NO	NO	no	NO	
Flood Insurance Rate Maps	YES	YES	YES	YES	yes	YES	
Acquisition of land for open space and public recreation uses	NO	NO	NO	YES	no	NO	
Other	NO	NO	NO	NO	no	NO	

Building Codes, Permitting, Land Use Planning and Ordinances

The Jefferson Davis Police Jury provides oversight for building permits and codes, land use planning for the unincorporated areas and the incorporated areas of Jennings and Welsh, and all parish ordinances where applicable.

As of the 2016 update, Jefferson Davis 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 Jefferson Davis Police Jury is also responsible for enforcing the parish ordinances relating to health and safety, property maintenance standards, and condemnation of unsafe structures.

The Jefferson Davis 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, Jefferson Davis Parish as a whole has a system in place to coordinate and share these capabilities through Jefferson Davis 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, Jefferson Davis 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 Jefferson Davis Parish and its jurisdictions.

Table 3-2: Jefferson Davis Parish Administrative and Technical Capabilities

Administration and Technical							
Identify whether your community has the following administrative and technical capabilities. For smaller jurisdictions without local staff resources, if there are p							
	Jefferson Davis Parish	Elton	Fenton	Jennings	Lake Arthur	Welsh	Comments
Administration	Yes / No						
Planning Commission	YES	NO	YES	YES	no	YES	
Mitigation Planning Committee	YES	NO	YES	NO	no	NO	
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	YES	YES	YES	YES	yes	YES	
Staff	Yes / No; FT/PT; % Hazard Mitigation						
Chief Building Official	YES	NO	YES	YES	no	NO	
Floodplain Administrator	YES	NO	YES	YES	yes	YES	Elton - Relies on Parish
Emergency Manager	YES	NO	YES	YES	yes	YES	
Community Planner	NO	NO	YES	NO	no	NO	
Civil Engineer	YES	NO	YES	YES	yes	YES	
GIS Coordinator	NO	NO	YES	NO	no	NO	
Grant Writer	NO	NO	YES	YES	no	YES	
Other	NO	NO	NO	NO	no	NO	
Technical	Yes / No						
Warning Systems / Service (Reverse 911, outdoor warning signals)	YES	YES	YES	YES	no	NO	
Hazard Data & Information	YES	NO	YES	YES	yes	NO	
Grant Writing	NO	NO	YES	YES	no	YES	
Hazus Analysis	NO	NO	YES	NO	no	NO	
Other	NO	NO	NO	NO	no	NO	

Financial capabilities are the resources that Jefferson Davis 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 resources available to fund mitigation actions in Jefferson Davis Parish and its jurisdictions are outlined in the table on the next page.

Table 3-3: Jefferson Davis Parish Financial Capabilities

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

Jefferson Davis 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: Jefferson Davis 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							
	Jefferson Davis Parish	Elton	Fenton	Jennings	Lake Arthur	Welsh	
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	YES	NO	yes	NO	
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	YES	NO	YES	YES	yes	NO	
Natural Disaster or safety related school program	YES	NO	NO	YES	yes	NO	
Storm Ready certification	YES	NO	NO	YES	no	NO	
Firewise Communities certification	NO	NO	NO	YES	no	NO	
Public/Private partnership initiatives addressing disaster-related issues	YES	NO	NO	YES	no	NO	
Other	NO	NO	NO	NO	no	NO	

In some cases, the jurisdictions rely on Jefferson Davis Parish OHSEP and/or Jefferson Davis 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, Jefferson Davis 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 Jefferson Davis 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:

- Village of Elton
- Village of Fenton
- City of Jennings
- Town of Lake Arthur
- Town of Welsh

Flood Insurance and Community Rating System

Jefferson Davis 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, including Lake Charles (class 8) and Calcasieu Parish (class 8). 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 2011[1], 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

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

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.

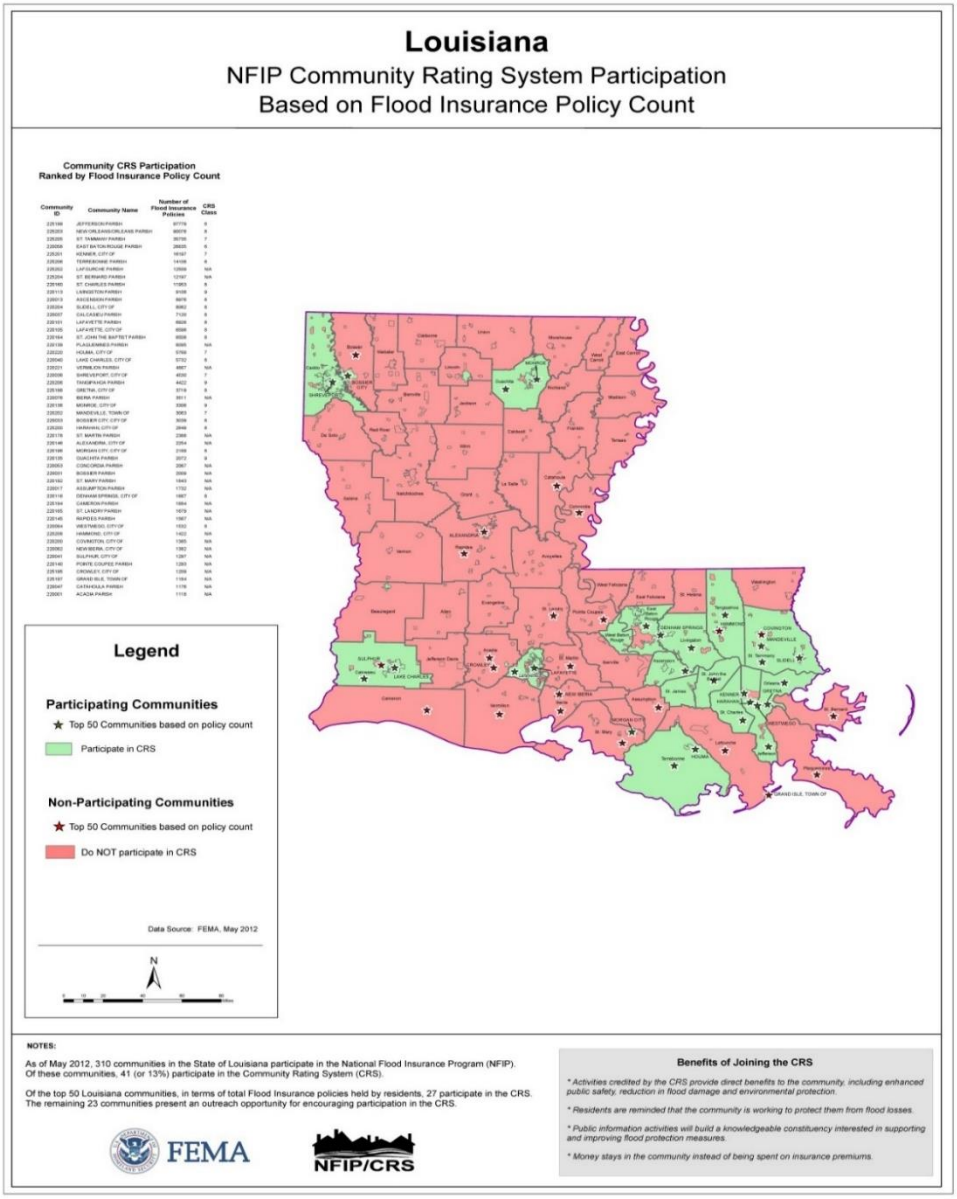

Figure 3-2: Louisiana CRS NFIP Participation
(Source: FEMA[2])

[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

Jefferson Davis 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.

Jefferson Davis 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 Jefferson Davis Parish Hazard Mitigation Plan Steering Committee, under the coordination of the Jefferson Davis 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 March 2016 – October 2016.

An online public opinion survey was conducted of Jefferson Davis Parish residents between April and October 2016. The survey was designed to capture public perceptions and opinions regarding natural hazards in Jefferson Davis 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 Jefferson Davis 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 Jefferson Davis Parish survey can be found at the following link:

https://www.surveymonkey.com/r/JeffersonDavisParish

During the public meeting in September, 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 Jefferson Davis 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, Jefferson Davis 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 Jefferson Davis 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 five goals remain valid.

The goals are as follows:

- Reduce exposure to damage from flooding
- Ensure the delivery of critical services to the residents of the parish communities before, during, and after a hazard event
- Guide development to reduce the exposure of new and existing improvements to hazard events
- Enhance structures and infrastructure to reduce the impact of hazard events
- Increase public awareness and support of hazard mitigation

The Mitigation Action Plan focuses on actions to be taken by Jefferson Davis 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 Jefferson Davis Parish Hazard Mitigation Plan Steering Committee and participating jurisdictions each identified actions that would reduce and/or prevent future damage within Jefferson Davis 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.

Jefferson Davis 2011 Hazard Mitigation Action Update

Jefferson Davis Parish					
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
J1: Wind Retrofits	Install wind retrofits to the buildings listed in Table 51	HMGP	JDPPJ	Hurricane, Tornado, Thunderstorms	In Progress
J2: Drainage Flow Capacity	Enhance the flow capacity of the drainage system to meet the increases in storm water runoff that have occurred over the last several years. This measure includes, but is not limited to, widening ditches and replacing undersized culverts.	HMGP, CDBG, Parish Drainage Districts, Municipalities	JDP Drainage District & Municipalities	Flood	Carried Over
J3: Road Elevation	Elevation of roads including but not limited to the town near Blue Bayou Drainage canal and Powell Road on the western side of the town and areas within potential levee inundation areas.	Town of Elton, Bayou Nezpique Drainage District, HMGP	Elton & JDPPJ	Flood, Levee	Carried Over
J4: Bank Stabilization	Stabilization of banks, including but not limited to the acquired property on Providence in the Town of Welsh and various locations within Lake Arthur.	HMGP, Town of Welsh, Town of Lake Arthur	Town of Lake Arthur and Welsh	Flood	Carried Over
J5: Flood Control Project	Implement flood control project in the Town of Lake Arthur	Town of Lake Arthur, State of Louisiana	Town of Lake Arthur	Flood	Carried Over

Jefferson Davis Parish					
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
J6: Equipment Hardening	Harden equipment at existing critical facilities, including but not limited to the sewage station and lift station	HMGP, JDPPJ, Municipalities	JDPPJ & Municipalities	Tornado, Hurricane. Thunderstorms, Hail, Winter Storm	Carried Over
J7: Safe Rooms	Build safe room in critical facilities including, but not limited to, the Parish multi-purpose building	JDPPJ, HMGP	JDPPJ & Municipalities	Tornado, Hurricane. Thunderstorms, Hail	Carried Over
J8: Repetitive Loss Acquisition	Acquisitions of repetitive loss properties including but not limited to those in the following locations: Lake Arthur, Castex, Jennings and areas within potential levee inundation areas	HMGP	JDPPJ & Municipalities	Flood, Levee, Hurricane, Storm Surge	Carried Over
J9: Water Treatment Security	Install security systems at water treatment facilities	JDP Water Districts, Municipalities	JDP Water District & Municipalities	All Hazards	In Progress
J10: Parish Water System Plan	Update and maintain communications and cross-distribution plan for parish water systems	JDCW, JDWC1, et al.	JDCW, JDWC1, et al.	All Hazards	Completed and Ongoing
J11: Tracking System	Develop tracking system for available public health and safety resources	OPH, JDSO, LEPC	OPH, JDSO, LEPC	All Hazards	Carried Over
J12: Manhole Raising	Raise manhole servicing town of Elton water treatment facility	Town of Elton	Town of Elton	Flood	Carried Over
J13: Parish Essential Services	Maintain essential services parish wide in the event of an incident, including but not limited to operations at critical facilities and first responder services.	OHSEP, JDSO	OHSEP, JDSO	All Hazards	Ongoing

Jefferson Davis Parish					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
J14: Multi-Hazard Awareness Event	Facilitate the integration of community planning efforts by developing web services, including but not limited to, a website and social media. Sponsor a "Multi-Hazard Awareness Event", to educate the public on severe storms, storm surge, hurricanes, tornadoes, and flooding (evacuation, emergency preparedness, retrofitting, and flood insurance) and winter storms, thunderstorms and lightning (emergency preparedness). -Print and distribute pamphlets to educate and inform residents of what to do to protect them from hazard events. -Communicate potential mitigation techniques and funding opportunities. -Promote the purchase of flood insurance by raising awareness through programs like the Community Rating System,	JDDPJ & OHSEP	JDDPJ & OHSEP	All Hazards	In Progress
J15: Sandbagging and Roadblock Equipment	Purchase and maintain sandbagging/roadblock equipment	JDPPJ, OHSEP, Fire Departments	OHSEP, JDRD, Fire Departments	Flood, Hurricane, Storm Surge, Levee Failure	Ongoing
J16: Generator Fuel Stock	Maintain fuel stock for generators	All Parish and Municipalities Departments	Various	Hurricane, Storm Surge, Flood, Thunderstorm, Winter Storm	Ongoing
J17: Hazmat Training	Provide ongoing hazmat training/certification and purchase decontamination kits	All Fire Departments	JFD et al.	HazMat Incident	Deleted
J18: Emergency Response Communications Plan	Maintain parish-wide emergency response communications plan	LEPC, OHSEP, JDPPJ	LEPC	All Hazards	Completed and Ongoing
J19: Lake Arthur Levee Plan	Emergency action plan for Lake Arthur levee system	Drainage Board, Town of Lake Arthur	Broadmore Drainage Board	Levees	In Progress

Jefferson Davis Parish					
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
J20: Wildfire Space	Identification and creation of defensible space from wildfire	JDPPJ	JDPPJ, Fire Department	Wildfire	Carried Over
J21: Levee Monitoring Committee	Establish a levee monitoring committee	JDPPJ, Drainage Board	JDPPJ, Town of Lake Arthur, Drainage Board	Levee	Carried Over
J22: Firewise Day Event	Conduct a Firewise Day Event to promote awareness of wildfire hazards	JDPPJ	JDPPJ, Fire Department	Wildfire	Carried Over

Unincorporated Jefferson Davis - New Mitigation Actions

Jefferson Davis Unincorporated - New Mitigation Actions						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
J1: 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 storms.	FEMA HMGP, Local	1-5 years	Jefferson Davis Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes, Hail	New
J2: 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	Jefferson Davis Parish OHSEP	Flooding, Tropical Cyclones	New
J3: 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	Jefferson Davis Parish OHSEP	Flooding, Tropical Cyclones	New
J4: Safe Room Projects	Construction of a safe room for first responders located in Jefferson Davis Parish. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Jefferson Davis Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones	New
J5: 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, Thunderstorms (lightning, high wind, hail), Drought, 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	Jefferson Davis Parish OHSEP	Drought, Flooding, Tropical Cyclones, Tornadoes, Wildfires, Thunderstorms (lightning, high wind, hail), Winter Storms	New

Jefferson Davis Unincorporated - New Mitigation Actions						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
J6: Generators for continuity of operations and government	Procurement and Installation of generators at critical facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Jefferson Davis Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail)	New
J7: 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	Jefferson Davis Parish OHSEP	Lightning	New
J8: Warning Systems	Update/upgrade public warning system components throughout Jefferson Davis Parish as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Jefferson Davis Parish OHSEP	Wildfires, Tornadoes, Tropical Cyclones	New
J9: 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	Jefferson Davis Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes	New
J10: 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	Jefferson Davis Parish OHSEP	Tropical Cyclones, Flooding	New
J11: Drought Ordinance	Adopt ordinances requiring water-saving measures in time of drought.	FEMA HMGP, Local	1-5 years	Jefferson Davis Parish OHSEP	Drought	New
J12: Wildfire Ordinance	Strengthen penalties and improve enforcement capabilities of burn ban ordinances	FEMA HMGP, Local	1-5 years	Jefferson Davis Parish OHSEP	Wildfires	New

Village of Elton - New Mitigation Actions

Village of Elton						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
E1: 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 storms.	FEMA HMGP, Local	1-5 years	Village of Elton/Jefferson Davis Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes	New
E2: 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 Elton/Jefferson Davis Parish OHSEP	Flooding, Tropical Cyclones	New
E3: 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 Elton/Jefferson Davis Parish OHSEP	Flooding, Tropical Cyclones	New
E4: Safe Room Projects	Construction of a safe room for first responders located in Elton. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Village of Elton/Jefferson Davis Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones	New
E5: 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, tornados, wildfire, thunderstorms (lightning, high wind, hail), drought, 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 Elton/Jefferson Davis Parish OHSEP	Drought, Flooding, Tropical Cyclones, Tornadoes, Wildfires, Thunderstorms (lightning, high wind, hail), Winter Storms	New

Village of Elton						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
E6: Generators for continuity of operations and government	Procurement and Installation of generators at critical facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Village of Elton/Jefferson Davis Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail)	New
E7: 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 Elton/Jefferson Davis Parish OHSEP	Lightning	New
E8: Warning Systems	Update/upgrade public warning system components throughout Elton as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Village of Elton/Jefferson Davis Parish OHSEP	Wildfires, Tornadoes, Tropical Cyclones	New
E9: 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 Elton/Jefferson Davis Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes	New
E10: 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 Elton/Jefferson Davis Parish OHSEP	Tropical Cyclones, Flooding	New
E11: Drought Ordinance	Adopt ordinances requiring water-saving measures in time of drought.	FEMA HMGP, Local	1-5 years	Village of Elton/Jefferson Davis Parish OHSEP	Drought	New
E12: Wildfire Ordinance	Strengthen penalties and improve enforcement capabilities of burn ban ordinances	FEMA HMGP, Local	1-5 years	Village of Elton/Jefferson Davis Parish OHSEP	Wildfires	New

Village of Fenton – New Mitigation Actions

Village of Fenton						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
F1: 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 storms.	FEMA HMGP, Local	1-5 years	Village of Fenton/Jefferson Davis Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes	New
F2: 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 Fenton/Jefferson Davis Parish OHSEP	Flooding, Tropical Cyclones	New
F3: 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 Fenton/Jefferson Davis Parish OHSEP	Flooding, Tropical Cyclones	New
F4: Safe Room Projects	Construction of a safe room for first responders located in Fenton. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Village of Fenton/Jefferson Davis Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones	New
F5: 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, tornados, wildfire, thunderstorms (lightning, high wind, hail), drought, 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 Fenton/Jefferson Davis Parish OHSEP	Drought, Flooding, Tropical Cyclones, Tornadoes, Wildfires, Thunderstorms (lightning, high wind, hail), Winter Storms	New

Village of Fenton						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
F6: Generators for continuity of operations and government	Procurement and Installation of generators at critical facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Village of Fenton/Jefferson Davis Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail)	New
F7: 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 Fenton/Jefferson Davis Parish OHSEP	Lightning	New
F8: Warning Systems	Update/upgrade public warning system components throughout Fenton as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Village of Fenton/Jefferson Davis Parish OHSEP	Wildfires, Tornadoes, Tropical Cyclones	New
F9: 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 Fenton/Jefferson Davis Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes	New
F10: 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 Fenton/Jefferson Davis Parish OHSEP	Tropical Cyclones, Flooding	New
F11: Drought Ordinance	Adopt ordinances requiring water-saving measures in time of drought.	FEMA HMGP, Local	1-5 years	Village of Fenton/Jefferson Davis Parish OHSEP	Drought	New
F12: Wildfire Ordinance	Strengthen penalties and improve enforcement capabilities of burn ban ordinances	FEMA HMGP, Local	1-5 years	Village of Fenton/Jefferson Davis Parish OHSEP	Wildfires	New

City of Jennings – New Mitigation Actions

City of Jennings						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
J1: 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 storms.	FEMA HMGP, Local	1-5 years	City of Jennings/Jefferson Davis Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes	New
J2: 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	City of Jennings/Jefferson Davis Parish OHSEP	Flooding, Tropical Cyclones	New
J3: 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 Jennings/Jefferson Davis Parish OHSEP	Flooding, Tropical Cyclones	New
J4: Safe Room Projects	Construction of a safe room for first responders located in Jennings. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	City of Jennings/Jefferson Davis Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones	New
J5: 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, tornados, wildfire, thunderstorms (lightning, high wind, hail), drought, 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 Jennings/Jefferson Davis Parish OHSEP	Drought, Flooding, Tropical Cyclones, Tornadoes, Wildfires, Thunderstorms (lightning, high wind, hail), Winter Storms	New

City of Jennings						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
J6: Generators for continuity of operations and government	Procurement and Installation of generators at critical facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	City of Jennings/Jefferson Davis Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail)	New
J7: 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 Jennings/Jefferson Davis Parish OHSEP	Lightning	New
J8: Warning Systems	Update/upgrade public warning system components throughout Jennings as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	City of Jennings/Jefferson Davis Parish OHSEP	Wildfires, Tornadoes, Tropical Cyclones	New
J9: 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 Jennings/Jefferson Davis Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes	New
J10: 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 Jennings/Jefferson Davis Parish OHSEP	Tropical Cyclones, Flooding	New
J11: Drought Ordinance	Adopt ordinances requiring water-saving measures in time of drought.	FEMA HMGP, Local	1-5 years	City of Jennings/Jefferson Davis Parish OHSEP	Drought	New
J12: Wildfire Ordinance	Strengthen penalties and improve enforcement capabilities of burn ban ordinances	FEMA HMGP, Local	1-5 years	City of Jennings/Jefferson Davis Parish OHSEP	Wildfires	New

Town of Lake Arthur – New Mitigation Actions

Town of Lake Arthur						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
L1: 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 storms.	FEMA HMGP, Local	1-5 years	Town of Lake Arthur/Jefferson Davis Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes	New
L2: 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 Lake Arthur/Jefferson Davis Parish OHSEP	Flooding, Tropical Cyclones	New
L3: 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 Lake Arthur/Jefferson Davis Parish OHSEP	Flooding, Tropical Cyclones	New
L4: Safe Room Projects	Construction of a safe room for first responders located in Lake Arthur. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Town of Lake Arthur/Jefferson Davis Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones	New
L5: 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, tornados, wildfire, thunderstorms (lightning, high wind, hail), drought, levee 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 Lake Arthur/Jefferson Davis Parish OHSEP	Drought, Flooding, Tropical Cyclones, Tornadoes, Wildfires, Thunderstorms (lightning, high wind, hail), Winter Storms, Levee Failure	New

Town of Lake Arthur						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
L6: Generators for continuity of operations and government	Procurement and Installation of generators at critical facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Town of Lake Arthur/Jefferson Davis Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail)	New
L7: 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 Lake Arthur/Jefferson Davis Parish OHSEP	Lightning	New
L8: Warning Systems	Update/upgrade public warning system components throughout Lake Arthur as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Town of Lake Arthur/Jefferson Davis Parish OHSEP	Wildfires, Tornadoes, Tropical Cyclones	New
L9: 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 Lake Arthur/Jefferson Davis Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes	New
L10: 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 Lake Arthur/Jefferson Davis Parish OHSEP	Tropical Cyclones, Flooding	New
L11: Levee Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a dam and/or levee failure.	FEMA HMGP, Local	1-5 years	Town of Lake Arthur /Jefferson Davis Parish OHSEP	Levee Failure	New
L12: 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 Lake Arthur /Jefferson Davis Parish OHSEP	Levee Failure	New
L13: Drought Ordinance	Adopt ordinances requiring water-saving measures in time of drought.	FEMA HMGP, Local	1-5 years	Town of Lake Arthur/Jefferson Davis Parish OHSEP	Drought	New
J14: Wildfire Ordinance	Strengthen penalties and improve enforcement capabilities of burn ban ordinances	FEMA HMGP, Local	1-5 years	Town of Lake Arthur/Jefferson Davis Parish OHSEP	Wildfires	New

Town of Welsh – New Mitigation Actions

Town of Welsh						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**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 storms.	FEMA HMGP, Local	1-5 years	Town of Welsh/Jefferson Davis Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes	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	Town of Welsh/Jefferson Davis Parish OHSEP	Flooding, Tropical Cyclones	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	Town of Welsh/Jefferson Davis Parish OHSEP	Flooding, Tropical Cyclones	New
W4: Safe Room Projects	Construction of a safe room for first responders located in Welsh. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Town of Welsh/Jefferson Davis Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones	New
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, tornados, wildfire, thunderstorms (lightning, high wind, hail), drought, 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 Welsh/Jefferson Davis Parish OHSEP	Drought, Flooding, Tropical Cyclones, Tornadoes, Wildfires, Thunderstorms (lightning, high wind, hail), Winter Storms	New

Town of Welsh						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
W6: Generators for continuity of operations and government	Procurement and Installation of generators at critical facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Town of Welsh/Jefferson Davis Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail)	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	Town of Welsh/Jefferson Davis Parish OHSEP	Lightning	New
W8: Warning Systems	Update/upgrade public warning system components throughout Welsh as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Town of Welsh/Jefferson Davis Parish OHSEP	Wildfires, Tornadoes, Tropical Cyclones	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 at appropriate critical locations.	FEMA HMGP, Local	1-5 years	Town of Welsh/Jefferson Davis Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes	New
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	Town of Welsh/Jefferson Davis Parish OHSEP	Tropical Cyclones, Flooding	New
W11: Drought Ordinance	Adopt ordinances requiring water-saving measures in time of drought.	FEMA HMGP, Local	1-5 years	Town of Welsh/Jefferson Davis Parish OHSEP	Drought	New
W12: Wildfire Ordinance	Strengthen penalties and improve enforcement capabilities of burn ban ordinances	FEMA HMGP, Local	1-5 years	Town of Welsh/Jefferson Davis Parish OHSEP	Wildfires	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 Jefferson Davis 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.

Jefferson Davis 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.

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Appendix A: Planning Process

Purpose

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

The Jefferson Davis Parish Hazard Mitigation Plan Update

The Jefferson Davis 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.

Jefferson Davis Parish includes the unincorporated areas of the parish, as well as the five incorporated municipalities that participated in the plan update process – the Village of Elton, Village of Fenton, City of Jennings, Town of Lake Arthur, and Town of Welsh. Jefferson Davis 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
1/21/2016	Initial Coordination	Telephone/ Email	No	Discuss with Parish HM coordinator and any Steering Committee members expectations and requirements of the project.
3/16/2016	Kick-Off Meeting	Jennings, LA	No	Discuss with the plan steering committee expectations and requirements of the project. Assign plan worksheets to jurisdictions.
9/9/2016	Risk Assessment Overview	Jennings, LA	No	Discuss and review the risk assessment with the steering committee discuss and review expectations for public meeting.
9/9/2016	Public Meeting	Jennings, 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 Jefferson Davis 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 Jefferson Davis 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/JeffersonDavisParish/
2 Week Period	Public Plan Review (Digital)		Yes	Parish Website and Jefferson Davis Parish OHSEP

Planning

The plan update process consisted of several phases:

Phase	Month 1-2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9
Plan Revision								
Data Collection								
Risk Assessment								
Public Input								
Mitigation Strategy and Actions								
Plan Review by GOHSEP and FEMA								
Plan Adoption								
Plan Approval								

Coordination

The Jefferson Davis Parish OHSEP oversaw the coordination of the 2016 Hazard Mitigation Plan Update Steering Committee during the update process. The Jefferson Davis 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 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:

- Jefferson Davis Police Jury
- Jefferson Davis Office of Homeland Security and Emergency Preparedness
- Village of Elton
- Village of Fenton
- City of Jennings
- Town of Lake Arthur
- Town of Welsh

The OHSEP Directors of Cameron and Allen Parishes were invited by the Jefferson Davis Parish OHSEP via email invitation 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 5 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	Phone
Terry Duhon	Mayor of Jennings	City of Jennings	154 N Main Jennings, LA	(337) 821-5500
Cathy Hollingsworth	Mayor of Elton	Town of Elton	1302 Main St. Elton, LA	(337) 584-2312
Robert B. Bertrand	Mayor of Lake Arthur	Town of Lake Arthur	102 Arthur Avenue Lake Arthur, LA	(337) 774-5259
Carolyn Louviere	Mayor of Welsh	Town of Welsh	201 South Elms St. Welsh, LA	(337) 734-2231
Eddie Alfred, Jr.	Mayor of Fenton	Village of Fenton	712 Third Avenue Fenton, LA	(337) 756-2512
Renee Hicks	Asst. Secretary/Treasurer	Jefferson Davis Parish Police Jury	304 N. State St Jennings LA	(337) 824-4792
Danny Lavergne	OEP Director	Cameron Parish OHSEP	148 Smith Circle Cameron, LA	(337) 775-7048

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 Jefferson Davis 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 Jefferson Davis 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
- Sea, Lake, and Overland Surge from Hurricanes (SLOSH)
- 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 Jefferson Davis Parish.

Meeting #1: Coordination Discussion

Date: January 21, 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 and initial project timeline.

Public Initiation: No

Invitees Included: Jefferson Davis Parish OHSEP, SDMI Staff

Meeting #2: Hazard Mitigation Plan Update Kick-Off

Date: March 16, 2016

Location: Jennings, 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
Terry Duhon	Mayor of Jennings	City of Jennings
Cathy Hollingsworth	Mayor of Elton	Town of Elton
Robert B. Bertrand	Mayor of Lake Arthur	Town of Lake Arthur
Carolyn Louviere	Mayor of Welsh	Town of Welsh
Eddie Alfred, Jr.	Mayor of Fenton	Village of Fenton
Renee Hicks	Asst. Secretary/Treasurer	Jefferson Davis Parish Police Jury
Danny Lavergne	OEP Director	Cameron Parish OHSEP

Meeting #3: Risk Assessment Overview

Date: September 9, 2016

Location: Jennings, 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
Terry Duhon	Mayor of Jennings	City of Jennings
Cathy Hollingsworth	Mayor of Elton	Town of Elton
Robert B. Bertrand	Mayor of Lake Arthur	Town of Lake Arthur
Carolyn Louviere	Mayor of Welsh	Town of Welsh
Eddie Alfred, Jr.	Mayor of Fenton	Village of Fenton
Renee Hicks	Asst. Secretary/Treasurer	Jefferson Davis Parish Police Jury
Danny Lavergne	OEP Director	Cameron Parish OHSEP

Meeting #4: Public Meeting

Date: September 9, 2016

Location: Jennings, 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 Jefferson Davis Parish communities were provided for the meeting attendees to identify specific areas where localized hazards occur.

Public Initiation: Yes

Invitees Included:

Name	Title	Agency
Terry Duhon	Mayor of Jennings	City of Jennings
Cathy Hollingsworth	Mayor of Elton	Town of Elton
Robert B. Bertrand	Mayor of Lake Arthur	Town of Lake Arthur
Carolyn Louviere	Mayor of Welsh	Town of Welsh
Eddie Alfred, Jr.	Mayor of Fenton	Village of Fenton
Renee Hicks	Asst. Secretary/Treasurer	Jefferson Davis Parish Police Jury
Danny Lavergne	OEP Director	Cameron Parish OHSEP

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

Meeting Public Notice

JEFFERSON DAVIS PARISH
OFFICE OF HOMELAND SECURITY & EMERGENCY PREPAREDNESS

MEETING NOTICE –Septmber 9, 2016

Jefferson Davis Parish to hold Public Meetings for Hazard Mitigation Plan Update

Jennings, LA – Jefferson Davis Parish Office of Homeland Security & Emergency Preparedness is in the process of updating the Jefferson Davis Parish Hazard Mitigation Plan and are required to hold public meetings on the plan update. The Public meeting will be held on September 9th in the Jefferson Davis Police Jury Meeting Room located at 304 N. State Street, Jennings, LA from 10:30AM to 11:30AM.

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.

Jefferson Davis Parish is in the beginning stages of updating its hazard mitigation plan. Public meeting will be held on Spetmber 9th for all citizens interested in learning about and participating in discussions concerning the Jefferson Davis Parish Hazard Mitigation Plan.

Residents of Jefferson Davis 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/JeffersonDavisParish/

For more information, please contact: Renee Hicks, Jefferson Police Jury, (337) 824 5792

Stephenson Disaster Management Institute
Louisiana State University • 3000 Business Education Complex • Baton Rouge, Louisiana 70803

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
The public was asked to provide information regarding which types of hazards concerned them the most. No public elected to participate in this activity, therefore no feedback was collected at this time.

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

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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 Jefferson Davis 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

Jefferson Davis 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

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

- Ordinances, Resolutions, Regulations
- Capital Improvements Plan
- Floodplain Ordinances
- Emergency Operations Plan
- Comprehensive Master Plan
- Economic Development Plan
- Continuity of Operations Plan
- Transportation Plan

Opportunities to integrate the requirements of this plan into other local planning mechanisms will continue to be identified through future meetings of the Jefferson Davis 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 Jefferson Davis 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 Village of Elton, Village of Fenton, City of Jennings, Town of Lake Arthur, and Town of Welsh, Jefferson Davis 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:

Jefferson Davis Unincorporated
Comprehensive Master Plan/Updated as needed/Jefferson Davis Parish Police Jury
Capital Improvements Plan/Updated as needed/Jefferson Davis Parish Police Jury
Economic Development Plan/Updated as needed/Jefferson Davis Parish Police Jury
Local Emergency Operations Plan/Updated as needed/Jefferson Davis Parish OHSEP

Village of Elton
Comprehensive Master Plan/Updated as needed/Jefferson Davis Parish Police Jury and Mayor of Elton
Economic Development Plan/Updated as needed/Jefferson Davis Parish Police Jury and Mayor of Elton

Village of Fenton
Comprehensive Master Plan/Updated as needed/Jefferson Davis Parish Police Jury and Mayor of Fenton
Capital Improvements Plan/Updated as needed/Jefferson Davis Parish Police Jury and Mayor of Fenton
Economic Development Plan/Updated as needed/Jefferson Davis Parish Police Jury and Mayor of Fenton
Local Emergency Operations Plan/Updated as needed/Jefferson Davis Parish OHSEP and Mayor of Fenton
Continuity of Operations Plan/Updated as needed/Jefferson Davis Parish OHSEP and Mayor of Fenton
Transportation Plan/Updated as needed/Jefferson Davis Parish Police Jury and Mayor of Fenton

City of Jennings
Comprehensive Master Plan/Updated as needed/Assumption Parish Police Jury
Capital Improvements Plan/Updated as needed/Jefferson Davis Parish Police Jury and Mayor of Jennings
Economic Development Plan/Updated as needed/Jefferson Davis Parish Police Jury and Mayor of Jennings
Local Emergency Operations Plan/Updated as needed/Jefferson Davis Parish OHSEP and Mayor of Jennings
Continuity of Operations Plan/Updated as needed/Jefferson Davis Parish OHSEP and Mayor of Jennings

Town of Lake Arthur
Local Emergency Operations Plan/Updated as needed/Jefferson Davis Parish OHSEP and Mayor of Lake Arthur
Continuity of Operations Plan/Updated as needed/Jefferson Davis Parish OHSEP and Mayor of Lake Arthur

Town of Welsh
Local Emergency Operations Plan/Updated as needed/Jefferson Davis Parish OHSEP and Mayor of Welsh

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

Jefferson Davis Parish Essential Facilities – All Jurisdictions

Jefferson Davis Unincorporated Essential Facilities											
Type	**Name**	**Drought***	**Flooding**	**Hail**	**Lightning**	**Wind**	**Tornado**	**Tropical Cyclone**	**Wildfires**	**Winter Storms***	**Levee Failure**
Fire and Rescue	Bayou Chene Jefferson Davis Fire District 3 Station		X	X	X	X	X	X			
	Jefferson Davis Fire District 2			X	X	X	X	X			
	Jefferson Davis Fire District 4 - Thornwell Station			X	X	X	X	X			
	Jefferson Davis Fire District 4 - Fire Station			X	X	X	X	X			
	Jefferson Davis Parish Volunteer Fire Dept - Woodlawn District #3			X	X	X	X	X			
	Lacassine Volunteer Fire Department			X	X	X	X	X			
	Roanoke Fire Station			X	X	X	X	X			
Schools	Fenton Elementary School			X	X	X	X	X			
	Hathaway High School			X	X	X	X	X			
	Lacassine High School			X	X	X	X	X			
	Lake Arthur High School			X	X	X	X	X	X		
	Welsh Roanoke Jr High			X	X	X	X	X			
Government	Jefferson Davis Parish Maintenance Facility		X	X	X	X	X	X	X		

Elton Essential Facilities											
Type	Name	Drought*	Flooding	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfires	Winter Storms*	Levee Failure
Fire and Rescue	Elton Fire Department			X	X	X	X	X			
Government	Elton Town Hall		X	X	X	X	X	X	X		
Law Enforcement	Elton Police Department			X	X	X	X	X			
Schools	Elton Elementary School			X	X	X	X	X	X		
	Elton High School			X	X	X	X	X	X		

Fenton Essential Facilities											
Type	Name	Drought*	Flooding	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfires	Winter Storms*	Levee Failure
Fire and Rescue	District 5 Fire Department			X	X	X	X	X			
Government	Fenton City Hall			X	X	X	X	X	X		

Jennings Essential Facilities											
Type	Name	Drought*	Flooding	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfires	Winter Storms*	Levee Failure
Fire and Rescue	Fire Station			X	X	X	X	X			
	Jennings Fire Department			X	X	X	X	X			
Government	31st Judicial District Courthouse		X	X	X	X	X	X			
	City Court of Jennings		X	X	X	X	X	X			
	City of Jennings Recreation Department		X	X	X	X	X	X			
	Council on Aging		X	X	X	X	X	X			

	Department of Social Services - Office of Family Support		X	X	X	X	X	X			
	Educational Media Center - Jefferson Davis Parish School Board		X	X	X	X	X	X			
	Jennings City Hall		X	X	X	X	X	X			
	Jennings Housing Authority		X	X	X	X	X	X			
	Jennings Housing Authority Maintenance Facility		X	X	X	X	X	X			
	LA Department of Public Safety - Office of Motor Vehicles		X	X	X	X	X	X			
	LA DOTD - Project Engineers Office		X	X	X	X	X	X			
	Louisiana Department of Health & Hospitals - Jeff Davis Medicaid Office		X	X	X	X	X	X			
	Mosquito Abatement District		X	X	X	X	X	X			
	Office of Family Support - Department of Social Services		X	X	X	X	X	X			
	Police Jury		X	X	X	X	X	X			
	Pupil Appraisal Service Jeff Davis School Board		X	X	X	X	X	X			
	Registrar of Voters		X	X	X	X	X	X			
	School Board		X	X	X	X	X	X			
	School Board Food Service Warehouse		X	X	X	X	X	X			
	School Board Office		X	X	X	X	X	X			

	State Legislative Office		X	X	X	X	X	X			
	State of Louisiana Office of Community Services		X	X	X	X	X	X			
	U.S. Department of Agriculture Service Center		X	X	X	X	X	X	X		
Law Enforcement	Jefferson Davis Parish Sheriff's Office			X	X	X	X	X			
	Jefferson Davis Parish Sheriff's Office			X	X	X	X	X			
	Jennings Police Department			X	X	X	X	X			
	Jennings Police Department - Criminal Investigation			X	X	X	X	X			
Public Health	Memorial Health Center			X	X	X	X	X			
Schools	James Ward Elementary School			X	X	X	X	X			
	Jennings Elementary School			X	X	X	X	X			
	Jennings High School			X	X	X	X	X			
	Our Lady Immaculate Catholic Elementary School			X	X	X	X	X			

Lake Arthur Essential Facilities											
Type	Name	Drought*	Flooding	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfires	Winter Storms*	Levee Failure
Fire and Rescue	Lake Arthur Fire Department		X	X	X	X	X	X	X		X
Government	Lake Arthur City Hall			X	X	X	X	X			X
	Lake Arthur Housing Authority			X	X	X	X	X	X		X
	Town of Lake Arthur Maintenance Facility			X	X	X	X	X	X		X
Law Enforcement	Lake Arthur Police Department			X	X	X	X	X	X		X
Schools	Lake Arthur Elementary			X	X	X	X	X	X		X

Welsh Essential Facilities											
Type	Name	Drought*	Flooding	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfires	Winter Storms*	Levee Failure+
Fire and Rescue	Welsh Fire Department			X	X	X	X	X			
	Welsh Firemen Hut		X	X	X	X	X	X			
Government	Maintenance Facility			X	X	X	X	X			
	Welsh City Hall			X	X	X	X	X			
	Welsh Maintenance Facility			X	X	X	X	X			
Law Enforcement	Town of Welsh Police Station			X	X	X	X	X			
	Welsh Police Department - Criminal Investigation Division			X	X	X	X	X			
Public Health	Golden Age of Welsh			X	X	X	X	X			
Schools	Welsh Elementary School			X	X	X	X	X			
	Welsh High School			X	X	X	X	X			

* There are no critical facilities vulnerable to the hazard

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Appendix D: Plan Adoption

It was moved by Mr. Guillory and seconded by Mr. Adams, to adopt the following to wit:

RESOLUTION
ADOPTING THE 2016 PARISH-WIDE HAZARD MITIGATION PLAN

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

WHEREAS, the Jefferson Davis Parish Police Jury has prepared a multi-hazard mitigation plan, hereby known as the 2016 Parish-Wide Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000;

WHEREAS, the 2016 Parish-Wide Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Jefferson Davis Parish from the impacts of future hazards and disasters; and

WHEREAS, adoption by the Jefferson Davis Parish Police Jury demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the 2016 Parish-Wide Hazard Mitigation Plan.

NOW THEREFORE BE IT RESOLVED THAT the Jefferson Davis Parish Police jury in a duly convened regular session on the 22nd day of February, 2017, hereby adopts the 2016 Parish Wide Hazard Mitigation Plan.

Upon being place to a vote, the above resolution was adopted as follows:

YEAS: 11
NAYS: 0
ABSENT 2

Thus done and signed this 22nd day of February, 2017 in Jennings Louisiana.

Donald Woods
Donald Woods, President

ATTEST:
Renee H. Hicks
Renee H. Hicks, Asst Sec/Treas

It was moved by Shirley Johnson and seconded by Anthony Guillory, to adopt the following to wit:

RESOLUTION
ADOPTING THE 2016 PARISH-WIDE HAZARD MITIGATION PLAN

WHEREAS, the Town of Elton recognizes the threat that natural hazards pose to people and property within the Town of Elton and the parish of Jefferson Davis and;

WHEREAS, the Jefferson Davis Parish Police Jury has prepared a multi-hazard mitigation plan, hereby known as the 2016 Parish-Wide Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000;

WHEREAS, the 2016 Parish-Wide Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Jefferson Davis Parish from the impacts of future hazards and disasters; and

WHEREAS, adoption by the Town of Elton demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the 2016 Parish-Wide Hazard Mitigation Plan.

NOW THEREFORE BE IT RESOLVED THAT the Town of Elton in a duly convened regular session on the 13th day of March, 2017, hereby adopts the 2016 Parish Wide Hazard Mitigation Plan.

Upon being place to a vote, the above resolution was adopted as follows:

YEAS: 3 Shirley Johnson, Anthony Guillory, Marilynn Granger
NAYS: 0
ABSENT 2 Avella Ackless, Michael Bellon

Thus done and signed this 14th day of March, 2017 in Elton, Louisiana.

Roger Laughlin, Mayor

ATTEST:

Theresa Fontenot, Clerk

It was moved by Ms. Jones and seconded by Ms. Johnson , to adopt the following to wit:

RESOLUTION
ADOPTING THE 2016 PARISH-WIDE HAZARD MITIGATION PLAN

WHEREAS, the Village of Fenton recognizes the threat that natural hazards pose to people and property within the Village of Fenton and the parish of Jefferson Davis and;

WHEREAS, the Jefferson Davis Parish Police Jury has prepared a multi-hazard mitigation plan, hereby known as the 2016 Parish-Wide Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000;

WHEREAS, the 2016 Parish-Wide Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Jefferson Davis Parish from the impacts of future hazards and disasters; and

WHEREAS, adoption by the Village of Fenton of Elton demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the 2016 Parish-Wide Hazard Mitigation Plan.

NOW THEREFORE BE IT RESOLVED THAT the Village of Fenton in a duly convened regular session on the ____14th___ day of _June_____, 2017, hereby adopts the 2016 Parish Wide Hazard Mitigation Plan.

Upon being place to a vote, the above resolution was adopted as follows:

YEAS: __3___
NAYS: __0___
ABSENT__0___

Thus done and signed this __15th___ day of __June_____, 2017 in Fenton, Louisiana.

Eddie Alfred, Mayor

ATTEST:

RESOLUTION 1727A

A RESOLUTION ADOPTING THE 2016 PARISH-WIDE HAZARD MITIGATION PLAN

BE IT RESOLVED by the City Council of the City of Jennings, Louisiana, duly convened in regular session with a quorum present and voting that;

WHEREAS, the City of Jennings recognizes the threat that natural hazards pose to people and property within the City of Jennings and the parish of Jefferson Davis; and

WHEREAS, the Jefferson Davis Parish Police Jury has prepared a multi-hazard mitigation plan, hereby known as the 2016 Parish-Wide Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000;

WHEREAS, the 2016 Parish-Wide Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Jefferson Davis Parish from the impacts of future hazards and disasters;

WHEREAS, adoption by the City of Jennings demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the 2016 Parish-Wide Hazard Mitigation Plan;

NOW THEREFORE BE IT RESOLVED that the Mayor and members of the Jennings City Council by way of this resolution do hereby adopt the 2016 Parish-Wide Hazard Mitigation Plan.

It was motioned by Mr. Armentor and seconded by Mr. Myers.

The above resolution was approved and adopted in a duly convened Regular Meeting of the Jennings City Council held on Tuesday, June 13, 2017

INTRODUCED: June 13, 2017

ADOPTED: June 13, 2017

YEAS: Johnny Armentor, Trey Myers, Carolyn Simon & Stephen VanHook

NAYS: None

ABSTAINED: None

ABSENT: Anthony LeBlanc

ATTEST:

Barbara Lantz

Barbara Lantz, City Clerk
Jennings City Council

Stephen VanHook, President
Jennings City Council

Terry W. Duhon, Mayor

It was moved by David Hanks and seconded by Robert Palermo to adopt the following to wit:

RESOLUTION
ADOPTING THE 2016 PARISH-WIDE HAZARD MITIGATION PLAN

WHEREAS, the Town of Lake Arthur recognizes the threat that natural hazards pose to people and property within the Town of Lake Arthur and the parish of Jefferson Davis and;

WHEREAS, the Jefferson Davis Parish Police Jury has prepared a multi-hazard mitigation plan, hereby known as the 2016 Parish-Wide Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000;

WHEREAS, the 2016 Parish-Wide Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Jefferson Davis Parish from the impacts of future hazards and disasters; and

WHEREAS, adoption by the Town of Lake Arthur demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the 2016 Parish-Wide Hazard Mitigation Plan.

NOW THEREFORE BE IT RESOLVED THAT the Town of Lake Arthur in a duly convened regular session on the 1st day of March, 2017, hereby adopts the 2016 Parish Wide Hazard Mitigation Plan.

Upon being place to a vote, the above resolution was adopted as follows:

YEAS: David Hanks, Robert Palermo, Sherry Crochet, Auldon Robinson, and Ricky Monceaux

NAYS: None

ABSENT: None

ABSTAIN: None

Thus done and signed this 1st day of March, 2017 in Lake Arthur, Louisiana.

Robert B. Bertrand, Mayor

ATTEST:

Cynthia Mallett, Town Clerk

It was moved by Mr. Robert Owens and seconded by Mr. Colby Perry, to adopt the following to wit:

RESOLUTION 006-2017
ADOPTING THE 2016 PARISH-WIDE HAZARD MITIGATION PLAN

WHEREAS, the Town of Welsh recognizes the threat that natural hazards pose to people and property within the Town of Welsh and the parish of Jefferson Davis and;

WHEREAS, the Jefferson Davis Parish Police Jury has prepared a multi-hazard mitigation plan, hereby known as the 2016 Parish-Wide Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000;

WHEREAS, the 2016 Parish-Wide Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Jefferson Davis Parish from the impacts of future hazards and disasters; and

WHEREAS, adoption by the Town of Welsh demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the 2016 Parish-Wide Hazard Mitigation Plan.

NOW THEREFORE BE IT RESOLVED THAT the Town of Welsh in a duly convened regular session on the 7th day of March, 2017, hereby adopts the 2016 Parish Wide Hazard Mitigation Plan.

Upon being place to a vote, the above resolution was adopted as follows:

YEAS: Andrea King, Rodney Trahan, Lawrence Mier, Colby Perry, Robert Owens
NAYS: None
ABSENT: None

Thus done and signed this 7th day of March, 2017 in Welsh, Louisiana.

Carolyn Louviere
Carolyn Louviere, Mayor

ATTEST:
Stephanie Benoit

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	Phone
Terry Duhon	Mayor of Jennings	City of Jennings	154 N Main Jennings, LA	(337) 821-5500
Cathy Hollingsworth	Mayor of Elton	Town of Elton	1302 Main St., Elton, LA	(337) 584-2312
Robert B. Bertrand	Mayor of Lake Arthur	Town of Lake Arthur	102 Arthur Avenue, Lake Arthur, LA	(337) 774-5259
Carolyn Louviere	Mayor of Welsh	Town of Welsh	201 South Elms St., Welsh, LA	(337) 734-2231
Eddie Alfred, Jr.	Mayor of Fenton	Village of Fenton	712 Third Avenue, Fenton, LA	(337) 756-2512
Renee Hicks	Asst. Secretary/Treasurer	Jefferson Davis Parish Police Jury	304 N. State St, Jennings LA	(337) 824-4792
Danny Lavergne	OEP Director	Cameron Parish OHSEP	148 Smith Circle, Cameron, LA	(337) 775-7048

Capability Assessment

Jefferson Davis 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.		
Jefferson Davis Unincorporated		
Plans	Yes/No	Comments
Comprehensive / Master Plan	YES	
Capital Improvements Plan	YES	
Economic Development Plan	YES	
Local Emergency Operations Plan	YES	
Continuity of Operations Plan	NO	
Transportation Plan	NO	
Stormwater Management Plan	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	YES	
Land Use Planning and Ordinances		
Zoning Ordinance	YES	
Subdivision Ordinance	YES	
Floodplain Ordinance	YES	

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

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

Village of Elton

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.		
Elton		
Plans	Yes/No	Comments
Comprehensive / Master Plan	Yes	
Capital Improvements Plan	NO	
Economic Development Plan	YES	
Local Emergency Operations Plan	NO	Uses Parish Plan
Continuity of Operations Plan	NO	Uses Parish Plan
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	YES	
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	USES 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	
Community Planner	NO	
Civil Engineer	NO	
GIS Coordinator	NO	
Grant Writer	NO	
Other	NO	
Technical		
Warning Systems / Service (Reverse 911, outdoor warning signals)	YES	
Hazard Data & Information	NO	
Grant Writing	NO	
Hazus Analysis	NO	

Other	NO	
Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes/No	Comments
Capital Improvements project funding	NO	
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 Fenton

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.		
Fenton		
Plans	Yes/No	Comments
Comprehensive / Master Plan	YES	
Capital Improvements Plan	YES	
Economic Development Plan	YES	
Local Emergency Operations Plan	YES	
Continuity of Operations Plan	YES	
Transportation Plan	YES	
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	NO	
Site plan review requirements	YES	
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	YES	
Mitigation Planning Committee	YES	
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	YES	
Staff		
Chief Building Official	YES	
Floodplain Administrator	YES	
Emergency Manager	YES	
Community Planner	YES	
Civil Engineer	YES	
GIS Coordinator	YES	
Grant Writer	YES	
Other	NO	
Technical		
Warning Systems / Service (Reverse 911, outdoor warning signals)	YES	
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	YES	
Authority to levy taxes for specific purposes	YES	
Fees for water, sewer, gas, or electric services	YES	
Impact fees for new development	YES	
Stormwater Utility Fee	NO	
Community Development Block Grant (CDBG)	YES	
Other Funding Programs	YES	

Education and Outreach

Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.

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

City of Jennings

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.		
Jennings		
Plans	Yes/No	Comments
Comprehensive / Master Plan	YES	
Capital Improvements Plan	YES	
Economic Development Plan	YES	
Local Emergency Operations Plan	YES	
Continuity of Operations Plan	YES	
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	Class 3
Site plan review requirements	YES	
Land Use Planning and Ordinances		
Zoning Ordinance	YES	
Subdivision Ordinance	YES	
Floodplain Ordinance	YES	

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

Other	NO	

Financial

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

Funding Resource	Yes/No	Comments
Capital Improvements project funding	YES	
Authority to levy taxes for specific purposes	YES	
Fees for water, sewer, gas, or electric services	YES	
Impact fees for new development	YES	
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)	YES	
Natural Disaster or safety related school program	YES	
Storm Ready certification	YES	
Firewise Communities certification	YES	
Public/Private partnership initiatives addressing disaster-related issues	YES	
Other	NO	

Town of Lake Arthur

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.		
Lake Arthur		
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	yes	
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	yes	
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	
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	no	
Grant Writer	no	
Other	no	
Technical		
Warning Systems / Service (Reverse 911, outdoor warning signals)	no	
Hazard Data & Information	yes	
Grant Writing	no	

Hazus Analysis	no	
Other	no	

Financial

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

Funding Resource	Yes/No	Comments
Capital Improvements project funding	yes	
Authority to levy taxes for specific purposes	yes	
Fees for water, sewer, gas, or electric services	yes	
Impact fees for new development	no	
Stormwater Utility Fee	no	
Community Development Block Grant (CDBG)	yes	
Other Funding Programs	yes	

Education and Outreach

Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.

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

Town of Welsh

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.		
Welsh		
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	YES	
Land Use Planning and Ordinances		
Zoning Ordinance	YES	
Subdivision Ordinance	YES	
Floodplain Ordinance	YES	

Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	NO	
Flood Insurance Rate Maps	YES	
Acquisition of land for open space and public recreation uses	NO	
Other	NO	

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	
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	NO	
Grant Writer	YES	
Other	NO	
Technical		
Warning Systems / Service (Reverse 911, outdoor warning signals)	NO	
Hazard Data & Information	NO	
Grant Writing	YES	
Hazus Analysis	NO	

Other	NO	

Financial

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

Funding Resource	Yes/No	Comments
Capital Improvements project funding	NO	
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	LGAP, CWEF

Education and Outreach

Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.

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

Building Inventory

Critical Facility (If Yes, Mark X)	Name of Building	Purpose of Building	Address	City	Latitude	Longitude	Assessed Value	Date Built	Construction Type
Jefferson Davis									
	Welsh High School	Education	306 Bourgeois Street	Welsh	30.23525672	-92.81136193	6,755,844	1950-2001	Reinforced Masonry
	Welsh Elementary School	Education	222 Bourgeois St	Welsh	30.23542019	-92.81234041	8,829,079	1950-2001	Reinforced Masonry
	Bayou Chene Jeff Davis Fire District 3 Station	Fire Search and Rescue	Nearby: 6225-6905 Louisiana 99	Welsh	30.12433748	-92.8257814	168,000.00	2000/2011	Metal
	Jefferson Davis Parish Maintenance Facility	Civil Government	Nearby: 412 East South Street	Welsh	30.23719258	-92.81842591	108,000.00	2011	Metal
	Lake Arthur Elementary	Education	Mill Street	Lake Arthur	30.0846137	-92.6766979	8,551,170	2000	Reinforced Masonry
	Lake Arthur High School	Education	None	Lake Arthur	30.09689506	-92.66926399	11,690,349	2001	Reinforced Masonry
	Lake Arthur Fire Department	Fire Search and Rescue	520 Arthur Avenue	Lake Arthur	30.08480966	-92.6809454	243,000.00	1969	Metal
	Jeff Davis Fire District 4 - Thornwell Station	Fire Search and Rescue	Nearby: 11416 Louisiana 380	Lake Arthur	30.0962715	-92.79853294	30,000.00	1981	Metal
	Elton Elementary School	Education	1212 Powell Road	Elton	30.48720549	-92.70467266	4,975,827	1981	Reinforced Masonry
	Elton High School	Education	601 2nd Street	Elton	30.47885786	-92.69323602	6,960,139	1983	Reinforced Masonry
	Elton Fire Department	Fire Search and Rescue	1306 Main Street	Elton	30.48158403	-92.69887571	62,500.00	1976	Metal

	Lacassine High School	Education	409 Algonia Avenue	Lacassine	30.2354464	-92.92113875	9,938,064	1951-1977	Metal
	Welsh Roanoke Junior High	Education	None	Roanoke	30.23358347	-92.74558719	5,037,422	1930-2001	Reinforced Masonry
	Roanoke Fire Station	Fire Search and Rescue	14132 Louisiana 395	Roanoke	30.23589217	-92.74642869	50,000.00	1975	Metal
	Jennings Elementary School	Education	620 Florence Street	Jennings	30.2265893	-92.64417445	12,202,445	1951-2007	Concrete
	Hathaway High School	Education	101 Main Street	Jennings	30.35069572	-92.67162409	9,344,737	1992-2002	Concrete
	Jennings High School	Education	2310 North Sherman Street	Jennings	30.24345038	-92.65115406	26,469,935	2005	Concrete
	James Ward Elementary School	Education	208 Shankland Avenue	Jennings	30.23211499	-92.65898199	8,488,687	1941, Ren1987	Concrete
	Fire Station	Fire Search and Rescue	1010 North Broadway Street	Jennings	30.21220584	-92.66312226	656,400.00	1975	Concrete
	Jeff Davis Fire District 2	Fire Search and Rescue	5396 Pine Island Highway	Jennings	30.35037357	-92.70020349	75,000.00	1995	Metal
	Jefferson Davis Parish School Board	Civil Government	Jefferson Davis Parish School Board	Jennings	30.2415714	-92.67649129	955,899.00	1965	Concrete
	Jefferson Davis Parish Mosquito Abatement District	Civil Government	Nearby: 1301-1469 Airport Road	Jennings	30.23934822	-92.67396805	750,000.00	1990	Masonry
	Jefferson Davis Parish School Board Office	Civil Government	203 East Plaquemine Street	Jennings	30.2224781	-92.65648542	1,000,000	1965	Masonry
	Jefferson Davis Parish Registrar of Voters	Civil Government	Nearby: 302 North Cutting Avenue	Jennings	30.22289533	-92.65464288	135,000.00	1993-2007	Masonry
	Jefferson Davis Parish Courthouse and Jail	Civil Government	304 N. State Street	Jennings	30.22302761	-92.65580149	4,360,000	1960	concrete

	Jefferson Davis Parish Police Jury	Civil Government	304 N State Street	Jennings	30.22336553	-92.65550568	463,543.00	1999	Masonry
	Educational Media Center - Jefferson Davis Parish School Board	Civil Government	720 E Plaquemine	Jennings	30.23184782	-92.66099305	742,660.00	1960	Masonry
	Jeff Davis Parish School Board Food Service Warehouse	Civil Government	Nearby: 1709 Wilbert D Rochelle Avenue	Jennings	30.20546195	-92.65575187	910,268.00	1983	Masonry
	Jeff Davis Parish Health Unit	Hospital or Medical Center	403 Baker Street	Jennings	30.21486725	-92.66234461	1,134,475.00	1997	Masonry
	Fenton Elementary School	Education	None	Fenton	30.36595842	-92.92152671	7,030,228	1951-1969	Reinforced Masonry
	District 5 Fire Department	Fire Search and Rescue	23405 Louisiana 383	Fenton	30.36535656	-92.91806995	70,030	1978-1990	Metal
	Jefferson Davis Parish Volunteer Fire Department - Woodlawn District #3	Fire Search and Rescue	Nearby: 19408 Louisiana 101	Fenton	30.2898648	-92.96070066	196,000.00	1992-2014	Metal
Elton									
	Elton Police Department	Law Enforcement	1304 Main Street	Elton	30.48155547	-92.69856163	150,000.00	1960	Reinforced Masonry
	Elton Town Hall	Civil Government	1302 Main Street	Elton	30.48156689	-92.69837745	200,000.00	1960	Reinforced Masonry
Fenton									
	Fenton City Hall	Civil Government	712 3rd Avenue	Fenton	30.36535732	-92.91866807	68,300.00	1960	Reinforced Masonry
Jennings									
	Jennings Fire Department and Police Department	Fire Search and Rescue	110 North Broadway Street	Jennings	30.2207378	-92.65721115	3,500,000.00	2016	Concrete
	Jennings Police Department - Criminal Investigations	Law Enforcement	Nearby: 114 North State Street	Jennings	30.22151985	-92.65647638	90850	1991	Wood
	City Court of Jennings DMB, Council on Aging	Civil Government	210 State St	Jennings	30.221566	-92.65694948	2,000,000.00	1998	Concrete

	Jennings City Hall	Civil Government	154 N Main	Jennings	30.2230 8645	-92.65711 579	3,400,000.00	2015	Concrete
	City of Jennings Recreation Department	Civil Government	1206 East Academy Avenue	Jennings	30.2273 7559	-92.64086 176	400,000.00	1997	Concrete
Lake Arthur									
	Lake Arthur City Hall and Police Department	Civil Government	Nearby: Arthur Avenue	Lake Arthur	30.0759 3693	-92.67692 323	909,000.00	1969	Reinforced Masonry
Welsh									
	Welsh Police Department - Criminal Investigations Division	Law Enforcement	Nearby: 114 South Elm Street	Welsh	30.2369 1749	-92.82250 746	120,000.00	1970	Reinforced Masonry
	Welsh, City Hall, Police Station, Fire Stations	Civil Government	201 South Elms Street	Welsh	30.2363 1038	-92.82297 761	910,000.00	1973	Reinforced Masonry
	Welsh Maintenance Facility	Civil Government	408 East South Street	Welsh	30.2369 9072	-92.81255 597	200,000.00	1994	Metal
	Welsh Airport	Airports and Airfields	Nearby: Kennedy Street	Welsh	30.2427 4236	-92.82589 767	256,000.00	1960	Concrete

Vulnerable Populations

Vulnerable Populations Worksheet					
Jefferson Davis Parish					
Name	**Street**	**City**	**Zip Code**	**Latitude**	**Longitude**
All Hospitals (Private or Public)					
Jeff Davis Parish Health Unit	403 Baker Street	Jennings	70546	30.21486725	-92.66234461
Jennings American Legion Hospital	1634 Elton Road	Jennings	70546	30.23813564	-92.66294532
Memorial Health Center	Nearby: 400-498 South Main Street	Jennings	70546	30.21748791	-92.65886024
Westend Hospital	1530 U.S. 90	Jennings	70546	30.23171948	-92.67858999
Fresenius Medical Care	1906 Johnson Street	Jennings	70546	30.23939228	-92.66099226
Orthopedic Surgery / Therapy Center Corporate Office / Jennings Senior Care Hospital	Nearby: 400-498 Hospital Drive	Jennings	70546	30.24044357	-92.66195644
Jeff Davis Home Health					
Nursing Homes (Private or Public)					
Golden Age of Welsh	410 South Simmons Street	Welsh	70591	30.22985976	-92.81663919
Prudhomme Homes	Nearby: 809 West North Street	Welsh	70591	30.23993876	-92.8294096
Southwest Louisiana War Veterans Home	Nearby: 1500-1998 Evangeline Highway	Jennings	70546	30.24020047	-92.6398577
Jeff Davis Living Center	1338 North Cutting Avenue	Jennings	70546	30.23506388	-92.65418104
Christus St. Patrick Homecare	721 North Lake Arthur Avenue	Jennings	70546	30.22721334	-92.66350299
Welsh Home Care Branch of Jeff Davis Home Health	1322 Elton Road	Jennings	70546	30.23542247	-92.81987197
Synergy Home Care	422 kade Drive #3	Jennings	70546	30.23866193	-92.6602334
Louisiana Hospice and Palliative Care	422 kade Drive	Jennings	70546	30.23866445	-92.66014
Jeff Davis Home Health	1322 Elton Road	Jennings	70546	30.23419438	-92.66199419

Mobile Home Parks					
RV Hookups	Nearby: West Grove Street	Welsh	70591	30.22855573	-92.82213228
Green Acres Mobile Home Park	Nearby: Pecan Acres Trailer Park Road	Welsh	70591	30.22815546	-92.81825675
Trailer Park	Nearby: 400-414 U.S. 90	Welsh	70591	30.23243164	-92.82583725
Trailer Park	Trailer Park Rd	Jennings	70546	30.20237164	-92.66459858
RV & Mobile Home Spaces	603 Holiday Drive	Jennings	70546	30.24836696	-92.66979032
Airport Mobile Home Park	603 Holiday Drive	Jennings	70546	30.23805104	-92.67510407
Trailer Park	Trailer Park Rd	Jennings	70546	30.2317046	-92.81480717
Trailer Town Road Trailer Park	Nearby: 4100-4492 Trailer Town Road	Jennings	70546	30.09906714	-92.67497086

National Flood Insurance Program (NFIP)

Jefferson Davis Parish

ELEMENT F: STATE REQUIREMENT

National Flood Insurance Program (NFIP)

Jurisdiction: Jefferson Davis Parish

	Jefferson Davis Parish	Elton	Fenton	Jennings	Lake Arthur	Welsh
Insurance Summary						
How many NFIP polices are in the community? What is the total premium and coverage?	572, $398,835 Premium, $109,325,300 Coverage	8, $2,876 Premium, $1,607,000 Coverage	2, $579 Premium, $315,00 Coverage	130, $71,920 Premium, $29,752,400 Coverage	116, $83,249 Premium, $22,193,700 Coverage	142, $93,439 Premium, $23,087,200 Coverage
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?	157, $2,632,267, none	3, $1,133, Unknown	None	15, $145,882, none	32, $159,910, none	20, $255,879, none
How many structures are exposed to flood risk with in the community?	1200	8	2	130	116	142
Describe any areas of flood risk with limited NFIP policy coverage.	None Known	None Known	None Known	None Known	None Known	None Known
Staff Resources						
Is the Community FPA or NFIP Coordinator certified?	NO	NO	NO	No	no	NO
Is flood plain management an auxiliary function?	YES	YES	YES	Yes	yes	YES
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Permit Review and Inspections.	Plan Review and Inspections	PERMIT AND PLAN REVIEW	Plan Review and Inspections	permit review	permit review, inspections
What are the barriers to running an effective NFIP program in the community, if any?	Determined BFE on Flood Maps for all areas is needed.	NO	NONE	Determined BFE needs to be identified on all areas.	no	none

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 Known	None Known	None Known	None Known	None Known	None Known
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact(CAC)?	Over 10 years ago	Over 10 years	Over 10 years	Over 10 years	over 5 years ago	Over 10 years
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?	6/15/1988	2/3/1982	7/22/2010	4/15/1981	29691	29783
Are the FIRMs digital or paper?	Both	Both	Both	Both	Both	Both
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	Yes, Adopted ordinances	Meet minimums	Meet minimums	Meet minimums	meets	Meet minimums
Community Rating System (CRS)						
Does the community participate in CRS?	No	No	No	No	No	No
What is the community's CRS Class Ranking?	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