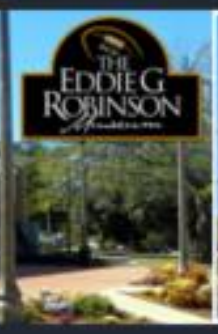

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PARISH HAZARD MITIGATION UPDATE – 2016

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LINCOLN PARISH

HAZARD MITIGATION PLAN UPDATE

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

Unincorporated Lincoln Parish
Village of Choudrant
Town of Dubach
City of Grambling
City of Ruston
Village Simsboro
Town of Vienna

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

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

- Village of Choudrant
- Town of Dubach
- City of Grambling
- City of Ruston
- Village of Simsboro
- Town of Vienna

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 Lincoln 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

Lincoln Parish is located in north central Louisiana along Interstate 20. It is strategically situated to serve the tristate market region which includes Louisiana, Mississippi, and Arkansas. Bienville and Claiborne Parishes are to the west; Union Parish is to the northeast; Ouachita Parish is to the east; and Jackson Parish is to the south of Lincoln Parish. Lincoln Parish consists of an area of 471.4 square miles, or 301,695 acres.

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

Lincoln Parish is set in the rolling red clay hills of northwestern Louisiana and is covered by tall pine forests and hardwood bottoms on 471 square miles. Lincoln Parish has always been considered one of the most beautiful and healthful parts of the state. The land is well drained by the D'Arbonne and Choudrant bayous with the aid of their principal tributaries: Sugar Creek, Cypress Creek, Middle Fork Creek, and Stowe Creek. The southwestern portion of the parish drains into the Dugdemona River, which flows south into Bienville and Jackson Parishes. The elevation is among the highest in the state, and is approximately three hundred feet above mean sea level near Ruston, though creek bottoms are often closer to one hundred feet.

The main transportation arteries through Lincoln Parish are Interstate 20; U. S. Highways 80 and 167; and State Highways 33, 145, 146, 151, 152, 545, 563, and 818. Interstate I-20 runs through the southern portion of Lincoln Parish. U. S. Highway 80 runs parallel and south of I-20. U. S. Highway 167 runs north/south from Jackson Parish in the south and through the middle of the parish into Union Parish. This highway is well-used and maintained for commercial traffic toward I-20. State Highway 33 enters the Parish from Union Parish in the northeast and runs into Ruston. State Highway 145 runs southwest from Downsville in Union Parish through Choudrant and exits through the southeastern portion of Lincoln Parish. State Highway 151 enters from the eastern border of Lincoln Parish and runs northwest through Dubach, where it merges with State Highway 823 for a short time, then exits the parish to the southeast. State Highway 146 runs from Claiborne Parish in the West into Vienna on U. S. Highway 167. State Highway 152 runs from northwest from Dubach into Claiborne Parish. State Highway 545 splits from State Highway 151 on the far western side of the parish and runs north and east, ultimately rejoining with State Highway 151 northeast of Dubach. State Highway 563 originates from State Highway 150 just east of Simsboro, and runs northeast where it merges with State Highway 151 southwest of Dubach. State Highway 818 originates at an intersection with U.S. Highway 167 in the northern part of Jackson Parish. It travels northwest to Woodville, then takes a north-northeast path where it intersects U.S. Highway 80 and ultimately ends at State Highway 150 between Ruston and Grambling.

Lincoln Parish is located in Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) Region 8.

As noted above, Lincoln Parish is located in the north-central region of Louisiana.

Figure 1-2: Louisiana Homeland Security Regions

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

	2010 Census	2014 Census	Current Year (If Available)	Percent Change 2010 - 2014
Total Population	46,735	47,617	____	1.90%
Population Density (Pop/Sq Mi)	99.1	____	____	____
Total Households	19,479	19,732	____	____

Economy

Originally, the local economy relied solely on abundant natural resources and a railroad line that ambles through the heart of downtown. Today, the economy of Ruston and Lincoln Parish is firmly rooted in education by Louisiana Tech, the Lincoln Parish School Board and Grambling State University, the three largest employers in the area. Providing balance and diversity are the many other major employers which include: Washington-based Weyerhaeuser Company (with numerous manufacturing facilities in Lincoln Parish and the surrounding area); Ardagh Glass Incorporated in Simsboro (which produces the world's supply of Tabasco bottles); and House of Raeford.

In addition to the universities, manufacturing, and business services, other niche employers play a major role on the local scene. These include healthcare, with Northern Louisiana Medical Center; HealthSouth Specialty Hospital of North Louisiana; and Green Clinic / Green Clinic Surgical Hospital being the most significant. Three social service agencies: Louisiana Methodist Children's Home; the Louisiana Center for the Blind; and the Ruston Developmental Center, are also counted among Lincoln Parish's top job providers. Finally, the banking and trust services sector plays a major role in the local economy. Industry data for business patterns in Lincoln Parish can be found in the table below:

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

Business Description	Number of Employees	Number of Establishments	Annual Payroll ($1,000)
Retail Trade	2,291	168	55,179
Manufacturing	1,187	34	62,820
Health Care and Social Assistance	2,946	113	93,740
Mining, Quarrying, Oil and Gas Extraction	100-249	13	10,878
Transportation and Warehousing	385	27	22,043
Construction	1,062	79	38,251
Administration and Support and Waste Management and Remediation Services	545	43	13,804
Real Estate and Rental and Leasing	267	47	7,077
Wholesale Trade	421	39	16,182
Other Services (except Public Administration)	816	107	14,949
Accommodation and Food Services	2,140	88	25,521
Financial and Insurance	662	94	36,327
Professional, Scientific, and Technical Services	722	92	42,685
Information	245	15	7,032
Educational Services	250-499	13	5,275
Arts, Entertainment, and Recreation	100-249	13	___
Management of Companies and Enterprises	63	6	10,726
Agriculture, Forestry, Fishing and Hunting	78	17	2,835
Utilities	29	7	978

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 Lincoln 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 Lincoln 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 Lincoln 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 Lincoln Hazard Mitigation Plan were as follows:

- Section One Table of Contents
- Section Two Executive Summary
- Section Three Context
- Section Four Adoption and Approval
- Section Five Planning Process
- Section Six Hazard Identification, Profiling, and Ranking
- Section Seven Risk Assessment
- Section Eight Capability Assessment
- Section Nine Mitigation Action Plan
- Section Ten Plan Monitoring and Maintenance
- Appendices

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

- Identifying and pursuing preventive measures that will reduce future damages from hazards
- Enhancing public awareness and understanding of disaster preparedness
- Reducing repetitive flood losses in the parish
- Facilitating sound development in the parish to reduce or eliminate the potential impact of hazards

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: Table of Contents	Section 1: Introduction
Section 2: Executive Summary	Section 1: Introduction
Section 3: Context	Section 1: Introduction
Section 4: Adoption and Approval	Appendix D: Plan Adoption
Section 5: Planning Process	Appendix A: Planning Process
Section 6: Hazard Identification, Profiling and Ranking	Section 2: Risk Assessment
Section 7: Risk Assessment	Section 2: Risk Assessment
Section 8: Capability Assessment	Section 3: Capability Assessment
Section 9: Mitigation Action Plan	Section 4: Mitigation Strategy
Section 10: Plan Monitoring and Maintenance	Appendix B: Plan Maintenance
Appendices	Appendices

Despite changes in this plan update, the plan remains consistent in its emphasis on the few types of hazards that pose the most risk to loss of life, injury, and property in Lincoln Parish and its municipalities. The extent of this risk is dictated primarily by its geographic location. Most significantly, Lincoln 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 Lincoln 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 provided an overview of the hazards that had been previously profiled in the Lincoln Parish Hazard Mitigation plan published in 2011, as well as the hazards that were identified in the State's 2014 Hazard Mitigation Plan that were considered to be of high or medium risk for the parish by the state. Those hazards identified as high or medium risk by the state or previously identified as a risk by the parish, have been determined to provide a risk to the parish and will be profiled in this section.

Table 2-1: Hazard Profile Summary

Hazard	Profiled in Last Plan	Considered Medium or High Risk in the State's HM Plan	Profiled in the 2016 Update
Subsidence/Coastal Land Loss			
Drought	X		X
Earthquakes	X		*
Expansive Soils			
Fog			
Flooding	X	X	X
Extreme Heat	X		X
Sinkholes			
Thunderstorms (Hail, Lightning, & Wind)	X	X	X
Tornadoes	X	X	X
Tropical Cyclones	X	X	X
Tsunamis			
Wildfires	X		X
Winter Storms	X		X
Dam Failure	X		+

* Hazard was profiled but discounted
+ Data deficiency

Prevalent Hazards to the Community

While many of the hazards identified in Table 2-1 occur in the parish, the determination was made to focus attention and resources on the most prevalent hazards, which include the hazards previously profiled along with dam failure. Earthquakes were discounted due to having no impact on the parish planning area, while dam failure claims a data deficiency.

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

a) Drought
b) Earthquakes
c) Extreme Heat
d) Flooding (backwater, riverine, localized stormwater event)
e) Thunderstorms (Hail, Lightning, Wind)
f) Tornadoes
g) Tropical Cyclones (flooding and high winds)
h) Wildfires
i) Winter Storms
j) Dam Failure

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

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

The potential destructive power of tropical cyclones was determined to be the most prevalent hazards to the parish. Four of the thirteen presidential declarations Lincoln Parish has received resulted from tropical cyclones which validates this as the most significant hazards. Therefore, the issue of hurricanes will serve as the main focus during the mitigation planning process. Hurricanes present risks from the potential for flooding, primarily resulting from storm surge, and high wind speeds. While storm surge is considered the hazard with the most potential 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 Lincoln Parish is included in the hurricane risk assessment.

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

Table 2-2: Lincoln Parish Major Disaster Declarations

Disaster Declaration Number	Date	Type of Disaster
3031	2/22/1977	Drought and Freezing
675	1/11/1983	Severe Storms and Flooding
829	5/20/1989	Severe Storms and Flooding
904	5/3/1991	Severe Storms, Tornadoes, and Flooding
1012	2/28/1994	Severe Winter Ice Storm
1264	1/21/1999	Severe Ice Storm
1314	2/15/2000	Severe Winter Storm
1357	1/12/2001	Severe Winter Ice Storm
3172	2/1/2003	Loss of Space Shuttle Columbia
1603	8/29/2005	Tropical Cyclone – Hurricane Katrina
1607	9/24/2005	Tropical Cyclone – Hurricane Rita
1786	9/2/2008	Tropical Cyclone – Hurricane Gustav
4080	8/29/2012	Tropical Cyclone – Hurricane Isaac

Probability of Future Hazard Events

The probability of a hazard event occurring in Lincoln Parish is estimated 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-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						
	Lincoln (Unincorporated)	Choudrant	Dubach	Grambling	Ruston	Simsboro	Vienna
Drought	4%	4%	4%	4%	4%	4%	4%
Earthquake	<1%	< 1%	< 1%	<1%	<1%	<1%	<1%
Extreme Heat	4%	4%	4%	4%	4%	4%	4%
Flooding	32%	4%	4%	8%	24%	4%	16%
Thunderstorms (Hail)	100%	100%	100%	100%	100%	100%	100%
Thunderstorms (Lightning)	56%	56%	56%	56%	56%	56%	56%
Thunderstorms (Wind)	100%	100%	100%	100%	100%	100%	100%
Tornadoes	8%	8%	8%	8%	8%	8%	8%
Tropical Cyclones	12%	12%	12%	12%	12%	12%	12%
Wildfires	<1%	< 1%	< 1%	<1%	<1%	<1%	<1%
Winter Storms	32%	32%	32%	32%	32%	32%	32%
Dam Failure	<1%	< 1%	< 1%	<1%	<1%	<1%	<1%

As shown in *Table 2-3*, thunderstorm winds and hailstorms for the entire planning area have the highest annual chance of occurrence in the parish (100%). Lightning has a 56% annual chance of occurrence, followed by flooding for the unincorporated areas of Lincoln Parish at 32%. Flood events in the remaining incorporated areas have a slightly lower chance of occurring annually. Winter storms have a 32% annual chance of reoccurrence, followed by tropical cyclones (12%), tornadoes (8%), and drought and extreme heat (4%). Wildfires have the lowest annual chance of occurrence in Lincoln Parish (< 1%). Earthquakes were discounted since the annual chance of occurrence was calculated at less than 1% and they have no impact on the parish planning area. Dam failure hazard claims a data deficiency.

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 on critical infrastructure from a previous hazard mitigation project.

Within the entire planning area, there is an estimated value of $6,524,727,000 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 Lincoln Parish

Occupancy	Lincoln Parish	Unincorporated Lincoln	Choudrant	Dubach
Agricultural	$19,904,000	$9,928,000	$1,504,000	$420,000
Commercial	$1,075,971,000	$158,304,000	$15,920,000	$8,004,000
Government	$37,334,000	$5,926,000	$750,000	$4,802,000
Industrial	$332,919,000	$135,604,000	$1,438,000	$6,386,000
Religion	$178,964,000	$39,506,000	$2,098,000	$10,112,000
Residential	$4,714,742,000	$1,768,359,000	$72,613,000	$76,190,000
Education	$164,893,000	$7,658,000	$1,000,000	$2,910,000
Total	$6,524,727,000	$2,125,285,000	$95,323,000	$108,824,000

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

Occupancy	Grambling	Ruston	Simsboro	Vienna
Agricultural	$0	$7,126,000	$522,000	$404,000
Commercial	$38,001,000	$842,226,000	$11,238,000	$2,278,000
Government	$1,602,000	$23,126,000	$1,128,000	$0
Industrial	$3,151,000	$158,525,000	$27,815,000	$0
Religion	$21,448,000	$104,496,000	$0	$1,304,000
Residential	$448,087,000	$2,204,821,000	$81,462,000	$63,210,000
Education	$62,883,000	$90,442,000	$0	$0
Total	$575,172,000	$3,430,762,000	$122,165,000	$67,196,000

Essential Facilities of the Parish

Below are the locations and names of the essential facilities within the parish:

Fire and Rescue	
Map ID	Name
1	Chandler Road Fire Station
2	Choudrant Fire Station
3	Choudrant Fire Station Number 2
4	Corinth/Hood/Mccurry Fire Station
5	Cross Roads Fire Station
6	D'Arbonne Brewstreeter Fire Station
7	Downsville West Street Fire Station
8	Dubach Fire Station
9	Fellowship/Britt Fire Station
10	Fire Station #2
11	Fire Station #3
12	Grambling Fire Department
13	Hico Fire Station
14	Kings Gin Fire Station
15	Madden Road/Carrol Fire Station
16	Maner Sisemore Fire Station
17	Mineral Springs Fire Station
18	Mt. Olive Fire Station
19	Nobles School Fire Station
20	Oak Grove Fire Station
21	Rolling Hills Fire Station
22	Ruston Fire Department Headquarters
23	Sibley Fire Station
24	Simsboro Fire Station
25	Tech Farm Fire Station
26	Tremont Fire Station
27	Vienna Fire Station

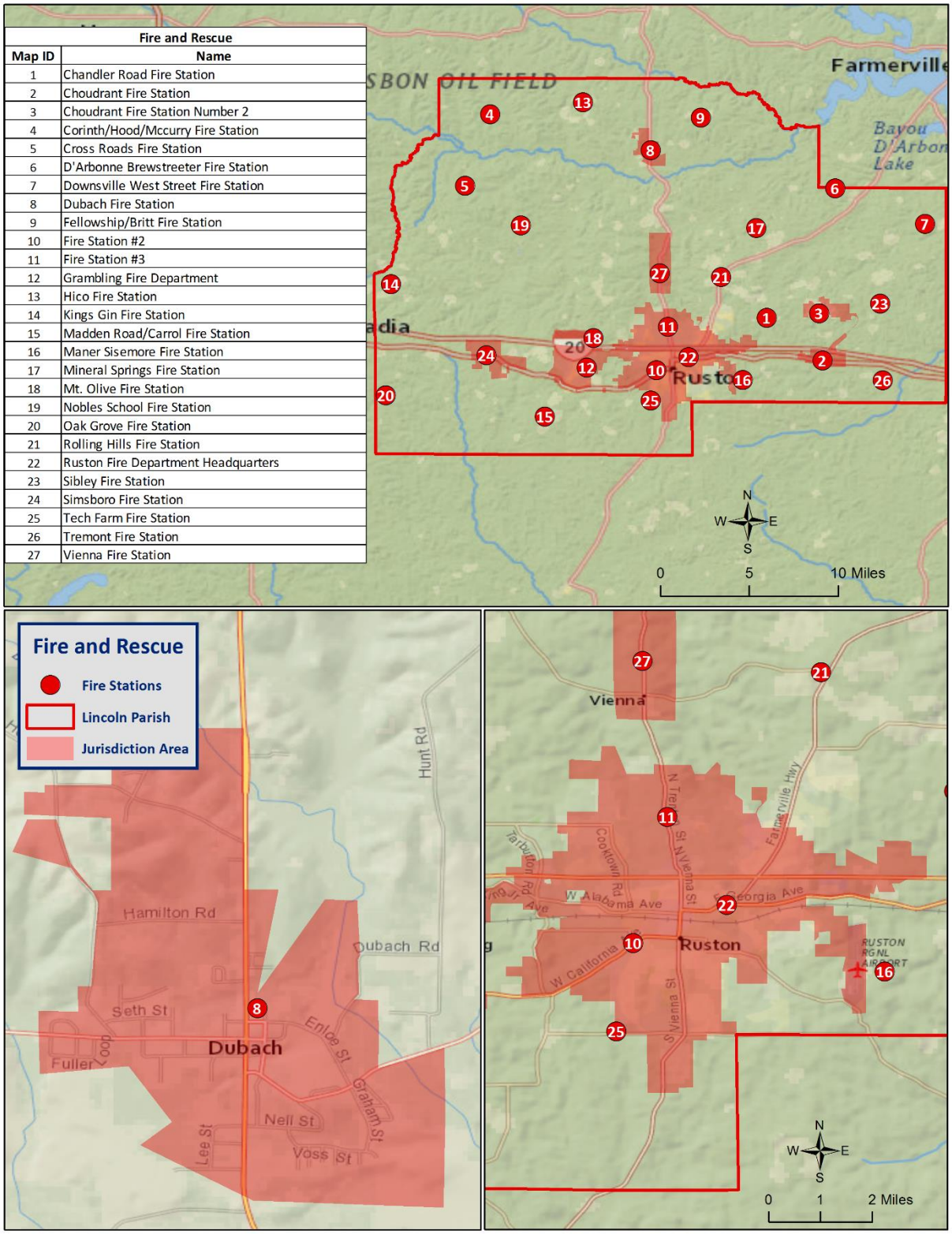

Figure 2-1: Fire and Rescue Buildings in Lincoln Parish

Government	
Map ID	Name
1	Choudrant Village Hall
2	City of Ruston Animal Control
3	Council on Aging
4	Courthouse Annex
5	DRABO Office
6	Dubach Community Center
7	Dubach Town Hall
8	GIS Office
9	Grambling City Hall
10	Grambling Public Works
11	Lincoln Parish Courthouse
12	Lincoln Parish Exhibition Center
13	Lincoln Parish Fire Training Center
14	Lincoln Parish Park
15	Lincoln Parish Police Jury Complex
16	Lincoln Parish Public Works Department
17	Lincoln Parish School Board
18	Lincoln Parish Solid Waste Department
19	Old Federal Building
20	Ruston City Hall/Civic Center
21	Ruston Farmer's Market
22	Ruston Historic Fire Station
23	Ruston Parks and Recreation
24	Ruston Public Works Complex
25	Ruston Regional Airport
26	School Board Bus Barn
27	School Board Maintenance
28	Section 8 Housing Office
29	Simsboro Town Hall
30	Truancy Office
31	Vienna Town Hall

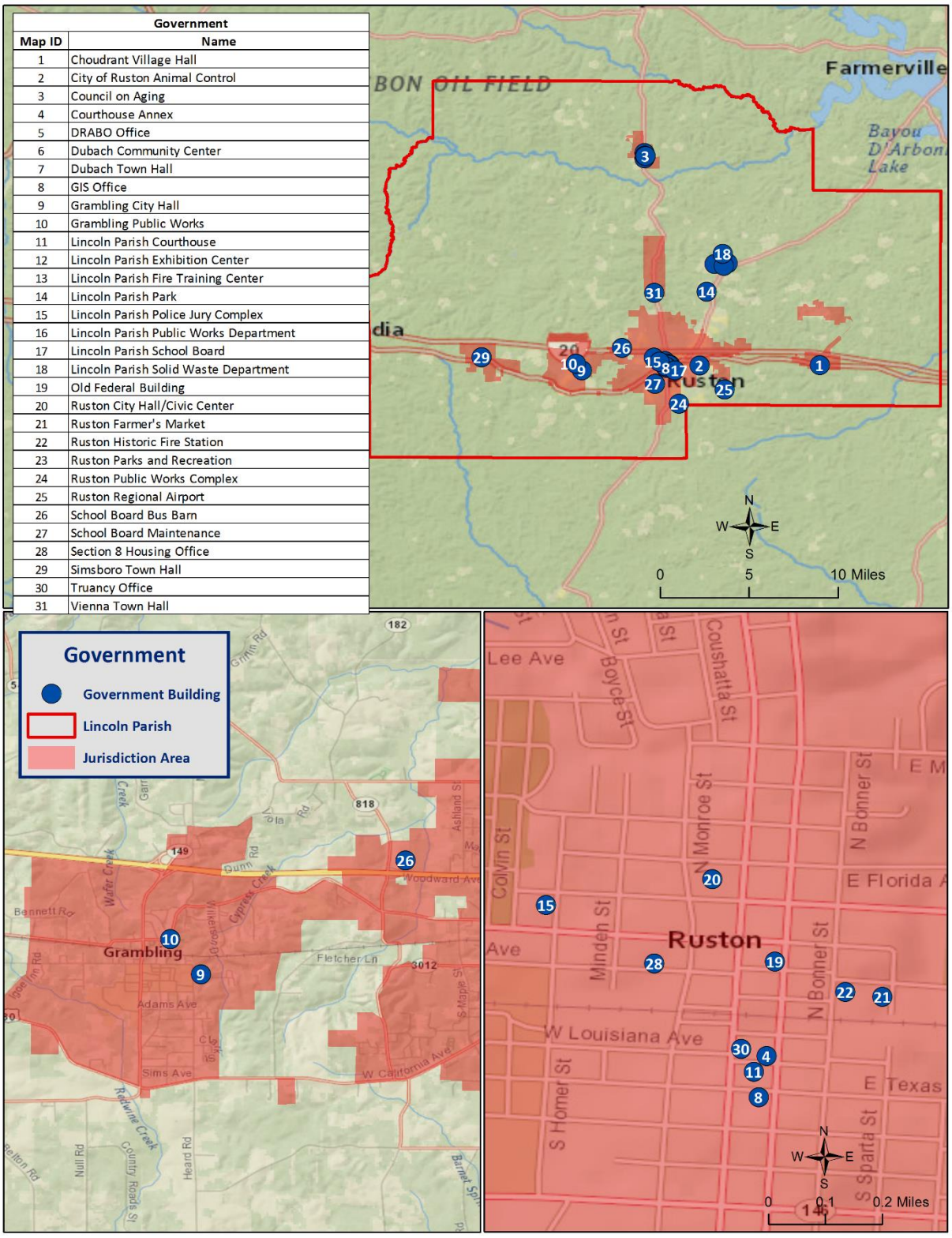

Figure 2-2: Government Buildings in Lincoln Parish

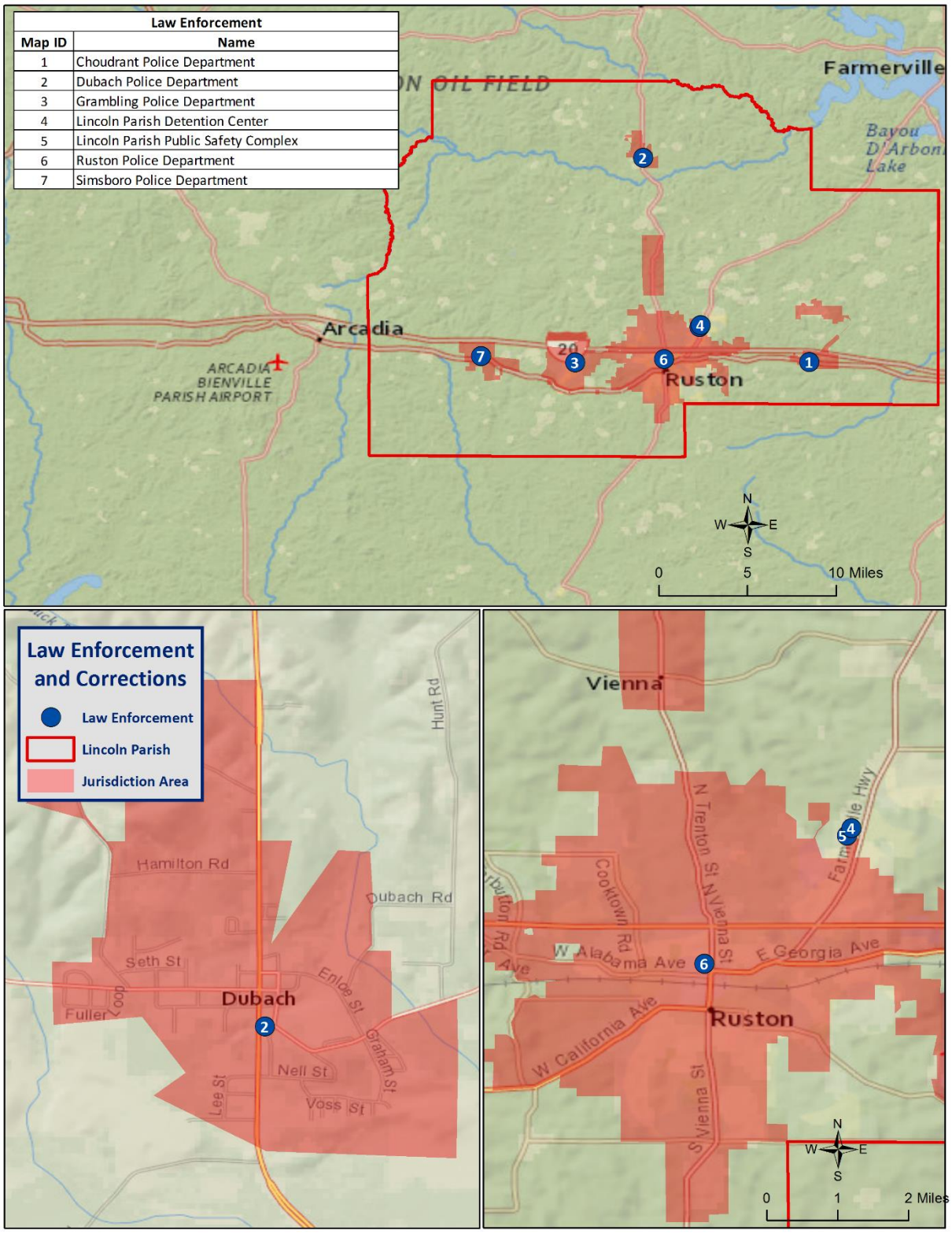

Figure 2-3: Law Enforcement and Correction Buildings in Lincoln Parish

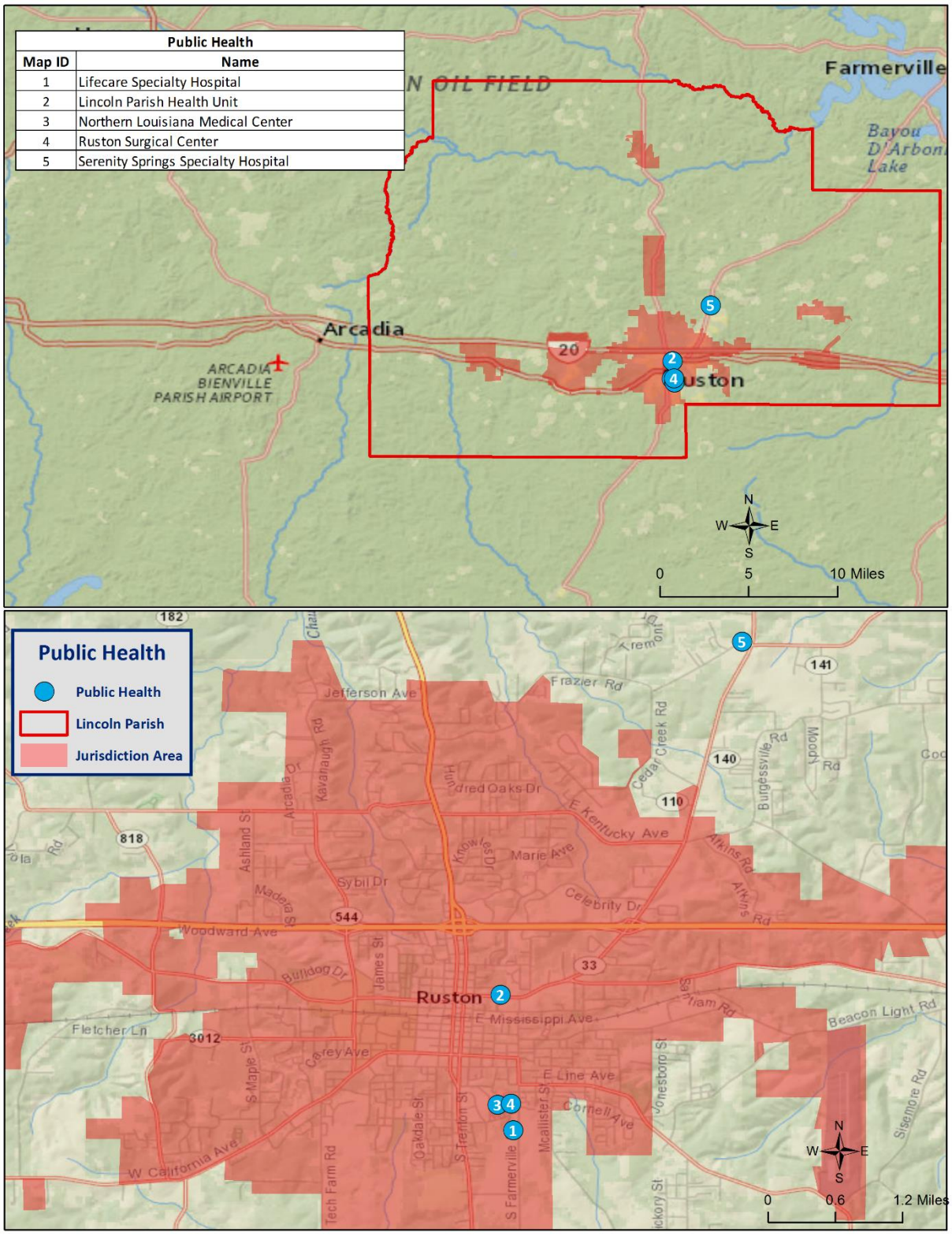

Figure 2-4: Public Health Buildings in Lincoln Parish

Schools	
Map ID	Name
1	A.E. Phillips Laboratory School
2	Choudrant Elementary School
3	Choudrant High School
4	Cypress Springs Elementary School
5	Dubach School
6	Early Childhood Center
7	Glen View Elementary School
8	Hillcrest Elementary School
9	I.A. Lewis
10	Lincoln Learning Center
11	Lincoln Preparatory School
12	Lincoln Preparatory School
13	Ruston Elementary School
14	Ruston High School
15	Ruston Junior High School
16	Simsboro School

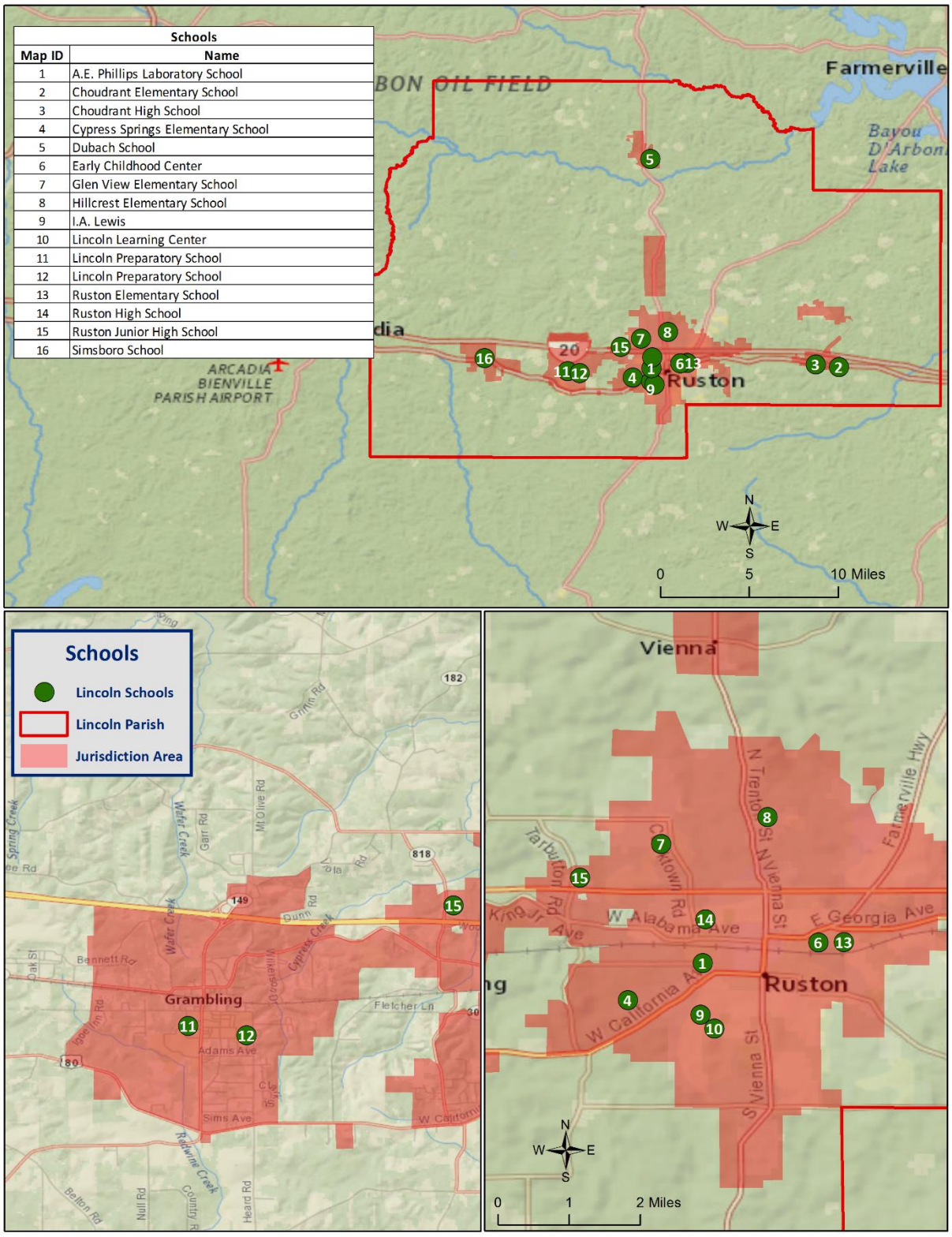

Figure 2-5: School Buildings in Lincoln Parish

Future Development Trends

Lincoln Parish experienced a small growth in population and housing between the years of 2000 and 2014, growing from a population of 42,575 with 17,000 housing units in 2000 to a population of 47,617 with 19,587 housing units in 2014. This growth was largely in the unincorporated areas of Lincoln Parish and in the incorporated area of Choudrant from the years 2000 to 2010, and in the incorporated areas of Choudrant and Grambling from 2010 to 2014. The incorporated area of Vienna experienced the only decline in population from 2000 to 2010, and from 2010 to 2014 all incorporated and unincorporated areas of the parish experienced population growth. 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 Lincoln Parish

Total Population	Lincoln Parish	Lincoln (Unincorporated)	Choudrant	Dubach	Grambling	Ruston	Simsboro	Vienna
1-Apr-00	42,575	14,271	633	947	4,766	20,778	759	421
1-Apr-10	46,801	16,920	846	963	4,953	21,890	842	387
1-Jul-14	47,617	17,036	933	977	5,124	22,301	857	389
Population Growth between 2000 – 2010	9.9%	18.6%	33.6%	1.7%	3.9%	5.4%	10.9%	-8.1%
Average Annual Growth Rate between 2000 – 2010	1.0%	1.9%	3.4%	0.2%	0.4%	0.5%	1.1%	-0.8%
Population Growth between 2010 – 2014	1.7%	0.7%	10.3%	1.5%	3.5%	1.9%	1.8%	0.5%
Average Annual Growth Rate between 2010 – 2014	0.44%	0.17%	2.57%	0.36%	0.86%	0.47%	0.45%	0.13%

Table 2-6: Housing Growth Rate for Lincoln Parish

Total Housing Units	Lincoln Parish	Lincoln (Unincorporated)	Choudrant	Dubach	Grambling	Ruston	Simsboro	Vienna
1-Apr-00	17,000	6,043	257	390	1,408	8,397	338	167
1-Apr-10	19,479	7,384	387	464	1,442	9,275	355	172
1-Jul-14	19,587	7,193	467	408	1,761	9,096	476	186
Housing Growth between 2000 – 2010	14.6%	22.2%	50.6%	19.0%	2.4%	10.5%	5.0%	3.0%
Average Annual Growth Rate between 2000 – 2010	1.5%	2.2%	5.1%	1.9%	0.2%	1.0%	0.5%	0.3%
Housing Growth between 2010 – 2014	0.6%	-2.6%	20.7%	-12.1%	22.1%	-1.9%	34.1%	8.1%
Average Annual Growth Rate between 2010 – 2014	0.1%	-0.6%	5.2%	-3.0%	5.5%	-0.5%	8.5%	2.0%

As shown in previous tables, Lincoln Parish has experienced slight growth in both population and housing units. Housing growth rates grew at 1.5% annually from 2000 to 2010, and at 0.1% annually from 2010 to 2014. Population growth rates for the parish were 1% annually from 2000 to 2010, and 0.44% annually from 2010 to 2014. From 2000 to 2010 and from 2010 to 2014, the incorporated area of Choudrant had the largest increase in population with an overall increase in population of 33.6% from 2000 to 2010 and 10.3% from 2010 to 2014. The incorporated area of Vienna was the only area to experience a decline in population from 2000 to 2010 with an overall decline of -8.1%.

The incorporated area of Choudrant experienced the largest increase in housing units from 2000 to 2010 at 50.6%, followed by the unincorporated area of Lincoln Parish at 22.2%. From 2010 to 2014, the incorporated area of Simsboro experienced the largest increase in housing units with an annual rate of 8.5%. The incorporated areas of Ruston and Dubach as well as the unincorporated areas of Lincoln Parish, experienced a decline in housing units during this time period.

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 continue to grow slightly within Lincoln Parish from the present until 2024. A summary of estimated future impacts is

shown in the table below. Dollar values are expressed in future costs and assume an annual rate of inflation of 1.02%. No changes in development have impacted the community's vulnerability since the plans last update.

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

Hazard / Impact	Total in Parish (2014)	Hazard Area (2014)	Hazard Area (2019)	Hazard Area (2024)
Flood Damage				
Structures	19,614	786	792	796
Value of Structures	$6,600,415,441	$264,666,279	$280,377,555	$293,615,480
# of People	47,825	1,918	1,960	1,994
Tropical Cyclones				
Structures	19,614	19,614	19,750	19,860
Value of Structures	$6,600,415,441	$6,600,415,441	$6,992,233,196	$7,322,368,984
# of People	47,825	47,825	48,876	49,734

Land Use

The Lincoln Parish Land Use table is provided on the following page. Residential, commercial, and industrial areas account for only 10% of the parish's land use. Forest land is the largest category at 169,918 acres, accounting for 56% of parish land. At 55,082 acres, agricultural land accounts for 18% of parish lands, while 46,815 acres of wetland areas account for 15% of parish lands. The parish also consists of 1,607 acres of water areas, accounting for 1% of all parish lands.

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

Land Use	Acres	Percentage
Agricultural Land, Cropland, and Pasture	55,082	18%
Wetlands	46,815	15%
Forest Land (not including forested wetlands)	169,918	56%
Urban/Development	28,752	10%
Water	1,607	1%

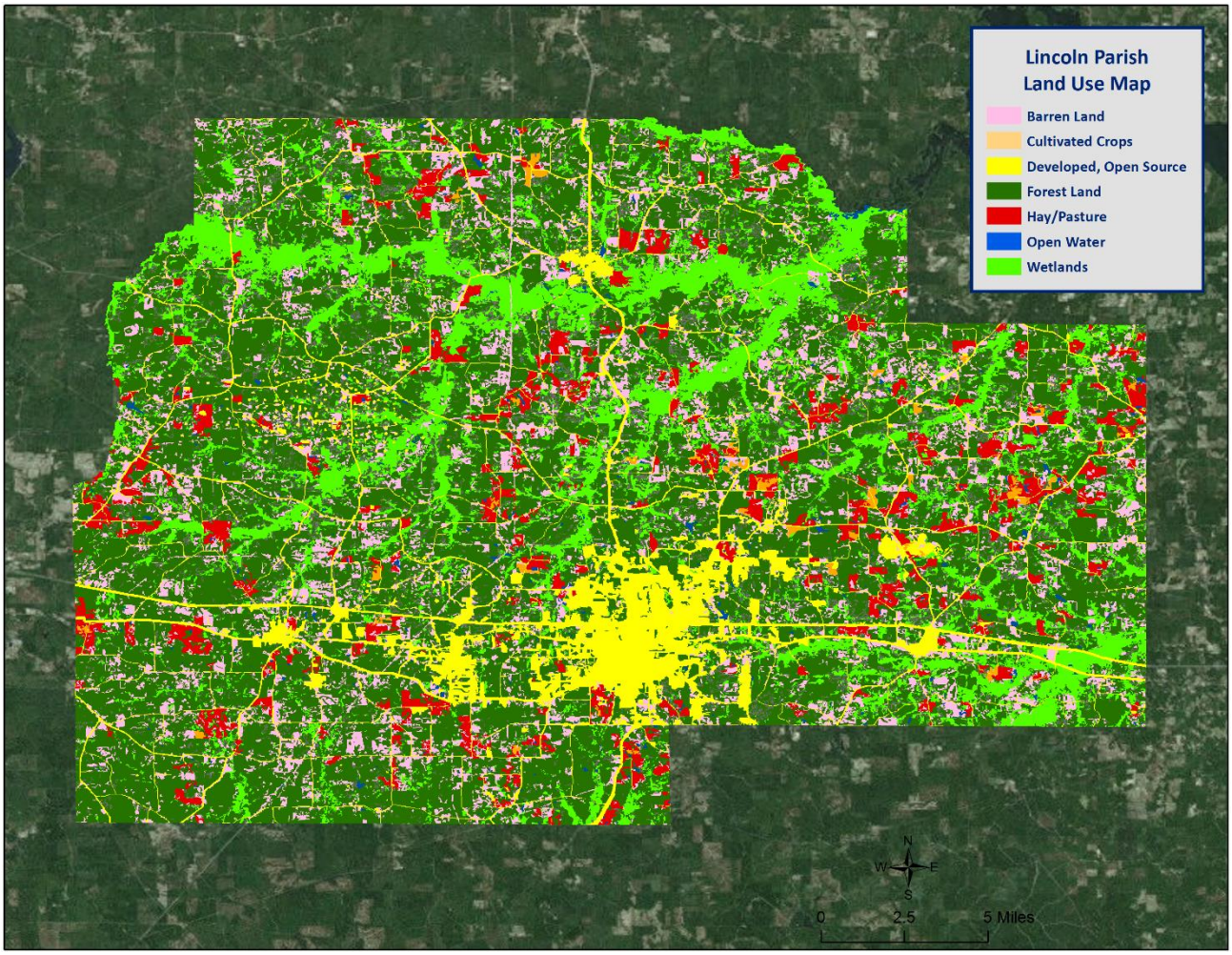

Figure 2-6: Lincoln Parish Land Use Map
(Source: USGS Land Use Map)

Hazard Identification

Drought

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

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

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

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

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

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

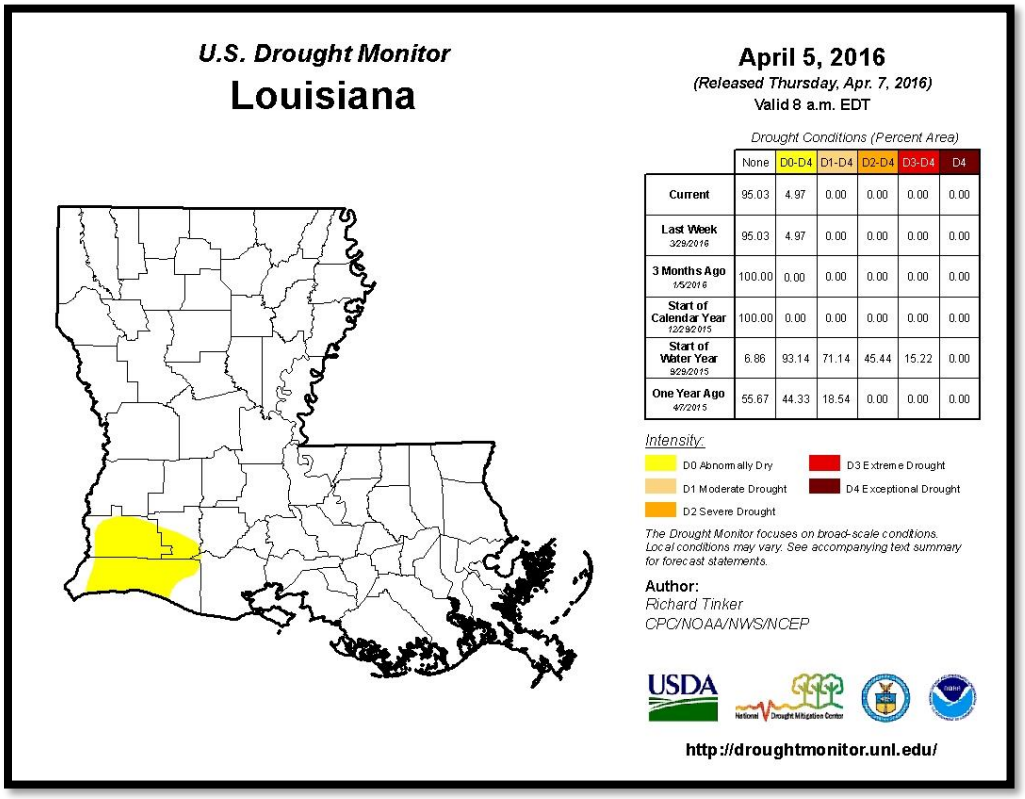

Figure 2-7: United States Drought Monitor for the State of Louisiana and its Parishes (Source: The National Drought Mitigation Center)

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 Lincoln Parish is on the agricultural community.

Previous Occurrences / Extents

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

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

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

Frequency / Probability

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

Estimated Potential Losses

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

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

Agricultural Exposure by Type for Drought						
Forestry	Home Gardens	Hay	Blueberries	Peaches	Honey	Total
$18,582,628	$2,625,000	$2,040,000	$211,750	$136,500	$7,776	$23,603,654

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

Earthquakes

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

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

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

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

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

Location

An earthquake event is a geological hazard that occurs along fault lines. Lincoln Parish has two fault lines with one running across US Interstate 20 in the southwest portion of the parish and the second running across US Highway 167 north of the incorporated area of Dubach (Figure 2-8). Effects of an earthquake may be felt throughout the parish.

Previous Occurrences / Extents

Both the SHELDUS and National Climatic Data Center report no earthquake events occurring within the boundaries of Lincoln Parish between the years of 1990 – 2015. The National Oceanic and Atmospheric Administration's National Geophysical Data Center reports no earthquake events occurring within the boundaries of Lincoln Parish between the years 1811 – 2014. Figure 2-8 displays the location of each fault line in Lincoln Parish and surrounding parishes. Based on the previous earthquake events in surrounding parishes, an earthquake with an intensity level of MMI 1 could occur within the planning area. This intensity of an earthquake would only be felt by a very few people.

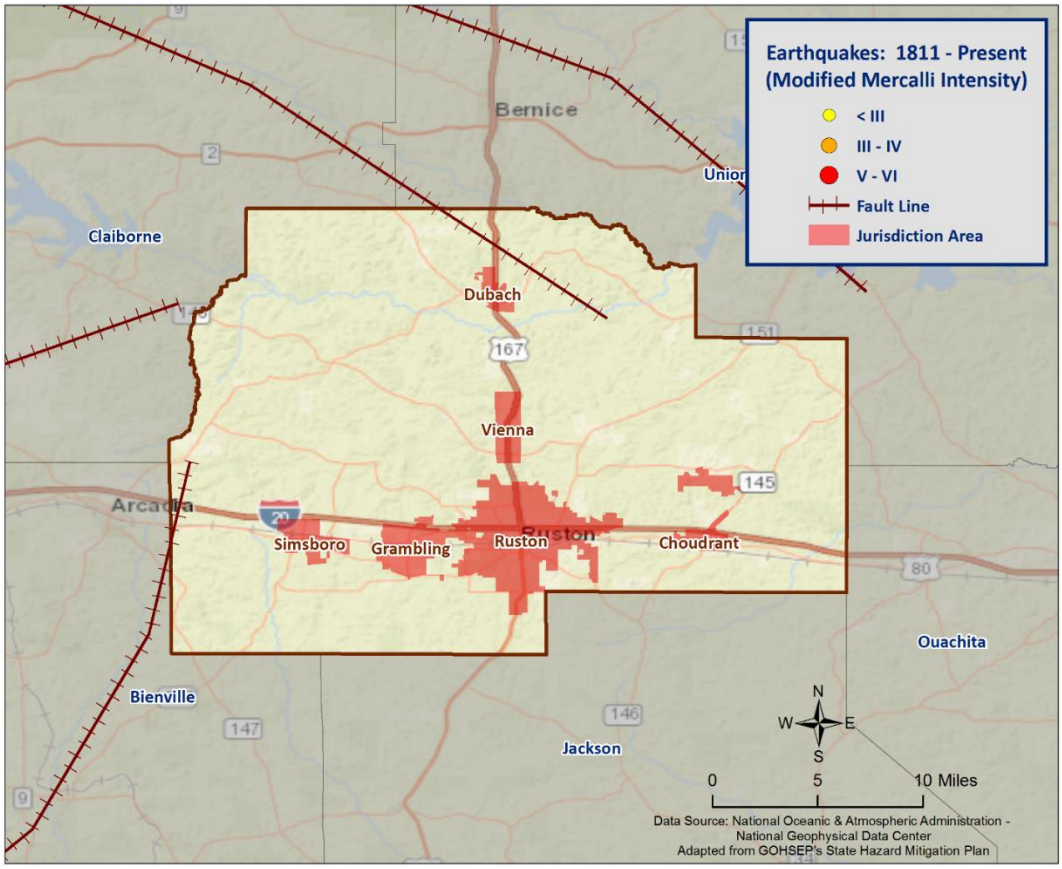

Figure 2-8: Location and Intensity (MMI) of Earthquakes in Lincoln Parish

Frequency / Probability

Earthquakes are an extremely rare occurrence in the State of Louisiana and Lincoln Parish, with no occurrences of an earthquake event within the boundaries of the parish from the years 1811 – 2014. Based on this historical record and the available data, it is determined that there will be no impact on Lincoln Parish or any of its jurisdictions with an annual chance of occurrence calculated at less than 1%, and is therefore discounted. As a result, earthquakes are not carried forward into risk assessment.

Extreme Heat

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

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

Most heat disorders (e.g., sunburn, heat cramps, heat exhaustion, and heat stroke) occur because the victim has been overexposed to heat, or has over-exercised in relation to their age and physical condition. Other circumstances that can induce heat-related illnesses include stagnant atmospheric conditions and poor air quality. Seniors and children are most at risk from adverse heat effects.

Extreme heat can also damage roads, bridges, utilities, and railroads. Extreme heat can cause pavement to soften, creating the buckling of roads and highways, which can result in potholes and rutting. These damaged roads can create hazardous conditions, causing motorists to find alternate transportation routes. Old water and sewer lines can deteriorate, increasing the likelihood of line ruptures during extreme heat. The demands on water supplies can result in water rationing, shortages, and restrictions. Extreme heat can also cause strain on several power grids, causing people to minimize the consumption of power during the hottest parts of the day due to overheating. The overwhelming demand of excess electrical power usage can also cause a strain on power capacities, resulting in blackout and /or brown outs. vehicles can overheat, and tires will deteriorate. High temperatures can be partially responsible for the expansion, buckling, or deflection of rails requiring track repairs or speed restrictions to avoid derailments.

Extreme heat can also be detrimental to the agricultural community. Extreme heat stress can reduce plant photosynthetic and transpiration efficiencies and negatively impact plant root development, which collectively can negatively impact yield. Heat injury in plants includes scalding and scorching of leaves and stems, sunburn on fruits and stems, leaf drop, rapid leaf death, and reduction in growth and yield. Extreme heat is particularly impactful when extreme heat is accompanied by drought conditions. The reduced moisture in the soil further exacerbates the effects of extreme temperatures.

The agrarian issues associated with extreme heat are relevant throughout the state, but are particularly significant in rural and agricultural parishes. A reduction of crop yield will diminish the incomes of farmers and producers in the area. If the reduced crop yield lasts over an extended period of time, the resulting reduction in disposable income could have a negative impact on businesses in the affected communities. People wouldn't have any extra money to spend at local establishments, and businesses would be forced to close for good.

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

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

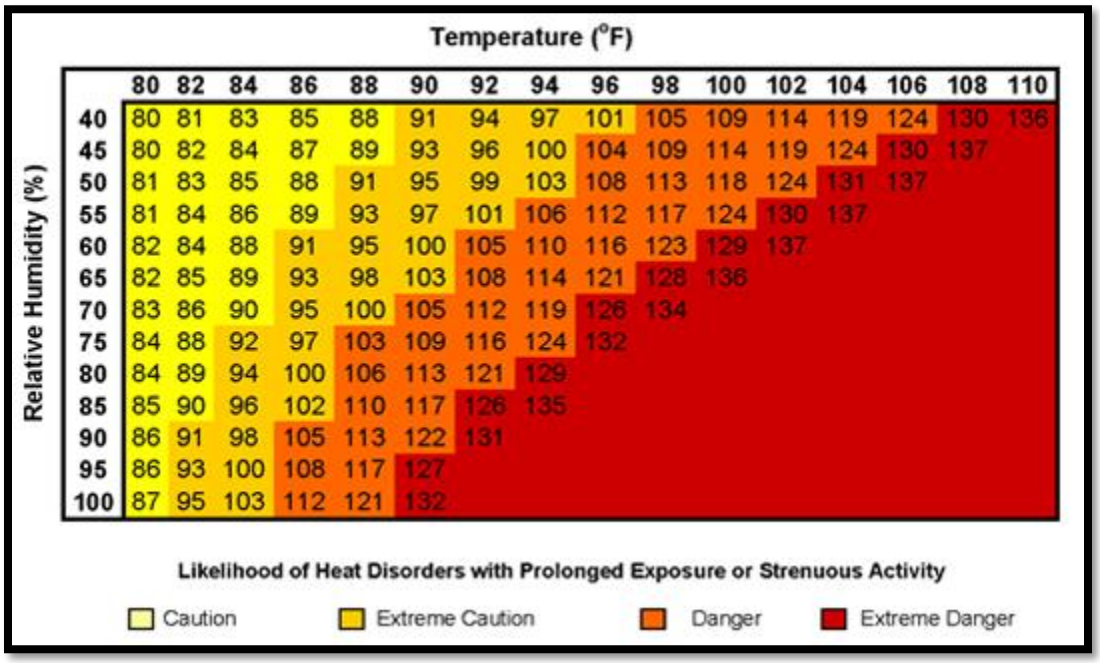

Table 2-14: Summary of Heat Index Risk Levels with Protective Measures (Source: National Weather Service)

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

Location

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

Previous Occurrences / Extents

The SHELDUS database reports a one significant extreme heat events occurring within the boundaries of Lincoln Parish between the years of 1990 to 2015. Table 2-15 provides an overview of extreme heat events that have impacted the Lincoln Parish planning area since 2000. Based on historical data, the worst case scenario for Lincoln Parish involving extreme heat would be a high risk level event on the HI scale with temperatures ranging from 103°F to 115°F.

Table 2-15: Previous Occurrences of Extreme Heat in Lincoln Parish
(Source: SHELDUS)

Date	Temperature (°F)
July 14, 2000	103

Frequency / Probability

Based on the geographical location of the State of Louisiana, and Lincoln Parish in particular, extreme heat events occur frequently. However, extreme heat events that meet the definition used by SHELDUS (those that actually result in damages to property or crops and injury or death to people) are less likely to occur. Based on a review of significant extreme heat data that has caused damages in the last 25 years, in which Lincoln Parish has had one recorded events, the probability of occurrence is estimated at approximately 4%.

Estimated Potential Losses

According to the SHELDUS database, crop damage due to extreme heat in Lincoln Parish has totaled approximately $7,813 since 1990. To estimate the potential losses of an extreme heat event on an annual basis, the total damages recorded for an extreme event is divided by the total number of years of available extreme heat data in SHELDUS (1990 – 2015). This provides an annual estimated potential loss of $313. The following table, based on the 2010 Land Use Land Change data, provides an estimate of potential crop losses for Lincoln Parish:

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

Estimated Annual Potential Losses from Extreme Heat for Lincoln Parish						
Unincorporated Lincoln Parish (94.3% of Land)	Choudrant (0.8% of Land)	Dubach (0.2% of Land)	Grambling (1.1% of Land)	Ruston (2.3% of Land)	Simsboro (0.8% of Land)	Vienna (0.5% of Land)
$295	$3	$1	$3	$7	$3	$2

There have been two reported fatalities as a result of extreme heat in Lincoln Parish.

Vulnerability

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

Flooding

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

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

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

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

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

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

- **Riverine flooding** occurs along a river or smaller stream. It is the result of runoff from heavy rainfall or intensive snow or ice melt. The speed with which riverine flood levels rise and fall depends not only on the amount of rainfall, but even more on the capacity of the river itself, as well as the shape and land cover of its drainage basin. The smaller the river, the faster that water levels rise and fall. Thus, the Mississippi River levels rise and fall slowly due to its large capacity. Generally, elongated and intensely-developed drainage basins will reach faster peak discharges and faster falls than circular-shaped and forested basins of the same area.
- **Flash flooding** occurs when locally intense precipitation inundates an area in a short amount of time, resulting in local stream flow and drainage capacity being overwhelmed.
- **Ponding** occurs when concave areas (e.g., parking lots, roads, and clay-lined natural low areas) collect water and are unable to drain.
- **Backwater flooding** occurs when water slowly rises from a normally unexpected direction where protection has not been provided. A model example is the flooding that occurred in LaPlace during Hurricane Isaac in 2012. Although the town was protected by a levee on the side facing the

Mississippi River, floodwaters from Lake Maurepas and Lake Pontchartrain crept into the community on the side of town opposite the Mississippi River.

- **Urban flooding** is similar to flash flooding but is specific to urbanized areas. It takes place when storm water drainage systems cannot keep pace with heavy precipitation, and water accumulates on the surface. Most urban flooding is caused by slow-moving thunderstorms or torrential rainfall.
- **Coastal flooding** can appear similar to any of the other flood types, depending on its cause. It occurs when normally dry coastal land is flooded by seawater, but may be caused by direct inundation (when the sea level exceeds the elevation of the land), overtopping of a natural or artificial barrier, or the breaching of a natural or artificial barrier (i.e., when the barrier is broken down by the sea water). Coastal flooding is typically caused by storm surge, tsunamis, or gradual sea level rise.

For purposes of this assessment, ponding, flash flood, and urban flooding are considered to be flooding as a result of storm water from heavy precipitation thunderstorms

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

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

Floods are measured mainly by probability of occurrence. A 10-year flood event, for example, is an event of small magnitude (in terms of stream flow or precipitation) but with a relatively high annual probability of recurrence (10%). A 100-year flood event is larger in magnitude, but it has a smaller chance of recurrence (1%). A 500-year flood is significantly larger than both a 100-year event and a 10-year event, but it has a lower probability than both to occur in any given year (0.2%). It is important to understand that an X-year flood event does not mean an event of that magnitude occurs only once in X years. Instead, it means that on average, we can expect a flood event of that magnitude to occur once every X years. Given that such statistical probability terms are inherently difficult for the general population to understand, the Association of State Floodplain Managers (ASFPM) promotes the use of more tangible expressions of flood probability. As such, the ASFPM also expresses the 100-year flood event as having a 25% chance of occurring over the life of a 30-year mortgage.

It is essential to understand that the magnitude of an X-year flood event for a particular area depends on the source of flooding and the area's location. The size of a specific flood event is defined through historic data of precipitation, flow, and discharge rates. Consequently, different 100-year flood events can have very

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

The 100-year flood event is of particular significance since it is the regulatory standard that determines the obligation (or lack thereof) to purchase flood insurance. Flood insurance premiums are set depending on the flood zone, as modeled by National Flood Insurance Program (NFIP) Rate Maps. The NFIP and FEMA suggest insurance rates based on Special Flood Hazard Areas (SFHAs), as diagrammed in *Figure 2-9*.

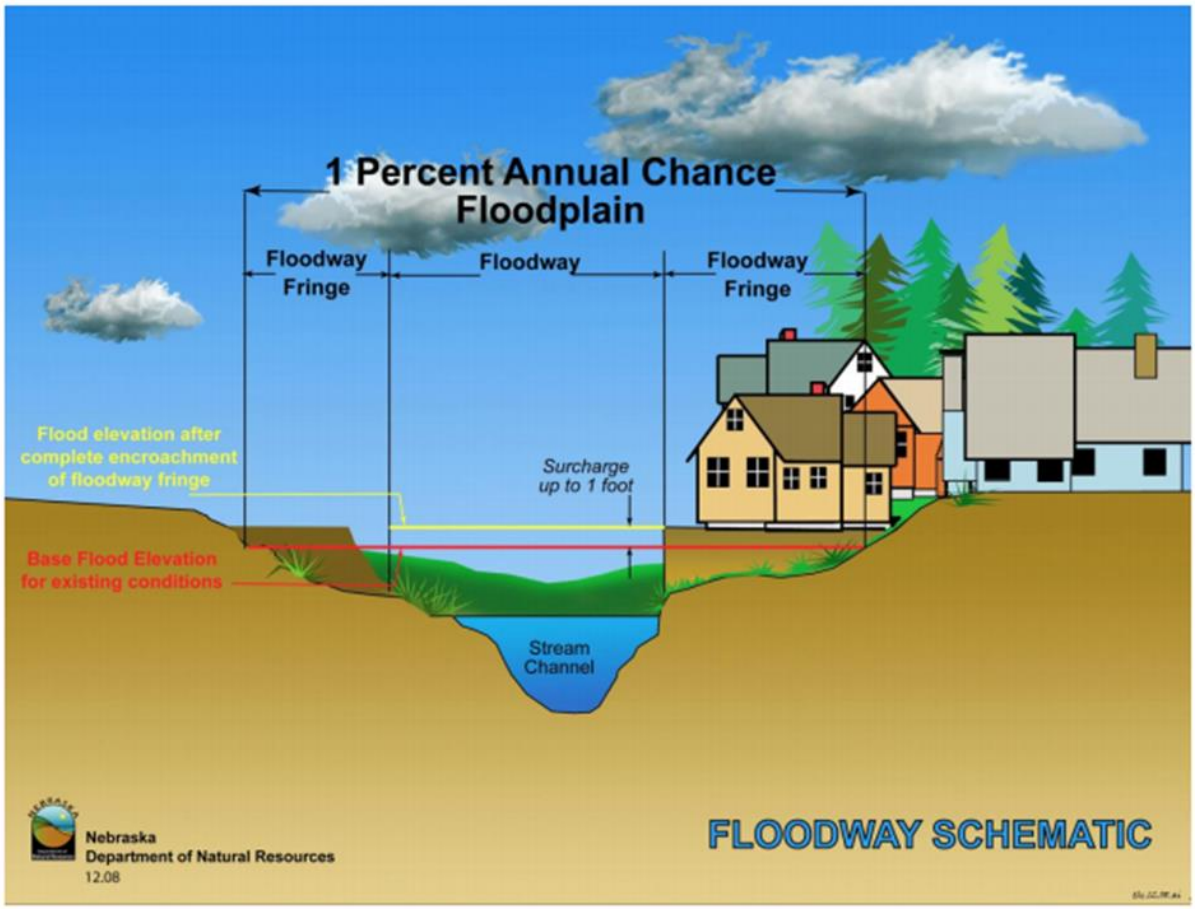

Figure 2-9: Schematic of 100-Year Floodplain. The Special Flood Hazard Area (SFHA) extends to the end of the floodway fringe.
(Source: Nebraska Department of Natural Resources)

A SFHA is the land area covered by the floodwaters of the base flood (red line in *Figure 2-9*), where the NFIP's floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies.

Property Damage

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

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

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

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

Repetitive Loss Properties

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

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

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

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

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

Table 2-17: Repetitive Loss Structures for Lincoln Parish

Jurisdiction	Number of Structures	Residential	Commercial	Government	Total Claims	Total Claims Paid	Average Claim Paid
Lincoln Parish (Unincorporated)	0	0	0	0	0	$0	$0
Choudrant	0	0	0	0	0	$0	$0
Dubach	1	1	0	0	2	$12,211	$6,106
Grambling	0	0	0	0	0	$0	$0
Ruston	1	1	0	0	2	$5,337	$2,669
Simsboro	0	0	0	0	0	$0	$0
Vienna	0	0	0	0	0	$0	$0
Total	2	2	0	0	4	$17,548	$4,387

Both 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 2-10* shows the approximate location of the two structures, while *Figure 2-11* shows where the highest concentration of repetitive loss structures are located. Through the repetitive loss map, it is clear that the primary concentrated area of repetitive loss structures is focused in the incorporated areas of Dubach and Ruston.

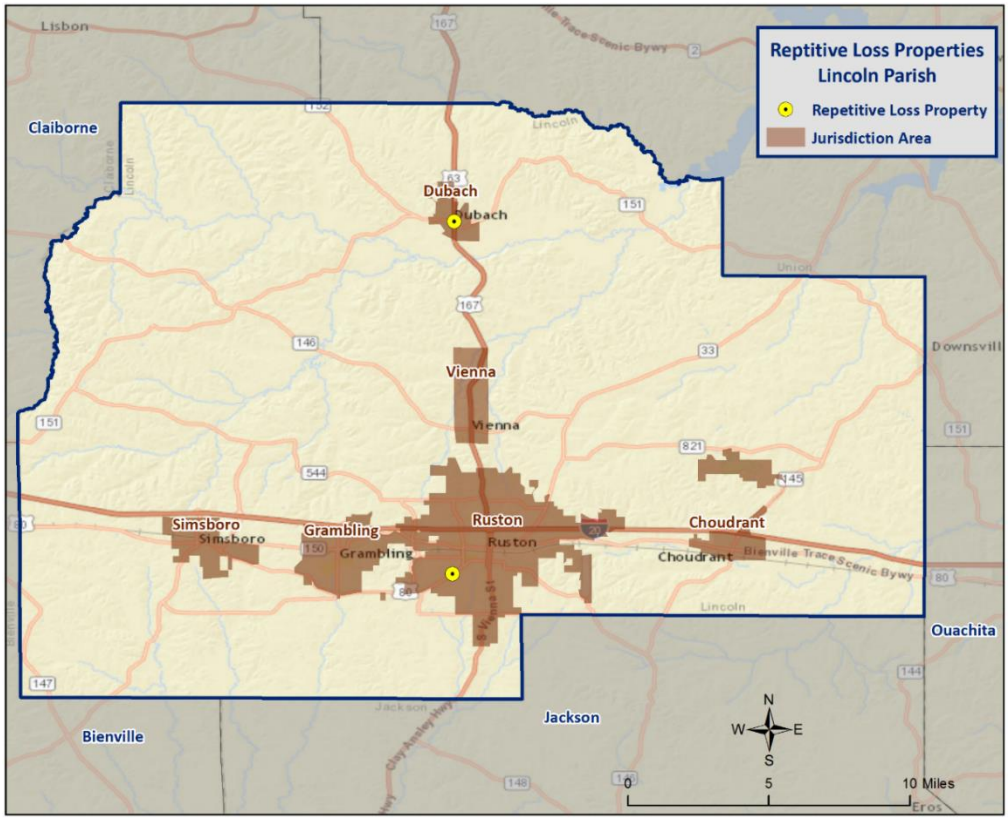

Figure 2-10: Repetitive Loss Properties in Lincoln Parish

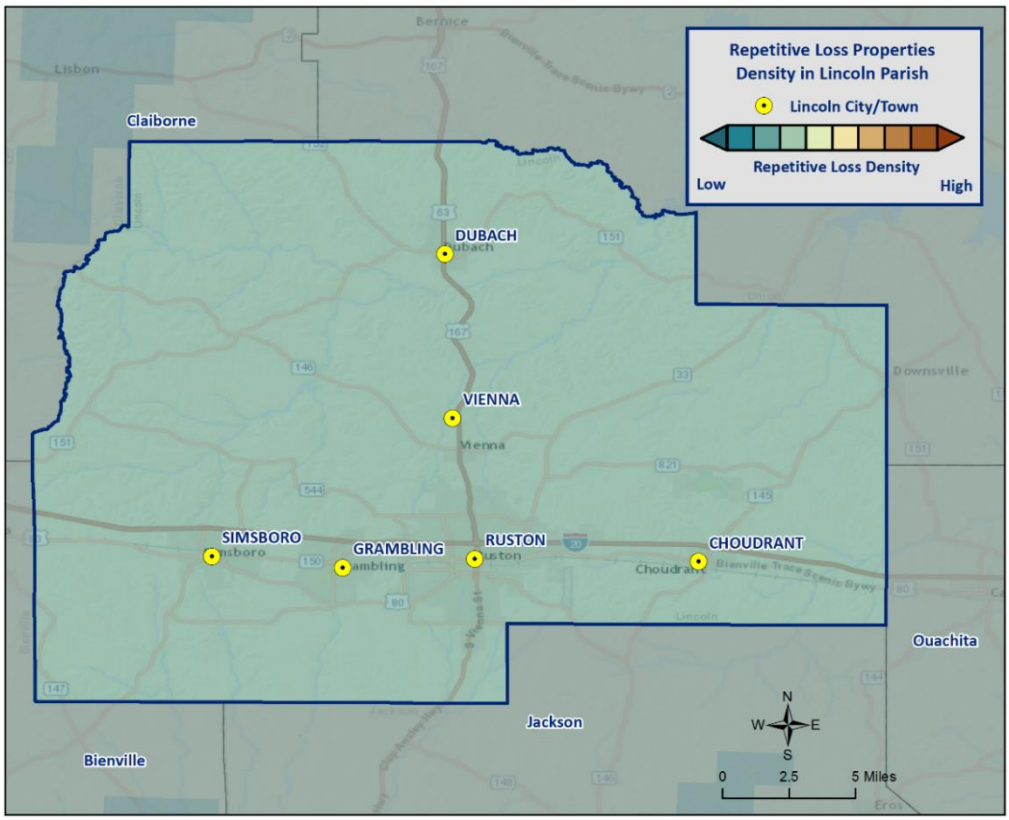

Figure 2-11: Repetitive Loss Property Densities in Lincoln Parish

National Flood Insurance Program

Flood insurance statistics indicate that Lincoln Parish has 103 flood insurance policies with the NFIP, with total annual premiums of $64,241. Lincoln Parish and the incorporated areas of Choudrant, Grambling, Ruston, and Simsboro are all participants in the NFIP. The incorporated areas of Dubach and Vienna do not participate in the NFIP. Dubach and Vienna lie on both sides of the Bayou D'Arbonne and Cypress Creek bottoms, Dubach on the north and Vienna on the south. Both sit on some of the higher elevated areas of the parish with limited areas of flooding. Both of these jurisdictions are very limited when it comes to personnel, funding, and resources needed to administer the NFIP program. Even though there have been previous occurrences of flooding, both jurisdictions have determined that participation in the NFIP has little or no large benefit or impact for the residents or the town's economy.

Lincoln 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 Lincoln Parish are provided in the tables on the next page.

Lincoln 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 floodplain managers for the jurisdictions of Choudrant, Grambling, Ruston, and Simsboro will continue to seek and attend floodplain management and NFIP continuing education.

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

Location	No. of Insured Structures	Total Insurance Coverage Value	Annual Premiums Paid	No. of Insurance Claims Filed Since 1978	Total Loss Payments
Lincoln Parish (Unincorporated)	33	$10,322,600	$13,074	0	$0
Choudrant	1	$280,000	$348	0	$0
Dubach	0	$0	$0	0	$0
Grambling	6	$1,315,600	$11,692	0	$0
Ruston	63	$15,723,600	$39,127	15	$109,331
Simsboro	0	$0	$0	0	$0
Vienna	0	$0	$0	0	$0
Total	103	$27,641,800	$64,241	15	$109,331

*While the Towns of Dubach and Vienna do not participate in the NFIP, and the Village of Simsboro does not have any active NFIP policies, the parish will continue to promote NFIP participation through education and outreach.

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

CID	Community Name	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Date Joined the NFIP	Tribal
220366#	Lincoln (Unincorporated)	11/29/1977	3/1/1991	4/2/2009	3/1/1991	No
220319#	Choudrant	6/27/1975	4/2/2009	4/2/2009 (M)	3/17/2010	No
220328#	Grambling	11/19/1976	4/2/2009	4/2/2009	4/2/2009	No
220347#	Ruston	12/24/1976	6/15/1981	4/2/2009	6/15/1981	No
220312#	Simsboro	2/7/1975	4/2/2009	4/2/2009	4/2/2009	No
220323#	Dubach	4/1/1977	4/2/2009	4/2/2009	Not in NFIP	No
220059#	Vienna	-	4/2/2009	4/2/2009	Not in NFIP	No

According to the Community Rating System (CRS) list of eligible communities dated June 1, 2014, Lincoln 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 Lincoln 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 Lincoln 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 Dugdemona River crests at flood stage levels, causing extensive flooding in low-lying areas.

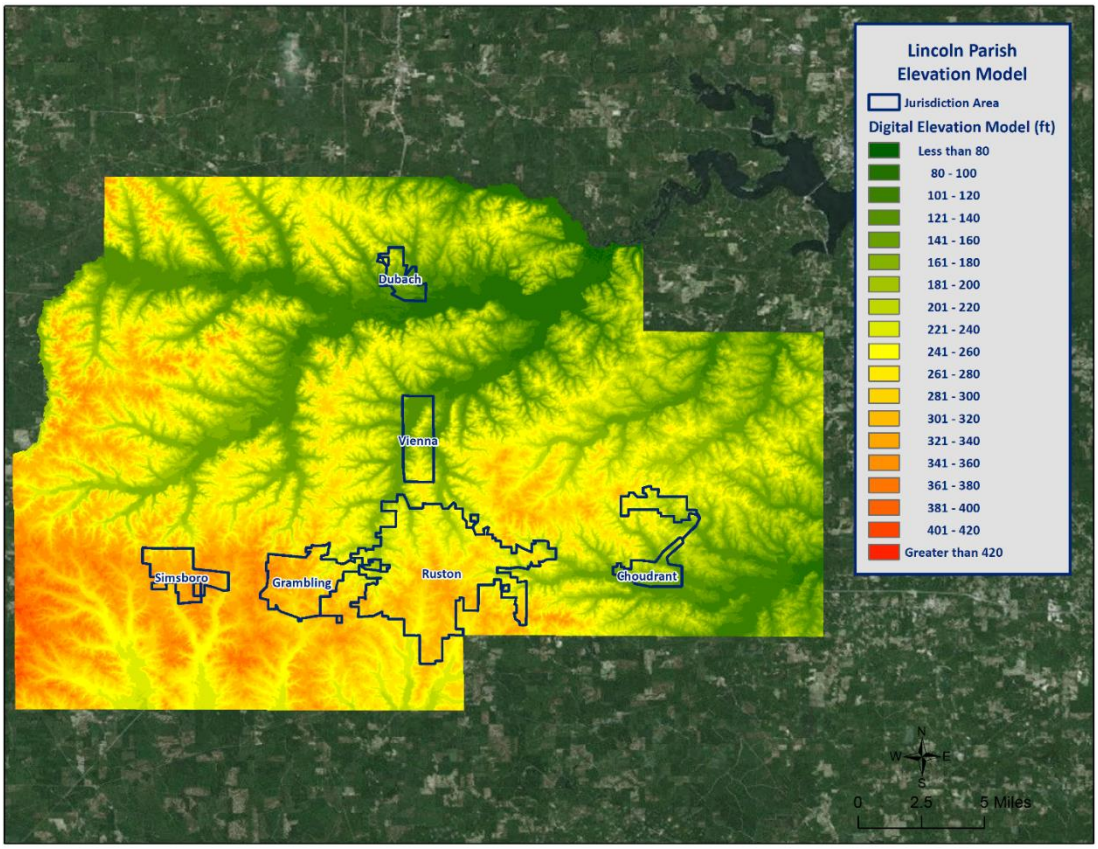

Figure 2-12: Elevation throughout Lincoln Parish

Looking at the digital elevation model (DEM) in the figure on the previous page for Lincoln 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 80 feet to greater than 420 feet. The highest elevations in the parish are approximately 420 feet, located in the southwest unincorporated area of the parish. The incorporated areas range in elevation from 157 feet to 331 feet, with Choudrant averaging 157 feet, Dubach averaging 164 feet, Vienna averaging 262 feet, Grambling averaging 308 feet, Simsboro averaging 322, and Ruston averaging 331 feet. The lowest elevations of the parish are less than 80 feet, and are located in the unincorporated areas of Lincoln Parish.

Location

Lincoln Parish has experienced significant flooding in its history and can expect more in the future. Most flooding in Lincoln Parish results from poor interior drainage, which is a function of under-performing, inadequate and/or deteriorating drainage infrastructure. Specifically, areas around the south central portion of Ruston along Arlington Street experience some backwater flooding from Shepherd Creek. Some areas along Lee Street south of Interstate 20 and west of US Highway 167 are subject to periodic flooding from the Chautauqua Creek, while similar isolated areas exist on the upstream reaches of Choudrant Creek, Colvin Creek and its tributaries.

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

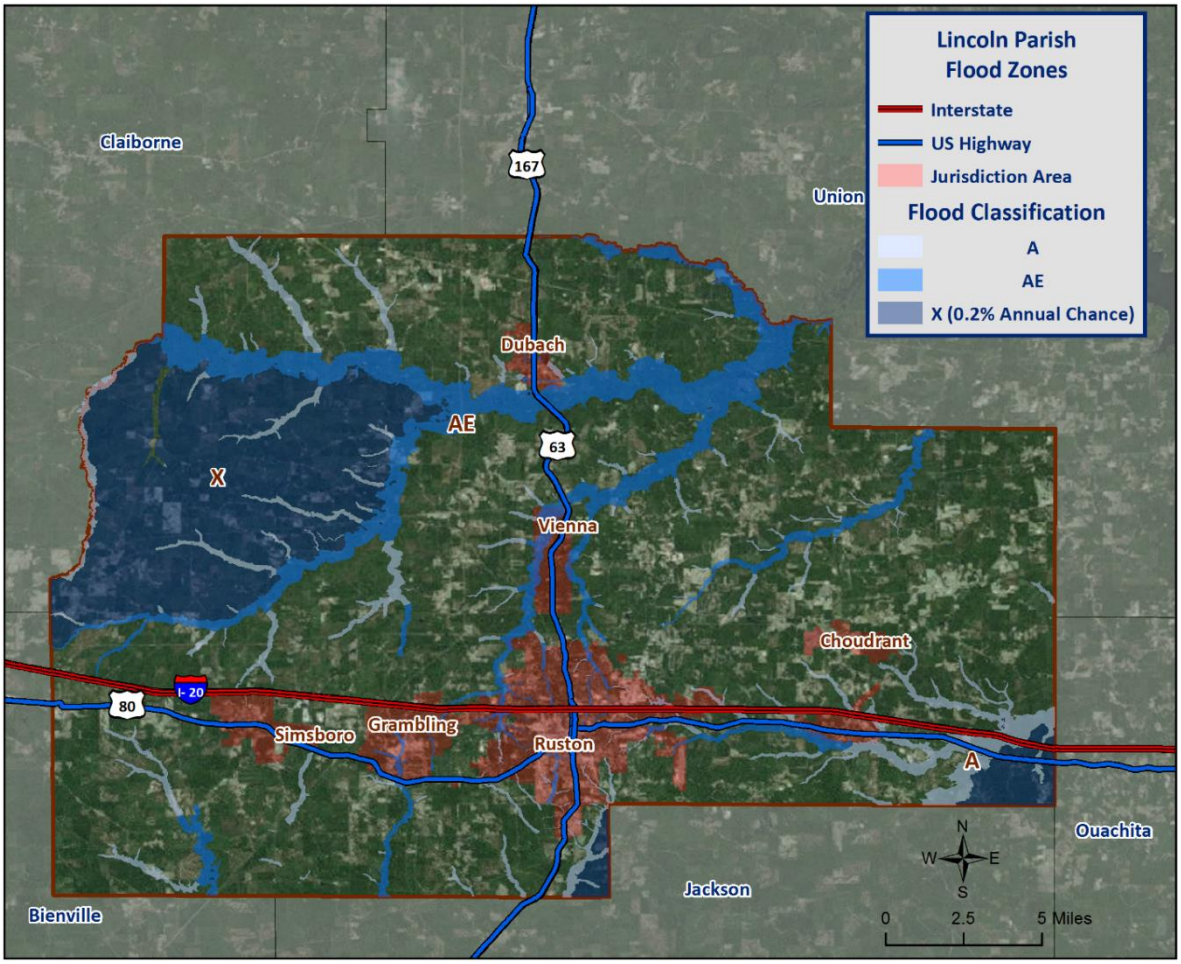

Figure 2-13: Lincoln Parish Areas within the Flood Zones

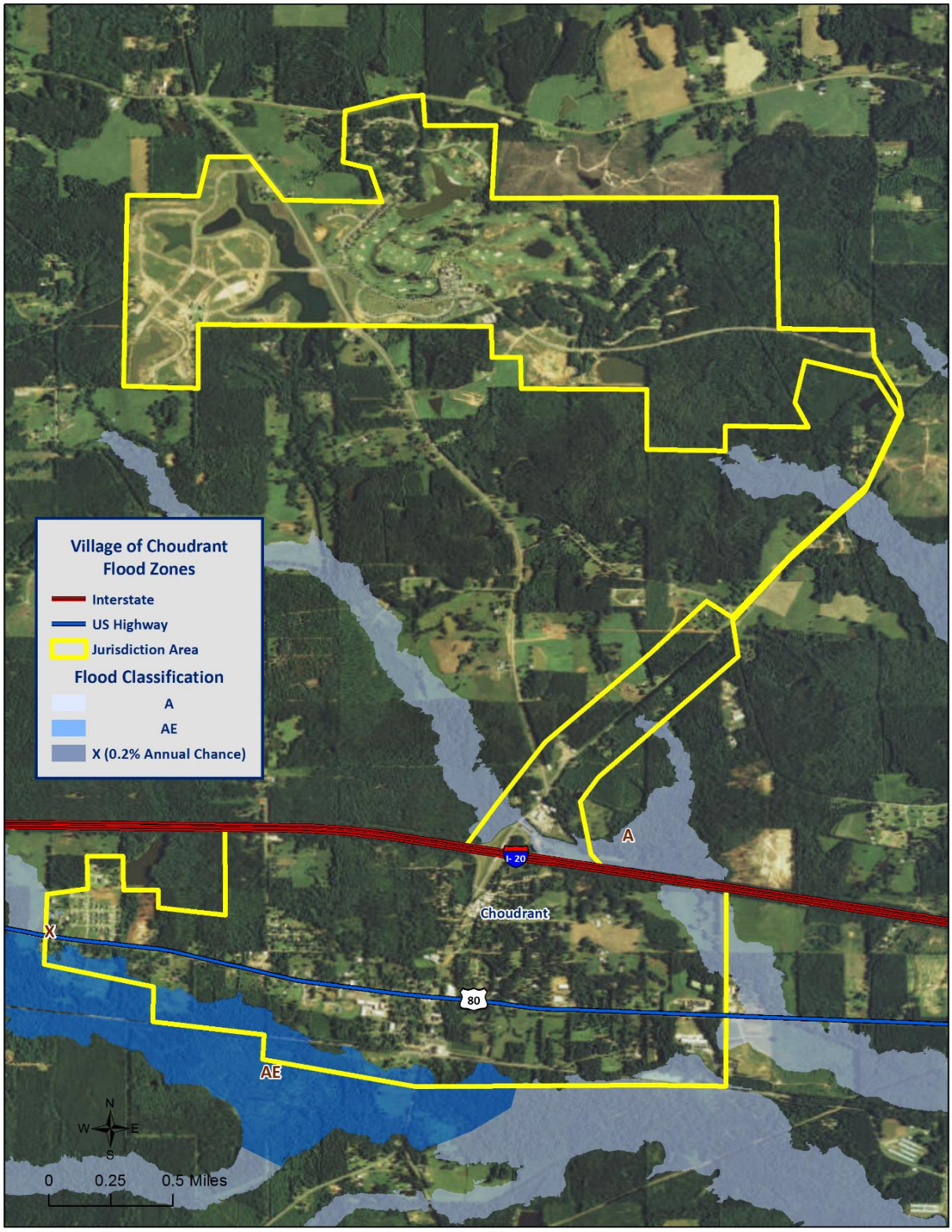

Figure 2-14: Village of Choudrant Areas within the Flood Zones

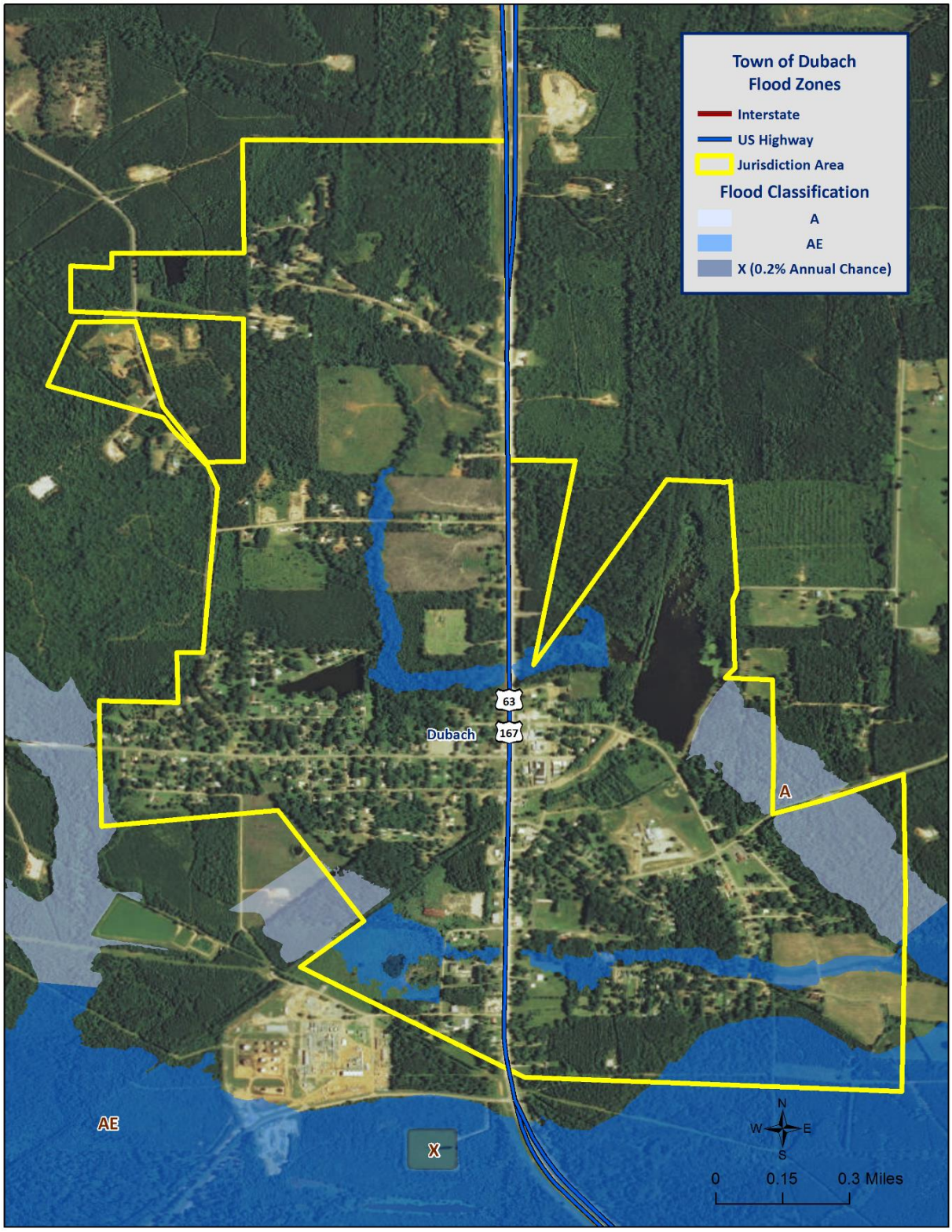

Figure 2-15: Town of Dubach Areas within the Flood Zones

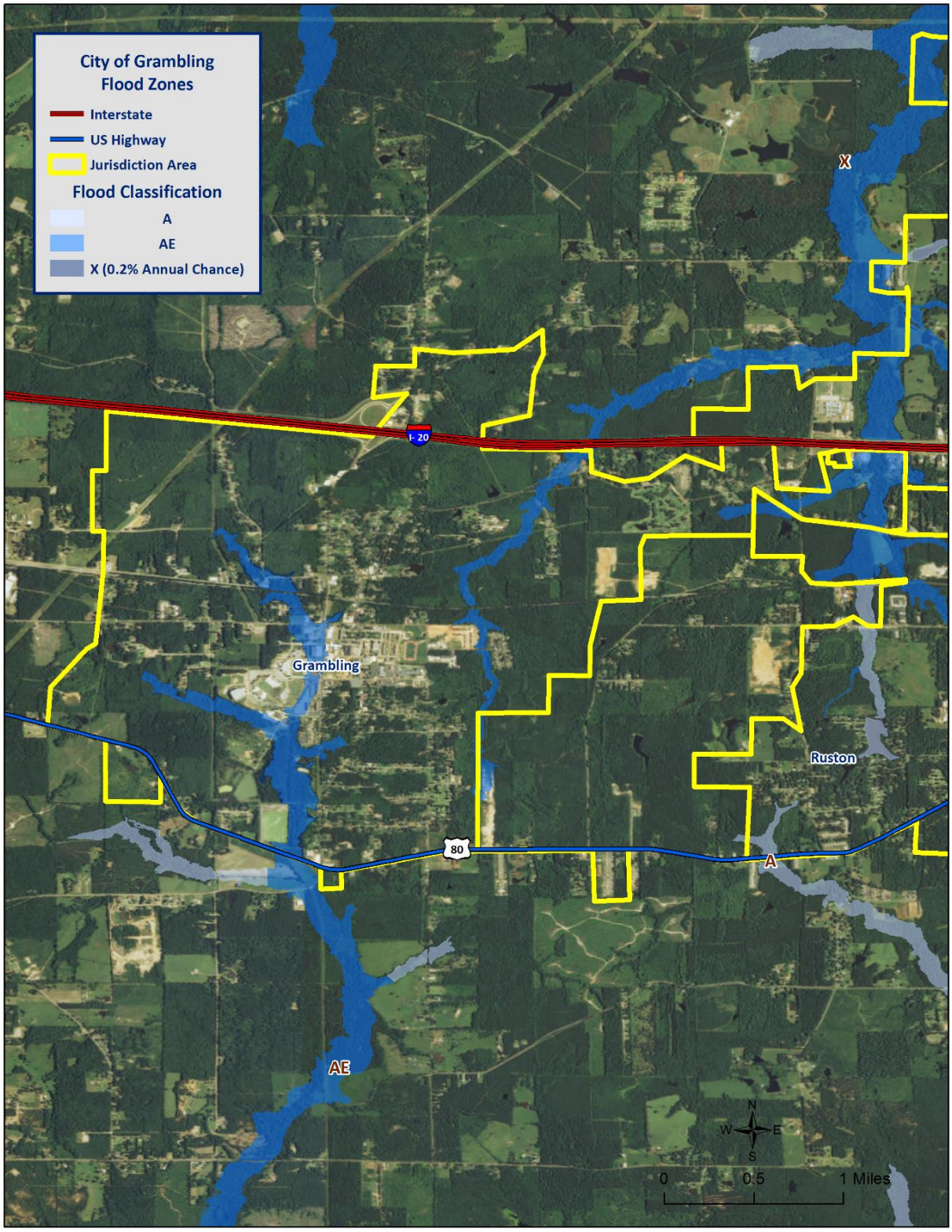

Figure 2-16: City of Grambling Areas within the Flood Zones

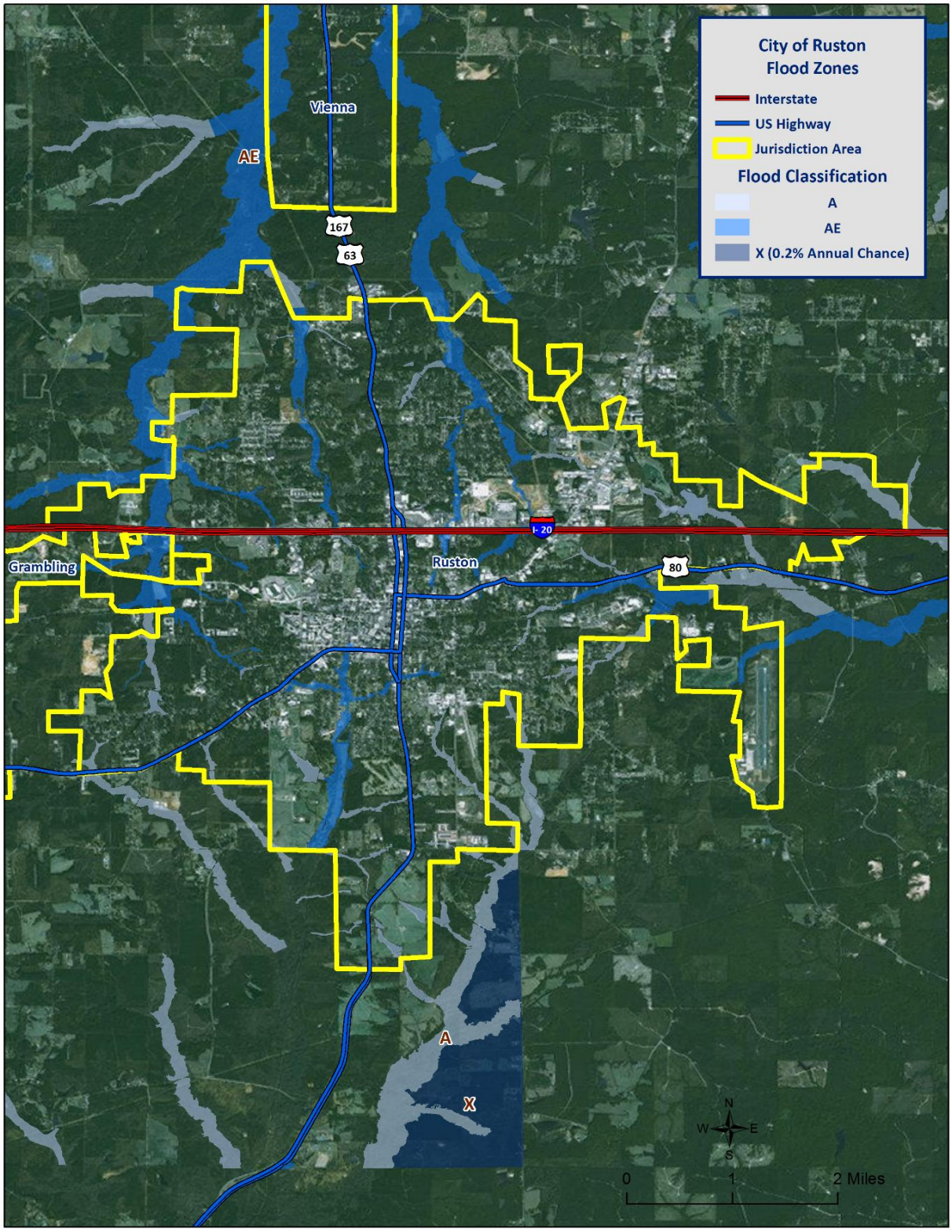

Figure 2-17: City of Ruston Areas within the Flood Zones

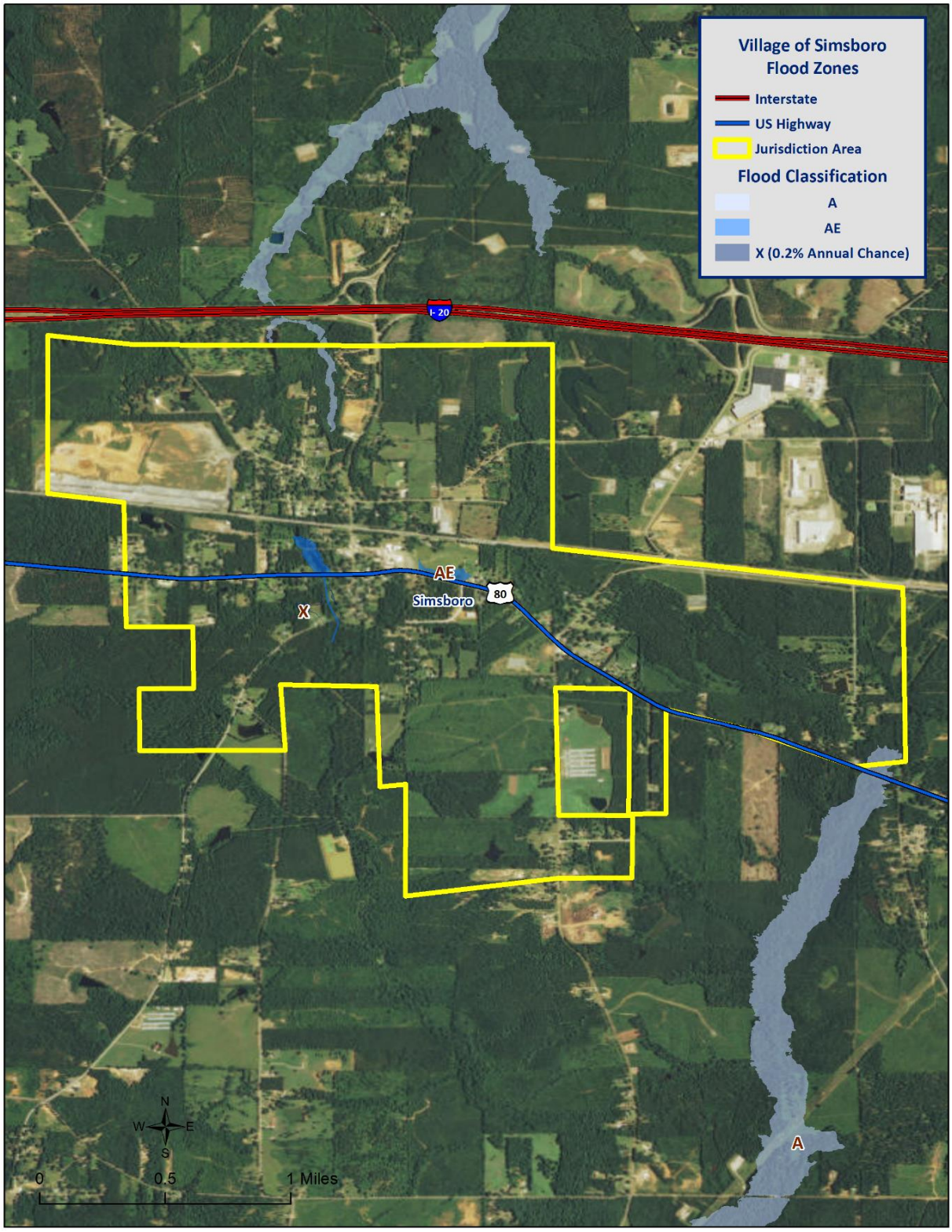

Figure 2-18: Village of Simsboro Areas within the Flood Zones

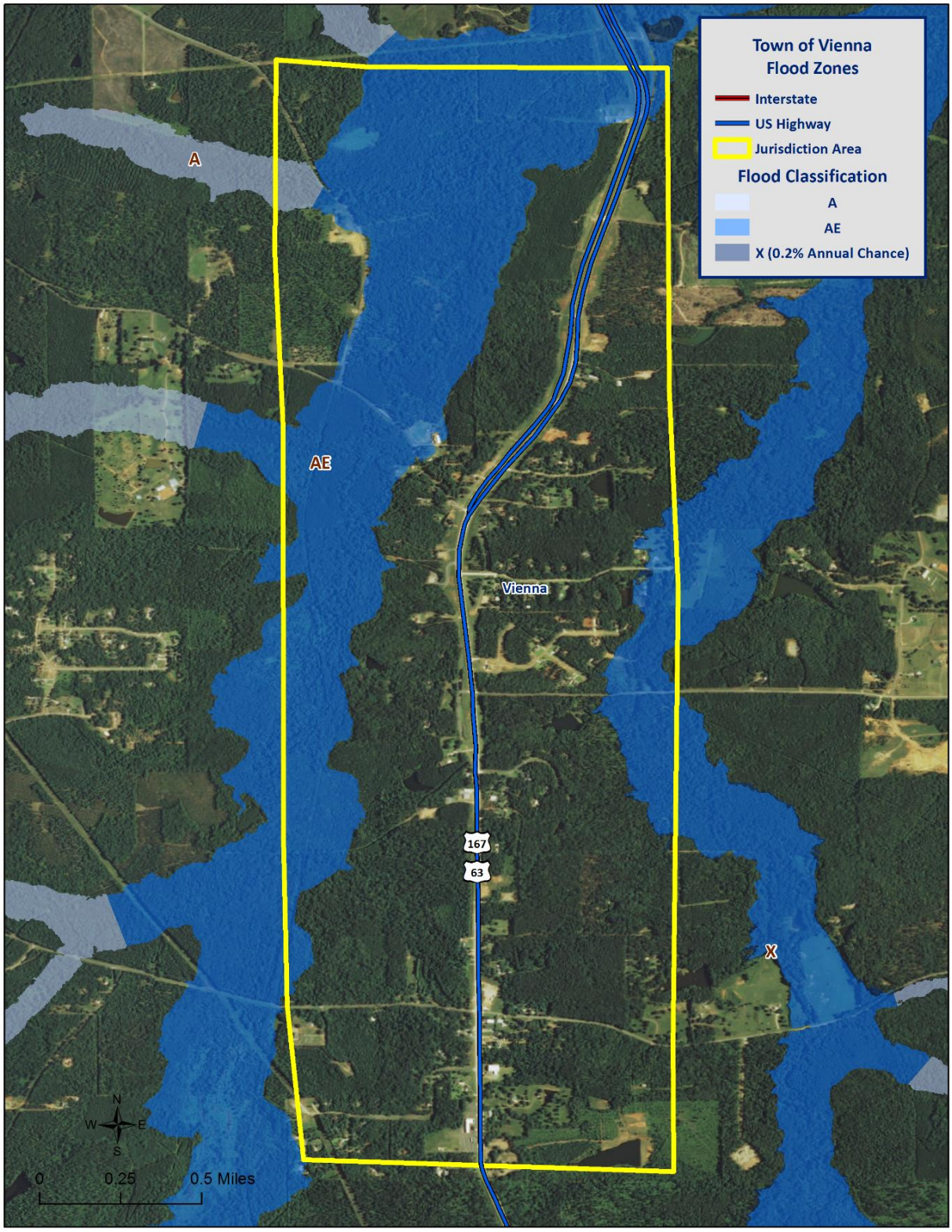

Figure 2-19: Town of Vienna Areas within the Flood Zones

Previous Occurrences / Extents

Historically, there have been 23 flooding events that have created significant flooding in Lincoln Parish between 1990 and 2015. Below is a brief synopsis of the six flooding events that have occurred since 2010, including flooding events that have occurred since the parish's last planning update.

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

Date	Extents	Type of Flooding	Estimated Damages	Location
June 21, 2011	Street flooding was reported in downtown Ruston on California Street, Railroad, Trenton, Bonner, Tech Drive, and Alabama Street.	Flash Flood	$0	CHAUTAUQUA SPGS
March 21, 2012	Numerous roads across the parish were flooded and closed.	Flash Flood	$0	BARNET SPGS
April 6, 2014	Water over many roadways forced closures across Ruston and Lincoln Parish.	Flash Flood	$0	CHAUTAUQUA SPGS
May 18, 2015	The Sheriff's Office reported widespread flooding resulting in several road closures throughout Lincoln Parish.	Flash Flood	$0	SIMSBORO
May 18, 2015	High water resulted in the closure of Frazier Road on the north side of Ruston.	Flash Flood	$0	VIENNA
May 18, 2015	High and swift water across Little River Road north of Ruston swept a vehicle off the roadway into Colvin Creek. The vehicle was occupied by an adult and two children. One of the children drowned while the other child and the adult were injured but survived.	Flash Flood	$10,000	VIENNA

Since 2010, there have been no significant flooding events in the incorporated areas of Choudrant, Dubach, Grambling, and Ruston.

The worst-case scenarios are based on several different types of flooding events. Storm water excesses and riverine flooding primarily affect the low-lying areas of the parish, and flood depths of up to six feet can be expected in the unincorporated areas of the parish. The incorporated areas of Ruston and Vienna, can expect flood depths of four to six feet, while the incorporated areas of Choudrant, Dubach, and Grambling can expect flood depths of two to four feet. The incorporated area of Simsboro can expect flood depths up 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 Lincoln Parish having multiple jurisdictions, it was necessary to assess the historical data found in the National Climatic Data Center for Lincoln 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 2-21: Annual Flood Probabilities for Lincoln Parish

Jurisdiction	Annual Probability	Return Frequency
Lincoln Parish (Unincorporated)	32%	3 – 4 years
Choudrant	4%	25 years
Dubach	4%	25 years
Grambling	8%	12 – 13 years
Ruston	24%	4 – 5 years
Simsboro	4%	25 years
Vienna	16%	6 – 7 years

Based on historical record, the overall flooding probability for the entire Lincoln Parish planning area is 92%, with 23 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. On the next page, *Table 2-22* shows the total economic losses that would result from this occurrence.

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

Jurisdiction	Estimated Total Losses from 100-Year Flood Event
Lincoln Parish (Unincorporated)	$21,201,000
Choudrant	$183,000
Dubach	$754,000
Grambling	$25,045,000
Ruston	$4,287,000
Simsboro	$0
Vienna	$763,000
Total	$52,233,000

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. These sectors are comprised of privately owned structures/facilities, as well as locally, state, and federally owned structures/facilities.

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

Lincoln Parish (Unincorporated)	Estimated Total Losses from 100-Year Flood Event
Agricultural	$41,000
Commercial	$4,566,000
Government	$4,000
Industrial	$1,007,000
Religious / Non-Profit	$765,000
Residential	$14,777,000
Schools	$41,000
Total	$21,201,000

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

Choudrant	Estimated Total Losses from 100-Year Flood Event
Agricultural	$0
Commercial	$40,000
Government	$1,000
Industrial	$0
Religious / Non-Profit	$0
Residential	$142,000
Schools	$0
Total	$183,000

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

Dubach	Estimated Total Losses from 100-Year Flood Event
Agricultural	$0
Commercial	$1,000
Government	$0
Industrial	$0
Religious / Non-Profit	$80,000
Residential	$673,000
Schools	$0
Total	$754,000

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

Grambling	Estimated Total Losses from 100-Year Flood Event
Agricultural	$0
Commercial	$861,000
Government	$0
Industrial	$4,000
Religious / Non-Profit	$370,000
Residential	$23,383,000
Schools	$427,000
Total	$25,045,000

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

Ruston	Estimated Total Losses from 100-Year Flood Event
Agricultural	$8,000
Commercial	$253,000
Government	$0
Industrial	$78,000
Religious / Non-Profit	$157,000
Residential	$3,629,000
Schools	$162,000
Total	$4,287,000

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

Vienna	Estimated Total Losses from 100-Year Flood Event
Agricultural	$0
Commercial	$10,000
Government	$0
Industrial	$0
Religious / Non-Profit	$0
Residential	$753,000
Schools	$0
Total	$763,000

Threat to People

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

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

Number of People Exposed to Flood Hazards			
Location	**# in Community**	**# in Hazard Area**	**% in Hazard Area**
Lincoln Parish (Unincorporated)	**16,894**	**483**	**2.9%**
Choudrant	**845**	**111**	**13.1%**
Dubach	**961**	**217**	**22.6%**
Grambling	**4,949**	**34**	**0.7%**
Ruston	**21,859**	**904**	**4.1%**
Simsboro	**841**	**0**	**0%**
Vienna	**386**	**125**	**32.4%**
Total	**46,735**	**1,874**	**4%**

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

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

Lincoln Parish (Unincorporated)		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	483	2.9%
Persons Under 5 Years	29	6.1%
Persons Under 18 Years	70	14.5%
Persons 65 Years and Over	55	11.3%
White	266	55.2%
Minority	217	44.9%

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

Choudrant		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	111	13.1%
Persons Under 5 Years	5	4.9%
Persons Under 18 Years	19	17.0%
Persons 65 Years and Over	16	14.1%
White	103	92.4%
Minority	8	7.6%

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

Dubach		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	217	22.6%
Persons Under 5 Years	15	6.9%
Persons Under 18 Years	41	18.8%
Persons 65 Years and Over	32	14.8%
White	115	53.1%
Minority	102	46.9%

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

Grambling		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	34	0.7%
Persons Under 5 Years	1	4.1%
Persons Under 18 Years	3	8.6%
Persons 65 Years and Over	3	8.3%
White	0	0.9%
Minority	34	99.1%

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

Ruston		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	904	4.1%
Persons Under 5 Years	55	6.1%
Persons Under 18 Years	118	13.0%
Persons 65 Years and Over	95	10.5%
White	473	52.3%
Minority	431	47.7%

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

Vienna		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	125	32.4%
Persons Under 5 Years	7	6.0%
Persons Under 18 Years	23	18.1%
Persons 65 Years and Over	17	13.7%
White	118	94.0%
Minority	7	6.0%

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 2-36: 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 2-37: 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 2-38: 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 2-39: 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 2-40: 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 Lincoln Parish is equally at risk for hailstorms.

Previous Occurrences / Extents

The SHELDUS database reports 26 significant hailstorm events occurring within the boundaries of Lincoln Parish between the years of 1990 - 2015. According to the National Climatic Data Center, hailstorm diameters experienced in Lincoln Parish have ranged from 0.75 inches to 2 inches since 1990. The most frequently recorded hail size has been 0.88 inch diameters. *Figure 2-20* displays the density of hailstorms in Lincoln Parish and adjacent parishes. Based on the National Climatic Data Center dataset, the table on the next page provides an overview of hailstorms that have impacted the Lincoln Parish planning area since 2010. Lincoln Parish can expect to experience hail up to 2 inches in diameter for future events.

Table 2-41: Previous Occurrences of Hailstorms in Lincoln Parish (Source: NCDC)

Date	Recorded Hail Size (inches)	Location
March 10, 2010	1.75	DUBACH
January 17, 2012	0.88	RUSTON
February 3, 2012	0.75	RUSTON
March 2, 2012	1.25	HICO
March 2, 2012	1	MT ZION
March 2, 2012	1.75	HILLY
March 2, 2012	0.75	DOWNSVILLE
April 3, 2012	0.88	RUSTON
April 5, 2012	1	DUBACH
April 11, 2012	1	GRAMBLING
March 28, 2014	1	DUBACH
March 28, 2014	1	DUBACH
May 9, 2014	0.75	RUSTON

Since 2010, there have been no significant hailstorm event in the incorporated areas of Choudrant, Simsboro, and Vienna.

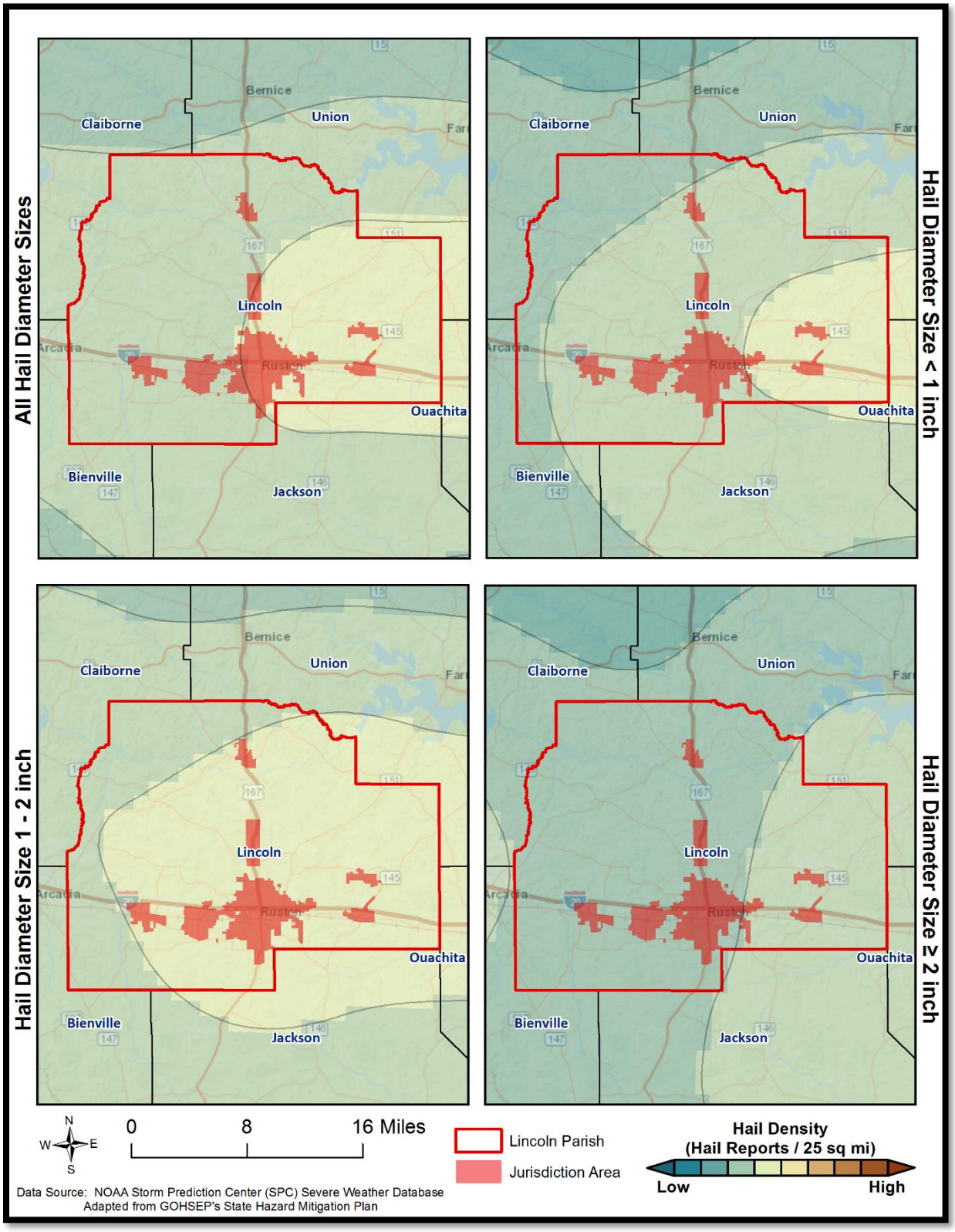

Figure 2-20: Density of Hailstorms by Diameter from 1950-2012
(Source: State of Louisiana Hazard Mitigation Plan 2014)

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 100%. The probability was determined based on a review of significant hail data that has caused damages in the last 25 years, in which Lincoln Parish has had 26 recorded events.

Estimated Potential Losses

According to the SHELDUS database, property damage due to hailstorms in Lincoln Parish have totaled approximately $370,164 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 $14,807. *Table 2-42* provides an estimate of potential property losses for Lincoln Parish.

Table 2-42: Estimated Annual Property Losses in Lincoln Parish from Hailstorms

Estimated Annual Potential Losses from Hailstorms for Lincoln Parish						
Unincorporated Lincoln Parish (36.1% of Population)	Choudrant (1.8% of Population)	Dubach (2.1% of Population)	Grambling (10.6% of Population)	Ruston (46.8% of Population)	Simsboro (1.8% of Population)	Vienna (0.8% of Population)
$5,352	$268	$304	$1,568	$6,925	$266	$122

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

Previous Occurrences / Extents

The SHELDUS database reports a total of 27 thunderstorm wind events occurring within the boundaries of Lincoln Parish between the years of 1990 to 2015. The significant thunderstorm wind events experienced in Lincoln Parish have ranged in wind speed from 58 mph to 92 mph. Lincoln Parish can expect to receive thunderstorm winds up to 92 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 2-43: Previous Occurrences for Thunderstorm High Wind Events

Location	Date	Recorded Wind Speeds (mph)	Property Damage	Crop Damage
HICO	June 28, 2010	62	$10,921	$0
SIMSBORO	June 28, 2010	61	$0	$0
CEDARTON	July 26, 2010	60	$0	$0
DUBACH	August 5, 2010	61	$0	$0
CHOUDRANT	August 5, 2010	61	$0	$0
RUSTON	August 5, 2010	62	$0	$0
RUSTON	February 24, 2011	63	$0	$0
GRAMBLING	February 24, 2011	62	$0	$0
MT ZION	February 24, 2011	62	$0	$0
DUBACH	July 4, 2011	61	$0	$0
RUSTON	August 18, 2011	60	$0	$0
RUSTON	August 22, 2011	62	$0	$0
HICO	August 22, 2011	62	$0	$0
GRAMBLING	August 24, 2011	63	$0	$0
SIMSBORO	November 8, 2011	61	$0	$0
RUSTON	April 2, 2012	57	$0	$0
RUSTON	April 2, 2012	60	$0	$0
RUSTON	June 12, 2012	62	$0	$0
RUSTON	December 20, 2012	64	$0	$0
DUBACH	January 29, 2013	62	$0	$0
RUSTON	March 31, 2013	64	$0	$0
SIMSBORO	May 21, 2013	63	$0	$0
DUBACH	June 1, 2013	61	$0	$0
UNIONVILLE	June 1, 2013	61	$0	$0
VIENNA	July 11, 2013	69	$0	$0
SIMSBORO	July 26, 2013	63	$0	$0
DUBACH	December 21, 2013	63	$0	$0
RUSTON	December 21, 2013	74	$102,221	$0
CEDARTON	December 21, 2013	70	$1,328,879	$0
DUBACH	April 4, 2014	60	$0	$0
CHOUDRANT	April 8, 2014	60	$0	$0
CHOUDRANT	April 14, 2014	61	$0	$0
RUSTON	October 13, 2014	62	$25,147	$0
RUSTON	May 25, 2015	63	$0	$0
RUSTON	May 25, 2015	62	$0	$0
VIENNA	June 9, 2015	60	$0	$0
VIENNA	June 9, 2014	60	$0	$0
SIMSBORO	November 17, 2015	60	$0	$0

Location	Date	Recorded Wind Speeds (mph)	Property Damage	Crop Damage
VIENNA	November 17, 2015	61	$0	$0
DUBACH	November 17, 2015	60	$0	$0
UNIONVILLE	November 17, 2015	60	$0	$0
RUSTON	December 13, 2015	63	$0	$0
MT ZION	December 28, 2015	62	$0	$0
OAK GROVE	December 28, 2015	62	$0	$0
DOWNSVILLE	December 28, 2015	61	$0	$0

Frequency

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

Estimated Potential Losses

Since 1990, there have been 27 significant wind events that have resulted in property damages according to the SHELDUS database. The total property damages associated with those storms have totaled $1,855,816. 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 $74,233. The following table provides an estimate of potential property losses for Lincoln Parish:

Table 2-44: Estimated Annual Property Losses in Lincoln Parish Resulting from High Winds

Estimated Annual Potential Losses from High Winds for Lincoln Parish						
Unincorporated Lincoln Parish (36.1% of Population)	Choudrant (1.8% of Population)	Dubach (2.1% of Population)	Grambling (10.6% of Population)	Ruston (46.8% of Population)	Simsboro (1.8% of Population)	Vienna (0.8% of Population)
$26,834	$1,342	$1,526	$7,861	$34,720	$1,336	$613

There have been two reported injuries and no 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 Lincoln Parish.

Previous Occurrences / Extents

The SHELDUS database reports a total of 14 lightning events occurring within the boundaries of Lincoln 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 Lincoln 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 2-45: Previous Occurrences of Significant Lightning Strikes in Lincoln Parish from 2010 – 2015 (Source: NCDC and SHELDUS)

Location	Date	Summary	Property Damage
SIMSBORO	January 20, 2010	Lightning struck an oil well site in the northwest part of Lincoln Parish which sparked a large fire that shot flames at least 70 feet into the air.	$27,142
SIMSBORO	July 4, 2011	Lightning struck a house and caught fire on Girl Scout Road.	$15,787
VIENNA	August 18, 2012	Lightning struck a home on Pea Ridge Road setting fire to the laundry room in front of the residence. The home suffered minor smoke damage and water damage.	$10,311

Since 2010, there have been no lightning events that have caused property damage or loss of life in the unincorporated areas of Lincoln Parish or the incorporated areas of Choudrant, Dubach, Grambling, and Ruston.

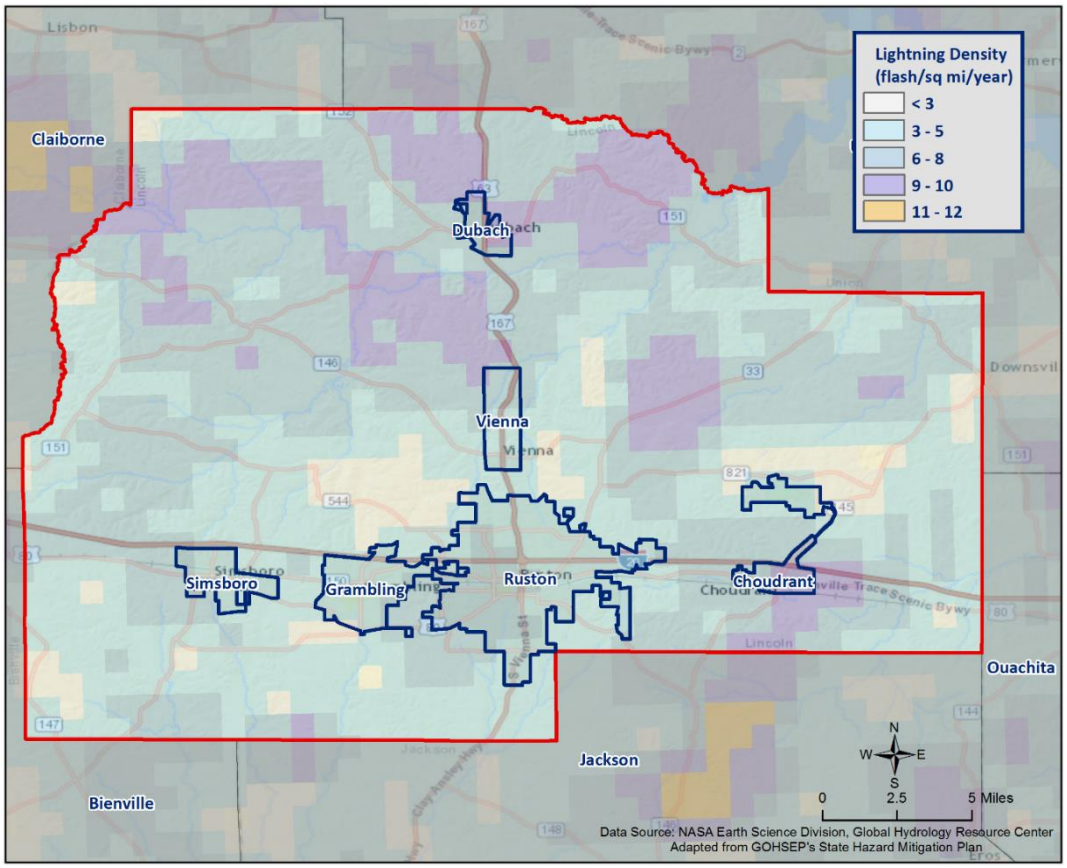

Figure 2-21: Lightning Density Reports for Lincoln Parish

Frequency

Lightning can strike anywhere and is produced by every thunderstorm, so the chance of lightning occurring in Lincoln 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 14 lightning events that have caused property damages or injuries over the last 25 years, establishing an annual probability of 56%.

Estimated Potential Losses

Since 1990, there have been 14 significant lightning events that have resulted in property damages according to the SHELDUS database. The total property damages associated with lightning events totaled $398,203. 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 $15,928. The table on the next page provides an estimate of potential property losses for Lincoln Parish.

Table 2-46: Estimated Annual Property Losses in Lincoln Parish from Lightning

Estimated Annual Potential Losses from Thunderstorm Lightning for Lincoln Parish						
Unincorporated Lincoln Parish (36.1% of Population)	Choudrant (1.8% of Population)	Dubach (2.1% of Population)	Grambling (10.6% of Population)	Ruston (46.8% of Population)	Simsboro (1.8% of Population)	Vienna (0.8% of Population)
$5,758	$288	$328	$1,687	$7,450	$287	$132

There has been one reported injury and no fatalities in Lincoln Parish as a result of a lightning strikes over the 25-year record.

Vulnerability

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

Tornadoes

Tornadoes (also called twisters or cyclones) are rapidly rotating funnels of wind extending between storm clouds and the ground. For their size, tornadoes are the most severe storms, and 70% of the world's reported tornadoes occur within the continental United States, making them one of the most significant hazards Americans face. Tornadoes and waterspouts form during severe weather events, such as thunderstorms and hurricanes, when cold air overrides a layer of warm air, causing the warm air to rise rapidly. This usually results in a counterclockwise rotation in the northern hemisphere. The updraft of air in tornadoes always rotates because of wind shear (differing speeds of moving air at various heights), and it can rotate in either a clockwise or counterclockwise direction; clockwise rotations (in the northern hemisphere) will sustain the system, at least until other forces cause it to die seconds to minutes later.

Since February 1, 2007, the Enhanced Fujita (EF) Scale has been used to classify tornado intensity. The EF Scale classifies tornadoes based on their damage pattern rather than wind speed; wind speed is then derived and estimated. This contrasts with the Saffir-Simpson scale used for hurricane classification, which is based on measured wind speed. *Table 2-47* 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 2-47: 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 2-48: 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 Lincoln Parish with actual locations, tornadoes in general are a climatological based hazard and have the same approximate probability of occurring in Lincoln Parish as all of its jurisdictions. Because a tornado has a similar probability of striking anywhere within the planning area for Lincoln Parish, all jurisdictions are equally at risk for tornadoes.

Previous Occurrences / Extents

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

The tornado that caused the most damage to property occurred on November 30, 1996. The tornado touched down in southwest Simsboro. Two men were killed and another injured when a tree fell across the cab of their truck while installing a radio. Nine people were injured due to the tornado. The tornado did minor damage to 33 homes, one was completely destroyed. Several mobile homes and one local church suffered major damage. The tornado struck the Ball-Foster Glass Container factory near I-20, knocking out brick walls

and flipping commercial trucks adjacent to the factory. As the tornado moved across I-20, several wrecks occurred including a tractor trailer which jackknifed into a ditch.

Table 2-49: Historical Tornadoes in Lincoln Parish with Locations from 1990 - 2015

Date	Impacts	Property Damage	Location	Magnitude
November 30, 1996	10 mile path with a width of 250 yards. Killed two men and injured nine. 33 homes suffered minor damage with one completely destroyed. Several tractor trailers were flipped or involved in wrecks.	$3,017,667	SIMSBORO	F2
April 9, 2009	4.4 mile path with a width of 150 yards. Several trees were snapped or uprooted, and some minor roof damage occurred.	$331,042	OAK GROVE	EF1

The incorporated areas of Choudrant, Dubach, Grambling, Ruston, Simsboro, and Vienna have not experienced a tornado event from 2010 to the present. Since 2010, the year in which the last update to this hazard mitigation plan was written, Lincoln Parish has had no tornado touchdowns in the unincorporated areas of the parish.

Frequency / Probability

Tornadoes are a sporadic occurrence within Lincoln Parish, with an annual chance of occurrence calculated at 8% based on the records for the past 25 years (1990 - 2015). The figure below displays the density of tornado touch downs in Lincoln Parish and neighboring parishes.

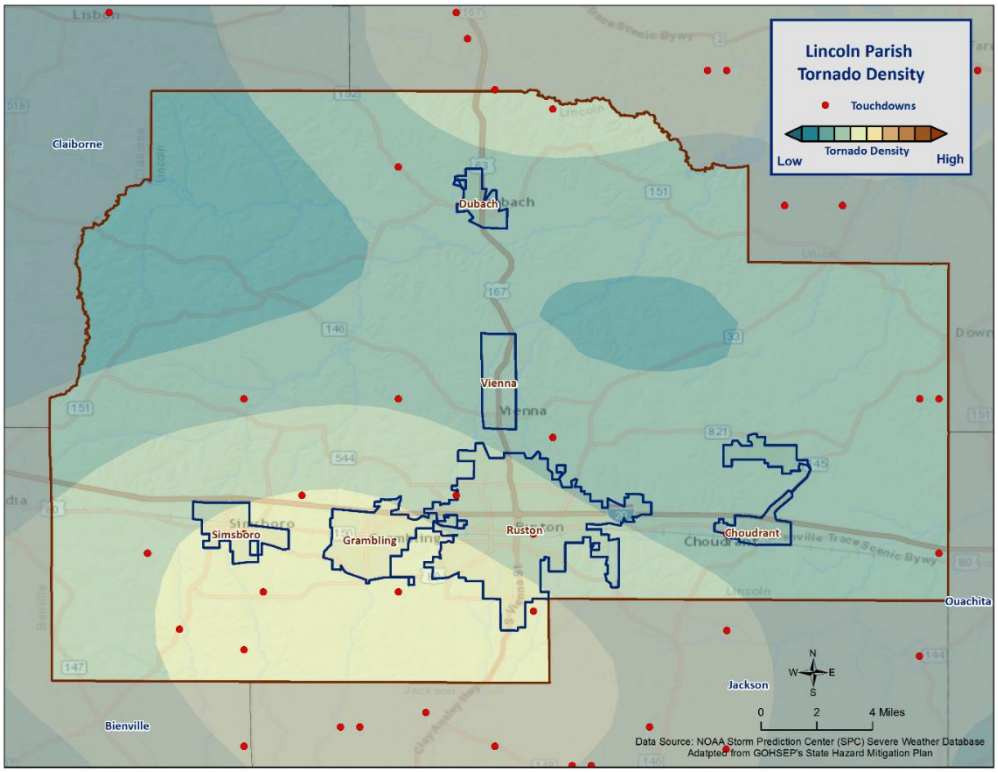

Figure 2-22: Location and Density of Tornadoes to Touch Down in Lincoln Parish (Source: NOAA/SPC Severe Weather Database)

Estimated Potential Losses

According to the SHELDUS database, there have been two tornadoes that have caused some level of property damage. The total damage from the actual claims for property is $3,348,710, with an average cost of $1,674,355 per tornado strike. When annualizing the total cost over the 25-year record, total annual loses based on tornadoes are estimated to be $133,948. 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 Lincoln Parish.

Table 2-50: Estimated Annual Losses from Tornadoes in Lincoln Parish

Estimated Annual Potential Losses from Tornadoes for Lincoln Parish						
Unincorporated Lincoln Parish (36.1% of Population)	Choudrant (1.8% of Population)	Dubach (2.1% of Population)	Grambling (10.6% of Population)	Ruston (46.8% of Population)	Simsboro (1.8% of Population)	Vienna (0.8% of Population)
$48,420	$2,422	$2,754	$14,184	$62,651	$2,410	$1,106

Table 2-51 presents an analysis of building exposure that is susceptible to tornadoes by general occupancy type for Lincoln Parish, along with the percentage of building stock that are mobile homes.

Table 2-51: Building Exposure by General Occupancy Type for Tornadoes in Lincoln 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 (%)
4,714,742	1,075,971	332,919	19,904	178,964	37,344	164,893	17.9%

The parish has suffered through a total of one day in which tornadoes or waterspouts have accounted for nine injuries and two fatalities during this 25-year period (*Table 2-52*). The average number of injuries per event for Lincoln Parish is 4.5 per tornado, with an average of 0.36 per year for the 25-year period.

Table 2-52: Tornadoes in Lincoln Parish by Magnitude that Caused Injuries or Deaths

Date	Magnitude	Deaths	Injuries
November 30, 1996	F2	2	9

In assessing the overall risk to population, the most vulnerable population throughout the parish are those residing in manufacturing housing. Approximately 17.9% of all housing in Lincoln Parish consists of manufactured housing. Based on location data provided by Lincoln Parish, there are 1,190 known locations where manufactured housing is concentrated. The location and density of manufactured houses can be seen in *Figure 2-23*.

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 Lincoln Parish (*Table 2-53*). However, this does not influence the risk associated with a tornado event since they strike at random, making all structures and population within the planning area equally vulnerable.

Table 2-53: Manufactured Home Distribution throughout Lincoln Parish

Location	Number of Manufactured Homes	% of Manufactured Homes
Unincorporated Area	833	70.0%
Choudrant	37	3.1%
Dubach	17	1.4%
Grambling	54	4.5%
Ruston	166	13.9%
Simsboro	58	4.9%
Vienna	25	2.1%

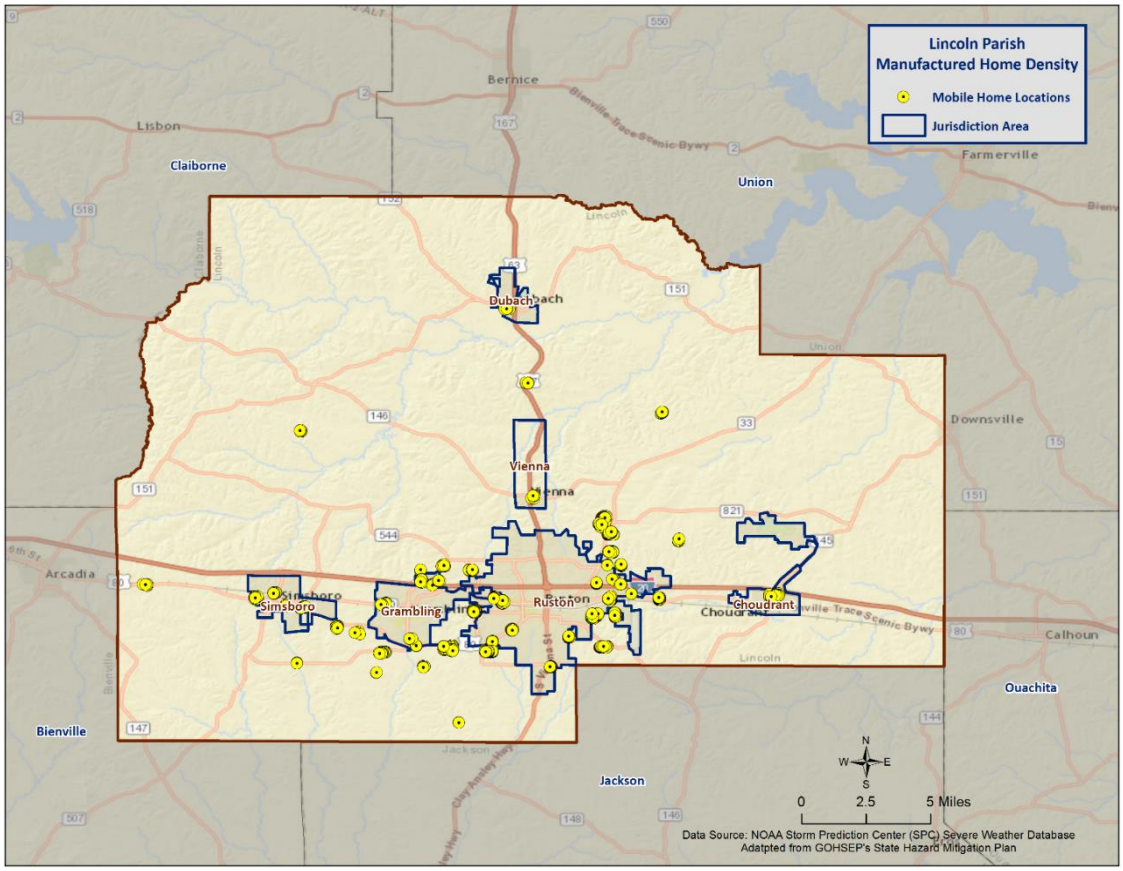

Figure 2-23: Location and Approximate Number of Units in Manufactured Housing Locations throughout Lincoln Parish

Vulnerability

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

Tropical Cyclones

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

Table 2-54: Saffir-Simpson Hurricane Wind Scale

Saffir-Simpson Hurricane Wind Scale			
Category	**Sustained Winds**	**Pressure**	**Types of Damage Due to Winds**
Tropical Depression	<39 mph	N/A	N/A
Tropical Cyclone	39-73 mph	N/A	N/A
1	74-95 mph	>14.2 psi	Very dangerous winds will produce some damage. Well-constructed frame homes could have damage to roof, shingles, vinyl siding, and gutters. Large branches of trees will snap and shallow-rooted trees may be toppled, especially after the soil becomes waterlogged. Extensive damage to power lines and poles will likely result in power outages that could last several days.
2	96-110 mph	14-14.2 psi	Extremely dangerous winds will cause extensive damage. Well-constructed frame homes could sustain major roof and siding damage. Many shallow-rooted trees will be snapped or uprooted, especially after the soil becomes waterlogged, and block numerous roads. Near total power loss is expected, with outages that could last from several days to weeks.
3	111-129 mph	13.7 -14 psi	Devastating damage will occur. Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, especially after the soil becomes waterlogged, blocking numerous roads. Electricity and water may be unavailable for several days to weeks after the storm passes.
4	130-156 mph	13.3-13.7 psi	Catastrophic damage will occur. Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted, especially after the soil becomes waterlogged, and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5	157 mph or higher	<13.7 psi	Catastrophic damage will occur. A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks to months.

Many associated hazards can occur during a hurricane, including heavy rains, flooding, high winds, and tornadoes. A general rule of thumb in coastal Louisiana is that the number of inches of rainfall to be expected from a tropical cyclone is approximately 100 divided by the forward velocity of the storm in mph; so a fast-moving storm (20 mph) might be expected to drop five inches of rain while a slow-moving (5 mph) storm could produce totals of around 20 inches. However, no two storms are alike, and such generalizations have limited utility for planning purposes. Hurricane Beulah, which struck Texas in 1967, spawned 115 confirmed tornadoes. In recent years, extensive coastal development has increased the storm surge resulting from these storms so much that this has become the greatest natural hazard threat to property and loss of life in the state. Storm surge is a temporary rise in sea level generally caused by reduced air pressure and strong onshore winds associated with a storm system near the coast. Although storm surge can technically occur at any time of the year in Louisiana, surges caused by hurricanes can be particularly deadly and destructive. Such storm surge events are often accompanied by large, destructive waves (exceeding ten meters in some places) that can inflict a high number of fatalities and economic losses. In 2005, Hurricane Katrina clearly demonstrated the destructive potential of this hazard, as it produced the highest modern-day storm surge levels in the State of Louisiana, reaching up to 18.7 feet near Alluvial City in St. Bernard Parish.

Property can be damaged by the various forces that accompany a tropical cyclone. High winds can directly impact structures in three ways: wind forces, flying debris, and pressure. By itself, the force of the wind can knock over trees, break tree limbs, and destroy loose items, such as television antennas and power lines. Many things can be moved by high winds. As winds increase, so does the pressure against stationary objects. Pressure against a wall rises with the square of the wind speed. For some structures, this force is enough to cause failure. The potential for damage to structures is increased when debris breaks the building “envelope” and allows the wind pressure to impact all surfaces (the building envelope includes all surfaces that make up the barrier between the indoors and the outdoors, such as the walls, foundation, doors, windows, and roof). Mobile homes and buildings in need of maintenance are most subject to wind damage. High winds mean bigger waves. Extended pounding by waves can demolish any poorly or improperly designed structures. The waves also erode sand beaches, roads, and foundations. When foundations are compromised, the building will collapse.

Nine out of ten deaths during hurricanes are caused by storm surge flooding. Falling tree limbs and flying debris caused by high winds have the ability to cause injury or death. Downed trees and damaged buildings are a potential health hazard due to instability, electrical system damage, broken pipelines, chemical releases, and gas leaks. Sewage and water lines may also be damaged. Salt water and fresh water intrusions from storm surge send animals, such as snakes, into areas occupied by humans.

Location

Hurricanes are the single biggest threat to Louisiana. With any single hurricane having the potential to devastate multiple parishes at once, the risk of a tropical cyclone has the probability of impacting anywhere within the planning area for Lincoln Parish. As such, all jurisdictions are equally at risk for tropical cyclones.

Previous Occurrences / Extents

The central Gulf of Mexico coastline is among the most hurricane-prone locations in the United States, and hurricanes can affect every part of the state. The SHELDUS database reports a total of three tropical cyclone events occurring within the boundaries of Lincoln Parish between the years 2002 and 2014 (*Table 2-55*). The tropical cyclone events experienced in Lincoln Parish include depressions, storms, and hurricanes. As a worst case scenario, Lincoln Parish can expect to experience hurricanes at the Category 1 level in the future.

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

Date	Name	Storm Type At Time of Impact
September 24, 2005	Rita	Hurricane – Category 1
September 1, 2008	Gustav	Tropical Storm
September 13, 2008	Ike	Tropical Storm

Hurricane Rita (2005)

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

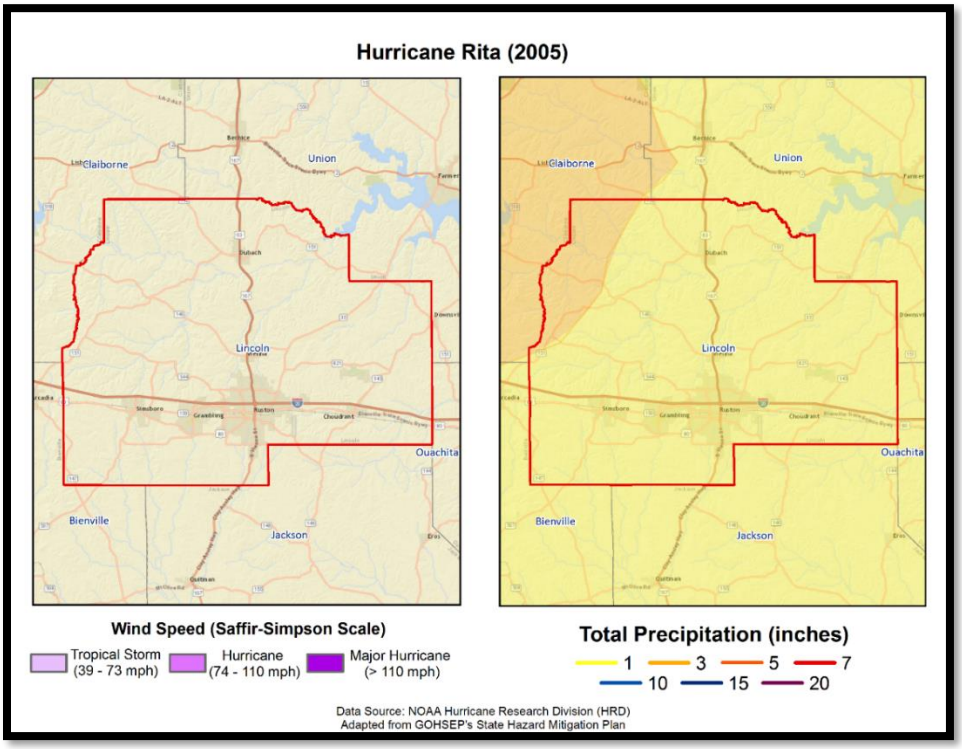

Figure 2-24: Wind Speed and Precipitation Totals in Lincoln Parish for Hurricane Rita

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.

During the height of the storm, Lincoln Parish experience wind gusts upwards of 50 mph. While the storm did not stall over the area, rainfall totals exceeded four inches in most of the parish.

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.

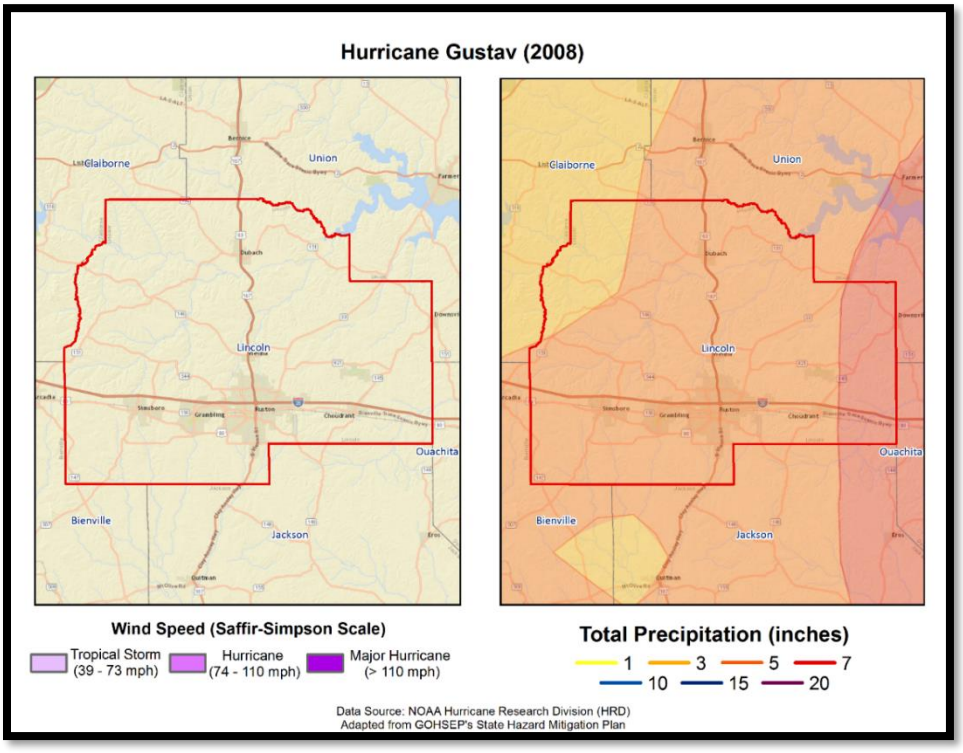

Figure 2-25: Wind Speed and Precipitation Totals in Lincoln Parish for Hurricane Gustav

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.

Tropical storm force wind gusts resulted in numerous trees and power lines downed across Lincoln Parish. Power outages were widespread across the parish as well. One tree fell across a home on West California Avenue in Ruston. There were no injuries reported.

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.

Tropical storm force winds downed several trees and power lines across Lincoln Parish during the height of the storm. Scattered power outages were also reported across Lincoln Parish. A tree fell on top of a home at 1308 Honeysuckle Lane in Ruston. Another tree fell across a home on Evans Street in Ruston. There was no report of injuries.

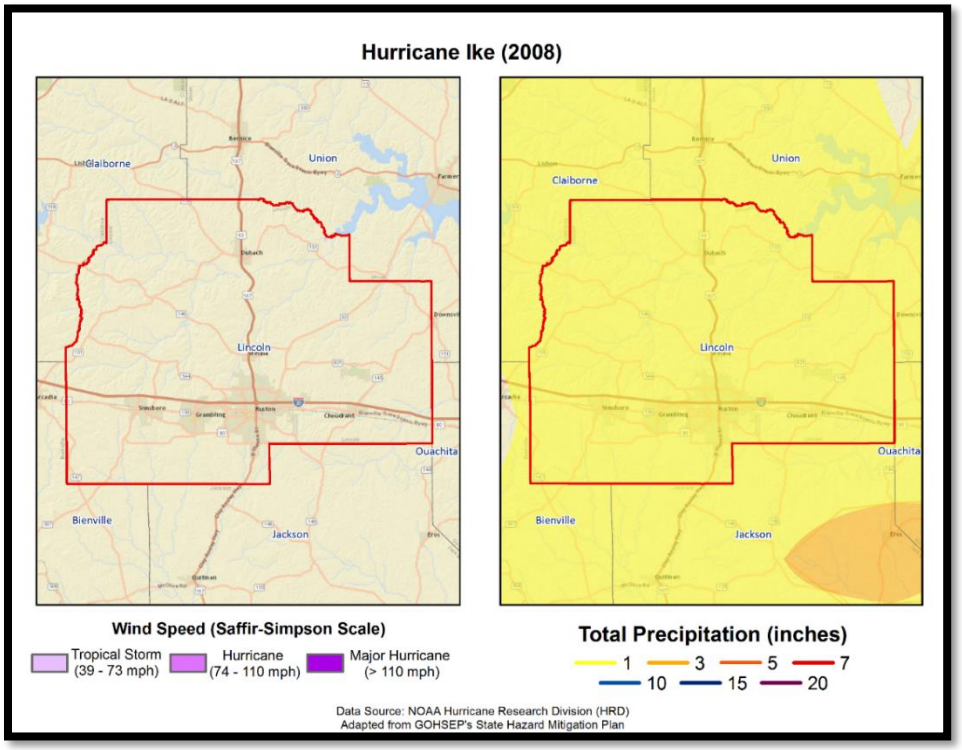

Figure 2-26: Wind Speed and Precipitation Totals in Lincoln Parish for Hurricane Ike

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

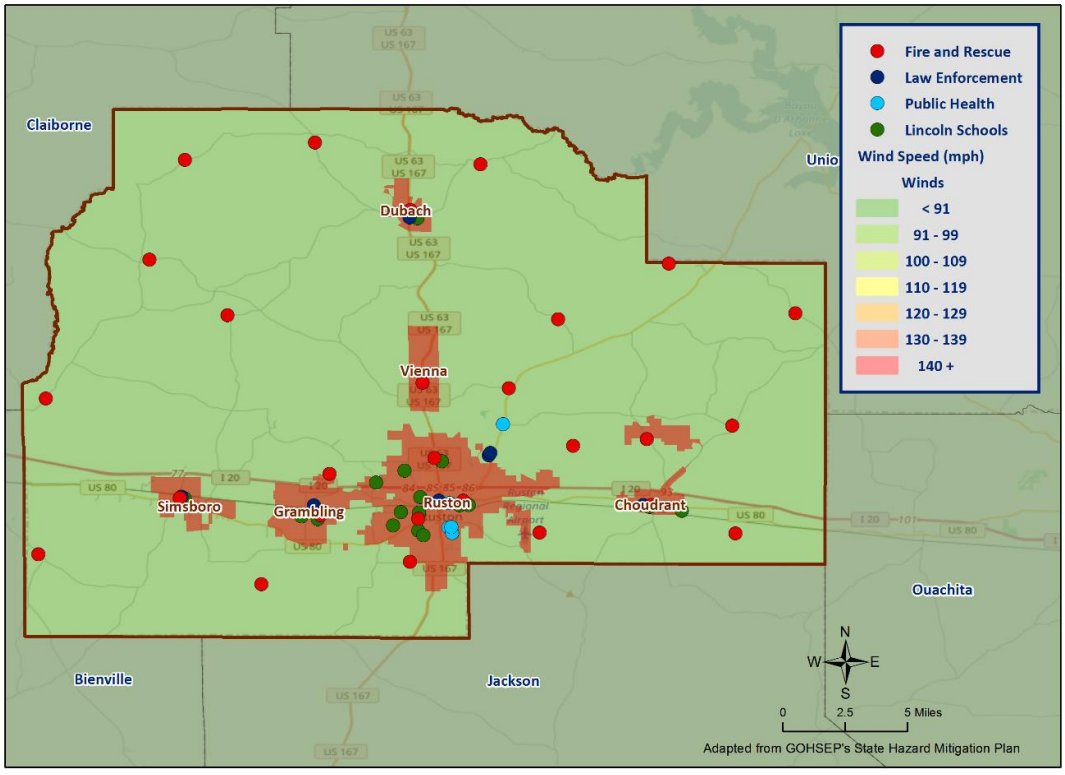

Figure 2-27: Winds Zones for Lincoln Parish in Relation to Critical Facilities

Frequency / Probability

Tropical cyclones are large natural hazard events that regularly impact Lincoln Parish. The annual chance of occurrence for a tropical cyclone is estimated at 12% for Lincoln Parish and its municipalities, with three events occurring within 25 years. The tropical cyclone season for the Atlantic Basin is from June 1st through November 30th, with most of the major hurricanes (Saffir-Simpson Categories 3, 4, & 5) occurring between the months of August and October. Based on geographical location alone, Lincoln 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 table below shows the total economic losses that would result from this occurrence.

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

Jurisdiction	Estimated Total Losses from 100-Year Hurricane Event
Lincoln Parish (Unincorporated)	$707,594
Choudrant	$35,392
Dubach	$40,251
Grambling	$207,286
Ruston	$915,550
Simsboro	$35,225
Vienna	$16,167
Total	$1,957,464

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

Table 2-57: Ratio of Total Losses to Total Estimated Value of Assets for each Jurisdiction in Lincoln 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	$707,594	$2,125,285,000	0.0%
Choudrant	$35,392	$95,323,000	0.0%
Dubach	$40,251	$108,824,000	0.0%
Grambling	$207,286	$575,172,000	0.0%
Ruston	$915,550	$3,430,762,000	0.0%
Simsboro	$35,225	$122,165,000	0.0%
Vienna	$16,167	$67,196,000	0.0%

Based on the Hazus 2.2 Hurricane Model, estimated total losses are less than 0.1% of the total estimated value of all assets for all areas of Lincoln 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 following tables. These sectors are comprised of privately owned structures/facilities, as well as locally, state, and federally owned structures/facilities.

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

Lincoln Parish (Unincorporated)	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	$221
Commercial	$15,933
Government	$457
Industrial	$3,109
Religious / Non-Profit	$1,956
Residential	$685,297
Schools	$622
Total	$707,594

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

Choudrant	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	$11
Commercial	$797
Government	$23
Industrial	$156
Religious / Non-Profit	$98
Residential	$34,277
Schools	$31
Total	$35,392

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

Dubach	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	$13
Commercial	$906
Government	$26
Industrial	$177
Religious / Non-Profit	$111
Residential	$38,983
Schools	$35
Total	$40,251

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

Grambling	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	$65
Commercial	$4,667
Government	$134
Industrial	$911
Religious / Non-Profit	$573
Residential	$200,754
Schools	$182
Total	$207,286

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

Ruston	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	$285
Commercial	$20,615
Government	$591
Industrial	$4,023
Religious / Non-Profit	$2,530
Residential	$886,700
Schools	$804
Total	$915,550

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

Simsboro	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	$11
Commercial	$793
Government	$23
Industrial	$155
Religious / Non-Profit	$97
Residential	$34,115
Schools	$31
Total	$35,225

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

Vienna	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	$5
Commercial	$364
Government	$10
Industrial	$71
Religious / Non-Profit	$45
Residential	$15,658
Schools	$14
Total	$16,167

Threat to People

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

Table 2-65: Number of People Susceptible to a 100-Year Hurricane Event in Lincoln Parish (Source: Hazus 2.2)

Number of People Exposed to Hurricane Hazards			
Location	**# in Community**	**# in Hazard Area**	**% in Hazard Area**
Parish (Unincorporated)	**16,894**	**16,894**	**100.0%**
Choudrant	**845**	**845**	**100.0%**
Dubach	**961**	**961**	**100.0%**
Grambling	**4,949**	**4,949**	**100.0%**
Ruston	**21,859**	**21,859**	**100.0%**
Simsboro	**841**	**841**	**100.0%**
Vienna	**386**	**386**	**100.0%**
Total	**46,735**	**46,735**	**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 2-66: Vulnerable Populations in Unincorporated Lincoln Parish for a 100-Year Hurricane Event (Source: Hazus 2.2)

Lincoln Parish (Unincorporated)		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	16,894	100.0%
Persons Under 5 Years	1,024	6.1%
Persons Under 18 Years	2,448	14.5%
Persons 65 Years and Over	1,911	11.3%
White	9,317	55.2%
Minority	7,577	44.9%

Table 2-67: Vulnerable Populations in Choudrant for a 100-Year Hurricane Event (Source: Hazus 2.2)

Choudrant		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	845	100.0%
Persons Under 5 Years	41	4.9%
Persons Under 18 Years	144	17.0%
Persons 65 Years and Over	119	14.1%
White	781	92.4%
Minority	64	7.6%

Table 2-68: Vulnerable Populations in Dubach for a 100-Year Hurricane Event (Source: Hazus 2.2)

Dubach		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	961	100.0%
Persons Under 5 Years	66	6.9%
Persons Under 18 Years	181	18.8%
Persons 65 Years and Over	142	14.8%
White	510	53.1%
Minority	451	46.9%

Table 2-69: Vulnerable Populations in Grambling for a 100-Year Hurricane Event (Source: Hazus 2.2)

Grambling		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	4,949	100.0%
Persons Under 5 Years	201	4.1%
Persons Under 18 Years	423	8.6%
Persons 65 Years and Over	410	8.3%
White	44	0.9%
Minority	4,905	99.1%

Table 2-70: Vulnerable Populations in Ruston for a 100-Year Hurricane Event (Source: Hazus 2.2)

Ruston		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	21,859	100.0%
Persons Under 5 Years	1,336	6.1%
Persons Under 18 Years	2,842	13.0%
Persons 65 Years and Over	2,304	10.5%
White	11,437	52.3%
Minority	10,422	47.7%

Table 2-71: Vulnerable Populations in Simsboro for a 100-Year Hurricane Event (Source: Hazus 2.2)

Simsboro		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	841	100.0%
Persons Under 5 Years	55	6.5%
Persons Under 18 Years	158	18.8%
Persons 65 Years and Over	102	12.1%
White	596	70.9%
Minority	245	29.1%

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

Vienna		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	386	100.0%
Persons Under 5 Years	23	6.0%
Persons Under 18 Years	70	18.1%
Persons 65 Years and Over	53	13.7%
White	363	94.0%
Minority	23	6.0%

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 2-28* displays the areas of wildland-urban interaction in Lincoln 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 2-73: 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 Lincoln Parish and its jurisdictions.

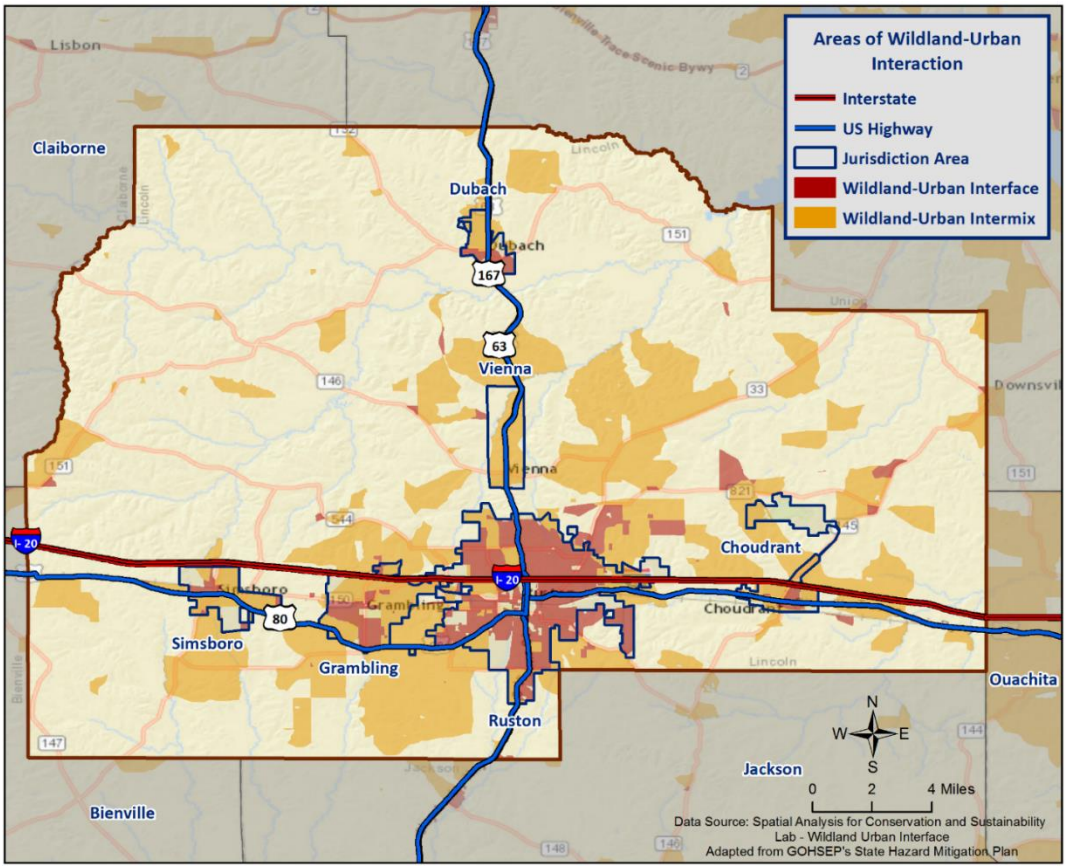

Figure 2-28: Wildland-Urban Interaction in Lincoln Parish

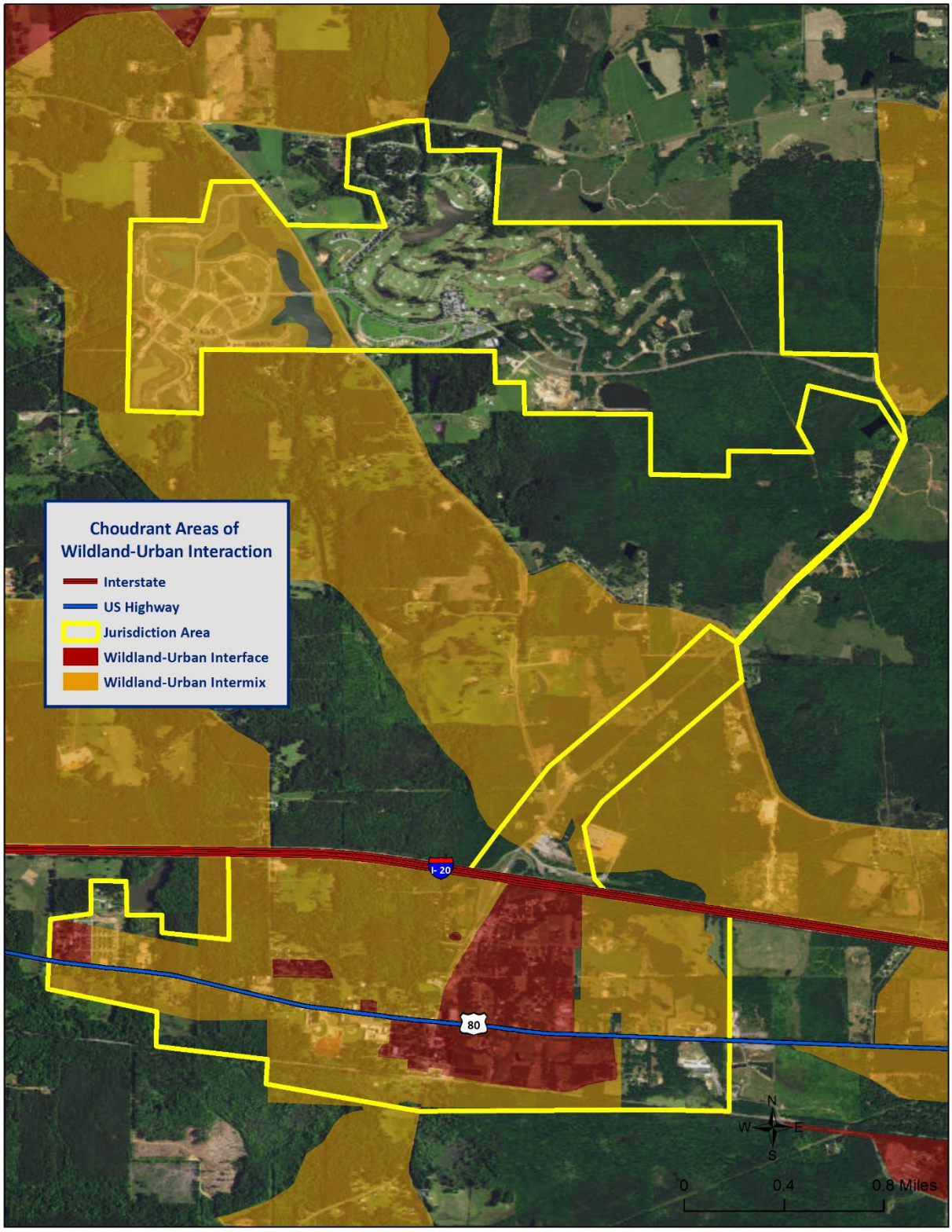

Figure 2-29: Wildland-Urban Interaction in Choudrant

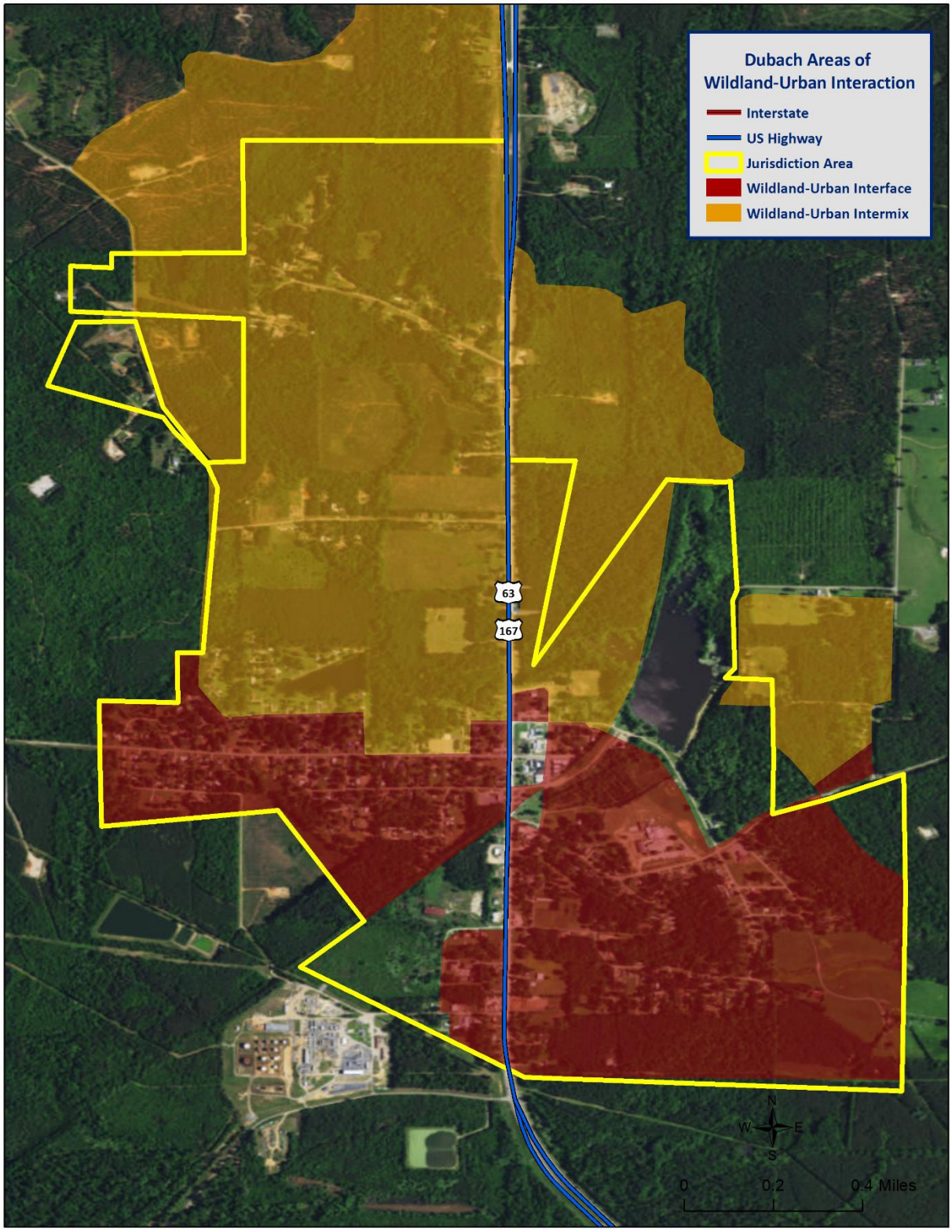

Figure 2-30: Wildland-Urban Interaction in Dubach

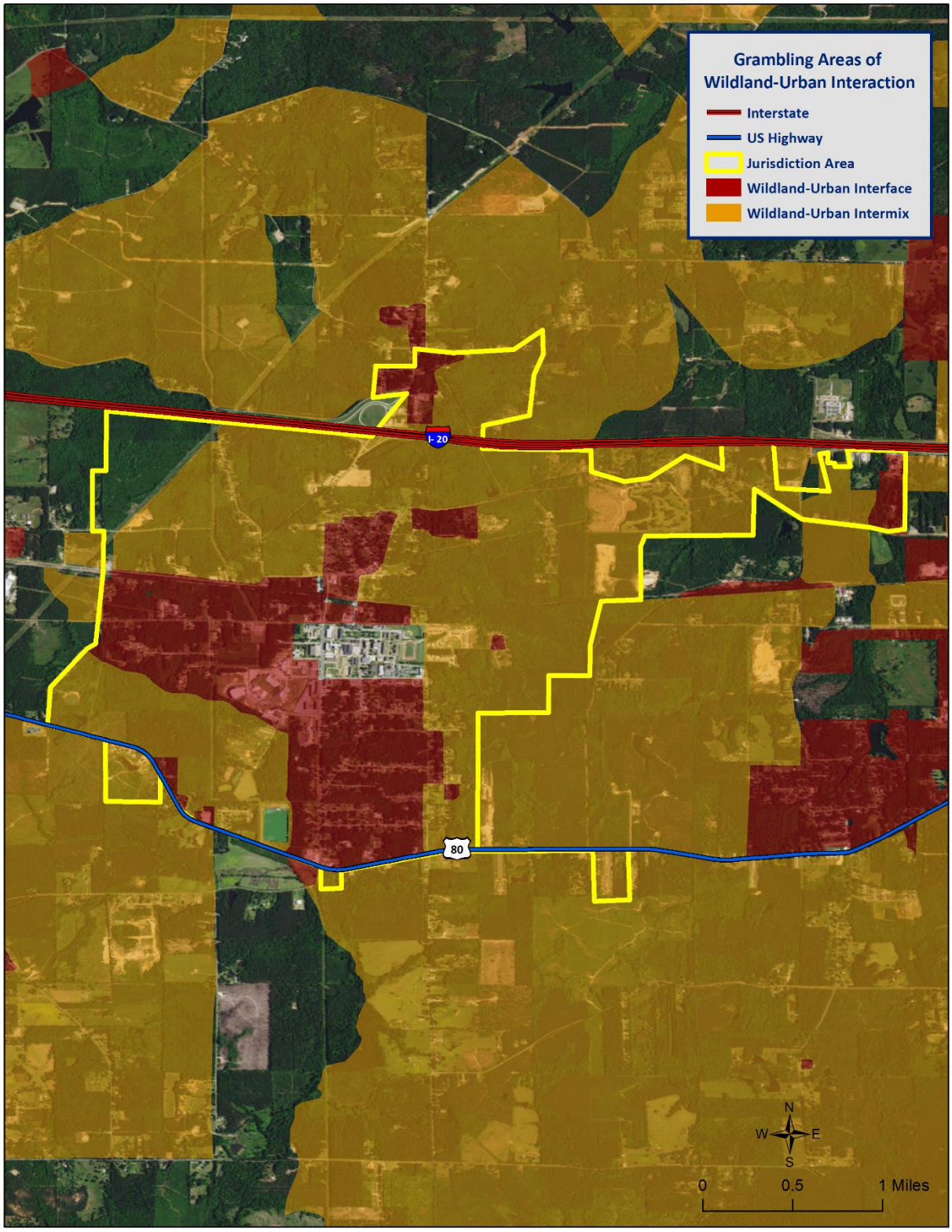

Figure 2-31: Wildland-Urban Interaction in Grambling

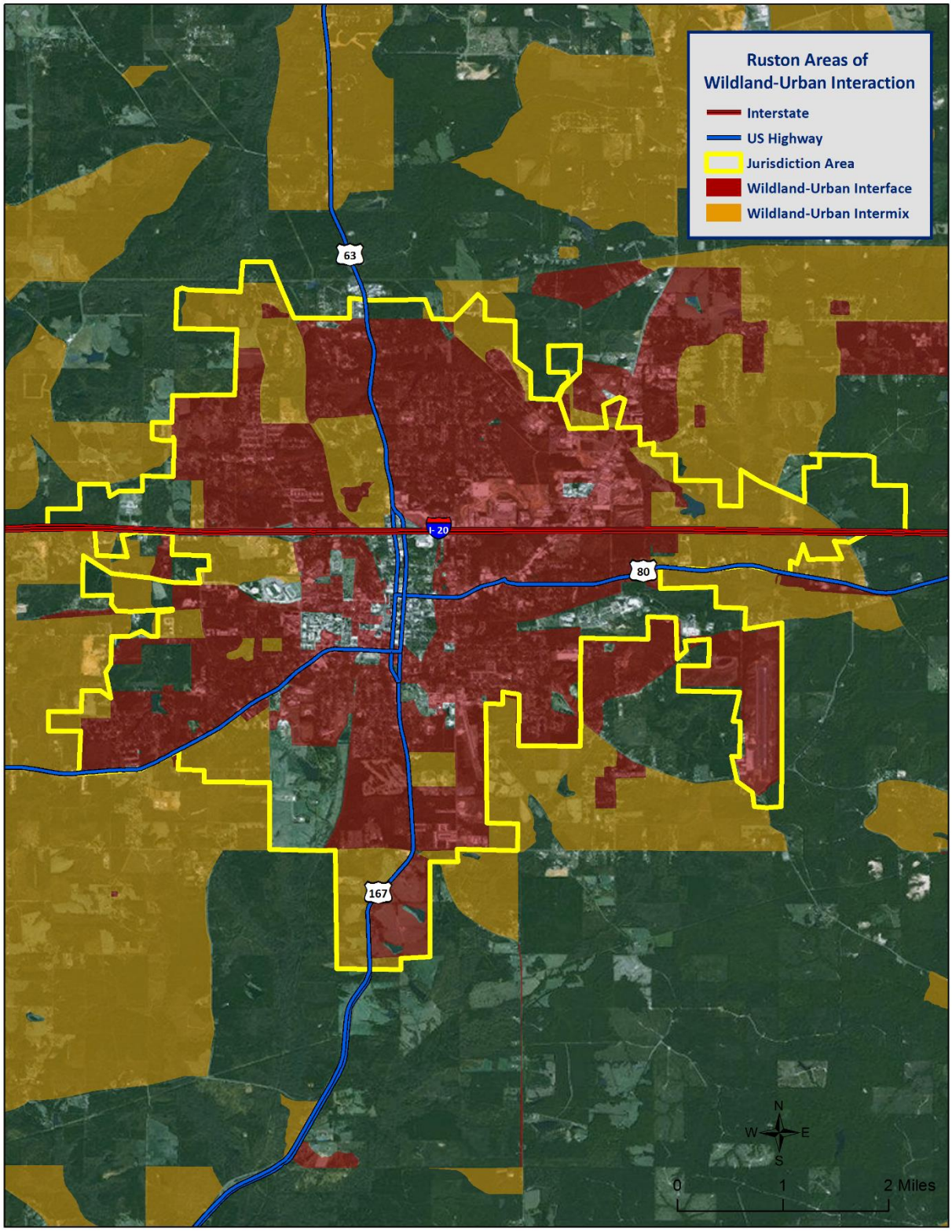

Figure 2-32: Wildland-Urban Interaction in Ruston

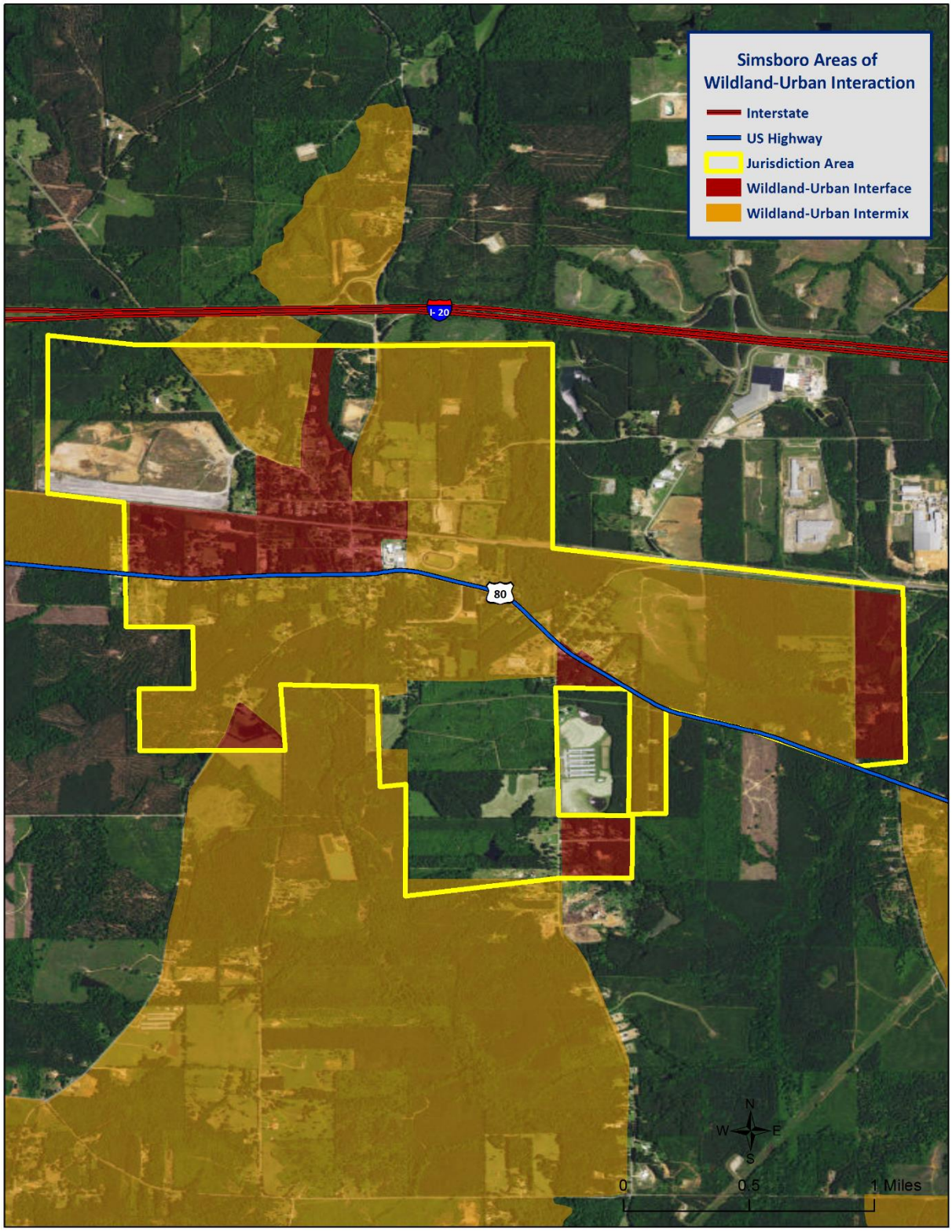

Figure 2-33: Wildland-Urban Interaction in Simsboro

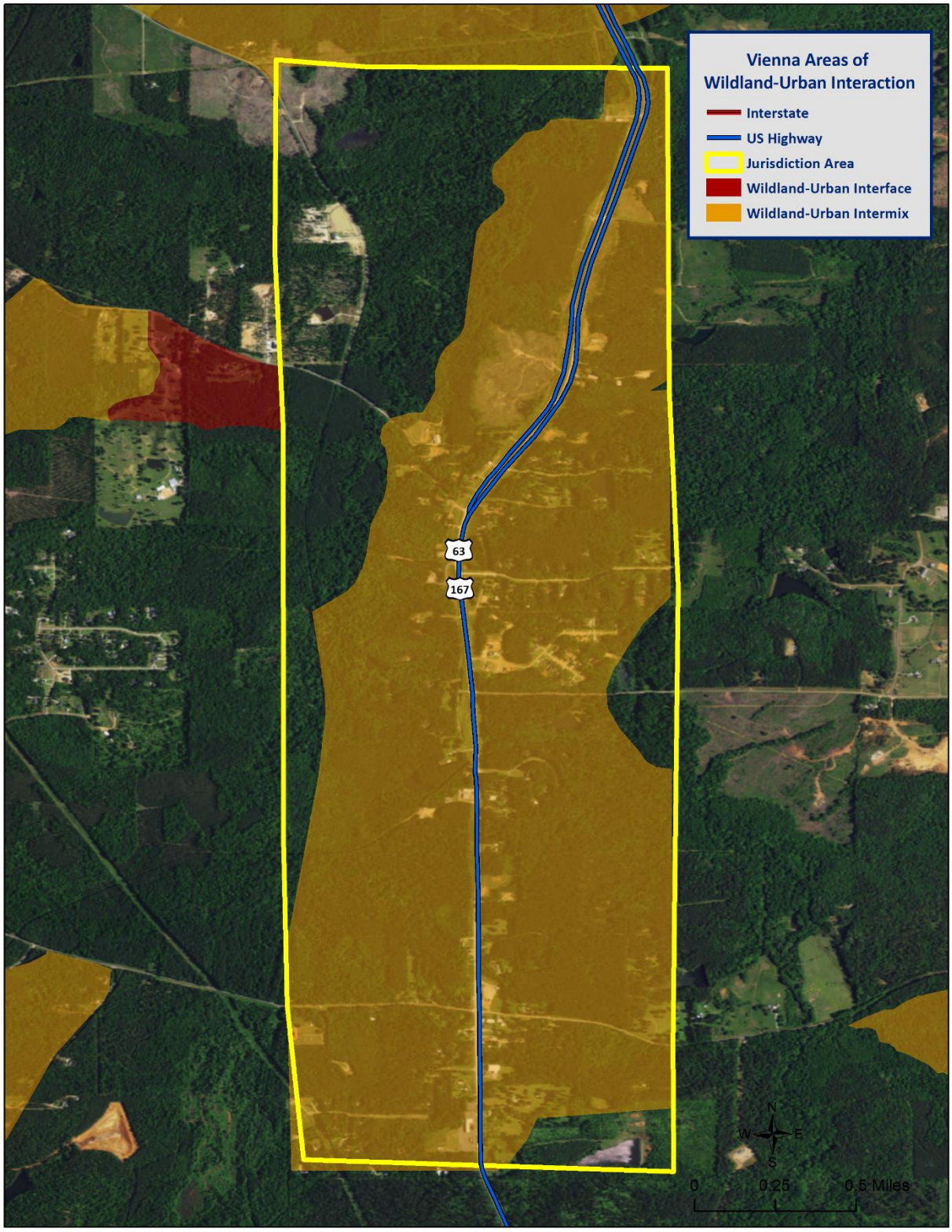

Figure 2-34: Wildland-Urban Interaction in Vienna

Previous Occurrences / Extents

There have been no reported wildfire events that have occurred within the boundaries of Lincoln Parish between the years of 1990 and 2015.

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

Table 2-74: Potential Wildfire Intensity Levels for Lincoln Parish
(Source: Southern Wildfire Assessment Portal)

Potential Wildfire Intensity	
Lincoln (Unincorporated)	Highest Intensity Level 5
Choudrant	Moderate Intensity Level 3
Dubach	Moderate Intensity Level 3
Grambling	Moderate Intensity Level 3
Ruston	Moderate Intensity Level 3
Simsboro	Moderate Intensity Level 3
Vienna	Low Intensity Level 2

Frequency / Probability

With no recorded events in 25 years, wildfire events within the boundaries of Lincoln 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 Lincoln Parish since 1990. 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 *2-28* displays the areas of wildland-urban interaction in Lincoln 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 2-75: Total Building Exposure by Wildland-Urban Interaction Areas
(Source: Hazus 2.2)

Jurisdiction	Estimated Total Building Exposure
Lincoln (Unincorporated)	$1,819,810,000
Choudrant	$80,641,000
Dubach	$103,293,000
Grambling	$555,280,000
Ruston	$3,321,800,000
Simsboro	$117,877,000
Vienna	$67,196,000
Total	$6,065,897,000

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. These sectors are comprised of privately owned structures/facilities, as well as locally, state, and federally owned structures/facilities.

Table 2-76: Estimated Exposure for Unincorporated Lincoln by Sector (Source: Hazus 2.2)

Lincoln Parish (Unincorporated)	Estimated Total Building Exposure by Sector
Agricultural	$7,540,000
Commercial	$140,546,000
Government	$5,908,000
Industrial	$125,077,000
Religious / Non-Profit	$31,140,000
Residential	$1,504,851,000
Schools	$4,748,000
Total	$1,819,810,000

Table 2-77: Estimated Exposure for Choudrant by Sector (Source: Hazus 2.2)

Choudrant	Estimated Total Building Exposure by Sector
Agricultural	$1,504,000
Commercial	$4,242,000
Government	$750,000
Industrial	$1,438,000
Religious / Non-Profit	$2,098,000
Residential	$69,609,000
Schools	$1,000,000
Total	$80,641,000

Table 2-78: Estimated Exposure for Dubach by Sector
(Source: Hazus 2.2)

Dubach	Estimated Total Building Exposure by Sector
Agricultural	$420,000
Commercial	$8,004,000
Government	$4,802,000
Industrial	$1,489,000
Religious / Non-Profit	$10,112,000
Residential	$75,556,000
Schools	$2,910,000
Total	$103,293,000

Table 2-79: Estimated Exposure for Grambling by Sector
(Source: Hazus 2.2)

Grambling	Estimated Total Building Exposure by Sector
Agricultural	$0
Commercial	$35,851,000
Government	$1,602,000
Industrial	$3,151,000
Religious / Non-Profit	$21,448,000
Residential	$430,345,000
Schools	$62,883,000
Total	$555,280,000

Table 2-80: Estimated Exposure for Ruston by Sector
(Source: Hazus 2.2)

Ruston	Estimated Total Building Exposure by Sector
Agricultural	$5,832,000
Commercial	$754,423,000
Government	$19,342,000
Industrial	$148,811,000
Religious / Non-Profit	$97,850,000
Residential	$2,211,468,000
Schools	$84,074,000
Total	$3,321,800,000

Table 2-81: Estimated Exposure for Simsboro by Sector
(Source: Hazus 2.2)

Simsboro	Estimated Total Building Exposure by Sector
Agricultural	$270,000
Commercial	$8,772,000
Government	$1,128,000
Industrial	$27,429,000
Religious / Non-Profit	$0
Residential	$80,278,000
Schools	$0
Total	$117,877,000

Table 2-82: Estimated Exposure for Vienna by Sector
(Source: Hazus 2.2)

Vienna	Estimated Total Building Exposure by Sector
Agricultural	$404,000
Commercial	$2,278,000
Government	$0
Industrial	$0
Religious / Non-Profit	$1,304,000
Residential	$63,210,000
Schools	$0
Total	$67,196,000

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 2-83: Populations Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)

Number of People Located in Wildland-Urban Interaction Areas			
Location	**# in Community**	**# in Area**	**% in Area**
Lincoln (Unincorporated)	**16,894**	**15,025**	**88.9%**
Choudrant	**845**	**817**	**96.7%**
Dubach	**961**	**956**	**99.5%**
Grambling	**4,949**	**4,743**	**95.8%**
Ruston	**21,859**	**21,532**	**98.5%**
Simsboro	**841**	**841**	**100%**
Vienna	**386**	**386**	**100%**
Total	**46,735**	**44,300**	**94.8%**

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 tables on the following pages.

Table 2-84: Population in Unincorporated Lincoln Parish Located within a Wildland-Urban Interaction Area (Source: 2010 U.S. Census Data)

Lincoln Parish (Unincorporated)		
Category	**Total Numbers**	**Percentage of People in Wildland-Urban Interaction Area**
Number in Hazard Area	15,025	88.9%
Persons Under 5 Years	911	6.1%
Persons Under 18 Years	2,177	14.5%
Persons 65 Years and Over	1,699	11.3%
White	8,286	55.2%
Minority	6,739	44.9%

Table 2-85: Population in Choudrant Located within a Wildland-Urban Interaction Area (Source: 2010 U.S. Census Data)

Choudrant		
Category	**Total Numbers**	**Percentage of People in Wildland-Urban Interaction Area**
Number in Hazard Area	817	96.7%
Persons Under 5 Years	40	4.9%
Persons Under 18 Years	139	17.0%
Persons 65 Years and Over	115	14.1%
White	755	92.4%
Minority	62	7.6%

Table 2-86: Population in Dubach Located within a Wildland-Urban Interaction Area (Source: 2010 U.S. Census Data)

Dubach		
Category	**Total Numbers**	**Percentage of People in Wildland-Urban Interaction Area**
Number in Hazard Area	956	99.5%
Persons Under 5 Years	66	6.9%
Persons Under 18 Years	180	18.8%
Persons 65 Years and Over	141	14.8%
White	507	53.1%
Minority	449	46.9%

Table 2-87: Population in Grambling Located within a Wildland-Urban Interaction Area (Source: 2010 U.S. Census Data)

Grambling		
Category	**Total Numbers**	**Percentage of People in Wildland-Urban Interaction Area**
Number in Hazard Area	4,743	95.8%
Persons Under 5 Years	193	4.1%
Persons Under 18 Years	406	8.6%
Persons 65 Years and Over	393	8.3%
White	42	0.9%
Minority	4,701	99.1%

Table 2-88: Population in Ruston Located within a Wildland-Urban Interaction Area (Source: 2010 U.S. Census Data)

Ruston		
Category	**Total Numbers**	**Percentage of People in Wildland-Urban Interaction Area**
Number in Hazard Area	21,532	98.5%
Persons Under 5 Years	1,316	6.1%
Persons Under 18 Years	2,799	13.0%
Persons 65 Years and Over	2,269	10.5%
White	11,266	52.3%
Minority	10,266	47.7%

Table 2-89: Population in Simsboro Located within a Wildland-Urban Interaction Area (Source: 2010 U.S. Census Data)

Simsboro		
Category	**Total Numbers**	**Percentage of People in Wildland-Urban Interaction Area**
Number in Hazard Area	841	100.0%
Persons Under 5 Years	55	6.5%
Persons Under 18 Years	158	18.8%
Persons 65 Years and Over	102	12.1%
White	596	70.9%
Minority	245	29.1%

Table 2-90: Population in Vienna Located within a Wildland-Urban Interaction Area (Source: 2010 U.S. Census Data)

Vienna		
Category	**Total Numbers**	**Percentage of People in Wildland-Urban Interaction Area**
Number in Hazard Area	386	100.0%
Persons Under 5 Years	23	6.0%
Persons Under 18 Years	70	18.1%
Persons 65 Years and Over	53	13.7%
White	363	94.0%
Minority	23	6.0%

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 2-91: 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 Lincoln Parish as all of the adjacent parishes, the entire planning area for Lincoln Parish is equally at risk for winter storms.

Previous Occurrences / Extents

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

Table 2-92: Previous Occurrences for Winter Storm Events

Date	Synopsis	Property Damage	Crop Damage
March 13, 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. Due to the relatively mild winter, many crops were in early bloom. The peach crop which is grown in the northern part of the state suffered a 60% loss valued at around $2 million. About a fourth of this loss was concentrated in Lincoln Parish. In addition, the blueberry crop was almost totally destroyed for a loss of $1.1 million.	$0	$227,828
February 10, 1994	Freezing rain spread across much of the north third of Louisiana and at times was accompanied by thunderstorms which produced the most severe icing. The greatest damage occurred on elevated objects. The combination of gusty winds and icing of one to two	$1,540,359	$0

Date	Synopsis	Property Damage	Crop Damage
	inches thick snapped power lines, power poles, or caused tree limbs to snap which subsequently broke power lines. The weight from ice accumulations was also heavy enough to collapse a number of chicken houses.		
December 22, 1998	Ice accumulated mainly across exposed surfaces such as trees and power lines as well as bridges and overpasses. Over a quarter million people were without power, some for over a week. I-20, I-220, and I-49 were shut down for a period. Numerous minor injuries were reported from vehicle accidents caused by slippery roads.	$85,433	$0
December 12, 2000	Ice accumulations on average of one inch were common north and west of a line from Mansfield and Arcadia to Farmerville. An estimated 235,000 residents lost power from snapped power lines. Upwards of 29 transmission lines atop "H" shaped steel towers were snapped due to the weight of the ice. Numerous traffic accidents were reported from ice covered roads and bridges.	$10,158,049	$0
December 24, 2000	Freezing rain accumulations ranged from one quarter to near one inch north of Interstate 20. Widespread power outages were reported across Minden, Homer, Arcadia, Farmerville, Ruston, and Monroe. 50,000 residents lost power due to ice accumulations on power lines, fallen trees, and snapped tree limbs.	$10,158,049	$0
January 7, 2010	Overnight and early morning low temperatures were well into the teens with daytime high temperatures struggling to make it to the freezing mark. The cold temperatures froze water pipes of many homes throughout the parish. Some city and parish water lines burst as well resulting in many residents either without water for a short period of time or with reduced water pressure.	$135,708	$0
January 28, 2014	Two three inches of snow mixed with some sleet fell across Lincoln Parish.	$0	$0
February 23, 2015	A cold dome of artic air spilled into Lincoln Parish causing freezing rain and sleet accumulations of less than a tenth of an inch.	$0	$0

Based on previous winter storm events, the worst-case scenario for the unincorporated area of Lincoln Parish and the incorporated areas of the parish can expect two to four inches of snow accumulation and approximately one half inch of ice accumulation.

Frequency / Probability

With eight recorded events in 25 years, winter storm events within the boundaries of Lincoln Parish have an annual chance of occurrence calculated at 32% based on the SHELDUS dataset.

Estimated Potential Losses

Since 1990, there have been six 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 $22,077,598. 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 $883,104. To assess potential losses to the participating jurisdictions, the 2010 Census population was used to assign the estimated potential losses proportionally across the jurisdictions. The following table provides an estimate of potential property losses for Lincoln Parish based on the 2010 Census data:

Table 2-93: Estimated Annual Losses for Winter Weather Events in Lincoln Parish

Estimated Annual Potential Losses from Winter Weather for Lincoln Parish						
Unincorporated Lincoln Parish (36.1% of Population)	Choudrant (1.8% of Population)	Dubach (2.1% of Population)	Grambling (10.6% of Population)	Ruston (46.8% of Population)	Simsboro (1.8% of Population)	Vienna (0.8% of Population)
$319,229	$15,967	$18,159	$93,516	$413,047	$15,892	$7,294

From 1990 - 2015, there have been no injuries or fatalities as a result of winter weather in Lincoln Parish.

Vulnerability

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

Dam Failure

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

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

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

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

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

Location

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

Previous Occurrences / Extents

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

Frequency / Probability

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

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3. Capability Assessment

This section summarizes the results of the Lincoln 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, Lincoln 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

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

Table 3-1: Lincoln Parish Planning and Regulatory Capabilities

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

Building Codes, Permitting, Land Use Planning and Ordinances

The Lincoln Parish Police Jury provides oversight for building permits and codes, and all parish ordinances.

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

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

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

Table 3-2: Lincoln Parish Administrative and Technical Capabilities

Administration and Technical								
Identify whether your community has the following administrative and technical capabilities.								
	Lincoln Parish	Choudrant	Dubach	Grambling	Ruston	Simsboro	Vienna	Comments
Administration	Yes / No							
Planning Commission	No	Yes	No	No	Yes	No	Yes	
Mitigation Planning Committee	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	Yes	Yes	No	Yes	No	No	
Mutual Aid Agreements	No	No	No	No	No	No	No	
Staff	Yes / No; FT/PT; % Hazard Mitigation							
Chief Building Official	Yes	Yes	Yes	No	Yes	No	Yes	
Floodplain Administrator	Yes	Yes	No	Yes	Yes	Yes	No	
Emergency Manager	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Community Planner	No	Yes	No	Yes	Yes	No	No	
Civil Engineer	No	Yes	No	Yes	Yes	No	Yes	
GIS Coordinator	Yes	No	No	No	Yes	No	No	Dubach & Vienna rely on Parish GIS
Grant Writer	No	Yes	Yes	No	Yes	No	No	
Other	No	No	No	No	No	No	No	
Technical	Yes / No							
Warning Systems / Service (Reverse 911, outdoor warning signals)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Hazard Data & Information	Yes	No	No	No	No	No	No	
Grant Writing	No	Yes	No	No	Yes	No	No	
Hazus Analysis	No	No	No	No	No	No	No	
Other	Yes	No	No	No	No	No	No	

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

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

Table 3-3: Lincoln Parish Financial Capabilities

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

Education and Outreach

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

Lincoln 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: Lincoln Parish Education and Outreach Capabilities

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

In some cases, the jurisdictions rely on Lincoln Parish OHSEP and/or Lincoln 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 the jurisdictional specific worksheets, which are available upon request.

As reflected in the aforementioned existing regulatory mechanisms, programs, and resources within each jurisdiction, Lincoln 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 Lincoln 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 Choudrant
- Town of Dubach
- City of Grambling
- City of Ruston
- Village Simsboro
- Town of Vienna

Flood Insurance and Community Rating System

The City of Ruston is the only jurisdiction in Lincoln Parish that is a participant in the Community Rating System (CRS). 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 Ruston (class 9). 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.

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.

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)

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 320 Map Information Service). It is likely that some communities with marginal CRS class 9 programs will have to identify new CRS credits in order to remain in the CRS.

Typically, CRS communities do not request credit for all the activities they are currently implementing unless it would earn enough credit to advance the community to a higher CRS class. A community that finds itself losing CRS credit with the 2013 manual could likely identify activities deserving credit they had not previously received.

Due to the changes in both activities and CRS points, community CRS coordinators should speak with their ISO/CRS Specialist to understand how and when the 2013 manual will impact their community.

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

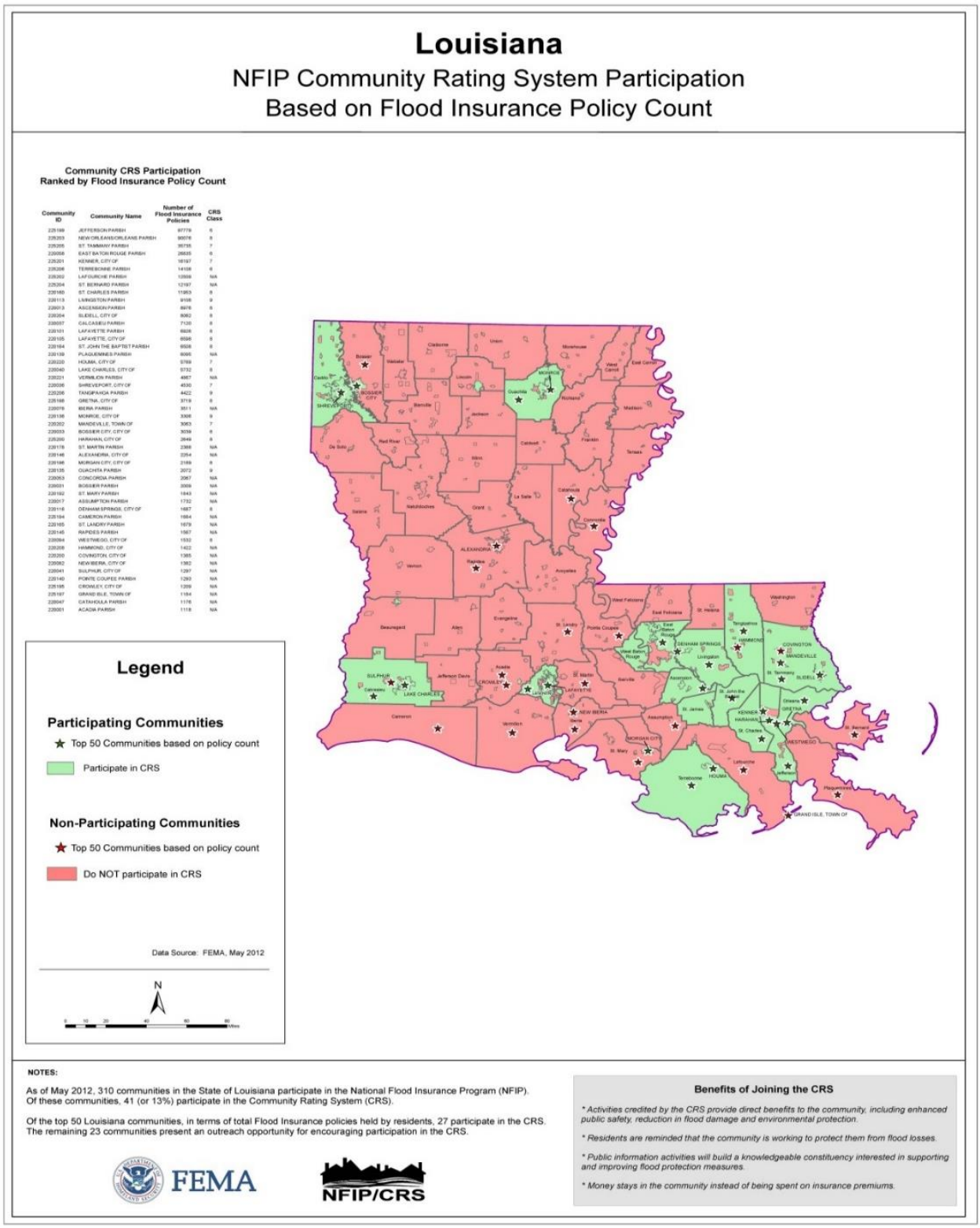

Figure 3-2: Louisiana CRS NFIP Participation
(Source: FEMA[2])

[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

Lincoln 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.

Lincoln 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 Lincoln Parish Hazard Mitigation Plan Steering Committee, under the coordination of the Lincoln 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 Lincoln Parish residents between February and October 2016. The survey was designed to capture public perceptions and opinions regarding natural hazards in Lincoln 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 Lincoln 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 Lincoln Parish survey can be found at the following link:

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

During the public meeting in August, 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 Lincoln 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, Lincoln 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 Lincoln 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 four goals remain valid.

The goals are as follows:

- Identifying and pursuing preventive measures that will reduce future damages from hazards
- Enhancing public awareness and understanding of disaster preparedness
- Reducing repetitive flood losses in the parish
- Facilitating sound development in the parish to reduce or eliminate the potential impact of hazards

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

Lincoln 2011 Hazard Mitigation Action Update

Lincoln Parish and Jurisdictions - 2011 Mitigation Action Update						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
L1: Localized Interior Drainage Projects	Investigate and implement localized interior drainage projects to reduce flood potential. Consider levees and drainage projects as well as purchase of sand bagging equipment.	CDBG, FMA, HMGP, SBA, State Capital Outlay, Local funds	Sep-12	Parish and City Floodplain Managers, Community Development and Capital Projects	Flooding	Carried Over
L2: Comprehensive Drainage Plan	Develop a comprehensive drainage plan that will provide future protection for areas in the Parish that experience flooding and drainage problems.	Parish Budget	Dec-12	Parish Engineer/Parish Department of Public Works	Flooding	Carried Over
L3: Drainage Improvements	Drainage improvements to locations at Beacon Light Road, Hogan Road, Millie Road, and Sisemore Road.	Parish Budget, Grant Funding	Apr-12	Parish Emergency Manager/Public Works	Flooding	Carried Over
L4: Stormwater Drainage Issues	Improve stormwater drainage issues throughout the Parish.	Parish and City Budget, Grant Funding	Dec-13	Parish and City Floodplain Managers	Flooding	Carried Over
L5: Road Surface Layers	Increase surface layer of roadway and seal base to reduce losses from flood damage on (Campbell Rd at Choudrant Creek; Hogan Rd at Choudrant Creek; Norris Rd at Choudrant Creek; Beacon Light Rd; Sizemore Rd; Kouhn Rd; Gills Ferry Rd; CCC Rd @ Line Rd; Rockshop Rd @ Hwy 167; Big Creek Rd @ Big Creek; Flowers Rd @ D'Arbonne Creek; Mays Crossing Rd @ D'Arbonne Creek; Wise Rd @ creek crossing; Tippit Rd on Parish Line; Young Rd; Kens Landing Rd; Della Rd).	City Budgets, Grant Funding	Dec-14	Parish and City Floodplain Managers	Flooding	Carried Over
L6: Storm Water Drainage	Improve Storm Water Drainage at Trenton & Georgia Streets, Alabama & Monroe Streets, Groveland Street, Jackson Street, Cornell Street, 2nd Street, Jefferson Street (caused by beaver dams upstream).	City Budgets, Grant Funding	Jun-13	Ruston Floodplain Managers	Flooding	Carried Over

L7: Beaver Storm Water Drainage	Improve storm water drainage due to beavers at South Pine Street and Hwy 150, RWE Jones and College Street, Kennedy and Main Street, RWE Jones Street at the Alumni House, Adams and Jackson Street, and on Oliver street.	City Budgets, Grant Funding	Jun-12	Grambling Floodplain Manager	Flooding	Carried Over
L8: Continued Storm Water Drainage	Improve storm water drainage at Adams building and Woodson Hall on Grambling University Campus.	City Budgets, Grant Funding	Aug-13	Grambling Floodplain Manager	Flooding	Carried Over
L9: Beaver Problem Alleviation	Alleviate beaver problems @ 2nd Street running East to West while pond runs North to South to Allen Street and Hwy 80.	City Budgets, Grant Funding	1-Jun	Town Council	Flooding	Carried Over
L10: Storm Water and Sewer Adequacy	Review adequacy of current storm water and sewer system	City Budgets, Grant Funding	Oct-12	Town Council	Flooding	Carried Over
L11: Graham and Trammel Street Storm Water Drainage	Improve storm water drainage at Graham Street and Trammel Street.	City Budgets, Grant Funding	Oct-13	Town Council	Flooding	Carried Over
L12: Check Valve Addition	Review adding check valves to at risk structures.	City Budgets, Grant Funding	Dec-14	Town Council	Flooding	Carried Over
L13: Elm Street and Hwy 145 Storm Water Drainage	Improve storm water drainage near Elm Street and Hwy 145.	City Budgets, Grant Funding	Dec-13	Choudrant Floodplain Manager	Flooding	Carried Over
L14: Railroad Crossing Forced Drainage	Improve forced drainage near railroad crossing at south end of town.	City Budgets, Grant Funding	Dec-13	Choudrant Floodplain Manager	Flooding	Carried Over
L15: Hwy 145 and Railroad Storm Water Drainage	Improve storm water drainage near Hwy 145 and railroad intersection.	City Budgets, Grant Funding	Feb-14	Choudrant Floodplain Manager	Flooding	Carried Over
L16: Hwy 146 and Cypress Creek Storm Water Drainage	Improve Storm Water Drainage at Highway 146 and Cypress Creek (Caused by Cypress Creek).	City Budgets, Grant Funding	May-14	Vienna Floodplain Manager	Flooding	Carried Over
L17: Rabb Road Storm Water Drainage	Improve Storm Water Drainage at Rabb Rd caused by Colvin Creek.	City Budgets, Grant Funding	May-14	Vienna Floodplain Manager	Flooding	Carried Over
L18: Parish Courthouse Physical Security	Increase and improve the physical security of the Parish Courthouse to include effective security screening systems.	Parish Budgets, Grant Funding	Jan-12	Parish Emergency Manager / Parish Sheriff's Office	Terrorism	Deleted

L19: Security Protocols	Review Security Protocols for at risk populations and special events.	City Budgets, Grant Funding	Jan-12	Parish Sheriff's Office / Local Police Department / Parish Emergency Manager	Terrorism / Civil Disorder	Deleted
L20: Water System Vulnerabilities	Review water system vulnerabilities to acts of terrorism.	City Budgets, Grant Funding	Jun-13	Parish Emergency Manager	Terrorism	Deleted
L21: Government Owned Facility Physical Security	Hardening the physical security for all government owned facilities.	City Budgets, Grant Funding	Dec-13	Local Police Department / City Council	Terrorism / Civil Disorder	Deleted
L22: Water Well Physical Security	Hardening for the purposes of physical security for all 9 water wells.	City Budgets, Grant Funding	May-14	City Council / Public Works Department	Terrorism / Civil Disorder	Deleted
L23: Restricted Area Curfews	Examine curfews for restricted areas.	City Budget	Dec-12	City Council / Police Department	Civil Disorder	Deleted
L24: Fire Hydrant Locking Mechanism	Review feasibility of adding locking mechanism on fire hydrants.	City Budgets, Grant Funding	May-15	Fire Department	Terrorism	Deleted
L25: Vector Control	Improve vector control.	Parish Budget, CDC Grants	12-Dec	Parish Emergency Manager	Nuisance Pests	Deleted
L26: Parish Courthouse Safe Room	Construct safe rooms at Lincoln Parish Courthouse	HMGP, PDM Grants	Jul-14	Parish Emergency Manager	Tornado	Carried Over
L27: Harden Foster Johnson Infirmary	Harden Foster Johnson Infirmary at Grambling State University.	Parish Budget, Grant Funding	Jul-15	Parish Emergency Manager/GSU Maintenance	Tornado	Carried Over
L28: Harden University Police Headquarters	Harden University Police Headquarters at Grambling State University.	Parish Budget, Grant Funding	Apr-14	Parish Emergency Manager/GSU Maintenance	Tornado	Carried Over
L29: Intramural Center Safe Rooms	Construct safe rooms at Intramural Center Grambling State University.	HMGP, PDM Grants	Jul-15	Parish Emergency Manager	Tornado	Carried Over
L30: Northern Louisiana Medical Center Substation	Connect with a separate substation to the Northern Louisiana Medical Center.	Parish Budget, Grant Funding	Jul-14	Parish Emergency Manager	Winter Storm / Flood / Thunderstorm / Tornado / Hailstorm / Wildfire	Carried Over
L31: Northern Louisiana Medical Center Safe Rooms	Construct safe rooms at Northern Louisiana Medical Center.	HMGP, PDM Grants	Jul-13	Parish Emergency Manager	Tornado	Carried Over

L32: Alternate Water Source for Saltwater Intrusion	Determine alternate water sources in case of significant saltwater intrusion in aquifer.	Parish Budgets, Grant Funding	Apr-12	Parish Emergency Manager	Saltwater Intrusion	Carried Over
L33: Highline Right of Ways Debris	Examine Highline Right of Ways for potential debris.	Parish and City Budget, Grant Funding, Entergy	Jul-13	Entergy /Utility Companies	Winter Storm / Thunderstorm /Tornado / Hailstorm / Hurricane	Carried Over
L34: Alternate Water Source for Firefighting	Examine alternate water source (interconnecting water pipeline system from Lake D'Arbonne) for firefighting.	Parish Budgets, Grant Funding	Dec-13	Parish Emergency Manager / Parish Fire Department	Wildfire	Carried Over
L35: Fire Station Wind Strapping	Hardening project to add wind strapping to fire stations.	Parish and City Budgets, Grant Funding	Dec-13	Police Jury / Parish Fire Department	Thunderstorm / Tornado / Hailstorm / Hurricane	Carried Over
L36: Dry Hydrant Program	Implement improvements to dry hydrant program	Parish Budget, CDC Grants	Mar-12	Parish Emergency Manager	Wildfires	Carried Over
L37: Improve Power Distribution	Harden and improve power distribution by maintaining right-of-ways, upgrading power lines and burying power lines where feasible.	Utility Companies	Dec-13	Parish Department of Public Works Director	Winter Storm / Flood / Thunderstorm / Tornado / Hailstorm	Carried Over
L38: Fire Station Bay Doors	Harden bay doors of all fire stations	Parish and City Budgets, Grant Funding	Jun-12	Fire Department	Thunderstorm / High Wind / Hurricane	Carried Over
L39: Radio Repeater Site Hardening	Harden Radio Repeater sites. Add transient electrical protection and arrestors for radio equipment at repeater sites.	Parish Budgets, Grant Funding	Jun-12	Parish Emergency Manager	Thunderstorm / High Wind / Hurricane	Carried Over
L40: Vegetation Study	Vegetation study to determine appropriate buffer zones for government facilities.	Parish and City Budgets, Grant Funding	Feb-12	Parish Emergency Manager / Mayors / Police Jury	Wildfire	Carried Over
L41: Water Facility Transient Electrical Protection	Install appropriate transient electrical protection for all water facilities.	City Budgets, Grant Funding	May-13	Municipal Public Works	Lightning / Thunderstorm / High Wind / Hurricane	Carried Over
L42: Fire Proof Paint to Government Facilities	Apply fire proof paint to government facilities.	City Budgets, Grant Funding	Dec-15	Town Councils	Wildfire	Carried Over
L43: Public Works Facility Transient Electrical Protection	Install appropriate transient electrical protection for public works facility.	City Budgets, Grant Funding	May-13	Municipal Public Works	Lightning / Thunderstorm / High Wind / Hurricane	Carried Over

L44: Exterior Door Hardening at Public Works Facility	Harden exterior doors at the public works facility.	City Budgets, Grant Funding	Jan-13	Municipal Public Works	Thunderstorm / High Wind / Hurricane	Carried Over
L45: Elevate Lift Stations	Elevate Lift Stations within flood prone areas	City Budgets, Grant Funding	Dec-14	Ruston Public Works	Flooding	Carried Over
L46: Boys and Girls Roof Retrofitting	Roof retrofit for Boys and Girls building on Memorial Drive.	Parish and City Budgets, Grant Funding	Feb-15	City Council	Hail / Thunderstorm / High Wind / Hurricane / Winter Storm	Carried Over
L47: Bobby James Gymnasium Roof Retrofitting	Roof Retrofit for Bobby James Gymnasium	City Budgets, Grant Funding	Dec-15	City Council	Hail / Thunderstorm / High Wind / Hurricane / Winter Storm	Carried Over
L48: Radio Repeater Site Hardening	Harden radio repeater sites for Police (1), Fire Service (2) and Public Works (4).	City Budgets, Grant Funding	Jun-13	City Council	Hail / Thunderstorm / High Wind / Hurricane	Carried Over
L49: Fire Station #2 Roof Retrofitting	Roof retrofit for Fire Station #2 (current roof is flat gravel) and for historic fire station.	City Budgets, Grant Funding	May-15	City Council	Hail / Thunderstorm / High Wind / Hurricane / Winter Storm	Carried Over
L50: Sewer Rehab Project	Review of City wide sewer rehab project	City Budgets, Grant Funding	Dec-14	City Council	Pandemic / Flooding	Carried Over
L51: Wooden Bridge Structure Upgrade	Upgrade existing wooden bridge structure on Jefferson Avenue, East Kentucky Avenue, and Cedar Creek Road.	Parish and City Budgets, Grant Funding	Dec-15	Road Department	Transportation	Carried Over
L52: City Hall Wind Retrofitting	Wind retrofit for City Hall.	City Budgets, Grant Funding	Jun-14	City Council	Hail / Thunderstorm / High Wind / Hurricane	Carried Over
L53: Civic Center Hardening	Harden the Civic Center.	Parish and City Budgets, Grant Funding	Oct-14	City Council	Hail / Thunderstorm / High Wind / Hurricane / Winter Storm	Carried Over
L54: City Hall Safe Room	Install Safe Room at City Hall.	City Budgets, Grant Funding	Dec-14	City Council	Tornado	Carried Over
L55: Simsboro High School and Town Hall Safe Rooms	Install safe rooms at Simsboro High School and Town Hall	City Budgets, Grant Funding	Sep-14	School Board	Tornado	Carried Over
L56: Simsboro High School Wind Protection	Add wind protection to Simsboro High School	City Budgets, Grant Funding	Sep-14	School Board	Tornado	Carried Over

L57: Mays Trailer Park Lift Station Structure	Improve lift station structure at Mays trailer park and/or reroute lines to different lift station.	City Budgets, Grant Funding	Apr-15	Water Department	Flooding	Carried Over
L58: Town Hall and Police Station Roof Hardening	Harden the roof and provide wind strengthening measures at Town Hall and Police Station	City Budgets, Grant Funding	Dec-13	Simsboro Town Council	Thunderstorm / Tornado / Hailstorm / Hurricane	Carried Over
L59: Check Valve Installation	Install check valves for at risk facilities to prevent sewer backup	City Budgets, Grant Funding	Jun-13	Water/Sewer Department	Flooding Pandemic	Carried Over
L60: Highline Examination	Examine Highlines to make sure lines are strong enough to support Ice accumulations.	City Budgets, Grant Funding, Entergy	Nov-13	Entergy / Power Utility Companies	Winter Storm	Carried Over
L61: Town Hall and Chamber of Commerce Roof Retrofitting	Retrofit the roof of Town Hall, Chamber of Commerce, and lift stations for hail protection.	City Budget, Grant Funding	Mar-14	Grambling City Council	Hail	Carried Over
L62: Town Hall and Police Department Safe Rooms	Retrofit Town Hall and Police Department to serve as safe rooms.	City Budget, Grant Funding	Dec-14	Grambling City Council	Tornado	Carried Over
L63: Chamber of Commerce Wind Retrofitting	Wind retrofit Chamber of Commerce building	City Budget, Grant Funding	Dec-15	Grambling City Council	Thunderstorm / Tornado / Hailstorm / Hurricane	Carried Over
L64: Town Hall and Community Center Wind Strengthening	Harden the roof and provide wind strengthening measures for Town Hall and the Community Center	City Budget, Grant Funding	May-14	Dubach Town Council	Thunderstorm / Tornado / Hailstorm / Hurricane	Carried Over
L65: Town Hall and Dubach High School Safe Rooms	Install safe rooms at Town Hall and Dubach High School	City Budget, Grant Funding	Dec-15	Dubach Town Council / School Board	Tornado	Carried Over
L66: Fire Proof Paint	Apply fire proof paint to Non Profit (DRABO).	Grant Funding	Dec-15	Dubach Town Council	Wildfire	Carried Over
L67: Choudrant High School and Elementary School Safe Rooms	Install safe rooms at Choudrant High School and Elementary School.	Parish and City Budgets, Grant Funding, School Board	Sep-13	School Board	Tornado	Carried Over
L68: Town Hall Window Film	Add window film to town hall to prevent shattering from Earthquake	City Budget, Grant Funding	Dec-15	Choudrant Town Council	Earthquake	Carried Over
L69: City Hall and Police Station Roof Retrofitting	Roof retrofit of City Hall and Police Station	City Budget, Grant Funding	Jun-14	Choudrant Town Council	Thunderstorm / Tornado / Hailstorm / Hurricane	Carried Over
L70: Town Hall Hardening	Harden Town Hall and install a Safe Room to protect occupants	City Budget, Grant Funding	Jun-14	Vienna Town Council	Thunderstorm / Tornado / Hailstorm / Hurricane	Carried Over

L71: De-Icing Plan	Develop a de-icing plan for roads and bridges.	Parish Budget, Grant Funding	Oct-14	Parish and City Floodplain Managers	Winter Storm	Carried Over
L72: Highway Right of Way Debris	Examine Highway Right of Ways for potential debris.	Parish and City Budgets, Grant Funding, State Funding, USDOT	Dec-12	Local, Parish, and State Road Departments	Transportation	Carried Over
L73: Lowering Maximum Railroad Speed	Examine the possibility of lowering maximum speed limits on railways within municipalities.	Parish City Budgets, Grant Funding, Railroad Commission	Apr-12	City Councils, Police Jury, Railroad Owners	Transportation	Carried Over
L74: Rail Beds	Examine rail beds for adequacy.	Parish and City Budgets, Grant Funding, Railroad Commission	Apr-12	City Councils, Police Jury, Railroad Owners	Transportation	Carried Over
L75: Commodity Flow Study	Conduct Commodity Flow Study	Parish and City Budgets, Grant Funding	Jun-14	Parish Emergency Manager	Transportation	Carried Over
L76: Railway Quiet Zones	Review adding quiet zone for railways within corporate limits as well as reducing maximum speeds on railway	City Budget, Grant Funding, Railroad Commission	Apr-12	City Council, Railroad Owners	Transportation	Carried Over
L77: Fans and Cooling Devices	Examine funding source to purchase fans and other cooling devices for at risk population	Parish Budget	Jun-12	Parish Emergency Manager	Extreme Heat	Carried Over
L78: Heavy Duty Truck Funding	Secure funding to purchase heavy duty truck for HazMat Response.	Parish and City Budgets, Grant Funding	Dec-13	Parish Fire Department	Hazardous Materials	Deleted
L79: HazMat Equipment	Acquire additional HazMat response equipment	City Budget, Grant Funding	Dec-13	Ruston Fire Department	Hazardous Materials	Deleted
L80: HazMat Training	Additional Technician level HazMat training for key personnel	Parish and City Budgets, Grant Funding	Dec-13	Parish and Ruston Fire Departments	Hazardous Materials	Deleted
L81: Community Wide Shelter Facility	Examine feasibility of constructing a community wide shelter facility.	City Budgets, Grant Funding	Sep-14	Parish Emergency Manager	Winter Storm / Tornado / Hurricane / Extreme Heat / Wildfire	Carried Over

L82: Extreme Heat Shelter	Examine a plan to move at risk population to shelter locations during extreme heat events.	City Budgets, Grant Funding	Jun-14	Ruston and Grambling City Councils	Extreme Heat	Carried Over
L83: Stranded Motorist Shelter	Examine the feasibility of a shelter facility for stranded motorists.	City Budget, Grant Funding	Dec-15	Choudrant City Council	Transportation / Winter Weather / Hurricane	Carried Over
L84: TV and Radio PSAs	Develop TV/Radio PSAS to educate the public on winter storms (fire safety and emergency preparedness), flooding (evacuation, emergency preparedness, retrofitting, and flood insurance), Hazmat incidents (sheltering in place and evacuation),thunderstorms and lightning (emergency preparedness), hurricane and tornadoes (sheltering in place, evacuation, emergency preparedness, and structural retrofitting), hailstorms (sheltering your car during hailstorms), terrorism (sheltering in place and evacuation), drought (water conservation), and wildfires (fire safety and evacuation) .	Parish and Town Budgets, Business and Industry	Dec-12	Mayors and Parish Emergency Manager	Winter Storm / Flood / Hazmat Incident / Thunderstorm / Tornado / Hailstorm / Terrorism / Nuisance Pests / Drought / Wildfire / Hurricane	Carried Over
L85: Public Awareness	Increase public awareness of hazards and hazardous areas. Distribute public awareness information regarding seeking shelter during severe weather or other emergencies using the local newspaper, utility bill inserts, inserts in the phone book, a parish hazard awareness website, and an educational program for school age children or "how to" classes in retrofitting by local merchants. Integrate "Disaster Resistance Education" into the public school curriculum. Provide public education on the importance of maintaining the ditches. Benefits: An informed public is better able to respond and protect themselves in times of hazards.	Parish Budget, Grant Funding	Sep-13	Parish School Board and Parish Emergency Manager	Winter Storm / Flood / Hazmat Incident / Thunderstorm / Tornado / Hailstorm / Terrorism / Nuisance Pests / Drought / Wildfire / Hurricane	Carried Over

L86: Emergency Response Effort Enhancement	Enhance the Parish's emergency response efforts and communication through frequent meetings with all agencies to include fixed facilities, transportation representatives, law enforcement officials, the local fire departments, and public utilities departments.	Parish Budget, Homeland Security Grant Funding	Dec-12	Parish Emergency Manager	Winter Storm / Flood / Hazmat Incident / Thunderstorm / Tornado / Hailstorm / Terrorism / Nuisance Pests / Drought / Wildfire / Hurricane	Carried Over
L87: Public Education	Public Education and Outreach regarding specific hazards, risks, and vulnerabilities	Parish and City Budgets, Grant Funding	Jun-13	Parish Emergency Manager	Winter Storm / Flood / Hazmat Incident / Thunderstorm / Tornado / Hailstorm / Terrorism / Nuisance Pests / Drought / Wildfire / Hurricane	Carried Over
L88: Repetitive Loss Structure Goals	Continue elevation/ acquisition/ floodproofing projects and structural solutions to flooding by pursuing funding opportunities for repetitive loss structures. Annually review and correct the Repetitive Loss List by submitting correction sheets to FEMA.	Flood Mitigation Assistance (FMA) Project Funds, Hazard Mitigation Grant Program (HMGP) Funds, Existing Parish and City Budgets	Dec-15	Parish and City Floodplain Managers	Flooding	Carried Over
L89: Community Rating System	Document Parish's activities according to the "Community Rating System (CRS). Apply for rating in CRS. Review and improve floodplain ordinance. Consider other higher regulatory standards (e.g. higher BFEs).	Parish and City Budgets, Grant Funding	Dec-14	Parish and City Floodplain Managers	Flooding	Carried Over
L90: RL List	Work with FEMA Region VI and GOHSEP to refine the RL list.	Parish Budget	Jun-12	Parish Emergency Manager, Parish Floodplain Manager, City Floodplain Manager	Flooding	Carried Over

L91: Improve Notification and Communication Systems	Improve communication and notifications before and during disasters including improvements to existing call down system, evacuation signage, new electrical substations, traffic control planning, sheltering plan, alternate transportation for critical and nursing care people, and timely TV / cable / radio notifications.	Parish and City Budgets, Grant Funding	Sep-13	Parish and City Floodplain Managers / Inspection and Code Planning Department of Public Works	Winter Storm / Flood / Hazmat Incident / Thunderstorm / Tornado / Hailstorm / Terrorism / Nuisance Pests / Drought / Wildfire / Hurricane	Carried Over
L92: NOAA All Hazards Radios	Examine funding for purchase of NOAA All Hazards Radios	City Budget	Apr-12	Parish Emergency Manager	Winter Weather / Thunderstorm / Tornado	Carried Over
L93: Public Alert Sirens	Examine feasibility of Public Alert Sirens within corporate limits.	City Budget	May-12	Ruston	Tornado / Hazardous Materials	Carried Over
L94: Back Up Power Supply and Generators for Choudrant and Simsboro High Schools	Add backup power supply/generators at drinking water supply stations Choudrant and Simsboro High Schools, and Wheatley and McCall Halls, and evaluate how best to link water supply systems for better distribution during partial system failures.	Parish Budget, Grant Funding	Dec-11	Parish Emergency Manager / Public Works	Winter Weather / Thunderstorm / Hurricane	Carried Over
L95: Fire Station Backup Generators	Backup Generators needed at 16 fire stations.	Parish Budget, Grant Funding	May-13	Parish Fire Department	Winter Storm / Thunderstorm / Tornado	Carried Over
L96: Lift Stations and Water Wells Backup Generators	Backup generators for 11 water wells and 10 lift stations.	City Budget, Grant Funding	Jun-13	Ruston City Council	Flooding	Carried Over
L97: City Hall, Police Station, and Community Center Backup Generators	Install a backup generator at City Hall, Police Station, and Community Center.	City Budget, Grant Funding	Dec-13	Grambling City Council	Winter Storm / Thunderstorm / Tornado / Hurricane	Carried Over
L98: Lift Stations Backup Generators	Install backup generators all lift stations.	City Budgets, Grant Funding	Dec-13	Municipal Water Departments, City/Town Councils	Flooding	Carried Over
L99: Town Hall Backup Generators	Install a backup generator at Town Hall.	City Budgets, Grant Funding	Jun-13	City/Town Councils	Winter Storm / Thunderstorm / Tornado / Hurricane	Carried Over
L100: Community Center Backup Generator	Install a backup generator at the Community Center	City Budget, Grant Funding	Dec-12	Dubach Town Council	Winter Storm / Thunderstorm / Tornado / Hurricane	Carried Over

L101: Police Station Backup Generator	Install a backup generator at the police station	City Budget, Grant Funding	Jun-12	Choudrant Police Department	Winter Storm / Thunderstorm / Tornado / Hurricane	Carried Over
L102: Public Alert System Funding	Examine funding source for Public Alert System.	Parish and City Budgets	Jan-12	Mayors and Parish Emergency Manager	Winter Storm / Flood / Hazmat Incident / Thunderstorm / Tornado / Terrorism / Wildfire / Hurricane	Carried Over
L103: Fuel Strategies	Review/implement fuel strategy parish-wide for all hazards.	Parish and City Budgets	Apr-14	Parish Emergency Manager	Winter Storm / Flood / Hazmat Incident / Thunderstorm / Tornado / Terrorism / Wildfire / Hurricane	Carried Over
L104: ICS/NIMS Implementation	Continue ICS/NIMS implementation for all key participants.	Parish and City Budgets, Grant Funding	Sep-12	Ruston City Council	Winter Storm / Flood / Hazmat Incident / Thunderstorm / Tornado / Wildfire / Hurricane	Carried Over
L105: International Building Codes	Review Implementation / Enforcement of International Building Codes.	Parish and City Budgets	Dec-11	City Councils, Police Jury	Winter Storm / Flood / Tornado / Wildfire / Hurricane	Carried Over
L106: Culvert Installation Policies	Review policies on culvert installation.	City Budgets	Jun-12	City Councils, Police Jury	Winter Storm / Flood / Tornado / Wildfire / Hurricane	Carried Over
L107: Local Hazard Data Recording and Reporting	Develop a system to record and report local hazard data to the National Weather Service.	Parish and City Budgets, Grant Funding	Jun-13	Parish Emergency Manager	Winter Storm / Flood / Hazmat Incident / Thunderstorm / Tornado / Terrorism / Wildfire / Hurricane / Drought	Carried Over
L108: Storm Spotter Training	Encourage Parish/City employees and residents to undergo Storm Spotter Training.	Parish and City Budgets	Jan-13	Parish Emergency Manager	Winter Storm / Flood / Thunderstorm / Tornado / Hurricane	Deleted
L109: Power Outage Reporting	Examine community outreach program regarding power outage reporting.	Parish and City Budgets, Grant Funding	Jun-13	Simsboro Town Council	Winter Storm / Flood / Thunderstorm / Tornado / Terrorism / Wildfire / Hurricane	Carried Over

Unincorporated Lincoln New Mitigation Actions

Lincoln Unincorporated - New Mitigation Actions						
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 Storms 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	Lincoln Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes, Hail	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 Storms periods.	FEMA HMGP, Local	1-5 years	Lincoln 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	Lincoln Parish OHSEP	Flooding, Tropical Cyclones	New
L4: Safe Room Projects	Construction of a safe room for first responders located in Lincoln Parish. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Lincoln 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 Cyclones, Tornadoes, Wildfire, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure 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	Lincoln Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfire, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure	New

L6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Lincoln Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail) , Extreme Heat	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	Lincoln Parish OHSEP	Lightning	New
L8: Warning Systems	Update/upgrade public warning system components throughout Lincoln Parish as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Lincoln Parish OHSEP	Winter Storms, Wildfire, Tornadoes, Tropical Cyclones, Dam Failure	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	Lincoln 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	Lincoln Parish OHSEP	Tropical Cyclones, Flooding	New
L11: Community Wide Shelter Facility	Examine feasibility of constructing a community wide shelter facility.	FEMA HMGP, Local	1-5 years	Lincoln Parish OHSEP	Winter Storms, Tornadoes, Tropical Cyclones, Flooding Extreme Heat, Wildfire	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	Lincoln Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure,	New
L13: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a Dam Failure.	FEMA HMGP, Local	1-5 years	Lincoln Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	New
L14: Drought Ordinances	Adopt ordinances requiring water-saving measures in time of Drought.	FEMA HMGP, Local	1-5 years	Lincoln Parish OHSEP	Drought	New
L15: Wildfire Ordinances	Strengthen penalties and improve enforcement capabilities of burn ban ordinances	FEMA HMGP, Local	1-5 years	Lincoln Parish OHSEP	Wildfires	New

Village of Choudrant - New Mitigation Actions

Village of Choudrant						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
C1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after Storms 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 Choudrant/Lincoln Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes, Hail	New
C2: Drainage Improvement	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during Storms periods.	FEMA HMGP, Local	1-5 years	Village of Choudrant/Lincoln Parish OHSEP	Flooding, Tropical Cyclones	New
C3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties.	FEMA HMGP, Local	1-5 years	Village of Choudrant/Lincoln Parish OHSEP	Flooding, Tropical Cyclones	New
C4: Safe Room Projects	Construction of a safe room for first responders located in Choudrant. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Village of Choudrant/Lincoln Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones	New
C5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclones, Tornadoes, Wildfire, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure 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 Choudrant/Lincoln Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfire, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure	New

C6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Village of Choudrant/Lincoln Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail) , Extreme Heat	New
C7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA HMGP, Local	1-5 years	Village of Choudrant/Lincoln Parish OHSEP	Lightning	New
C8: Warning Systems	Update/upgrade public warning system components throughout Choudrant as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Village of Choudrant/Lincoln Parish OHSEP	Winter Storms, Wildfire, Tornadoes, Tropical Cyclones, Dam Failure	New
C9: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in Parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.	FEMA HMGP, Local	1-5 years	Village of Choudrant/Lincoln Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes	New
C10: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	FEMA HMGP, Local	1-5 years	Village of Choudrant/Lincoln Parish OHSEP	Tropical Cyclones, Flooding	New
C11: Community Wide Shelter Facility	Examine feasibility of constructing a community wide shelter facility.	FEMA HMGP, Local	1-5 years	Village of Choudrant/Lincoln Parish OHSEP	Winter Storms, Tornadoes, Tropical Cyclones, Flooding Extreme Heat, Wildfire	New
C12: Flood Control Measures	Install and/or upgrade minor flood control structures including berms and floodwalls to protect critical facilities.	FEMA HMGP, Local	1-5 years	Village of Choudrant/Lincoln Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	New
C13: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a Dam Failure.	FEMA HMGP, Local	1-5 years	Village of Choudrant/Lincoln Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	New
C14: Drought Ordinances	Adopt ordinances requiring water-saving measures in time of Drought.	FEMA HMGP, Local	1-5 years	Village of Choudrant/Lincoln Parish OHSEP	Drought	New
C15: Wildfire Ordinances	Strengthen penalties and improve enforcement capabilities of burn ban ordinances	FEMA HMGP, Local	1-5 years	Village of Choudrant/Lincoln Parish OHSEP	Wildfires	New

Town of Dubach - New Mitigation Actions

Town of Dubach						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
D1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after Storms 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 Dubach/Lincoln Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes, Hail	New
D2: Drainage Improvement	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during Storms periods.	FEMA HMGP, Local	1-5 years	Town of Dubach/Lincoln Parish OHSEP	Flooding, Tropical Cyclones	New
D3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties.	FEMA HMGP, Local	1-5 years	Town of Dubach/Lincoln Parish OHSEP	Flooding, Tropical Cyclones	New
D4: Safe Room Projects	Construction of a safe room for first responders located in Dubach. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Town of Dubach/Lincoln Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones	New
D5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclones, Tornadoes, Wildfire, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure 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, Local	1-5 years	Town of Dubach/Lincoln Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfire, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure	New

D6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA, Local	1-5 years	Town of Dubach/Lincoln Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail) , Extreme Heat	New
D7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA HMGP, Local	1-5 years	Town of Dubach/Lincoln Parish OHSEP	Lightning	New
D8: Warning Systems	Update/upgrade public warning system components throughout Dubach as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Town of Dubach/Lincoln Parish OHSEP	Winter Storms, Wildfire, Tornadoes, Tropical Cyclones, Dam Failure	New
D9: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in Parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.	FEMA HMGP, Local	1-5 years	Town of Dubach/Lincoln Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes	New
D10: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	FEMA HMGP, Local	1-5 years	Town of Dubach/Lincoln Parish OHSEP	Tropical Cyclones, Flooding	New
D11: Community Wide Shelter Facility	Examine feasibility of constructing a community wide shelter facility.	FEMA HMGP, Local	1-5 years	Town of Dubach/Lincoln Parish OHSEP	Winter Storms, Tornadoes, Tropical Cyclones, Flooding Extreme Heat, Wildfire	New
D12: 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 Dubach/Lincoln Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	New
D13: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a Dam Failure.	FEMA HMGP, Local	1-5 years	Town of Dubach/Lincoln Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	New
D14: Drought Ordinances	Adopt ordinances requiring water-saving measures in time of Drought.	FEMA HMGP, Local	1-5 years	Town of Dubach/Lincoln Parish OHSEP	Drought	New
D15: Wildfire Ordinances	Strengthen penalties and improve enforcement capabilities of burn ban ordinances	FEMA HMGP, Local	1-5 years	Town of Dubach/Lincoln Parish OHSEP	Wildfires	New

City of Grambling - New Mitigation Actions

City of Grambling						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
G1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after Storms 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 Grambling/Lincoln Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes, Hail	New
G2: 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 Storms periods.	FEMA HMGP, Local	1-5 years	City of Grambling/Lincoln Parish OHSEP	Flooding, Tropical Cyclones	New
G3: 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 Grambling/Lincoln Parish OHSEP	Flooding, Tropical Cyclones	New
G4: Safe Room Projects	Construction of a safe room for first responders located in Grambling. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	City of Grambling/Lincoln Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones	New
G5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclones, Tornadoes, Wildfire, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure 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 Grambling/Lincoln Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfire, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure	New

G6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	City of Grambling/Lincoln Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail) , Extreme Heat	New
G7: 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 Grambling/Lincoln Parish OHSEP	Lightning	New
G8: Warning Systems	Update/upgrade public warning system components throughout Grambling as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	City of Grambling/Lincoln Parish OHSEP	Winter Storms, Wildfire, Tornadoes, Tropical Cyclones, Dam Failure	New
G9: 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 Grambling/Lincoln Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes	New
G10: 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 Grambling/Lincoln Parish OHSEP	Tropical Cyclones, Flooding	New
G11: Community Wide Shelter Facility	Examine feasibility of constructing a community wide shelter facility.	FEMA HMGP, Local	1-5 years	City of Grambling/Lincoln Parish OHSEP	Winter Storms, Tornadoes, Tropical Cyclones, Flooding Extreme Heat, Wildfire	New
G12: Flood Control Measures	Install and/or upgrade minor flood control structures including berms and floodwalls to protect critical facilities.	FEMA HMGP, Local	1-5 years	City of Grambling/Lincoln Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	New
G13: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a Dam Failure.	FEMA HMGP, Local	1-5 years	City of Grambling/Lincoln Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	New
G14: Drought Ordinances	Adopt ordinances requiring water-saving measures in time of Drought.	FEMA HMGP, Local	1-5 years	City of Grambling/Lincoln Parish OHSEP	Drought	New
G15: Wildfire Ordinances	Strengthen penalties and improve enforcement capabilities of burn ban ordinances	FEMA HMGP, Local	1-5 years	City of Grambling/Lincoln Parish OHSEP	Wildfires	New

City of Ruston - New Mitigation Actions

City of Ruston						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
R1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after Storms 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 Ruston/Lincoln Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes, Hail	New
R2: Drainage Improvements	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during Storms periods.	FEMA HMGP, Local	1-5 years	City of Ruston/Lincoln Parish OHSEP	Flooding, Tropical Cyclones	New
R3: 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 Ruston/Lincoln Parish OHSEP	Flooding, Tropical Cyclones	New
R4: Safe Room Projects	Construction of a safe room for first responders located in Ruston. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	City of Ruston/Lincoln Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones	New
R5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclones, Tornadoes, Wildfire, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure 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 Ruston/Lincoln Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfire, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure	New

R6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	City of Ruston/Lincoln Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail) , Extreme Heat	New
R7: 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 Ruston/Lincoln Parish OHSEP	Lightning	New
R8: Warning Systems	Update/upgrade public warning system components throughout Ruston as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	City of Ruston/Lincoln Parish OHSEP	Winter Storms, Wildfire, Tornadoes, Tropical Cyclones, Dam Failure	New
R9: 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 Ruston/Lincoln Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes	New
R10: 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 Ruston/Lincoln Parish OHSEP	Tropical Cyclones, Flooding	New
R11: Community Wide Shelter Facility	Examine feasibility of constructing a community wide shelter facility.	FEMA HMGP, Local	1-5 years	City of Ruston/Lincoln Parish OHSEP	Winter Storms, Tornadoes, Tropical Cyclones, Flooding Extreme Heat, Wildfire	New
R12: Flood Control Measures	Install and/or upgrade minor flood control structures including berms and floodwalls to protect critical facilities.	FEMA HMGP, Local	1-5 years	City of Ruston/Lincoln Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	New
R13: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a Dam Failure.	FEMA HMGP, Local	1-5 years	City of Ruston/Lincoln Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	New
R14: Drought Ordinances	Adopt ordinances requiring water-saving measures in time of Drought.	FEMA HMGP, Local	1-5 years	City of Ruston/Lincoln Parish OHSEP	Drought	New
R15: Wildfire Ordinances	Strengthen penalties and improve enforcement capabilities of burn ban ordinances	FEMA HMGP, Local	1-5 years	City of Ruston/Lincoln Parish OHSEP	Wildfires	New

Village of Simsboro - New Mitigation Actions

Village of Simsboro						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
S1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after Storms 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 Simsboro/Lincoln Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes, Hail	New
S2: Drainage Improvements	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during Storms periods.	FEMA HMGP, Local	1-5 years	Village of Simsboro/Lincoln Parish OHSEP	Flooding, Tropical Cyclones	New
S3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties.	FEMA HMGP, Local	1-5 years	Village of Simsboro/Lincoln Parish OHSEP	Flooding, Tropical Cyclones	New
S4 Safe Room Projects	Construction of a safe room for first responders located in Simsboro. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Village of Simsboro/Lincoln Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones	New
S5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclones, Tornadoes, Wildfire, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure 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 Simsboro/Lincoln Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfire, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure	New

S6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Village of Simsboro/Lincoln Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail) , Extreme Heat	New
S7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA HMGP, Local	1-5 years	Village of Simsboro/Lincoln Parish OHSEP	Lightning	New
S8: Warning Systems	Update/upgrade public warning system components throughout Simsboro as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Village of Simsboro/Lincoln Parish OHSEP	Winter Storms, Wildfire, Tornadoes, Tropical Cyclones, Dam Failure	New
S9: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in Parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.	FEMA HMGP, Local	1-5 years	Village of Simsboro/Lincoln Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes	New
S10: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	FEMA HMGP, Local	1-5 years	Village of Simsboro/Lincoln Parish OHSEP	Tropical Cyclones, Flooding	New
S11: Community Wide Shelter Facility	Examine feasibility of constructing a community wide shelter facility.	FEMA HMGP, Local	1-5 years	Village of Simsboro/Lincoln Parish OHSEP	Winter Storms, Tornadoes, Tropical Cyclones, Flooding Extreme Heat, Wildfire	New
S12: Flood Control Measures	Install and/or upgrade minor flood control structures including berms and floodwalls to protect critical facilities.	FEMA HMGP, Local	1-5 years	Village of Simsboro/Lincoln Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	New
S13: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a Dam Failure.	FEMA HMGP, Local	1-5 years	Village of Simsboro/Lincoln Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	New
S14: Drought Ordinances	Adopt ordinances requiring water-saving measures in time of Drought.	FEMA HMGP, Local	1-5 years	Village of Simsboro/Lincoln Parish OHSEP	Drought	New
S15: Wildfire Ordinances	Strengthen penalties and improve enforcement capabilities of burn ban ordinances	FEMA HMGP, Local	1-5 years	Village of Simsboro/Lincoln Parish OHSEP	Wildfires	New

Town of Vienna - New Mitigation Actions

Town of Vienna						
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Status**
V1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after Storms 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 Vienna/Lincoln Parish OHSEP	High Wind, Tropical Cyclones, Tornadoes, Hail	New
V2: Drainage Improvements	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during Storms periods.	FEMA HMGP, Local	1-5 years	Town of Vienna/Lincoln Parish OHSEP	Flooding, Tropical Cyclones	New
V3: 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 Vienna/Lincoln Parish OHSEP	Flooding, Tropical Cyclones	New
V4: Safe Room Projects	Construction of a safe room for first responders located in Vienna. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	Town of Vienna/Lincoln Parish OHSEP	Tornadoes, High Wind, Tropical Cyclones	New
V5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclones, Tornadoes, Wildfire, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure 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 Vienna/Lincoln Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfire, Extreme Heat, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure	New

V6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA HMGP, Local	1-5 years	Town of Vienna/Lincoln Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail) , Extreme Heat	New
V7: 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 Vienna/Lincoln Parish OHSEP	Lightning	New
V8: Warning Systems	Update/upgrade public warning system components throughout Vienna as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	Town of Vienna/Lincoln Parish OHSEP	Winter Storms, Wildfire, Tornadoes, Tropical Cyclones, Dam Failure	New
V9: 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 Vienna/Lincoln Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes	New
V10: 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 Vienna/Lincoln Parish OHSEP	Tropical Cyclones, Flooding	New
V11: Community Wide Shelter Facility	Examine feasibility of constructing a community wide shelter facility.	FEMA HMGP, Local	1-5 years	Town of Vienna/Lincoln Parish OHSEP	Winter Storms, Tornadoes, Tropical Cyclones, Flooding Extreme Heat, Wildfire	New
V12: 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 Vienna/Lincoln Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	New
V13: Dam Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a Dam Failure.	FEMA HMGP, Local	1-5 years	Town of Vienna/Lincoln Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure	New
V14: Drought Ordinances	Adopt ordinances requiring water-saving measures in time of Drought.	FEMA HMGP, Local	1-5 years	Town of Vienna/Lincoln Parish OHSEP	Drought	New
V15: Wildfire Ordinances	Strengthen penalties and improve enforcement capabilities of burn ban ordinances	FEMA HMGP, Local	1-5 years	Town of Vienna/Lincoln 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 Lincoln 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, or political priorities within the past 5 years, with the methodology and prioritization process remaining the same.

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

Appendix A: Planning Process

Purpose

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

The Lincoln Parish Hazard Mitigation Plan Update

The Lincoln 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.

Lincoln Parish includes the unincorporated areas of the parish, as well as six incorporated municipalities that participated in the plan update process – the Village of Choudrant, Town of Dubach, City of Grambling, City of Ruston, Village of Simsboro, and Town of Vienna. Lincoln Parish Office of Homeland Security and Emergency Preparedness (OHSEP) invited communities' representatives to meetings, where they supplied critical infrastructure data and reviewed work-in-progress for the plan update.

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

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

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

Date	Meeting or Outreach	Location	Public Invited	Purpose
1/22/2016	Initial Coordination	Telephone/ Email	No	Discuss with Parish HM coordinator and any Steering Committee members expectations and requirements of the project.
2/1/2016	Kick-Off Meeting	Ruston, LA	No	Discuss with the plan steering committee expectations and requirements of the project. Assign plan worksheets to jurisdictions.
8/10/2016	Risk Assessment Overview	Ruston, LA	No	Discuss and review the risk assessment with the steering committee discuss and review expectations for public meeting.
8/10/2016	Public Meeting	Ruston, 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 Lincoln 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 Lincoln 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/LincolnParish
2 Week Period	Public Plan Review (Digital)		Yes	Parish Website and Lincoln 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 Lincoln Parish OHSEP oversaw the coordination of the 2016 Hazard Mitigation Plan Update Steering Committee during the update process. The Lincoln 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 Committees 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:

- Lincoln Parish Police Jury
- Lincoln Office of Homeland Security and Emergency Preparedness
- Village of Choudrant
- Town of Dubach
- City of Grambling
- City of Ruston
- Village of Simsboro
- Town of Vienna

The Ouachita Parish and Jackson Parish OHSEP Directors were invited by the Lincoln Parish OHSEP via email 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 8 Coordinator during the process also contributed to neighboring community representation.

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

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

Name	Title	Agency	Address	Email	Phone
Jody Backus	President	Lincoln Parish Police Jury	P.O. Box 979 Ruston, La. 71273	backus@truevalue.net	318-255-8622
Courtney Hall	Administrator	Lincoln Parish Police Jury	P.O. Box 979 Ruston, La. 71273	chall@lincolnparish.org	318-513-6200
Kip Franklin	Director	Lincoln Parish OHSEP	161 Road Camp Rd. Ruston, La. 71270	kfranklin@lincolnparish.org	318-251-6454
Jackson Matthews	GIS Manager	Lincoln Parish GIS	P.O. Box 1660 Ruston, La. 71273	jmatthews@lincolnparish.org	318-513-6453
Darrell Caraway	PW Director	City of Ruston	P.O. Box 2069 Ruston, La. 71273	dcaraway@ruston.org	318-255-0800
James Austin	Daily Ops. Manager	City of Ruston	P.O. Box 2069 Ruston, La. 71273	jaustin@ruston.org	318-251-8689
Ronnie Walker	Mayor	City of Ruston	P.O. Box 2069 Ruston, La. 71273	rwalker@ruston.org	318-251-8621
Edward Jones	Mayor	City of Grambling	P.O. Box 109 Grambling, La. 71245	mayor@cityofgrambling.net	318-247-6120
Sybil Foster	Mayor	Town of Simsboro	P.O. Box 40 Simsboro, La. 71275	simsboro@suddenlink.com	318-247-6248

Bob Jensen	Mayor	Town of Dubach	7839 Annie Lee St. Dubach, La. 71235	townofdubach@att.net	318-777-3321
Bill Sanderson	Mayor	Village of Choudrant	P.O. Box 288 Choudrant, La. 71227	bsanderson@ruston.org	318-768-4111
Walter Carpenter	Mayor	Village of Vienna	P.O. Box 13081 Ruston, La. 71273	villageofvienna@gmail.com	318-243-1701
James Payton	Trans. Supervisor	Lincoln Parish School Board	410 S. Farmerville St. Ruston, La. 71270	jpayton@lincolnschools.org	318-255-6079
Judy Copeland	President	Chamber of Commerce	2111 N. Trenton St. Ruston, La. 71270	jcopeland@rustonlincoln.org	318-255-2031
Don Braswell	Environmental Mgr.	Louisiana Tech University	P.O. Box 3187, TS, Ruston, La., 71272	braswell@latech.edu	318-257-2120
Ewing Collier	Consultant	Grambling State University	P.O. Box 343 Grambling, La. 71245	collier256306@bellsouth.net	318-247-6516
Roy Finch	CEO	Northern Louisiana Medical Center	401 East Vaughn Ave. Ruston, La. 71270	roy_finch@chs.net	318-254-2453

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 Lincoln 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 Lincoln 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's Hazard Mitigation Plan
- Flood Insurance Rate Maps

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

Meeting Documentation and Public Outreach Activities

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

Meeting #1: Coordination Discussion

Date: January 22, 2016
Location: Email
Purpose: Discuss with the Hazard Mitigation Lead for the parish (OHSEP Director) the expectations and requirements of the Hazard Mitigation Plan Update process and to establish and initial project timeline.
Public Initiation: No
Invitees Included: Lincoln Parish OHSEP, SDMI Staff

Meeting #2: Hazard Mitigation Plan Update Kick-Off

Date: February 1, 2016

Location: Ruston, LA

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	Address	Email	Phone
Jody Backus	President	Lincoln Parish Police Jury	P.O. Box 979 Ruston, La. 71273	backus@truevalue.net	318-255-8622
Courtney Hall	Administrator	Lincoln Parish Police Jury	P.O. Box 979 Ruston, La. 71273	chall@lincolnparish.org	318-513-6200
Kip Franklin	Director	Lincoln Parish OHSEP	161 Road Camp Rd. Ruston, La. 71270	kfranklin@lincolnparish.org	318-251-6454
Jackson Matthews	GIS Manager	Lincoln Parish GIS	P.O. Box 1660 Ruston, La. 71273	jmatthews@lincolnparish.org	318-513-6453
Darrell Caraway	PW Director	City of Ruston	P.O. Box 2069 Ruston, La. 71273	dcaraway@ruston.org	318-255-0800
James Austin	Daily Ops. Manager	City of Ruston	P.O. Box 2069 Ruston, La. 71273	jaustin@ruston.org	318-251-8689
Ronnie Walker	Mayor	City of Ruston	P.O. Box 2069 Ruston, La. 71273	rwalker@ruston.org	318-251-8621
Edward Jones	Mayor	City of Grambling	P.O. Box 109 Grambling, La. 71245	mayor@cityofgrambling.net	318-247-6120
Sybil Foster	Mayor	Town of Simsboro	P.O. Box 40 Simsboro, La. 71275	simsboro@suddenlink.com	318-247-6248
Bob Jensen	Mayor	Town of Dubach	7839 Annie Lee St. Dubach, La. 71235	townofdubach@att.net	318-777-3321
Bill Sanderson	Mayor	Village of Choudrant	P.O. Box 288 Choudrant, La. 71227	bsanderson@ruston.org	318-768-4111
Walter Carpenter	Mayor	Village of Vienna	P.O. Box 13081 Ruston, La. 71273	villageofvienna@gmail.com	318-243-1701
James Payton	Trans. Supervisor	Lincoln Parish School Board	410 S. Farmerville St. Ruston, La. 71270	jpayton@lincolnschools.org	318-255-6079
Judy Copeland	President	Chamber of Commerce	2111 N. Trenton St. Ruston, La. 71270	jcopeland@rustonlincoln.org	318-255-2031
Don Braswell	Environmental Mgr.	Louisiana Tech University	P.O. Box 3187, TS, Ruston, La., 71272	braswell@latech.edu	318-257-2120
Ewing Collier	Consultant	Grambling State University	P.O. Box 343 Grambling, La. 71245	collier256306@bellsouth.net	318-247-6516
Roy Finch	CEO	Northern Louisiana Medical Center	401 East Vaughn Ave. Ruston, La. 71270	roy_finch@chs.net	318-254-2453

Meeting #3: Risk Assessment Overview

Date: August 10, 2016

Location: Ruston, 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	Address	Email	Phone
Jody Backus	President	Lincoln Parish Police Jury	P.O. Box 979 Ruston, La. 71273	backus@truevalue.net	318-255-8622
Courtney Hall	Administrator	Lincoln Parish Police Jury	P.O. Box 979 Ruston, La. 71273	chall@lincolnparish.org	318-513-6200
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Ewing Collier	Consultant	Grambling State University	P.O. Box 343 Grambling, La. 71245	collier256306@bellsouth.net	318-247-6516
Roy Finch	CEO	Northern Louisiana Medical Center	401 East Vaughn Ave. Ruston, La. 71270	roy_finch@chs.net	318-254-2453

Meeting #4: Public Meeting

Date: August 10, 2016

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

Public Initiation: Yes

Invitees Included:

Name	Title	Agency	Address	Email	Phone
Jody Backus	President	Lincoln Parish Police Jury	P.O. Box 979 Ruston, La. 71273	backus@truevalue.net	318-255-8622
Courtney Hall	Administrator	Lincoln Parish Police Jury	P.O. Box 979 Ruston, La. 71273	chall@lincolnparish.org	318-513-6200
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****Subject Matter Experts from parish government were present to answer specific questions about proposed projects from any citizens****

Meeting Public Notice

STEPHENSON DISASTER MANAGEMENT INSTITUTE

LINCOLN PARISH OFFICE OF HOMELAND SECURITY & EMERGENCY PREPAREDNESS

MEETING NOTICE – August 10, 2016

Lincoln Parish to hold Public Meetings for Hazard Mitigation Plan Update

Ruston, LA – Lincoln Parish Office of Homeland Security & Emergency Preparedness is in the process of updating the Lincoln Parish Hazard Mitigation Plan and are required to hold public meetings on the plan update. The Public meeting will be held on August 10, 2016 at 11:30am in the Lincoln Lincoln Parish Courthouse, Police Jury Meeting Room, 100 West Texas Ave, Ruston, LA.

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 Lincolns. 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.

Lincoln Parish is in the beginning stages of updating its hazard mitigation plan. Public meeting will be held on August 10th for all citizens interested in learning about and participating in discussions concerning the Lincoln Parish Hazard Mitigation Plan.

Residents of Lincoln 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/LincolnParish

For more information, please contact: Lincoln Parish OHSEP

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
No comments were collected through this activity.

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. However, because no members of the public attended, no comments were collected.

Public Plan Review Documentation

The Lincoln Parish Hazard Mitigation Draft Plan was placed on the Lincoln 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 was collected at 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 Lincoln 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

Lincoln 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

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

- Ordinances, Resolutions, Regulations
- Floodplain Ordinances
- Comprehensive Master Plan
- Capital Improvements Plan
- Economic Development Plan
- Emergency Operations Plan
- Continuity of Operations Plan
- Transportation Plan
- Stormwater Management Plan
- Community Wildfire Protection Plan

Opportunities to integrate the requirements of this plan into other local planning mechanisms will continue to be identified through future meetings of the Lincoln 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 Lincoln 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 Unincorporated Lincoln Parish, Village of Choudrant, Town of Dubach, City of Grambling, City of Ruston, Village of Simsboro, and Town of Vienna, Lincoln 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:

Unincorporated Lincoln
Capital Improvements Plan/Updated as needed/Lincoln Parish Police Jury
Local Emergency Operations Plan/Updated as needed/Lincoln Parish OHSEP
Continuity of Operations Plan/Updated as needed/Lincoln Parish OHSEP
Transportation Plan/Updated as needed/Lincoln Parish Police Jury
Stormwater Management Plan/Updated as needed/Lincoln Parish Police Jury
Community Wildfire Protection Plan/Updated as needed/Lincoln Parish OHSEP

Village of Choudrant
Comprehensive Master Plan/Updated as needed/Lincoln Parish Police Jury and Mayor of Choudrant
Capital Improvements Plan/Updated as needed/ Lincoln Parish Police Jury and Mayor of Choudrant
Economic Development Plan Updated as needed/Lincoln Parish Police Jury and Mayor of Choudrant
Local Emergency Operations Plan/Updated as needed/Lincoln Parish OHSEP and Mayor of Choudrant
Continuity of Operations Plan/Updated as needed/Lincoln Parish OHSEP and Mayor of Choudrant

Town of Dubach
Local Emergency Operations Plan/Updated as needed/Lincoln Parish OHSEP and Mayor of Dubach
Continuity of Operations Plan/Updated as needed/Lincoln Parish OHSEP and Mayor of Dubach

City of Grambling
Economic Development Plan Updated as needed/Lincoln Parish Police Jury and Mayor of Grambling
Local Emergency Operations Plan/Updated as needed/Lincoln Parish OHSEP and Mayor of Grambling
Continuity of Operations Plan/Updated as needed/Lincoln Parish OHSEP and Mayor of Grambling

City of Ruston
Comprehensive Master Plan/Updated as needed/Lincoln Parish Police Jury and Mayor of Ruston
Capital Improvements Plan/Updated as needed/Lincoln Parish Police Jury and Mayor of Ruston
Economic Development Plan Updated as needed/Lincoln Parish Police Jury and Mayor of Ruston
Local Emergency Operations Plan/Updated as needed/Lincoln Parish OHSEP and Mayor of Ruston
Continuity of Operations Plan/Updated as needed/Lincoln Parish OHSEP and Mayor of Ruston
Transportation Plan/Updated as needed/Lincoln Parish Police Jury and Mayor of Ruston
Stormwater Management Plan/Updated as needed/Lincoln Parish Police Jury and Mayor of Ruston

Village of Simsboro
Local Emergency Operations Plan/Updated as needed/Lincoln Parish OHSEP and Mayor of Simsboro
Continuity of Operations Plan/Updated as needed/Lincoln Parish OHSEP and Mayor of Simsboro

Town of Vienna
Local Emergency Operations Plan/Updated as needed/Lincoln Parish OHSEP and Mayor of Vienna
Continuity of Operations Plan/Updated as needed/Lincoln Parish OHSEP and Mayor of Vienna

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

Lincoln Parish Essential Facilities – All Jurisdictions

Lincoln Unincorporated Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*	Dam Failure+
Fire and Rescue	Chandler Road Fire Station				X	X	X	X	X	X		
	Choudrant Fire Station Number 2				X	X	X	X	X	X		
	Corinth/Hood/McCurry Fire Station				X	X	X	X	X			
	Cross Roads Fire Station				X	X	X	X	X			
	D'Arbonne Bre Streeter Fire Station				X	X	X	X	X	X		
	Downsville West Street Fire Station				X	X	X	X	X			
	Fellowship/Britt Fire Station				X	X	X	X	X			
	Hico Fire Station				X	X	X	X	X			
	Kings Gin Fire Station				X	X	X	X	X	X		
	Madden Road/Carrol Fire Station				X	X	X	X	X	X		
	Maner Sisemore Fire Station				X	X	X	X	X			
	Mineral Springs Fire Station				X	X	X	X	X	X		
	Mt. Olive Fire Station				X	X	X	X	X	X		
	Nobles School Fire Station				X	X	X	X	X			
	Oak Grove Fire Sation				X	X	X	X	X			
	Rolling Hills Fire Station				X	X	X	X	X	X		
	Sibley Fire Station				X	X	X	X	X	X		
	Tremont Fire Station				X	X	X	X	X	X		
Government	Lincoln Parish Exhibition Center				X	X	X	X	X			
	Lincoln Parish Fire Training Center				X	X	X	X	X	X		
	Lincoln Parish Park				X	X	X	X	X	X		
	Lincoln Parish Public Works Department				X	X	X	X	X	X		
	Lincoln Parish Solid Waste Department				X	X	X	X	X	X		
Law Enforcement	Lincoln Parish Detention Center				X	X	X	X	X	X		
	Lincoln Parish Public Safety Complex				X	X	X	X	X			
Public Health	Serenity Springs Specialty Hospital				X	X	X	X	X	X		

Choudrant Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*	Dam Failure+
Fire and Rescue	Choudrant Fire Station				X	X	X	X	X	X		
Government	Choudrant Village Hall				X	X	X	X	X	X		
Law Enforcement	Choudrant Police Department				X	X	X	X	X	X		
Law Enforcement	Choudrant Elementary School				X	X	X	X	X			
	Choudrant High School				X	X	X	X	X	X		

Dubach Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*	Dam Failure+
Fire and Rescue	Dubach Fire Station				X	X	X	X	X			
Government	Council on Aging				X	X	X	X	X	X		
	DRABO Office				X	X	X	X	X			
	Dubach Community Center				X	X	X	X	X	X		
	Dubach Town Hall				X	X	X	X	X	X		
Law Enforcement	Dubach Police Department				X	X	X	X	X	X		
Schools	Dubach School				X	X	X	X	X	X		

Grambling Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*	Dam Failure+
Fire and Rescue	Grambling Fire Department				X	X	X	X	X	X		
Government	Grambling City Hall				X	X	X	X	X	X		
	Grambling Public Works				X	X	X	X	X	X		
Law Enforcement	Grambling Police Department				X	X	X	X	X	X		
Schools	Lincoln Preparatory School				X	X	X	X	X			
	Lincoln Preparatory School				X	X	X	X	X			

Ruston Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*	Dam Failure+
Fire and Rescue	Fire Station #2				X	X	X	X	X	X		
	Fire Station #3				X	X	X	X	X	X		
	Ruston Fire Department Headquarters				X	X	X	X	X	X		
	Tech Farm Fire Station				X	X	X	X	X			
Government	City of Ruston Animal Control				X	X	X	X	X			
	Courthouse Annex				X	X	X	X	X			
	GIS Office				X	X	X	X	X			
	Lincoln Parish Courthouse				X	X	X	X	X			
	Lincoln Parish Police Jury Complex				X	X	X	X	X	X		
	Lincoln Parish School Board				X	X	X	X	X			
	Old Federal Building				X	X	X	X	X			
	Ruston City Hall/Civic Center				X	X	X	X	X			
	Ruston Farmer's Market				X	X	X	X	X			
	Ruston Historic Fire Station				X	X	X	X	X			
	Ruston Parks and Recreation				X	X	X	X	X	X		
	Ruston Public Works Complex				X	X	X	X	X	X		
	Ruston Regional Airport				X	X	X	X	X	X		
	School Board Bus Barn				X	X	X	X	X			
	School Board Maintenance				X	X	X	X	X	X		
	Section 8 Housing Office				X	X	X	X	X			
	Truancy Office				X	X	X	X	X			
Law Enfocement	Ruston Police Department				X	X	X	X	X			
Public Health	Lifecare Specialty Hospital				X	X	X	X	X			
	Lincoln Parish Health Unit				X	X	X	X	X			
	Northern Louisiana Medical Center				X	X	X	X	X	X		
	Ruston Surgical Center				X	X	X	X	X	X		
Schools	A.E. Phillips Laboratory School				X	X	X	X	X			
	Cypress Springs Elementary School				X	X	X	X	X	X		
	Early Childhood Center				X	X	X	X	X	X		
	Glen View Elementary School				X	X	X	X	X	X		
	Hillcrest Elementary School				X	X	X	X	X	X		
	I.A. Lewis				X	X	X	X	X	X		
	Lincoln Learning Center				X	X	X	X	X	X		
	New Living Word				X	X	X	X	X	X		
	Ruston Elementary School				X	X	X	X	X	X		
	Ruston High School				X	X	X	X	X	X		
	Rustion Junior High School				X	X	X	X	X			

Simsboro Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*	Dam Failure+
Fire and Rescue	Simsboro Fire Station				X	X	X	X	X	X		
Government	Simsboro Town Hall				X	X	X	X	X	X		
Law Enforcement	Simsboro Police Department				X	X	X	X	X	X		
Schools	Simbsoro School				X	X	X	X	X			

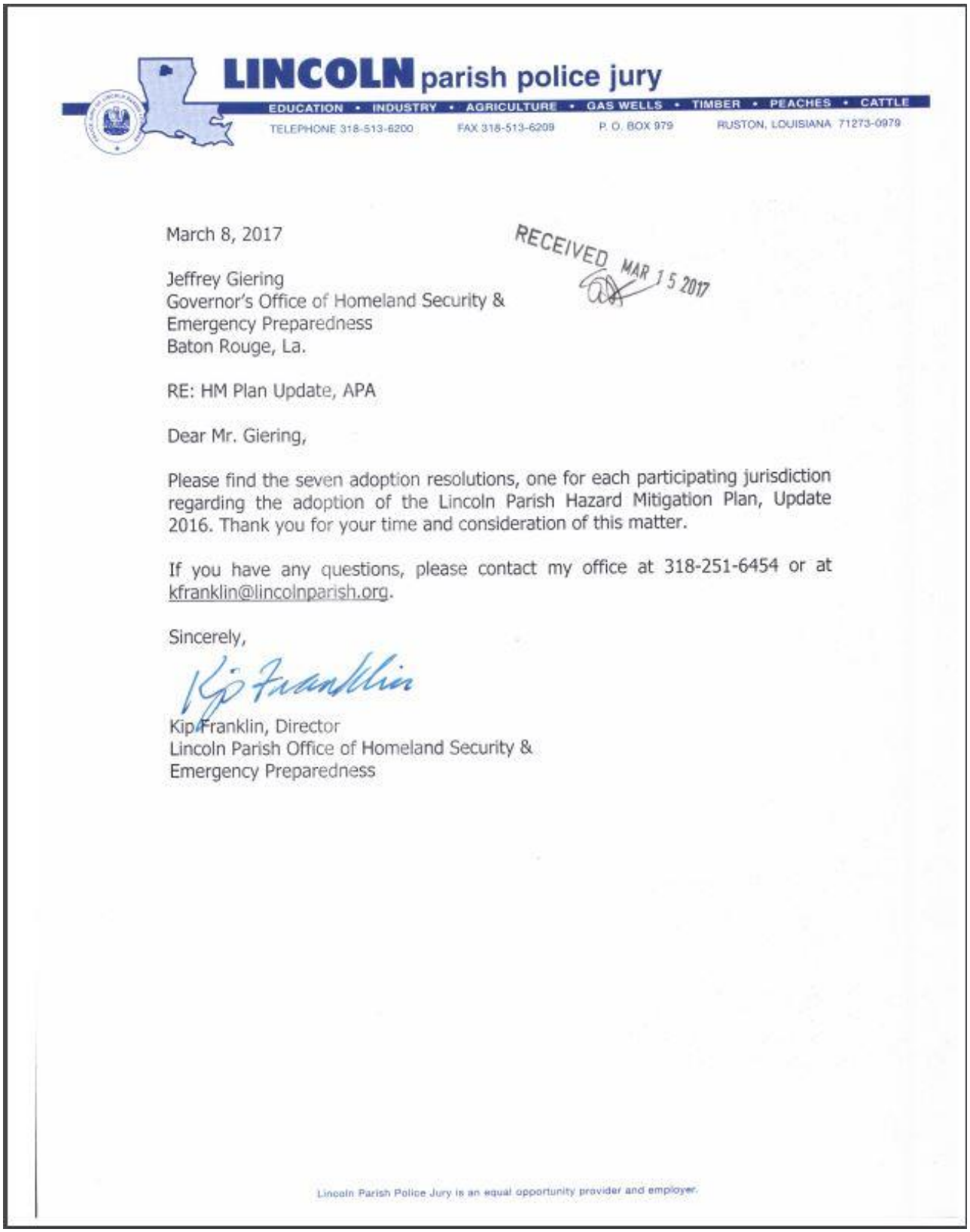
Vienna Essential Facilities												
Type	Name	Drought*	Extreme Heat*	Flooding*	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfire	Winter Storms*	Dam Failure+
Fire and Rescue	Vienna Fire Station				X	X	X	X	X	X		
Government	Vienna Town Hall				X	X	X	X	X	X		

* Hazard does not impact any mapped critical facility.

+ Data deficiency declared for the hazard.

Appendix D: Plan Adoption

APA Letter from FEMA



LINCOLN parish police jury

EDUCATION • INDUSTRY • AGRICULTURE • GAS WELLS • TIMBER • PEACHES • CATTLE

TELEPHONE 318-513-6200 FAX 318-513-6209 P. O. BOX 979 RUSTON, LOUISIANA 71273-0979

March 8, 2017

RECEIVED MAR 15 2017

Jeffrey Giering
Governor's Office of Homeland Security &
Emergency Preparedness
Baton Rouge, La.

RE: HM Plan Update, APA

Dear Mr. Giering,

Please find the seven adoption resolutions, one for each participating jurisdiction regarding the adoption of the Lincoln Parish Hazard Mitigation Plan, Update 2016. Thank you for your time and consideration of this matter.

If you have any questions, please contact my office at 318-251-6454 or at kfranklin@lincolnparish.org.

Sincerely,

Kip Franklin

Kip Franklin, Director
Lincoln Parish Office of Homeland Security &
Emergency Preparedness

Lincoln Parish Police Jury is an equal opportunity provider and employer.

RESOLUTION NO. 2017-10

WHEREAS, LINCOLN PARISH is a grant recipient of Hazard Mitigation Grant Program (HMGP) funding through the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) and the Federal Emergency Management Agency (FEMA) for the purpose of reviewing and updating the Lincoln Parish Hazard Mitigation Plan.

WHEREAS, the Plan will enable the Parish to better prepare for and reduce the effects of disasters and;

WHEREAS, LINCOLN PARISH formed a Steering Committee consisting of state and local governments and agencies, local organizations, businesses and private citizens and;

WHEREAS, this Steering Committee has prepared and reviewed the 2011 Lincoln Parish Hazard Mitigation Plan and updated it accordingly, now titled (the "Lincoln Parish Hazard Mitigation Plan, update 2016") that will guide the Parish and;

NOW, THEREFORE, BE IT RESOLVED BY THE POLICE JURY OF LINCOLN PARISH, LOUISIANA, in Regular Session convened on the 14th day of February 2017, that it does hereby formally adopt the Lincoln Parish Hazard Mitigation Plan, update 2016.

/s/ Randy Roberson
Randy Roberson
Parish President

* *

I, Courtney Hall, Parish Administrator, Lincoln Parish Police Jury, do hereby certify that the above and foregoing is a true and correct copy of a Resolution adopted by the Police Jury of Lincoln Parish, Louisiana, convened in regular session on the 14th day of February, 2017 at which meeting a quorum was present.

Courtney Hall
Parish Administrator

RESOLUTION NO. 1 OF 2017

RESOLUTION ADOPTING THE LINCOLN PARISH HAZARD MITGATION PLAN

WHEREAS, LINCOLN PARISH is a recipient of Hazard Mitigation Grant Program (HMGP) funding through the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) and the Federal Emergency Management Agency (FEMA) for the purpose of reviewing and updating the Lincoln Parish Hazard Mitigation Plan.

WHEREAS, the Plan will enable the Parish to better prepare for and reduce the effects of disasters and;

WHEREAS, LINCOLN PARISH formed a Steering Committee consisting of state and local governments and agencies, local organizations, businesses and private citizens and;

WHEREAS, this Steering Committee has prepared and reviewed the 2011 Lincoln Parish Hazard Mitigation Plan and updated it accordingly, now titled (the "Lincoln Parish Hazard Mitigation Plan, update 2016") that will guide the Parish and;

WHREAS, the Village of Vienna desires to adopt the Lincoln Parish Mitigation Plan;

NOW, THEREFORE BE IT RESOLVED BY THE BOARD OF ALEDERMAN OF THE VILLAGE OF VIENN, LOUISIANA;

1.) The Village of Vienna formally adopts the Lincoln Parish Hazard Mitigation plan
2.) This Resolution shall become effective upon final adoption and signature of the Mayor

This Resolution after being read and considered on motion to adopt by Alderman Keith Brausell and seconded by Alderman Linda Graham, a record was taken and the following result was had:

YEA: 3

NAY: 0

ABSENT: 0

WHEREUPON, the presiding officer declared the above Resolution duly adopted in full on this 14th day of February, 2017.

ATTEST:

George Walter Carpenter, Jr. Mayor

RESOLUTION NO 361 OF 2017

RESOLUTION ADOPTING THE LINCOLN PARISH HAZARD MITIGATION PLAN

WHEREAS, LINCOLN PARISH is a recipient of Hazard Mitigation Grant Program (HMGP) funding through the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) and the Federal Emergency Management Agency (FEMA) for the purpose of reviewing and updating the Lincoln Parish Hazard Mitigation Plan.

WHEREAS, a Hazard Mitigation Plan will enable the Parish to better prepare for and reduce the effects of disasters; and,

WHEREAS. Lincoln Parish formed a Steering Committee consisting of state and local governments and agencies, local organizations, businesses and private citizens; and,

WHEREAS, this Steering Committee has prepared and reviewed the 2011 Lincoln Parish Hazard Mitigation plan and updated it accordingly, now titled (the "Lincoln Parish Hazard Mitigation Plan, update 2016" that will guide the Parish and;

WHEREAS, The Town of Dubach desires to adopt the Lincoln Parish Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF ALDERMAN OF THE TOWN OF DUBACH, LOUISIANA:

1. The Town of Dubach formally adopts the Lincoln Parish Hazard Mitigation Plan, update 2016.
2. This Resolution shall become effective upon final adoption and signature of the Mayor.

This Resolution after having been read and considered on motion to adopt by Alderman _Evelyn Graham_, seconded by Alderman _Monique Roberts_, a record vote was taken and the following result was had:

YEA: All
NAY: None
ABSENT: Donna Lewis

WHEREUPON, the presiding officer declared the above Resolution duly adopted in full on this the 21st day of February, 2017.

ATTEST:

Pamela Spillers

Pamela Spillers, Clerk

Robert W. Jensen

Robert W. Jensen, Mayor

RESOLUTION NO. 10 2017

RESOLUTION ADOPTING THE LINCOLN PARISH HAZARD MITIGATION PLAN

WHEREAS, LINCOLN PARISH is a recipient of Hazard Mitigation Grant Program (HMGP) funding through the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) and the Federal Emergency Management Agency (FEMA) for the purpose of reviewing and updating the Lincoln Parish Hazard Mitigation Plan.

WHEREAS, the Plan will enable the Parish to better prepare for and reduce the effects of disasters and;

WHEREAS, LINCOLN PARISH formed a Steering Committee consisting of state and local governments and agencies, local organizations, businesses and private citizens and;

WHEREAS, this Steering Committee has prepared and reviewed the 2011 Lincoln Parish Hazard Mitigation Plan and updated it accordingly, now title (the "Lincoln Parish Hazard Mitigation Plan, updated') that will guide the Parish and;

WHEREAS, the City of Grambling desires to adopt the Lincoln Parish Hazard Mitigation Plan:

NOW THEREFORE, BE IT RESOLVED BY MEMBERS OF THE GRAMBLING CITY COUNCIL:

§1. The City of Grambling formally adopts the Lincoln Parish Hazard Mitigation Plan.

§2. This Resolution shall become effective upon final adoption and signature of the Mayor.

This resolution after having been read and considered by motion to adopt by Council Member Cathy Holmes, and seconded by Council Member Yanise Days a record vote was taken and the roll call was as follows:

YEA: 5

NAY: 0

ABSENT: None

WHEREUPON, the presiding officer declared the above Resolution duly adopted in full this 2nd day of March, 2017.

ATTEST:

Pamela Stringfellow

PAMELA STRINGFELLOW
CERTIFIED MUNICIPAL CLERK

Edward R. Jones

EDWARD R. JONES
MAYOR

RESOLUTION NO. 1108 OF 2017

RESOLUTION ADOPTING THE LINCOLN PARISH HAZARD MITIGATION PLAN

WHEREAS, Lincoln Parish is a recipient of Hazard Mitigation Grant Program ("HMGP") funding through the Louisiana Governor's Office of Homeland Security and Emergency Preparedness ("GOHSEP") and the Federal Emergency Management Agency ("FEMA") for the purpose of preparing a Hazard Mitigation Plan; and,

WHEREAS, a Hazard Mitigation Plan will enable Lincoln Parish to better prepare for and reduce the effects of disasters; and,

WHEREAS, Lincoln Parish formed a Steering Committee consisting of state and local governments and agencies, local organizations, businesses and private citizens; and,

WHEREAS, this Steering Committee has prepared and reviewed the 2011 Lincoln Parish Hazard Mitigation Plan and updated it accordingly, now titled the "Lincoln Parish Hazard Mitigation Plan, Update 2016" that will guide the Parish; and,

WHEREAS, the City desires to adopt the Lincoln Parish Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF ALDERMEN OF THE CITY OF RUSTON, LOUISIANA:

§1. The City formally adopts the Lincoln Parish Hazard Mitigation Plan, Update 2016.

§2. This Resolution shall become effective upon final adoption and signature of the Mayor.

This Resolution after having been read and considered on motion to adopt by Alderwoman Angela Mayfield, and seconded by Alderwoman Carolyn Cage, a record vote was taken and the following result was had:

YEA: ALDERWOMAN CAROLYN ELMORE CAGE
ALDERMAN JEDD LEWIS
ALDERWOMAN ANGELA R. MAYFIELD
ALDERMAN JIM PEARCE
ALDERMAN BRUCE SIEGMUND

NAY: NONE

ABSENT: NONE

WHEREUPON, the presiding officer declared the above Resolution duly adopted in full on this the 6th day of March, 2017.

ATTEST:

EMMETT GIBBS, CLERK

RONNY WALKER, MAYOR

VILLAGE OF SIMSBORO
P. O. BOX 40
2742 MARTHA STREET
SIMSBORO, LA 71275
318-247-6248

MAYOR
SYBIL SMALLING-FOSTER

CLERK
CYNTHIA F HANEY

RESOLUTION 02-17

RESOLUTION ADOPTING THE LINCOLN PARISH HAZARD MITIGATION PLAN

WHEREAS, Lincoln Parish is a recipient of a Hazard Mitigation Grant Program (**"HMGP"**) funds from the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (**"GOHSEP"**) and the Federal Emergency Management Agency (**"FEMA"**) for the purpose of reviewing and updating the Lincoln Parish Hazard Mitigation Plan; and

WHEREAS, the plan will enable the Parish to better prepare for and reduce the effects of disaster; and

WHEREAS, Lincoln Parish formed a Steering Committee consisting of state and local governments and agencies, local organizations, businesses and private citizens; and

WHEREAS, this Steering Committee has prepared and reviewed the 2011 Lincoln Parish Hazard Mitigation Plan and updated it accordingly, now titled (the **"Lincoln Parish Hazard Mitigation Plan, update 2016")** that will guide the Parish; and

WHEREAS, the Village of Simsboro desires to adopt the Lincoln Parish Hazard Mitigation Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF ALDERMEN OF THE VILLAGE OF SIMSBORO, LOUISIANA:

1. The Village of Simsboro formally adopts the Lincoln Parish Hazard Mitigation Plan,
2. This Resolution shall become effective upon final adoption and signature of the Mayor.

This Resolution after having been read and considered on motion to adopt by Alderman Doug Durrett and seconded by Alderman Jerry Davis a record vote was taken and the following result was had:

YEA:

NAY:

ABSENT:

WHEREUPON, the presiding officer declared the above Resolution duly adopted in full on this the 6th day of March, 2017.

ATTEST:

Sybil Smalling-Foster, Mayor

Cynthia F. Haney. Clerk

The Village of Choudrant

RESOLUTION

WHEREAS, Lincoln Parish is a recipient of a Hazard Mitigation Grant Program (HMGP) funding through the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) and the Federal Emergency Management Agency (FEMA) for the purpose of renewing and updating the Lincoln Parish Hazard Mitigation Plan.

WHEREAS, the Plan will enable the parish to better prepare for and reduce the effects of disasters and;

WHEREAS, LINCOLN PARISH formed a Steering Committee consisting of state and local governments and agencies, local organizations, businesses and private citizens and;

WHEREAS, this Steering Committee has prepared and reviewed the 2011 Lincoln Parish Hazard Mitigation Plan and updated it accordingly, now titled (the "Lincoln Parish Hazard Mitigation Plan, update 2016") that will guide the Parish and;

WHEREAS, the Village of Choudrant desires to adopt the Lincoln Parish Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE VILLAGE OF CHOUDRANT, LOUISIANA, in Regular Session convened on the 6th day of March, 2017, that it does hereby formally adopt the Lincoln Parish Hazard Mitigation Plan. This Resolution becomes effective upon final adoption and signature of the Mayor.

This resolution having been submitted to a vote, the vote therein was as follows:

YEAS: JOHNSON, MAIER, PATTON

NAYS: NONE

ABSENT: NONE

The resolution was declared to be adopted this day 6th day of March 2017.

Bill Sanderson
MAYOR

ATTEST:

Celeste Butler, Clerk

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Appendix E: State Required Worksheets

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

Mitigation Planning Team

Name	Title	Agency	Address	Email	Phone
Jody Backus	President	Lincoln Parish Police Jury	P.O. Box 979, Ruston, La. 71273	backus@truevalue.net	318-255-8622
Courtney Hall	Administrator	Lincoln Parish Police Jury	P.O. Box 979, Ruston, La. 71273	chall@lincolnparish.org	318-513-6200
Kip Franklin	Director	Lincoln Parish OHSEP	161 Road Camp Rd., Ruston, La. 71270	kfranklin@lincolnparish.org	318-251-6454
Jackson Matthews	GIS Manager	Lincoln Parish GIS	P.O. Box 1660, Ruston, La. 71273	jmatthews@lincolnparish.org	318-513-6453
Darrell Caraway	PW Director	City of Ruston	P.O. Box 2069, Ruston, La. 71273	dcaraway@ruston.org	318-255-0800
James Austin	Daily Ops. Manager	City of Ruston	P.O. Box 2069, Ruston, La. 71273	jaustin@ruston.org	318-251-8689
Ronnie Walker	Mayor	City of Ruston	P.O. Box 2069, Ruston, La. 71273	rwalker@ruston.org	318-251-8621
Edward Jones	Mayor	City of Grambling	P.O. Box 109, Grambling, La. 71245	mayor@cityofgrambling.net	318-247-6120
Sybil Foster	Mayor	Town of Simsboro	P.O. Box 40, Simsboro, La. 71275	simsboro@suddenlink.com	318-247-6248
Bob Jensen	Mayor	Town of Dubach	7839 Annie Lee St., Dubach, La. 71235	townofdubach@att.net	318-777-3321
Bill Sanderson	Mayor	Village of Choudrant	P.O. Box 288, Choudrant, La. 71227	bsanderson@ruston.org	318-768-4111
Walter Carpenter	Mayor	Village of Vienna	P.O. Box 13081, Ruston, La. 71273	villageofvienna@gmail.com	318-243-1701
James Payton	Trans. Supervisor	Lincoln Parish School Board	410 S. Farmerville St., Ruston, La. 71270	jpayton@lincolnschools.org	318-255-6079
Judy Copeland	President	Chamber of Commerce	2111 N. Trenton St., Ruston, La. 71270	jcopeland@rustonlincoln.org	318-255-2031
Don Braswell	Environmental Mgr.	Louisiana Tech University	P.O. Box 3187, TS, Ruston, La., 71272	braswell@latech.edu	318-257-2120
Ewing Collier	Consultant	Grambling State University	P.O. Box 343, Grambling, La. 71245	collier256306@bellsouth.net	318-247-6516
Roy Finch	CEO	Northern Louisiana Medical Center	401 East Vaughn Ave., Ruston, La. 71270	roy_finch@chs.net	318-254-2453

Building Inventory

Critical Facility (If Yes, Mark X)	Name of Building	Purpose of Building	Address	City	Latitude	Longitude	Assessed Value	Date Built	Constr. Type
Lincoln Parish									
X	LPFD #1, Vienna Station	Parish Fire Station	4786 Hwy 167	Dubach	32.601064	-92.648616	$460,608.00	1992	Metal
X	LPFD #2, Mt. Olive Station	Parish Fire Station	422 Garr Rd	Grambling	32.548291	-92.702531	$99,776.00	1992	Metal
X	LPFD #3, Tech Farm Station	Parish Fire Station	2877 Tech Farm Rd	Ruston	32.497386	-92.656001	$66,056.00	1992	Metal
X	LPFD #4, Maner Sisemore Station	Parish Fire Station	540 Sisemore Rd	Ruston	32.514144	-92.580934	$122,893.00	1992	Metal
X	LPFD #5, Chandler Road Station	Parish Fire Station	985 Chandler Rd	Ruston	32.564568	-92.561453	$122,893.00	1992	Metal
X	LPFD #6, Dubach Station	Parish Fire Station	118 Smith St	Dubach	32.701093	-92.65587	$122,906.00	1992	Metal
X	LPFD #7, Hico Station	Parish Fire Station	747 Hwy 152	Dubach	32.740212	-92.711048	$122,893.00	1992	Metal
X	LPFD #8, Corinth, Hood, McCurry Station	Parish Fire Station	4310 Hwy 545	Dubach	32.730215	-92.786412	$66,506.00	1992	Metal
X	LPFD #9, Cross Roads Station	Parish Fire Station	13360 Hwy 146	Dubach	32.672261	-92.806983	$66,506.00	1992	Metal
X	LPFD #10, Fellowship, Britt Station	Parish Fire Station	135 Britt Rd	Dubach	32.727662	-92.61512	$66,506.00	1992	Metal
X	LPFD #11, Simsboro Station	Parish Fire Station	147 Second St	Simsboro	32.534361	-92.789446	$271,590.00	1992	Metal
X	LPFD #12, Oak Grove Station	Parish Fire Station	1778 Hwy 147	Simsboro	32.501591	-92.871533	$66,506.00	1992	Metal
X	LPFD #13, Madden Road,Carrol Station	Parish Fire Station	621 Madden Rd	Grambling	32.484197	-92.742119	$66,506.00	1992	Metal

X	LPFD #14, Nobles School Station	Parish Fire Station	440 Nobles School Rd	Dubach	32.640037	-92.761702	$122,893.00	1992	Metal
X	LPFD #15, Kings Gin Station	Parish Fire Station	110 Kings Gin Rd	Arcadia	32.591959	-92.867165	$66,506.00	1992	Metal
X	LPFD #16, Sibley Station	Parish Fire Station	132 Hwy 821	Choudrant	32.57613	-92.469057	$122,893.00	1992	Metal
X	LPFD #17, Tremont Station	Parish Fire Station	537 Pleasant Grove Road	Choudrant	32.513704	-92.467202	$66,506.00	1992	Metal
X	LPFD #18, Downsville West Station	Parish Fire Station	132 Wild Wing Road	Downsville	32.641153	-92.432514	$66,506.00	1992	Metal
X	LPFD #19, D'Arbonne, Brewster Station	Parish Fire Station	714 Anderson Rd	Ruston	32.670123	-92.505868	$66,506.00	1992	Metal
X	LPFD #20, Mineral Springs Station	Parish Fire Station	4428 Hwy 822	Dubach	32.637872	-92.570065	$99,764.00	1992	Metal
X	LPFD #21, Rolling Hills Station	Parish Fire Station	1360 Hwy 3072	Ruston	32.597855	-92.598779	$218,613.00	2010	Metal
X	Lincoln Parish Fire Training Center	Parish Fire Training Center	415 Fire Training Rd	Dubach	32.610902	-92.599244	$552,131.00	2000	Metal
X	Lincoln Parish Courthouse	Parish Government Building	100 W Texas Ave	Ruston	32.527146	-92.638825	$3,936,400.00	1950	Concrete
X	Lincoln Parish Courthouse Annex	Parish Government Building	101 W Railroad Ave	Ruston	32.527544	-92.638525	$421,824.00	1980	Concrete
X	Lincoln Parish GIS Office	Parish Government Building	105 W Texas Ave	Ruston	32.526529	-92.638618	$1,325,000.00	1985	Concrete
X	Lincoln Parish Pine Hills Advocacy/Truancy Office	Parish Government Building	117 S Trenton St	Ruston	32.527719	-92.639152	$65,242.00	1980	Concrete

X	Lincoln Parish Police Jury Complex	Parish Government Building	307 N Homer St	Ruston	32.531376	-92.644109	$1,231,600.00	1981	Concrete
X	Lincoln Parish Detention Center	Parish Prison/Correction Facility	170 Road Camp Rd	Ruston	32.560471	-92.609337	$4,325,739.00	1981	Concrete
X	Lincoln Parish Public Safety Complex	Parish Law Enforcement/EOC	161 Road Camp Rd	Ruston	32.558792	-92.610442	$4,100,000.00	2014	Metal
X	Lincoln Parish Public Works Department	Parish Public Works Facility	189 Arkansas Plant Rd	Dubach	32.609573	-92.59181	$1,066,400.00	2008	Metal
X	Lincoln Parish Solid Waste Department	Parish Solid Waste Facility	463 Arkansas Plant Rd	Dubach	32.619113	-92.592753	$315,395.00	1970	Metal
X	Lincoln Parish Park	Parish Recreational Facility	199 Parish Park Rd	Ruston	32.588282	-92.605692	$338,624.00	1985	Metal
X	Choudrant Fire Station #1	Municipal Fire Station	2520 Hwy 80	Choudrant	32.530093	-92.516223	$78,000.00	2000	Metal
X	Choudrant Fire Station #2	Municipal Fire Station	1976 Hwy 820	Choudrant	32.568307	-92.518722	$850,000.00	2010	Unreinforced Masonry
X	Choudrant High School	Public School	2555 Hwy 80	Choudrant	32.529209	-92.51733	$11,992,888.00	1938	Unreinforced Masonry
X	Choudrant Elementary School	Public School	160 Walker Rd	Choudrant	32.52676	-92.498357	$7,806,716.00	1978	Unreinforced Masonry
X	Dubach School	Parish Public School	7710 Fellowship Rd	Dubach	32.696225	-92.65176	$9,624,473.00	1968	Unreinforced Masonry
X	Grambling Fire Department	Municipal Fire Station	562 Stadium Dr	Grambling	32.524241	-92.707901	$575,000.00	2008	Metal
X	Ruston High School	Public Education	900 Bearcat Dr.	Ruston	32.535	-92.650009	$47,791,060.00	1939	Reinforced Masonry
X	Ruston Junior High School	Public Education	481 Tarbutton Rd.	Ruston	32.543301	-92.675697	$13,993,308.00	1985	Unreinforced Masonry

X	I.A. Lewis Middle School	Public Education	1000 Mithchell St.	Ruston	32.515385	-92.651497	$6,624,591.00	1962	Unreinforced Masonry
X	Glen View Elementary School	Public Education	1601 Bittersweet Avenue	Ruston	32.550098	-92.6595	$10,361,014.00	1962	Unreinforced Masonry
X	Cypress Springs Elem. School	Public Education	1100 Saratoga St.	Ruston	32.518364	-92.665932	$12,097,200.00	1962	Unreinforced Masonry
X	Hillcrest Elementary School	Public Education	301 East Kentucky Ave.	Ruston	32.555599	-92.637634	$7,991,868.00	1962	Unreinforced Masonry
X	Ruston Elementary School	Public Education	200 North Bernard St.	Ruston	32.530201	-92.622101	$7,689,672.00	1955	Unreinforced Masonry
X	Lincoln Parish School Board	Public Education	410 South Farmerville St.	Ruston	32.524536	-92.631668	$2,926,326.00	1966	Unreinforced Masonry
X	School Board Maintenance	Public Education	1428 Arlington St.	Ruston	32.513599	-92.647797	$2,003,945.00	1997	Reinforced Masonry
X	School Board Bus Barn	Public Education	2948 Woodward Ave.	Ruston	32.542606	-92.674431	$1,013,829.00	2008	Reinforced Masonry
X	Ruston Historic Fire Station	Municipal Government Building	200 E. Mississippi Ave.	Ruston	32°31'45.243"N	92°38'11.299"W	$50,000.00	1926	Reinforced Masonry
X	Ruston Fire Dept. Sta. 1	Municipal Fire/EMS Station	920 East Georgia Avenue	Ruston	32°31'57.572"N	92°37'30.179"W	$1,700,000.00	1994	Metal
X	Ruston Fire Dept. Sta. 2	Municipal Fire/EMS Station	1010 West California Ave.	Ruston	32°31'19.581"N	92°39'4.666"W	$150,000.00	1949	Unreinforced Masonry
X	Ruston Fire Dept. Sta. 3	Municipal Fire/EMS Station	2502 North Trenton St.	Ruston	32°33'26.101"N	92°38'30.25"W	$400,000.00	1974	Unreinforced Masonry
X	Lincoln Parish Exhibition Center	Parish Event Center & Pet Shelter Facility	165 Fairgrounds Rd	Dubach	32.61146	-92.588527	$946,400.00	2001	Metal

X	Choudrant Village Hall	Municipal Government Building	3911 Elm St	Choudrant	32.52881	-92.513744	$180,000.00	2007	Unreinforced Masonry
X	Public Safety Building	Municipal Police Station	2629 Hwy 80	Choudrant	32.530215	-92.52065	$100,000.00	1972	Metal
X	Pipes Road Water Well	Municipal Water System	290 Pipes Rd	Choudrant	32.537993	-92.520769	$500,000.00	1985	Steel
X	Jones Street Water Well	Municipal Water System	228 Jones St	Choudrant	32.532914	-92.50822	$560,000.00	1971	Steel
X	Squire Creek Water Well	Municipal Water System	112 Spend Thrift Rd	Choudrant	32.566854	-92.505333	$750,000.00	2003	Steel
X	Squire Creek Water Tank	Municipal Water System	2007 Hwy 820	Choudrant	32.568398	-92.517288	$800,000.00	2003	Steel
X	South Treatment Plant	Municipal Waste Water Treatment	121 Arena Rd (Pvt)	Choudrant	32.52804	-92.501221	$730,000.00	1990	Concrete
X	North Treatment Plant	Municipal Waste Water Treatment	147 Spend Thrift Rd	Choudrant	32.565474	-92.504538	$790,000.00	2003	Concrete
X	Dubach Town Hall	Municipal Government Building	7839 Annie Lee St	Dubach	32.696717	-92.656267	$120,000.00	1960	Unreinforced Masonry
X	Dubach Police Department	Municipal Police Station	7839 Annie Lee St	Dubach	32.696758	-92.656257	$25,000.00	1960	Unreinforced Masonry
X	Henry Road Water Well	Municipal Water System	Henry Rd	Dubach	32.714354	-92.66853	$425,000.00	1978	Steel
X	School Water Well	Municipal Water System	Main St	Dubach	32.696957	-92.654467	$550,000.00	1999	Steel
	North Sewer Treatment	Municipal Waste Water Treatment	137 Oak St.	Dubach	32.692886	-92.666005	$785,000.00	1978	Concrete
X	South Sewer Treatment	Municipal Waste Water Treatment	Flowers Rd	Dubach	32.686707	-92.6583	$850,000.00	1980	Concrete
X	Town Public Works	Municipal Public Works	7839 Annie Lee St	Dubach	32.696717	-92.656267	$78,000.00	1975	Metal
X	Grambling City Hall	Municipal Government Building	127 King St	Grambling	32.524425	-92.707123	$425,000.00	2007	Unreinforced Masonry

X	Grambling Police Department	Municipal Police Station	105 Park St	Grambling	32.530045	-92.71204	$265,000.00	1960	Unreinforced Masonry
X	Grambling Public Works	Municipal Public Works	2045 Martin Luther King Jr Ave	Grambling	32.529997	-92.711761	$68,000.00	1960	Wood
X	Ruston City Hall/Civic Center	Municipal Government Building	401 North Trenton St.	Ruston	32°31'53.848"N	92°38'22.744"W	$9,500,000.00	1975	Reinforced Masonry
X	City of Ruston Airport	Municipal Government Building	3102 McDonald Ave.	Ruston	32°31'35.918"N	92°35'57.933"W	$800,000.00	1995	Unreinforced Masonry
X	City of Ruston Animal Control	Municipal Government Building	1901 McDonald Ave.	Ruston	32°31'41.874"N	92°36'41.546"W	$50,000.00	1996	Metal
X	Ruston Parks and Recreation	Municipal Government Building	605 James St.	Ruston	32°32'4.389"N	92°38'54.669"W	$50,000.00	1986	Wood
X	City of Ruston	Municipal Government Building	1306 Cornell Ave.	Ruston	32°31'1.462"N	92°37.12.884"W	$50,000.00	2003	Unreinforced Masonry
X	Ruston Police Department	Municipal Police Station	501 North Trenton St.	Ruston	32°31'58.25"N	92°38'21.979"W	$1,250,000.00	2010	Unreinforced Masonry
X	Ruston Public Works Complex	Municipal Public Works Facilities	701 East Tennessee Ave.	Ruston	32°29'50.994"N	92°37'41.219"W	$3,000,000.00	2009	Metal
X	Water Tank 2	Municipal Water Facility	2502 N. Trenton St.	Ruston	32°31'35.18"N	92°34'29.63"W	$1,500,000.00	1959	Steel
X	Water Tank 3	Municipal Water Facility	1121 Jena St.	Ruston	32.539364	-92.64221	$2,000,000.00	1988	Steel
X	Water Tank 4	Municipal Water Facility	202 Memorial Drive	Ruston	32°31'47.837"N	92°37'59.888"W	$3,500,000.00	2009	Steel
X	Water Well 2	Municipal Water Facility	312 E. Mississippi Ave.	Ruston	32°31'35.18"N	92°34'29.63"W	$1,500,000.00	1936	Steel

X	Water Well 5	Municipal Water Facility	1605 McDonald Ave.	Ruston	32°31'35.58"N	92°36'48.55"W	$1,500,000.00	1958	Steel
X	Water Well 4	Municipal Water Facility	606 Second Ave.	Ruston	32°31'36.73"N	92°34'23.4"W	$1,500,000.00	1955	Steel
X	Water Well 10	Municipal Water Facility	2915 W. Tennessee Ave.	Ruston	32°30'8.49"N	92°36'59.02"W	$2,000,000.00	1978	Steel
X	Water Well 8	Municipal Water Facility	2502 N. Trenton St.	Ruston	32°34'0.67"N	92°36'43.49"W	$2,000,000.00	1973	Steel
X	Water Well 9	Municipal Water Facility	1402 W. Kentucky Ave.	Ruston	32°33'54.75"N	92°36'37.85"W	$2,000,000.00	1974	Steel
X	Water Well 6	Municipal Water Facility	902 Cook St.	Ruston	32°32'8.1"N	92°38'24.04"W	$1,500,000.00	1958	Steel
X	Water Well 7	Municipal Water Facility	2113 W. Barnett Springs Ave.	Ruston	32°31'31.63"N	92°38'27.63"W	$1,500,000.00	1966	Steel
X	Water Well 1	Municipal Water Facility	1100 W. California Ave.	Ruston	32°31'21.46"N	92°36'6.8"W	$1,500,000.00	1953	Steel
X	Water Well 12, LTU	Municipal Water Facility	1501 W. Alabama Ave.	Ruston	32°31'54.7"N	92°38'23.26"W	$1,500,000.00	1964	Steel
X	Water Well 13, LTU	Municipal Water Facility	908 Hergot Ave.	Ruston	32°31'37.69"N	92°38'27.95"W	$1,500,000.00	1967	Steel
X	Water Well 11, LTU	Municipal Water Facility	412 S. Homer St.	Ruston	32°31'42.2"N	92°36'3.93"W	$1,500,000.00	1970	Steel
X	Liftstation 32 South Plant	Municipal Waste Water Treatment Facility	1200 Bonita Street	Ruston	32°30'55.7"N	92°37'38.54"W	$2,000,000.00	1972	Concrete
X	Liftstation 9A Lilinda Drive	Municipal Waste Water Treatment Facility	200 Lilinda Drive	Ruston	32°30'1.403"N	92°38'18.048"W	$40,000.00	1980	Concrete

X	Liftstation 24 Riser Road	Municipal Waste Water Treatment Facility	208 Riser Road	Ruston	32°29'42.838"N	92°38'5.882"W	$20,000.00	1988	Concrete
X	Liftstation 10 Tennessee & PW	Municipal Waste Water Treatment Facility	691 Tennessee Ave.	Ruston	32°29'48.542"N	92°37'45.717"W	$250,000.00	1995	Concrete
X	Liftstation 10 A S. Famerville ST	Municipal Waste Water Treatment Facility	1701 S. Farmerville ST	Ruston	32°30'37.061"N	92°37'56.51"W	$350,000.00	1990	Concrete
X	Liftstation 24 A Riser Rd	Municipal Waste Water Treatment Facility	212 Riser RD	Ruston	32°29'42.802"N	92°38'5.79"W	$20,000.00	1988	Concrete
X	Liftstation 3 Lewis ST	Municipal Waste Water Treatment Facility	1311 Lewis ST	Ruston	32°30'0.826"N	92°38'17.988"W	$350,000.00	2011	Concrete
X	Liftstation 28 Clay ST	Municipal Waste Water Treatment Facility	711 Clay ST	Ruston	32°31'15.242"N	92°37'3.647"W	$125,000.00	1990	Concrete
X	Liftstation 20 Llanfair	Municipal Waste Water Treatment Facility	198 Llanfair DR	Ruston	32°33'59.775"N	92°38'26.348"W	$250,000.00	1976	Concrete
X	Liftstation 21 Hundred Oaks	Municipal Waste Water Treatment Facility	206 Hundred Oaks	Ruston	32°33'32.005"N	92°38'13.245"W	$500,000.00	1978	Concrete
X	Liftstation 4A Savannah Trace	Municipal Waste Water Treatment Facility	102 Savannah Trace	Ruston	32°34'5.183"N	92°38'59.562"W	$300,000.00	1999	Concrete
X	Liftstation 5N Frazier	Municipal Waste Water Treatment Facility	600 Frazier RD	Ruston	32°34'0.186"N	92°37'51.644"W	$2,000,000.00	2003	Concrete
X	Liftstation 5A Santiam	Municipal Waste Water Treatment Facility	299 Santiam RD	Ruston	32°31'49.103"N	92°36'10.128"W	$250,000.00	1987	Concrete
X	Liftstation 7B HWY 80 E	Municipal Waste Water Treatment Facility	2698 E. Georgia Ave.	Ruston	32°32'2.376"N	92°36'22.669"W	$1,550,000.00	2013	Concrete

X	Liftstation 19 W. Kentucky	Municipal Waste Water Treatment Facility	799 W. Kentucky Ave.	Ruston	32°33'17.467"N	92°39'4.768"W	$800,000.00	2005	Concrete
X	Liftstation 30 Roosevelt DR	Municipal Waste Water Treatment Facility	2012 Roosevelt DR	Ruston	32°30'45.72"N	92°39'46.833"W	$200,000.00	1980	Concrete
X	Liftstation P1 Rusty Lane	Municipal Waste Water Treatment Facility	2300 Rusty Lane	Ruston	32°30'38.357"N	92°39'56.114"W	$180,000.00	1985	Concrete
X	Lifstation 23 Furman	Municipal Waste Water Treatment Facility	1507 Furman ST	Ruston	32°30'40.72"N	92°40'42.514"W	$220,000.00	1991	Concrete
X	Lifstation 26 Maple & Magnolia	Municipal Waste Water Treatment Facility	1200 S. Maple ST	Ruston	32°31'2.064"N	92°39'51.591"W	$175,000.00	1980	Concrete
X	Liftstation 26 A Ragan	Municipal Waste Water Treatment Facility	106 Ragan ST	Ruston	32°31'45.824"N	92°39'36.655"W	$190,000.00	1974	Concrete
X	Liftstation 39 W. Alabama	Municipal Waste Water Treatment Facility	2001 W. Alabama AVE	Ruston	32°32'1.686"N	92°40'16.477"W	$1,750,000.00	2002	Concrete
X	Liftstation 2 A Cedar Creek	Municipal Waste Water Treatment Facility	2001 W. Alabama 14-1/2 A	Ruston	32°31'51.4"N	92°39'49.261"W	$180,000.00	2011	Concrete
X	Lifstation 11 Alabama ICC RR	Municipal Waste Water Treatment Facility	1299 W. Alabama AVE	Ruston	32°31'46.727"N	92°39'14.584"W	$325,000.00	1975	Concrete
X	Liftstation 13 Lee ST	Municipal Waste Water Treatment Facility	1299 Lee ST	Ruston	32°32'19.141"N	92°38'45.054"W	$2,000,000.00	1977	Concrete
X	Liftstation 12 Edwards	Municipal Waste Water Treatment Facility	1215 1/2 Edwards ST	Ruston	32°32'8.305"N	92°39'21.37"W	$210,000.00	1984	Concrete
X	Liftstation P2 Dixie	Municipal Waste Water Treatment Facility	1904 Dixie ST	Ruston	32°32'56.973"N	92°39'28.707"W	$100,000.00	1987	Concrete

X	Liftstation 29 Normay	Municipal Waste Water Treatment Facility	1292 Normay Ray DR	Ruston	32°32'36.845"N	92°39'15.93"W	$180,000.00	1997	Concrete
X	Liftstation 7A Madera	Municipal Waste Water Treatment Facility	500 Madera ST	Ruston	32°32'26.957"N	92°39'42.073"W	$280,000.00	1980	Concrete
X	Lifstation 16 A North Plant	Municipal Waste Water Treatment Facility	1717 Goodwin RD	Ruston	32°32'51.419"N	92°37'51.168"W	$17,000,000.00	2008	Concrete
X	Lifstation 18 Hilton Pasture	Municipal Waste Water Treatment Facility	2023 W. Kentucky AVE	Ruston	32°30'45.105"N	92°39'46.663"W	$550,000.00	2005	Concrete
X	Liftstation 40 Texas & TXI	Municipal Waste Water Treatment Facility	302 W. Texas	Ruston	32°31'36.571"N	92°38'31.237"W	$125,000.00	2011	Concrete
X	Liftstation 15 A Prison Camp	Municipal Waste Water Treatment Facility	French Quarters Subdivision	Ruston	32°33'55.326"N	92°36'53.903"W	$425,000.00	2012	Concrete
X	Liftstation West Tennessee Ave.	Municipal Waste Water Treatment Facility	West Tennessee Ave.	Ruston	32°29'47.828"N	92°38'53.955"W	$250,000.00	2011	Concrete
X	Simsboro Town Hall	Municipal Government Building	2742 Martha Street	Simsboro	32.535009	-92.788603	$120,000.00	1969	Wood
X	Simsboro Police Department	Municipal Police Station	2717 Martha Street	Simsboro	32.534181	-92.788986	$10,000.00	1930	Reinforced Masonry
X	Simsboro Water Well #1	Municipal Water System	577 Braswell Lane	Simsboro	32.536484	-92.787302	$800,000.00	2000	Steel
X	Simsboro Water Well #2	Municipal Water System	495 Braswell Lane	Simsboro	32.537044	-92.779984	$750,000.00	1980	Steel
X	Simsboro School	Public School	114 Tiger Drive	Simsboro	32.534076	-92.786487	$14,406,224.00	1949	Reinforced Masonry

X	Maintenance Barn	Municipal Public Works	2719 Martha Street	Simsboro	32.534226	-92.789041	$10,000.00	1972	Metal
X	Simsboro Sewer Plant	Municipal Waste Water Treatment	311 Best Rd.	Simsboro	32.517939	-92.78971	$950,000.00	2005	Concrete
X	Vienna Town Hall	Municipal Government Building	5168 Hwy 167	Dubach	32.587399	-92.648399	$94,000.00	1955	Wood

Vulnerable Populations

Vulnerable Populations Worksheet

Lincoln Parish

Name	Street	City	Zip Code	Latitude	Longitude
All Hospitals (Private or Public)					
Serenity Springs Specialty Hospital	1495 Frazier Rd	Ruston	71270	32.576986	-92.602111
Northern Louisiana Medical Center	401 East Vaughn Avenue	Ruston	71270		
Ruston Surgical Hospital	1118 South Farmerville Street	Ruston	71270		
LifeCare Specialty Hospital of North Louisiana	1401 Ezell Street	Ruston	71270		
Nursing Homes (Private or Public)					
Ruston Nursing & Rehabilitation Center	3720 Hwy 80	Ruston	71270	32.533926	-92.567712
Alpine Guest Care Center	2401 N. Service Road East	Ruston	71270		
Arbor & Terrace Assisted Living	4518 Hwy. 80 East	Ruston	71270		
Russ House Assisted Living	165 Jefferson Avenue	Ruston	71270		
Princeton Place Nursing Home	1405 White Street	Ruston	71270		
Pecan Villa Assisted Living	611 South Bonner Street	Ruston	71270		
Mobile Home Parks					
Whispering Pines Mobile Home Park	109 Sullivan Ln(Pvt)	Choudrant	71227	32.536711	-92.508085
Spillers #1 Mobile Home Park	129 Hilltop Dr (Pvt)	Choudrant	71227	32.53529	-92.513192
Spillers #2 Mobile Home Park	2480 Hwy 80	Choudrant	71227	32.529957	-92.514612
Southern Residential Mobile Home Park	120 Aswell St	Choudrant	71227	32.529601	-92.505492
Sandy Lane Mobile Home Park	9824 Hwy 80	Simsboro	71275	32.534395	-92.801856
Mays Mobile Home Park	681 Braswell Ln	Simsboro	71275	32.536871	-92.791736
Penix Mobile Home Park	661 Braswell Ln	Simsboro	71275	32.537048	-92.790661
Barnes Mobile Home Park	297 Rose St	Simsboro	71275	32.529616	-92.785232
Chip & Joes Mobile Home Park	9167 Hwy 80	Simsboro	71275	32.528278	-92.776628

Shady Oaks Mobile Home Park	9156 Hwy 80	Simsboro	71275	32.528881	-92.775197
Quail Ridge Mobile Home Park	Terral Lane	Dubach	71235	32.591542	-92.645825
Holtzclaw Mobile Home Park	Hwy. 3072	Ruston	71270	32.59095	-92.645864
Twin Oaks Mobile Home Park	173 Twin Oaks Ln (Pvt)	Ruston	71270	32.566372	-92.564441
Wilson Mobile Home Park	890 Rough Edge Rd	Ruston	71270	32.552698	-92.596801
Town & Country Mobile Home Park	696 Burgessville Rd	Ruston	71270	32.560275	-92.602198
Shady Pines Mobile Home Park	964 Burgessville Road	Ruston	71270	32.552751	-92.604461
Village Green Mobile Home Park	102 -148 Village Green Rd (Pvt)	Ruston	71270	32.569676	-92.602733
The Edge Mobile Home Park	137 Rough Edge Rd	Ruston	71270	32.533762	-92.575227
Green Acres Mobile Home Park	203 Water Tank Rd	Ruston	71270	32.506511	-92.607718
Shady Lane Mobile Home Park	1423 McAllister St	Ruston	71270	32.512099	-92.625943
Shepherd Creek Mobile Home Park	Shepherd Creek Road	Ruston	71270	32.504186	-92.669176
Peachland Village Mobile Home Park	7003 Hwy 80	Ruston	71270	32.505675	-92.691666
Lynch Mobile Home Park	181 Kathryn Ln (Pvt)	Ruston	71270	32.505652	-92.695625
Richardson Mobile Home Park	120 Kathryn Ln (Pvt)	Ruston	71270	32.506955	-92.696282
Westwood Hills Mobile Home Park	3300 Fletcher Ln	Ruston	71270	32.526793	-92.679567
Pine Ridge Mobile Home Park	294 Tarbutton Rd	Ruston	71270	32.549695	-92.681039
Tall Timbers Mobile Home Park	1343 Frazier Rd	Ruston	71270	32.57469	-92.608268
Oakwood Mobile Home Park	1361 Frazier Rd	Ruston	71270	32.575177	-92.607746
Romie Ridge Mobile Home Park	135 Romie Ridge Ln (Pvt)	Dubach	71235	32.63837	-92.573563
Hilly Junction Mobile Home Park	3175 Hwy 167	Dubach	71235	32.655022	-92.64952
Goose Creek Mobile Home Park	1596 McCullin Rd		71235	32.628164	-92.776847
Smart Mobile Home Park	11346 Hwy 80	Simsboro	71275	32.541772	-92.864793
Calvin Barnard Mobile Home Park	250 Jackson Rd	Simsboro	71275	32.497666	-92.778747
Antley Mobile Home Park	217 Gahagan Rd		71275	32.51808	-92.756211
Country Roads Mobile Home Park	505 Hwy 3005	Grambling	71245	32.503774	-92.73144
Charity Place Mobile Home Park	373 Belton Rd	Grambling	71245	32.492214	-92.734164
Minniefield Mobile Home Park	421 Heard Rd	Grambling	71245	32.495581	-92.707864
Burks Mobile Home Park	203 Nathan Loop	Grambling	71245	32.549472	-92.709324
Belinda Mobile Home Park	210 Garr Road	Grambling	71245	32.552416	-92.696434
Clarence Kennedy Mobile Home Park	353 Dunn Rd	Grambling	71245	32.541854	-92.702545
Oak Hill Mobile Home Park	269 Dunn Rd	Grambling	71245	32.54377	-92.699096

Robert Evans Mobile Home Park	4399 Hwy 818	Ruston	71270	32.464256	-92.687988
Green Leaf Mobile Home Park	4587 Hwy 80	Ruston	71270	32.534009	-92.602907
Hastings Mobile Home Park	131 Hastings Ln (Pvt)	Dubach	71235	32.696912	-92.661528
James Crawley Mobile Home Park	2506 Martin Luther King Jr Ave	Grambling	71245	32.530375	-92.730872
Jackson Mobile Home Park	141 Bennett Rd	Grambling	71245	32.531228	-92.729044
Lars Gray Mobile Home Park	137 Penn St	Grambling	71245	32.51125	-92.715529
Blankenship Mobile Home Park	116 Young St	Grambling	71245	32.507281	-92.711807
Milton Candler Mobile Home Park	133 Sandbed Rd	Grambling	71245	32.544723	-92.708805
Gardner Clark Mobile Home Park	128 Sandbed Rd	Grambling	71245	32.544051	-92.709163
Leisure Living Mobile Home Park	Beacon Light Road	Ruston	71270		
Liners Mobile Home Park	Hwy. 80 East	Ruston	71270		
Suburban Mobile Home Park	Atkins Road	Ruston	71270		
Lakeview Mobile Home Park	Atkins Road	Ruston	71270		
Highland Mobile Home Park	Highland Street	Ruston	71270		
Cedar Creek Mobile Home Park	West Alabama Avenue	Ruston	71270		
Penn Oaks Mobile Home Park	West California Avenue	Ruston	71270		
University Hill Mobile Home Park	West California Avenue	Ruston	71270		
Hays Mobile Home Park	Riser Road	Ruston	71270		

National Flood Insurance Program (NFIP)

Lincoln Parish

ELEMENT F: STATE REQUIREMENT
National Flood Insurance Program (NFIP)

Jurisdiction: Lincoln Parish

	Lincoln Parish	Choudrant	Dubach	Grambling	Ruston	Simsboro	Vienna	
Insurance Summary								**Comments**
How many NFIP polices are in the community? What is the total premium and coverage?	33, $13,074 Premium, $10,322,600 Coverage	1, $348 Premium, $280,000 Coverage	None	6, $11,692 Premium, $1,315,600 Coverage	63, $39,127 Premium, $15,723,600 Coverage	None	None	
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?	None	None	None	None	15, $109,331, Unknown	None	None	
How many structures are exposed to flood risk with in the community?	33	1	0	6	63	0	0	
Describe any areas of flood risk with limited NFIP policy coverage.	None Known	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	No	
Is flood plain management an auxiliary function?	Yes	Yes	No	No	No	Yes	No	
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Yes	Yes	N/A	N/A	Through NFIP Coordinator	No	None	

What are the barriers to running an effective NFIP program in the community, if any?	Not Sure	None	None	Not sure	Cost of Flood Insurance	Cost of insurance	Not sure	
Compliance History								
Is the community in good standing with the NFIP?	Yes	Yes	No, Sanction Date 4/1/78	Yes	Yes	Yes	No, Sanction Date 4/2/10	
Are there any outstanding compliance issues(i.e., current violations)?	No	None Known	Unknown	None Known	None	None Known	Unknown	
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact(CAC)?	November, 2015	Unknown	Unknown	Unknown	1 year	Unknown	Unknown	
Is a CAV or CAC scheduled or needed? If so when?	No	No	No	No	No	No	No	
Regulation								
When did the community enter the NFIP?	3/1/1991	3/17/2010	Not in NFIP	4/2/2009	6/15/1981	4/2/2009	Not in NFIP	
Are the FIRMs digital or paper?	Both	Both	Both	Both	Both	Both	Both	
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	Meets Minimum	Meets Minimum	N/A	Meets Minimum	Meets Minimum	Meets Minimum	N/A	
Community Rating System (CRS)								
Does the community participate in CRS?	No	No	No	No	Yes	No	No	
What is the community's CRS Class Ranking?	N/A	N/A	N/A	N/A	9	N/A	N/A	
Does the plan include CRS planning requirements?	N/A	N/A	N/A	N/A	Yes	N/A	N/A	