



East Baton Rouge

PARISH HAZARD MITIGATION

UPDATE – 2016



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EAST BATON ROUGE PARISH HAZARD MITIGATION PLAN UPDATE

Prepared for:

East Baton Rouge Parish



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East Baton Rouge Parish
 City of Baker
 City of Baton Rouge
 City of Central
 City of Zachary

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1. Introduction

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

In that regard, this plan (a) documents the East Baton Rouge 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 East Baton Rouge 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 East Baton Rouge Parish Hazard Mitigation Plan is a multi-jurisdictional plan that includes the following jurisdictions which participated in the planning process:

- City of Baker
- City of Baton Rouge
- City of Central
- City of Zachary

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 East Baton Rouge 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

East Baton Rouge Parish is located in the southeast region of Louisiana. It is located on the eastern bank of the Mississippi River, making it a major river port and industrial center. The parish is bordered by Iberville and Ascension Parishes to the south, St. Helena and Livingston Parishes to the east, West Baton Rouge and Pointe Coupee Parishes to the west, and East Feliciana Parish to the north. The City of Baton Rouge is the parish seat and Louisiana's state capital. East Baton Rouge Parish consists of an area of approximately 471 square miles, or 301,440 acres.



Figure 1-1: Location of East Baton Rouge Parish within the State of Louisiana

The main transportation arteries through East Baton Rouge Parish are Interstates 10, 12, and 110, and U.S. Highways 61 and 190. Other highways include State Highways 19, 37, 67, 73, 423, and 427. Interstate 10, the fourth longest interstate highway in the U.S., passes through the southwest portion of the Parish. Interstate 12 is an intrastate interstate. It starts in Baton Rouge at Interstate 10 and ends at the intersection of Interstate 10 and Interstate 59. Interstate 110 runs from Interstate 10 near downtown Baton Rouge to U.S. Highway

61 and the Baton Rouge Airport in the northern part of the city. U.S. Highway 61's most southern terminus is New Orleans. The portion of the highway that runs from New Orleans to Baton Rouge is known as Airline Highway. U.S. Highway 190 is an east-west highway that runs through the entire parish with a major junction at Interstate 110. Some of these roadways are significant evacuation routes for East Baton Rouge Parish, as well as surrounding parishes during states of emergency.

The Mississippi River forms the western boundary of East Baton Rouge Parish; however, less than 20% of the parish drains there. The Amite River forms the eastern boundary of the parish and serves as the primary drainage outfall for this region. The Comite River, the primary tributary of the Amite River, drains through the central portion of the parish then flows eastward where it forms its confluence with the Amite River just upstream of U.S. Highway 190. The Amite River drains an area of approximately 2,200 square miles, and the Comite River drains approximately 335 square miles.

East Baton Rouge Parish is located in Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) Region 2.

As noted above, East Baton Rouge Parish is located in the southeastern region of Louisiana.



Figure 1-2: Louisiana Homeland Security Regions

Table 1-1: East Baton Rouge Parish Population
(Source: U.S. Census Bureau)

	2010 Census	2014 Census	Current Year (If Available)	Percent Change 2010 - 2014
Total Population	440,178	446,042	—	1.30%
Population Density (Pop/Sq Mi)	966.6	—	—	—
Total Households	187,353	191,203	—	—

Economy

The City of Baton Rouge, one of the fastest-growing cities in the South, lies along the eastern banks of the Mississippi River. It's the site of the governor's mansion, the state capitol building, the Louisiana Arts & Science Museum, and the River Center, a venue for large events such as concerts, theater performances, tradeshow, and conferences. Also downtown is Shaw Center for the Arts, featuring art exhibits, performances, and rooftop dining with spectacular views.

In addition to the downtown area, the City of Baton Rouge includes many established neighborhoods, such as Mid-City, with its eclectic mix of local shops and restaurants; the Garden District, with its beautiful older homes; and Spanish Town, known for its flamboyant Mardi Gras parades. Outside the city limits, the parish is booming with both residential and commercial development. Subdivisions, planned communities, upscale shopping areas, restaurants, and new movie theaters are springing up throughout the parish.

East Baton Rouge Parish has two very important natural resources – farmland and timber. The floodplain in the eastern half of the parish provides fertile soil for agriculture. About 23% of the Parish's land is cultivated cropland. The number of farm related jobs is difficult to tabulate because farm labor is seasonal and often temporary. The hilly terrain of the western half of the Parish provides optimum growing conditions for pine trees. The largest single employer in East Baton Rouge Parish is Turner Industries Group, followed by LSU System, Performance Contractors, and Our Lady of the Lake Regional Medical Center.

Industry data for business patterns in East Baton Rouge Parish can be found in the table below:

Table 1-2: Business Patterns in East Baton Rouge 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	28,324	1,840	718,085
Manufacturing	10,891	327	768,084
Health Care and Social Assistance	36,511	1,381	1,477,681
Mining, Quarrying, Oil and Gas Extraction	102	29	7,598
Transportation and Warehousing	4,213	237	198,500
Construction	57,865	803	3,448,732
Administration and Support and Waste Management and Remediation Services	14,097	602	522,802
Real Estate and Rental and Leasing	3,367	543	121,864
Wholesale Trade	9,525	686	539,616
Other Services (except Public Administration)	10,762	1,212	322,646
Accommodation and Food Services	23,303	1,030	347,203
Financial and Insurance	12,206	975	805,837
Professional, Scientific, and Technical Services	18,448	1,725	1,219,554
Information	4,591	203	223,596
Educational Services	4,679	186	141,512
Arts, Entertainment, and Recreation	4,978	152	92,761
Management of Companies and Enterprises	4,688	97	504,413
Agriculture, Forestry, Fishing and Hunting	51	13	1,775
Utilities	999	25	71,119

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 East Baton Rouge 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 East Baton Rouge 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 East Baton Rouge 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 East Baton Rouge Hazard Mitigation Plan were as follows:

- Section One Introduction
- Section Two Parish Profile
- Section Three Planning Process
- Section Four Risk Assessment
- Section Five Mitigation Strategy
- Section Six Plan Maintenance
- Section Seven Action Plan
- Tables
- Figures
- Exhibits
- 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 East Baton Rouge 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 East Baton Rouge Parish Hazard Mitigation Plan. The current goals are as follows:

- To mitigate critical infrastructure and governmental/parish facilities to prepare for, protect against, respond to, and recover from natural hazards within East Baton Rouge Parish
- To minimize the NFIP payouts by reducing repetitive flooding in all areas of East Baton Rouge Parish, including all municipalities
- To promote an all-hazards public awareness campaign that focuses on preparing for and mitigating against natural disasters that may affect our community
- To improve the drainage system capacity for all river, creeks, and canals within East Baton Rouge Parish

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

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

Table 1-4: Plan Crosswalk

2011 Plan	Revised Plan (2016)
Section 1: Introduction	Section 1: Introduction
Section 2: Community Profile	Section 1: Introduction
Section 3: Planning Process	Appendix A: Planning Process
Section 4: Risk Assessment	Section 2: Hazard Identification and Risk Assessment, Section 3: Capability Assessment
Section 5: Mitigation Strategy	Section 4: Mitigation Strategy
Section 6: Plan Maintenance	Appendix B: Plan Maintenance
Section 7: Action Plan	Section 4: Mitigation Strategy
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 East Baton Rouge Parish and its municipalities. The extent of this risk is dictated primarily by its geographic location. Most significantly, East Baton Rouge Parish remains at high risk of water inundation from various sources, including flooding, tornadoes, and tropical cyclone activity. All of the parish is also at high risk of damages from high winds and wind-borne debris caused by various meteorological phenomena. Other hazards threaten the parish and/or its municipalities, although not to such great degrees and not in such widespread ways. In all cases, the relative social vulnerability of areas threatened and affected plays a significant role in how governmental agencies and their partners (local, parish, state, and federal) prepare for and respond to disasters.

Mitigation efforts related to particular hazards are highly individualized by jurisdiction. Flexibility in response and planning is essential. The most important step forward to improve hazard management capability is to improve coordination and information sharing between the various levels of government regarding hazards.

2. Hazard Identification and Parish-Wide Risk Assessment

This section assesses the various hazard risks that East Baton Rouge Parish faces in order to identify a strategy for mitigation. Having identified the categories of hazards, emergencies, disasters, and catastrophes, this section details the major climatological and natural/human-influenced hazards by (1) defining them, (2) explaining how they are measured, (3) describing their geographic extent, (4) surveying their previous occurrences, and (5) evaluating their future likelihood of occurrences.

The table below provides an overview of the hazards that had been previously profiled in the East Baton Rouge 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
Land Subsidence	X		*
Drought	X		X
Earthquakes	X		*
Expansive Soils			
Fog			
Flooding	X	X	X
Extreme Heat			
Sinkholes			
Thunderstorms (Hail, Lightning, & Wind)	X	X	X
Tornadoes	X	X	X
Tropical Cyclones	X	X	X
Tsunamis			
Wildfires	X		X
Winter Storms	X		X
Dam Failure	X		+
Levee 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, their occurrence was not merited for further study by the planning committee. The determination was made to focus attention and resources on the most prevalent hazards, which include the hazards previously profiled. The hazards of land subsidence and earthquakes were discounted, and dam and levee failure claim a data deficiency.

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

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

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

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

The potential destructive power of tropical cyclones and flooding were determined to be the most prevalent hazards to the parish. Nineteen of the twenty-one Presidential Declarations East Baton Rouge Parish has received resulted from either tropical cyclones (12 declarations) or flooding (7 declarations), which validates these as the most significant hazards. Therefore, the issues of hurricanes and floods will both serve as the main focus during the mitigation planning process. Hurricanes present risks from the potential for flooding, primarily resulting from storm surge, and high wind speeds. While storm surge is considered the hazard with the most destructive potential, the risk assessment will also assess non-storm surge flooding as well. Flooding can also occur from non-hurricane events, as flash floods are a common occurrence due to heavy rainfall.

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

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

Table 2-2: East Baton Rouge Parish Major Disaster Declarations

Disaster Declaration Number	Date	Type of Disaster
208	9/10/1965	Tropical Cyclone – Hurricane Betsy
315	10/13/1971	Tropical Cyclone – Hurricane Edith
374	4/27/1973	Severe Storms and Flooding
534	5/2/1977	Severe Storms and Flooding
584	5/2/1979	Severe Storms and Flooding
679	4/20/1983	Severe Storms and Flooding
833	6/16/1989	Severe Storms and Tornadoes
835	7/17/1989	Tropical Cyclone - Tropical Storm Allison
956	8/26/1992	Tropical Cyclone – Hurricane Andrew
978	2/2/1993	Severe Storms and Flooding
1380	6/11/2001	Tropical Cyclone - Tropical Storm Allison
1435	9/27/2002	Tropical Cyclone - Tropical Storm Isidore
1437	10/3/2002	Tropical Cyclone – Hurricane Lili
3172	2/1/2003	Loss of Space Shuttle Columbia
1548	9/15/2004	Tropical Cyclone – Hurricane Ivan
1603	8/29/2005	Tropical Cyclone – Hurricane Katrina
1607	9/24/2005	Tropical Cyclone – Hurricane Rita
1786	9/2/2008	Tropical Cyclone – Hurricane Gustav
3322	5/6/2011	Flooding
4015	8/18/2011	Flooding
4080	8/29/2012	Tropical Cyclone – Hurricane Isaac

Probability of Future Hazard Events

The probability of a hazard event occurring in East Baton Rouge Parish is estimated in the table on the following page. The percent chance of an event happening during any given year was calculated by posting past events and dividing by the time period. Unless otherwise indicated, the time period used to access probability followed the method used in the State of Louisiana’s most current Hazard Mitigation Plan. The primary source for historical data used throughout the plan is the Spatial Hazards Events and Losses Database (SHELDUS), which provides historical hazard data from 1960 to 2014. In staying consistent with the state plan, the SHELDUS database was evaluated for the last twenty-five years (1990 – 2015) in order to determine future probability of a hazard occurring. While the 25-year record used by the State was adopted for the purpose of determining the overall probability, in order to assist with determining estimated losses, unless otherwise stated, the full 54-year record was used when Hazus-Multi-Hazard (MH) wasn’t available

to determine losses. This full record was used to provide a more extensive record to determine losses. All assessed damages were adjusted for inflation in order to reflect the equivalent amount of damages with the value of the U.S. dollar today. In addition, the National Climatic Data Center (NCDC) was also used to help identify hazard data specific to the municipalities. This was used due to it containing specific data for cities, whereas the data within SHELUDS 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				
	East Baton Rouge Parish (Unincorporated)	Baker	Baton Rouge	Central	Zachary
Drought	16%	16%	16%	16%	16%
Earthquake	<1%	< 1%	< 1%	<1%	<1%
Flooding	44%	20%	48%	20%	24%
Land Subsidence	<1%	< 1%	< 1%	<1%	<1%
Thunderstorms (Hail)	100%	100%	100%	100%	100%
Thunderstorms (Lightning)	100%	100%	100%	100%	100%
Thunderstorms (Wind)	100%	100%	100%	100%	100%
Tornadoes	56%	56%	56%	56%	56%
Tropical Cyclones	24%	24%	24%	24%	24%
Wildfires	<1%	< 1%	< 1%	<1%	<1%
Winter Storms	32%	32%	32%	32%	32%
Dam Failure	<1%	< 1%	< 1%	<1%	<1%
Levee Failure	<1%	< 1%	< 1%	<1%	<1%

As shown in [Table 2-3](#), thunderstorm winds, hailstorms, and lightning for the entire planning area, have the highest annual chance of occurrence in the parish (100%), followed by tornadoes at 56%, and flooding for the incorporated area of Baton Rouge at 44%. Flood events and remaining incorporated areas and unincorporated area have a slightly lower chance of occurring annually. Winter storms have a 32% annual chance of reoccurrence, followed by tropical cyclones (24%), and drought (16%). Wildfires, earthquakes, land subsidence, dam failure, and levee failure all have less than a 1% annual chance of occurrence. Earthquakes and land subsidence were discounted since they have no impact on the parish, and dam and levee failure claim 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 (GOHSEP) on critical infrastructure from a previous hazard mitigation project.

Within the entire planning area, there is an estimated value of \$80,345,905,000 in structures throughout the parish. The table below provides the total estimated value for each type of structure by occupancy.

Table 2-4: Estimated Total of Potential Losses throughout East Baton Rouge Parish

Occupancy	East Baton Rouge Parish	Unincorporated East Baton Rouge	Baker
Agricultural	\$142,816,000	\$58,910,000	\$1,808,000
Commercial	\$15,747,167,000	\$4,655,414,000	\$274,014,000
Government	\$1,179,537,000	\$99,769,000	\$16,836,000
Industrial	\$2,707,651,000	\$1,195,734,000	\$62,558,000
Religion	\$1,763,292,000	\$388,722,000	\$59,458,000
Residential	\$57,789,290,000	\$22,709,827,000	\$1,355,155,000
Education	\$1,016,152,000	\$122,067,000	\$12,405,000
Total	\$80,345,905,000	\$29,230,443,000	\$1,782,234,000

Table 2-5: Estimated Total of Potential Losses throughout East Baton Rouge Parish (Continued)

Occupancy	Baton Rouge	Central	Zachary
Agricultural	\$67,684,000	\$8,024,000	\$6,390,000
Commercial	\$9,976,169,000	\$399,312,000	\$442,258,000
Government	\$1,028,515,000	\$5,215,000	\$29,202,000
Industrial	\$1,308,176,000	\$95,920,000	\$45,263,000
Religion	\$1,191,892,000	\$71,364,000	\$51,856,000
Residential	\$28,220,169,000	\$3,710,012,000	\$1,794,127,000
Education	\$854,128,000	\$10,444,000	\$17,108,000
Total	\$42,646,733,000	\$4,300,291,000	\$2,386,204,000

Essential Facilities of the Parish

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

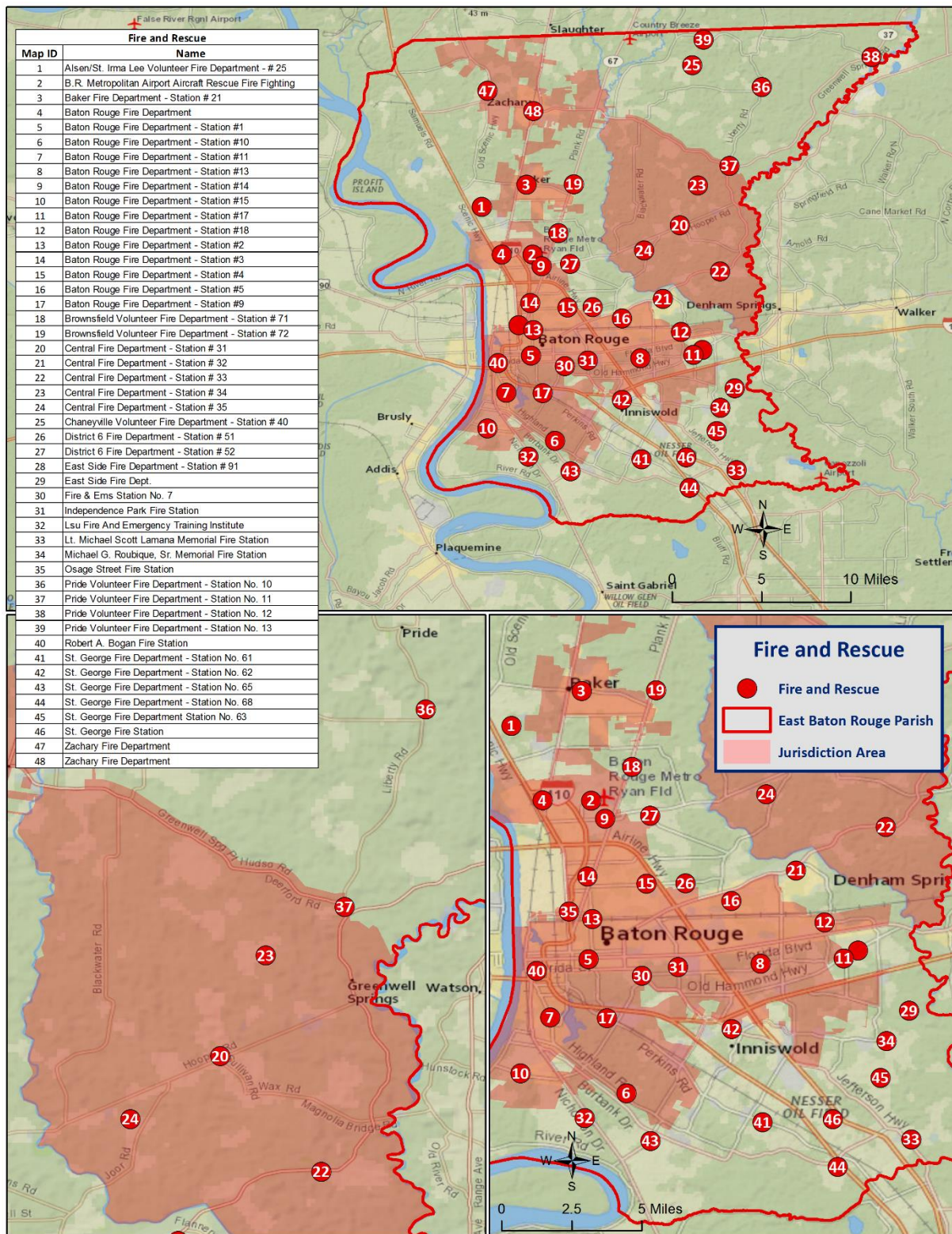


Figure 2-1: Fire Stations in East Baton Rouge Parish

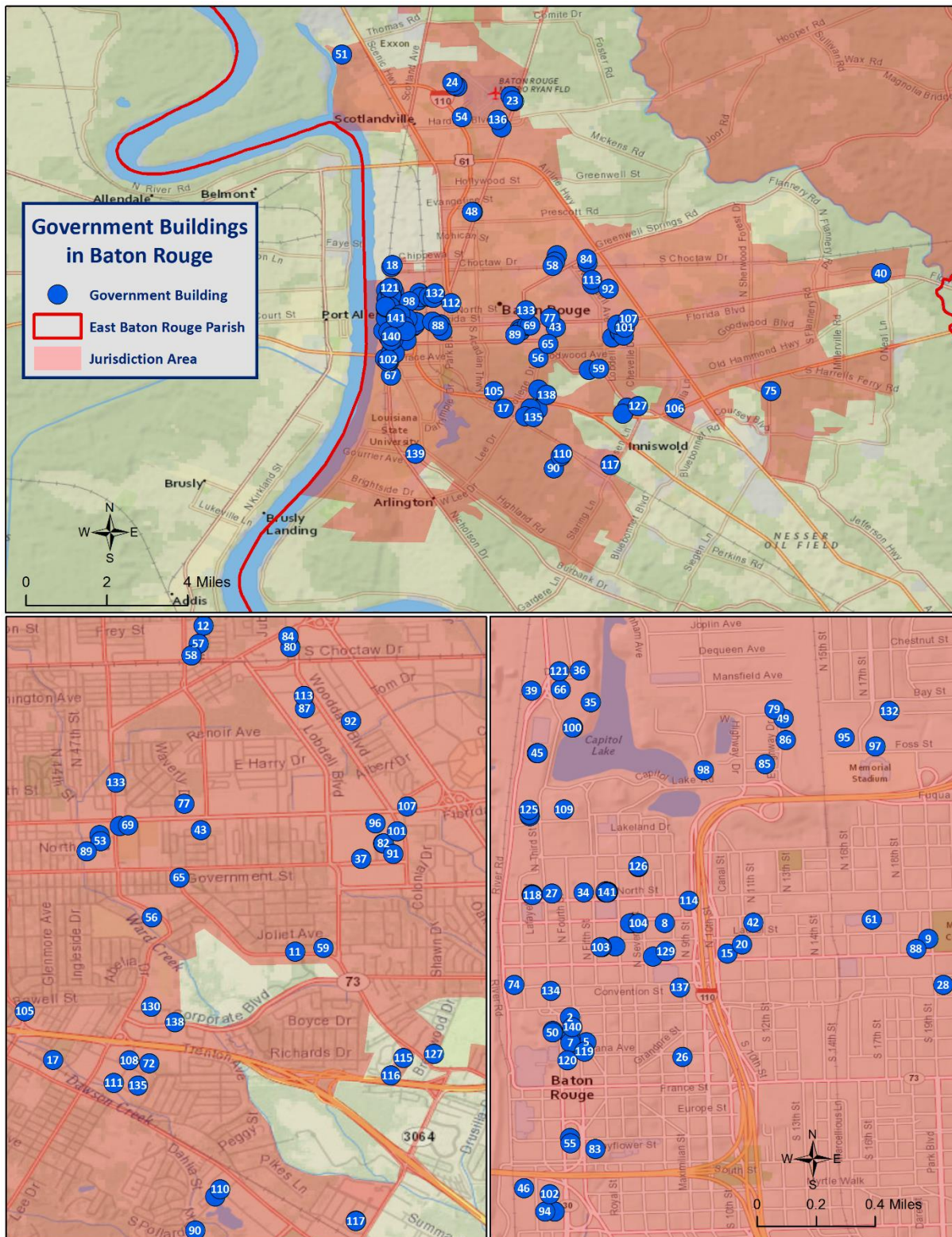


Figure 2-2: Government Buildings in the Incorporated Area of Baton Rouge

Table 2-6: Map Table for Government Buildings Located in Baton Rouge

Map ID	Name
1	19th Judicial District Clerk Of Court
2	19th Judicial District Courthouse
3	American Legion
4	American Legion Auxiliary
5	Baton Rouge City-Parish Employees' Retirement System
6	Baton Rouge City Constable
7	Baton Rouge City Court
8	Better Business Bureau
9	Capital Regional Planning Commission
10	Chamber Of Commerce
11	Chamber Of Commerce Of East Baton Rouge
12	Choctaw Administrative Center East Baton Rouge School Board
13	City-Parish Department Of Public Works - Building Maintenance For Parish Prison
14	City-Parish Department Of Public Works - Environmental Division
15	City-Parish Department Of Public Works - Permit And Inspection Division
16	City-Parish Department Of Public Works - Service Station
17	City-Parish Department Of Public Works - South Lot
18	City-Parish Department Of Public Works - Waste Management Division
19	City-Parish Mosquito Abatement And Rodent Control
20	City-Parish Planning Commission
21	Civil Air Center
22	Civil Air Patrol - Capitol City Composite Squadron
23	Civil Air Patrol - Louisiana Wing
24	Companion Animal Alliance
25	Compost Learning Center
26	Court Appointed Special Advocates For Children
27	Department Of Children And Family Services
28	Department Of Children And Family Services - Office Of Family Support
29	Department Of Culture Recreation & Tourism
30	Department Of Economic Development
31	Department Of Education
32	Department Of Environmental Quality
33	Department Of Health & Hospitals
34	Department Of Health And Hospitals
35	Department Of Insurance
36	Department Of Justice
37	Department Of Motor Vehicles
38	Department Of Natural Resources
39	Department Of Public Safety Capitol Detail
40	Department Of Public Works East Maintenance Lot

Map ID	Name
41	Department Of Revenue
42	Department Of Social Services - Office Of Family Support
43	Department Of Social Services Office Of Community Services
44	Disabled American Veterans
45	Division Of Administration
46	Division Of Administration - Office Of State Printing And Forms Management
47	Division Of Administrative Law
48	Division Of Human Development And Services
49	DOTD Weight Enforcement And Truck Permit Office
50	East Baton Rouge Parish City Hall
51	East Baton Rouge Parish Devils Swamp Landfill
52	East Baton Rouge Parish Housing Authority
53	East Baton Rouge Parish Housing Authority
54	East Baton Rouge Parish Juvenile Court
55	East Baton Rouge Parish Recycling Office
56	East Baton Rouge Parish School Board Office
57	EBRP School System - Transportation Offices
58	EBRP School System - Warehouse Services
59	Erich Ponti Representative
60	Federal Building & United States Courthouse
61	Federal Emergency Management Agency
62	Federal Highway Administration
63	Federal Motor Carrier Safety Administration
64	First Circuit Court Of Appeal
65	Garrett Graves U.S. Congress
66	Information Services
67	LA District Attorney's Association
68	LADOTD Environmental Section
69	LADOTD Materials And Testing Lab
70	Legiscon Legislative Services
71	Lieutenant Governor's Office
72	Louisiana Addictive Disorder Regulatory Authority
73	Louisiana Board Of Ethics
74	Louisiana Career Development Services For The Blind & Deaf-Blind
75	Louisiana Clerk Of Court Association
76	Louisiana Commission On Law Enforcement
77	Louisiana Department Of Agriculture & Forestry
78	Louisiana Department Of Corrections - Prison Enterprises
79	Louisiana Department Of Environmental Quality Laboratory
80	Louisiana Department Of Health And Hospitals - Lachip
81	Louisiana Department Of Public Safety - Office Of Management And Finance
82	Louisiana Department Of Public Safety - Office Of Motor Vehicles

Map ID	Name
83	Louisiana Department Of Public Safety & Corrections - Corrections Services
84	Louisiana Department Of Public Safety And Corrections - Probation And Parole Baton Rouge District
85	Louisiana Department Of Transportation & Development
86	Louisiana Department Of Transportation & Development
87	Louisiana Department Of Veterans Affairs
88	Louisiana Department Of Veterans Affairs - Parish Service Office
89	Louisiana Department Of Veterans Affairs Parish Service Office
90	Louisiana Department Of Wildlife & Fisheries
91	Louisiana Dept. Of Public Safety Data Processing Center
92	Louisiana Dept. Of Transportation & Development District 61 Office
93	Louisiana Developmental Disabilities Council
94	Louisiana Division Of Administration - Office Of State Mail Operations
95	Louisiana DOTD Equipment Section
96	Louisiana DPS Procurement And Material Management
97	Louisiana Federal Property Assistance Agency
98	Louisiana Governor's Mansion
99	Louisiana Housing Corporation
100	Louisiana Legislative Auditor
101	Louisiana Office Of State Fire Marshal
102	Louisiana Property Assistance Agency
103	Louisiana Public Defender Board
104	Louisiana Public Defender Board
105	Louisiana Public Facilities Authority
106	Louisiana Real Estate Appraisers Board
107	Louisiana Rehabilitation Services
108	Louisiana State Board Of Home Inspectors
109	Louisiana State Capitol
110	Louisiana State Licensing Board For Contractors
111	Louisiana Used Motor Vehicle Commission
112	Louisiana Workforce Commission
113	Louisiana Workforce Commission Business And Career Solutions Center
114	Metro City Redevelopment Coalition
115	Municipal Employees' Retirement System
116	Municipal Police Employees' Retirement System
117	National Oceanic And Atmospheric Administration
118	Office Of Community Development Disaster Recovery Unit
119	Office Of District Attorney Hillar C. Moore
120	Office Of Public Defender
121	Office Of State Buildings
122	Office Of State Inspector General

Map ID	Name
123	Office Of Student Financial Assistance
124	Office Of The Governor
125	Office Of The Secretary
126	Police Jury Association Of Louisiana
127	Public Safety Retirement Systems
128	Public Service Commission
129	Russell B. Long Federal Building & U. S. Courthouse
130	Social Security Administration
131	Social Security Administration
132	State Of La Property Control
133	State Of Louisiana Office Of Juvenile Justice
134	State Office Building
135	Steve Carter State Representative
136	United States Federal Aviation Administration
137	United States Senator David Vitter
138	US Dept. Of Justice - Bureau Of Alcohol, Tobacco, Firearms, And Explosives - Baton Rouge Field Office
139	USDA Agricultural Service Center
140	Vacant
141	Veterans Affairs

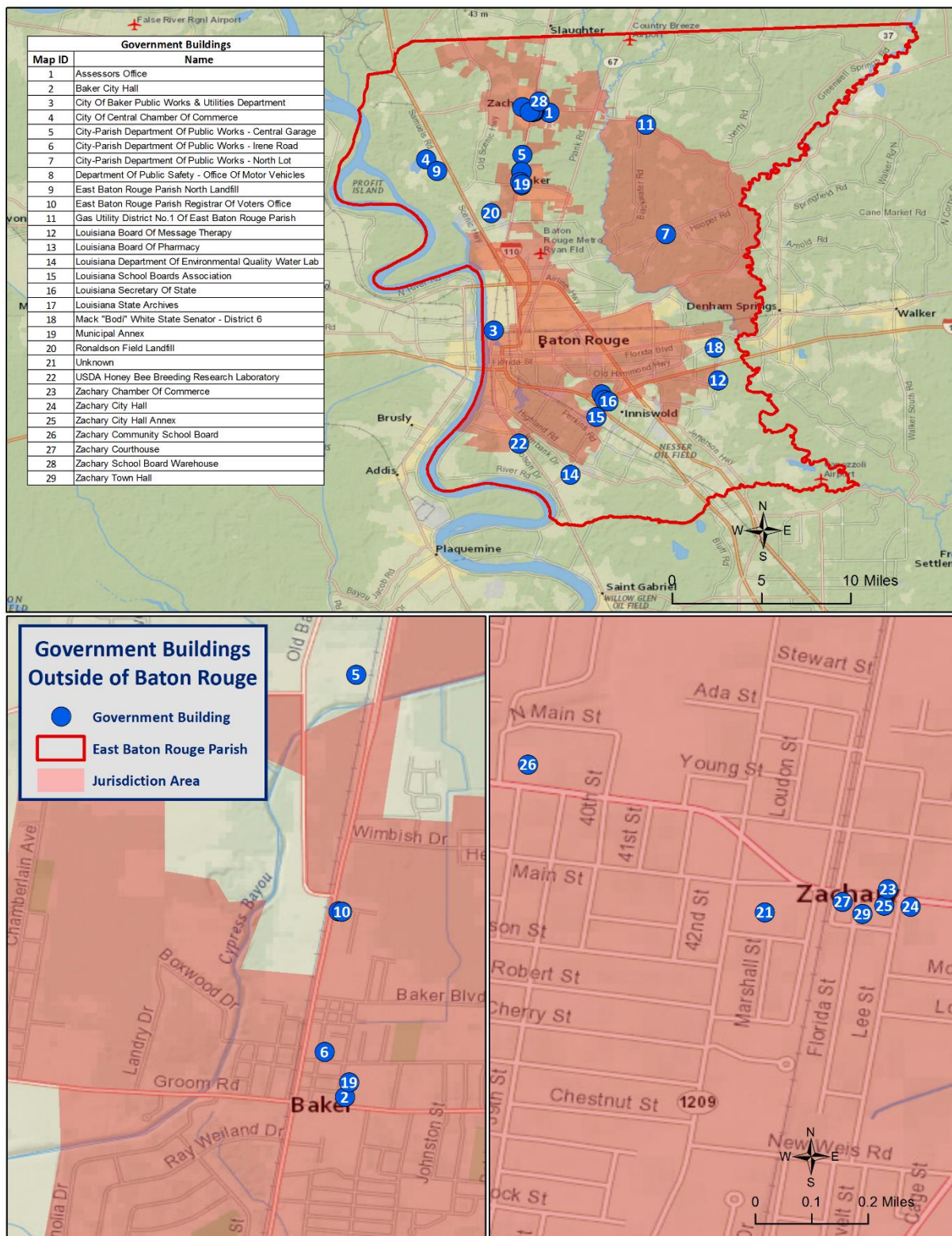
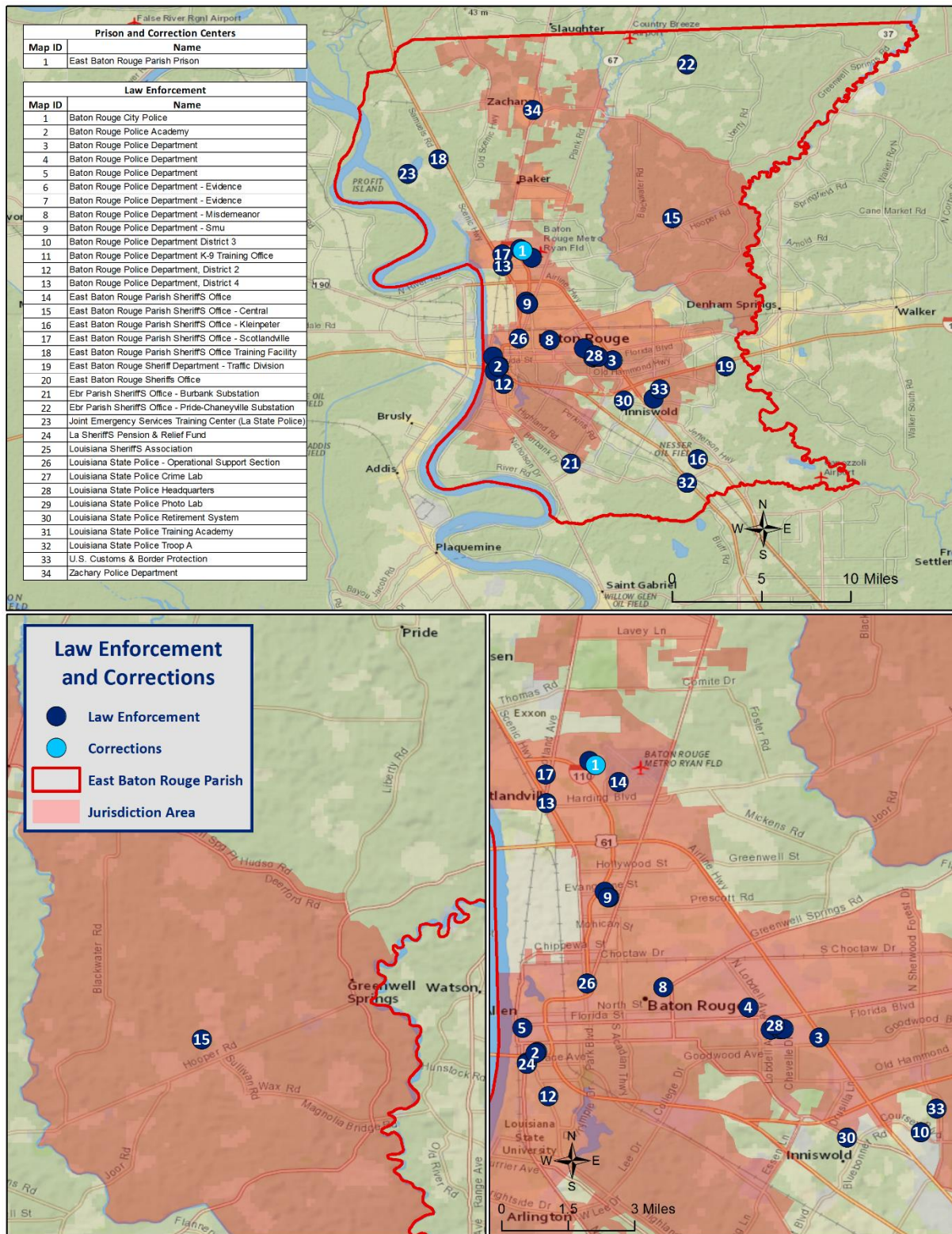


Figure 2-3: Government Buildings Outside of the Incorporated Area of Baton Rouge



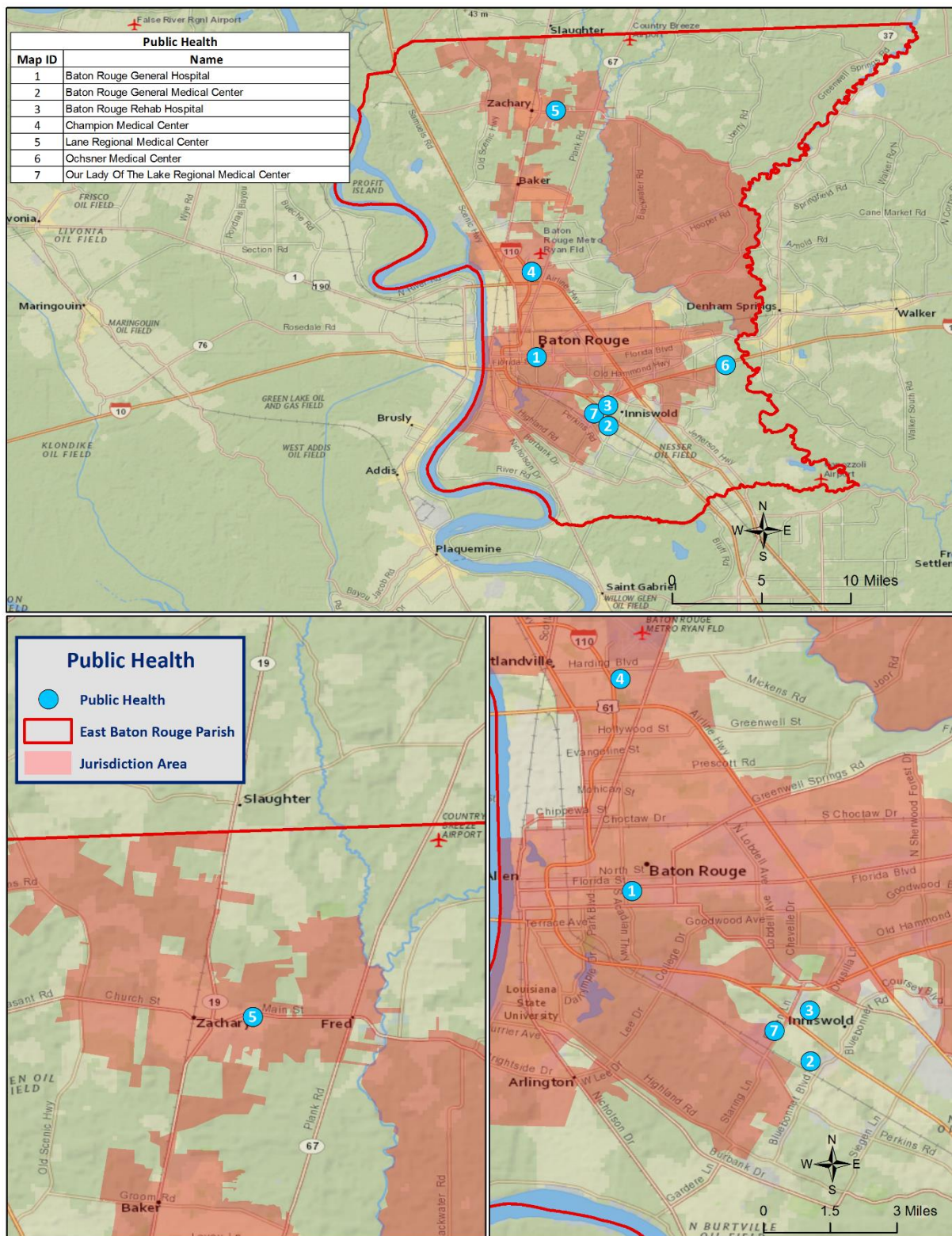


Figure 2-5: Public Health Facilities in East Baton Rouge Parish

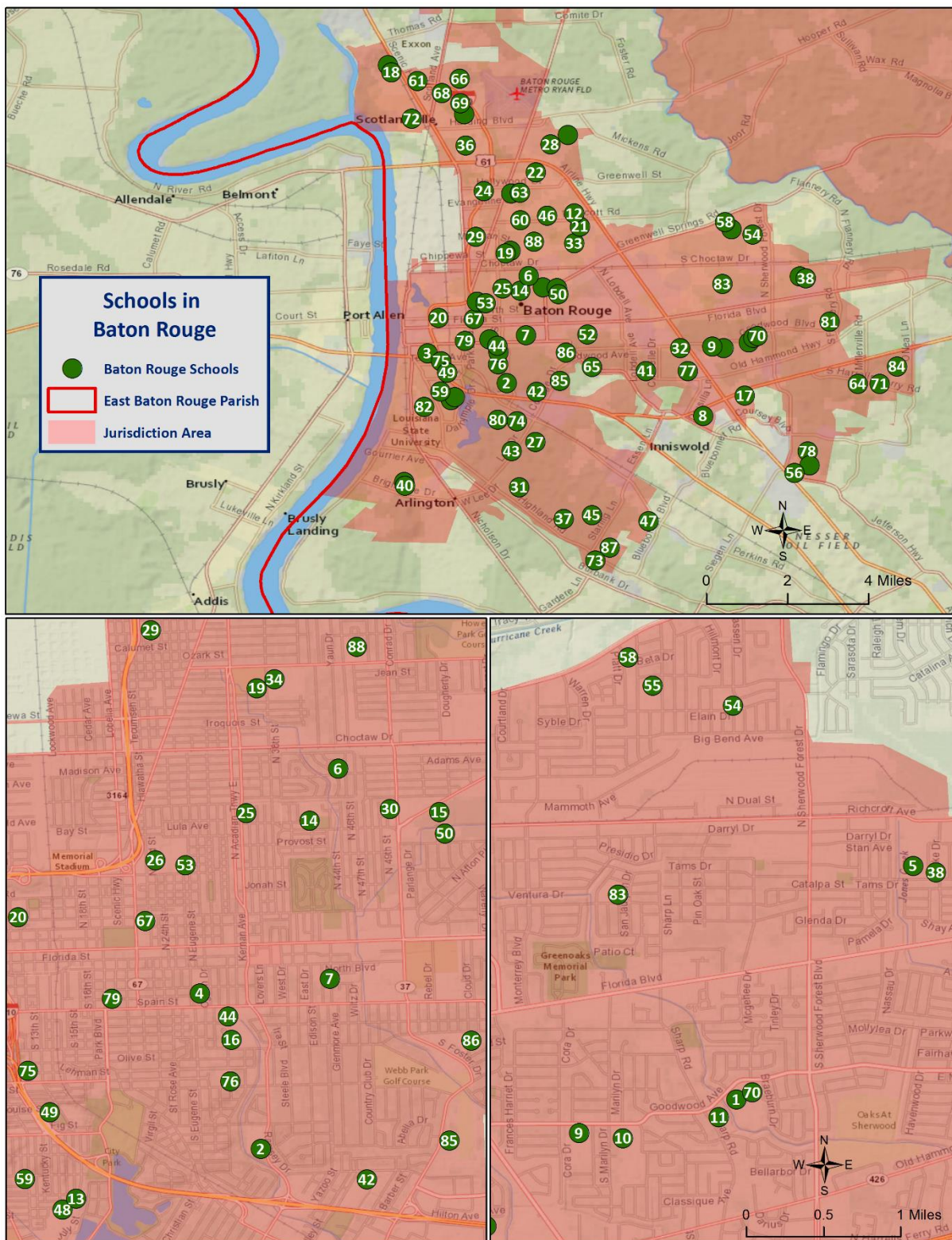


Figure 2-6: School Buildings Inside of the Incorporated Area of Baton Rouge

Table 2-7: Map Table for School Buildings Located in Baton Rouge

Map ID	Name
1	Audubon Elementary School
2	Baton Rouge Center For Visual & Performing Arts
3	Baton Rouge Foreign Language Academic Immersion Magnet
4	Baton Rouge Magnet High School
5	Belaire High School
6	Belfair Montessori Magnet Elementary School
7	Bernard Terrace Elementary School
8	Brighton School
9	Broadmoor Elementary School
10	Broadmoor High School
11	Broadmoor Middle
12	Brookstown Elementary
13	Buchanan Elementary School
14	Capitol Elementary School
15	Capitol Middle School
16	Catholic High School
17	Cedarcrest-Southmoor Elementary School
18	Celerity Crestworth Charter School
19	Celerity Dalton Charter School
20	Children's Charter School
21	Children's Charter School (Middle)
22	Claiborne Elementary School
23	Crestworth Elementary School
24	Delmont Elementary
25	Eden Park Elementary
26	Friendship Capitol High School
27	Glasgow Middle School
28	Glen Oaks Middle School
29	Greenville Alternative At Wyandotte
30	Greenville Superintendent's Academy
31	Highland Elementary School
32	Hoasanna First Assembly Of God
33	Howell Park Elementary School
34	Istrouma High School
35	J. K. Haynes Elementary Charter School
36	J.K. Haynes Middle Charter School
37	Kenilworth Science And Technology School
38	La Belle Aire Elementary School
39	La School For The Deaf
40	La School For The Visually Impared
41	Lasalle Elementary
42	Lee High School
43	Lee High School
44	Louisiana Key Academy
45	Magnolia Woods Elementary School
46	Martin Luther King Christian Academy

Map ID	Name
47	Mayfair Laboratory School
48	McKinley High School
49	McKinley Middle Magnet School
50	Melrose Elementary School
51	North Banks Middle School Of Excellence
52	Our Lady Of Mercy Catholic School
53	Park Elementary School
54	Park Forest Elementary School
55	Park Forest Middle School
56	Parkview Baptist School
57	Parkview Elementary
58	Paul's Christian Academy
59	Polk Elementary School
60	Prescott Middle School
61	Progress Elementary School
62	Redemptorist Elementary School
63	Redemptorist High School
64	Riverdale Christian Academy
65	Runnels
66	Ryan Elementary
67	Sacred Heart Of Jesus Catholic School
68	Scotlandville Magnet High Center Of Excellence
69	Scotlandville Middle Pre-Engineering Magnet School
70	Sherwood Middle Academic Magnet School
71	Southeast Middle School
72	Southern University Laboratory School
73	St Jude Apostle School
74	St. Aloysius Catholic School
75	St. Francis Xavier Catholic School
76	St. Joseph's Academy
77	Tara High School
78	The Brighton School
79	The Dufrocq School
80	Trinity Episcopal Day School
81	Twin Oaks Elementary School
82	University Terrace Elementary School
83	Villa Del Rey Elementary School
84	Wedgewood Elementary School
85	Westdale Heights Academic Magnet
86	Westdale Middle School
87	Wildwood Elementary School
88	Winbourne Elementary School

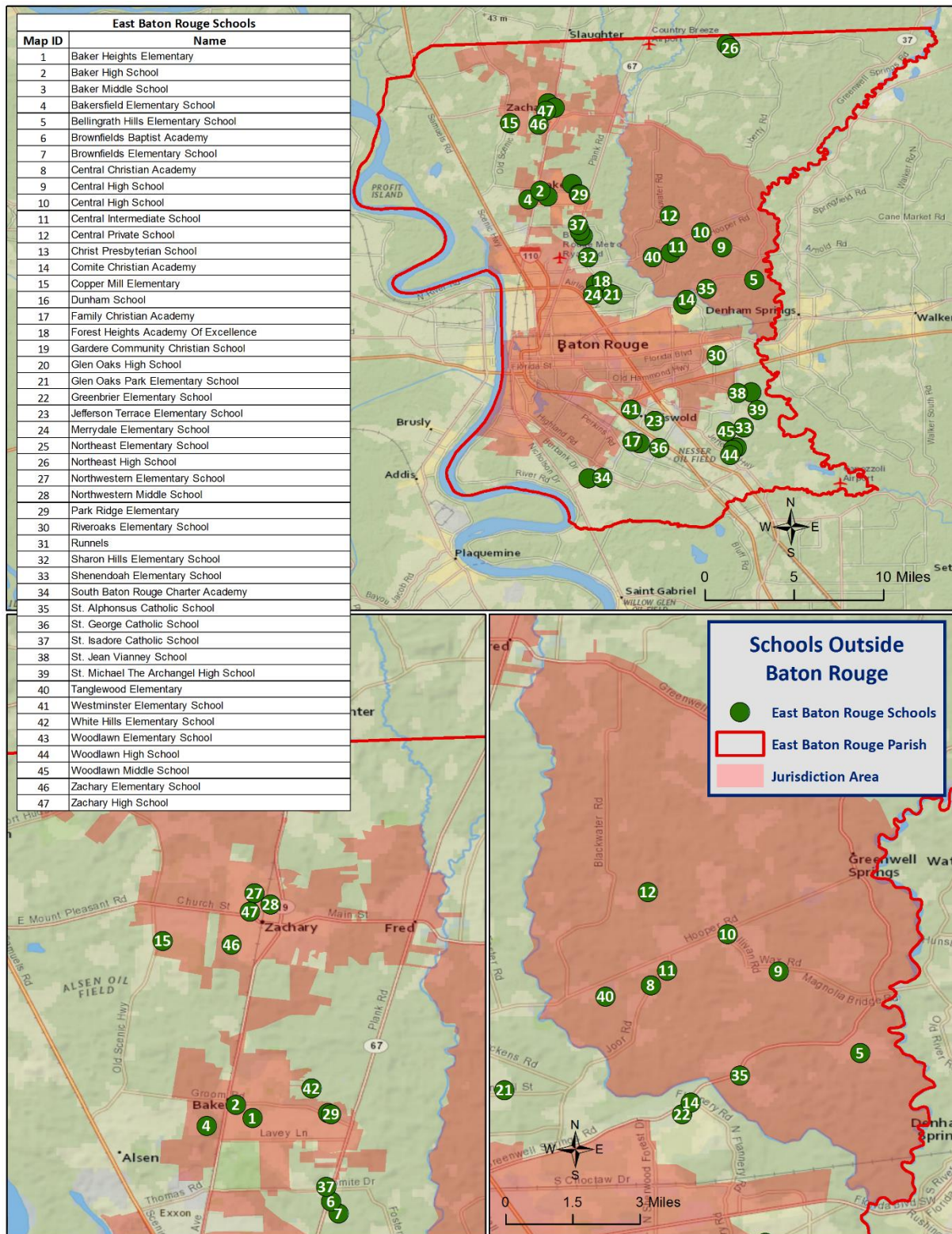


Figure 2-7: School Buildings Outside of the Incorporated Area of Baton Rouge

Future Development Trends

East Baton Rouge Parish a growth in population and housing between the years of 2000 and 2014, growing from a population of 412,958 with 169,073 housing units in 2000 to a population of 443,598 with 189,353 housing units in 2014. This growth was largely in the unincorporated areas of East Baton Rouge Parish, and in the incorporated area of Zachary from the years 2000 to 2010, and in the incorporated areas of Zachary and Baton Rouge from 2010 to 2014. The future population and number of buildings can be estimated using U.S. Census Bureau housing and population data. The following tables show population and housing unit estimates from 2000 to 2014:

Table 2-8: Population Growth Rate for East Baton Rouge Parish

Total Population	East Baton Rouge	East Baton Rouge (Unincorporated)	Baker	Baton Rouge	Central	Zachary
1-Apr-00	412,958	135,310	13,501	226,370	No Data*	11,171
1-Apr-10	440,909	155,224	13,919	229,871	26,910	14,985
1-Jul-14	443,598	157,323	13,838	229,353	27,505	15,579
Population Growth between 2000 – 2010	6.8%	14.7%	3.1%	1.5%	1.1%	34.1%
Average Annual Growth Rate between 2000 – 2010	0.7%	1.5%	0.3%	0.2%	0.1%	3.4%
Population Growth between 2010 – 2014	0.6%	1.4%	-0.6%	-0.2%	2.2%	4.0%
Average Annual Growth Rate between 2010 – 2014	0.15%	0.34%	-0.15%	-0.06%	0.55%	0.99%

* Citizens of Central did not vote to incorporate until April 23, 2005.

Table 2-9: Housing Growth Rate for East Baton Rouge Parish

Total Housing Units	East Baton Rouge	East Baton Rouge (Unincorporated)	Baker	Baton Rouge	Central	Zachary
1-Apr-00	169,073	62,220	5,389	97,388	No Data*	4,076
1-Apr-10	187,353	65,257	5,314	100,801	10,574	5,407
1-Jul-14	189,353	66,752	5,312	101,274	10,611	5,404
Housing Growth between 2000 – 2010	10.8%	4.9%	-1.4%	3.5%	No Data*	32.7%
Average Annual Growth Rate between 2000 – 2010	1.1%	0.5%	-0.1%	0.4%	No Data*	3.3%
Housing Growth between 2010 – 2014	1.1%	2.3%	0.0%	0.5%	0.3%	-0.1%
Average Annual Growth Rate between 2010 – 2014	0.3%	0.6%	0.0%	0.1%	0.1%	0.0%

* Citizens of Central did not vote to incorporate until April 23, 2005

As shown in the previous tables, East Baton Rouge Parish has experienced a growth in both population and housing units. Housing growth rates grew at 1.1% annually from 2000 to 2010, and at 0.3% annually from 2010 to 2014. Population growth rates for the parish were slightly lower at 0.7% annually from 2000 to 2010, and 0.15% annually from 2010 to 2014. From 2000 to 2010, the incorporated area of Zachary had the largest increase in population at an overall rate of 34.1%, followed by the unincorporated areas of East Baton Rouge Parish at 14.7%. From 2010 to 2014, the Zachary experienced the largest growth in population at 4%, followed by the incorporated area of Baton Rouge at 2.2%.

The incorporated area of Zachary experienced the largest increase in housing units from 2000 to 2010 at 32.7%, followed by the unincorporated area of East Baton Rouge Parish at 4.9%. From 2010 to 2014, the unincorporated area of East Baton Rouge Parish had the largest increase in housing units at 2.3%, followed by the incorporated area of Baton Rouge at 0.5%.

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 within East Baton Rouge Parish from the present until 2024. A summary of estimated future impacts is shown in the table on the next page. 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 2-10: 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	189,858	45,085	45,689	46,179
Value of Structures	\$81,382,044,209	\$19,325,348,946	\$20,604,001,965	\$21,687,573,959
# of People	444,274	105,499	106,306	106,956
Tropical Cyclones				
Structures	189,858	189,858	192,405	194,467
Value of Structures	\$81,382,044,209	\$81,382,044,209	\$86,766,650,553	\$91,329,740,419
# of People	444,274	444,274	447,672	450,408

Land Use

The East Baton Rouge Parish Land Use table is provided below. Residential, commercial, and industrial areas account for 36% of the parish's land use. Agricultural land is the second largest category at 78,037 acres, accounting for 26% of parish land. At 77,809 acres, wetlands account for 26% of parish lands, while 27,489 acres of forested areas account for 9% of parish lands. The parish also consists of 10,876 acres of water areas, accounting for 4% of all parish lands.

Table 2-11: East Baton Rouge Parish Land Use

(Source: USGS Land Use Map)

Land Use	Acres	Percentage
Agricultural Land, Cropland, and Pasture	78,037	26%
Wetlands	77,809	26%
Forest Land (not including forested wetlands)	27,480	9%
Urban/Development	107,307	36%
Water	10,876	4%

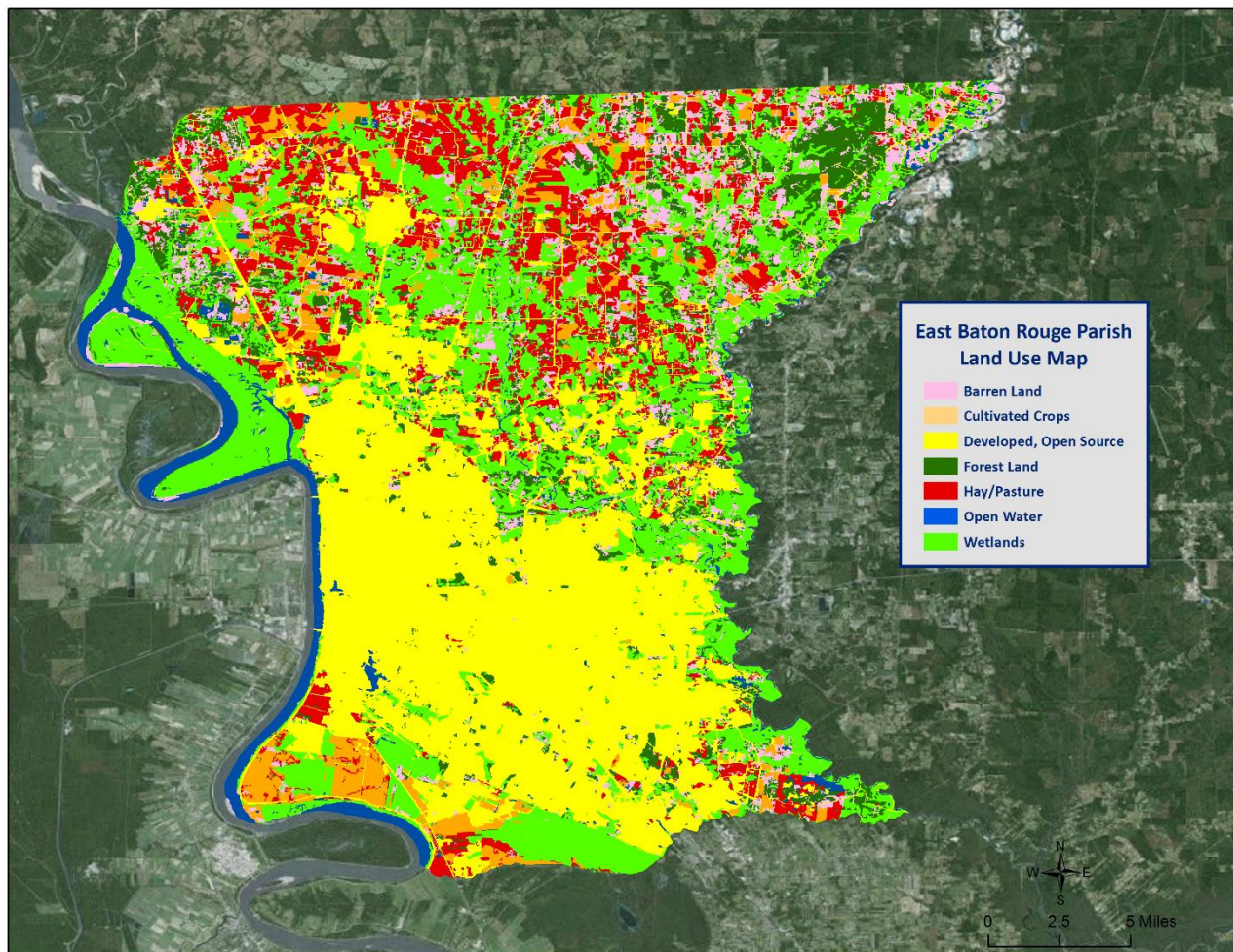


Figure 2-8: East Baton Rouge Parish Land Use Map
(Source: USGS Land Use Map)

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 2-12](#) displays the range and Palmer classifications of the PDSI index.

[Figure 2-9](#) displays the current drought monitor for the State of Louisiana and its parishes.

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

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

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

Figure 2-9).

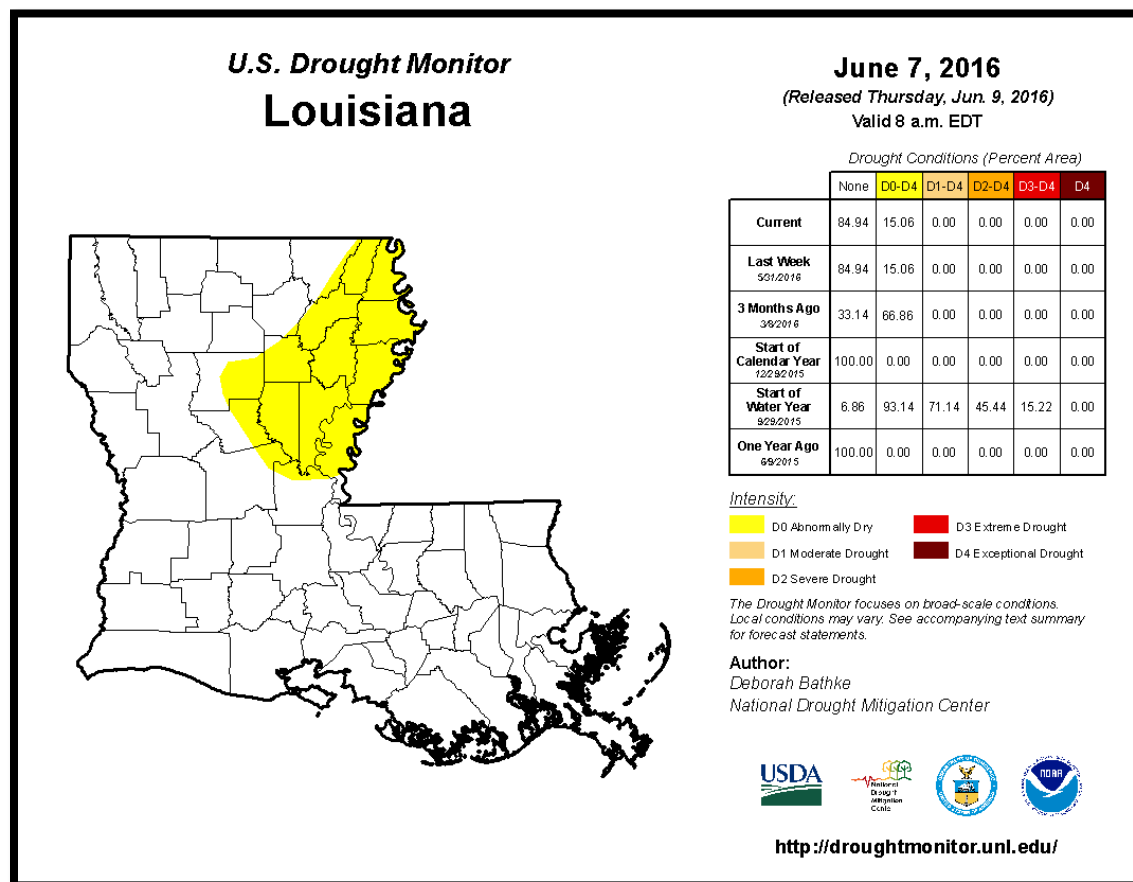


Figure 2-9: United States Drought Monitor for the State of Louisiana and its Parishes
(Source: The National Drought Mitigation Center)

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 East Baton Rouge Parish is on the agricultural community.

Previous Occurrences / Extents

The SHELUDS database reports a total of four drought events occurring within the boundaries of East Baton Rouge Parish between the years of 1990 to 2015. On the next page, [Table 2-13](#) identifies the date of occurrence, estimated crop damage, and severity of the events that have occurred in East Baton Rouge Parish. Based on previous occurrences, and in accordance with the Palmer Drought Index, the worst case scenario for drought in East Baton Rouge Parish would be a severe drought event.

*Table 2-13: Drought Events with Crop Damage Totals for East Baton Rouge Parish
(Source: SHEL DUS)*

Date	Crop Damage	Palmer Classification
March 1993	\$227,828	Moderate Drought
February 1996	\$1,371,667	Moderate Drought
August 1998	\$5,116,296	Severe Drought
December 2000	\$6,171,206	Severe Drought

Frequency / Probability

Based on previous occurrences of three drought events in 25 years, the probability of drought occurrence in the planning area in any given year is 16%.

Estimated Potential Losses

According to the SHEL DUS database, there have been four drought events that have caused some level of crop damage. The total agricultural damage from these events is \$12,886,997, with an average cost of \$3,221,749 per drought event. When annualizing the total cost over the 25-year record, total annual losses based on drought is estimated to be \$515,480. *Table 2-14* presents an analysis of agricultural exposure that is susceptible to drought by major crop type for East Baton Rouge Parish.

*Table 2-14: Agricultural Exposure by Crop Type for Droughts in East Baton Rouge Parish
(Source: LSU Ag Center 2014 Parish Totals)*

Agricultural Exposure by Type for Drought						
Forestry	Soybeans	Blueberries	Pecans	Tomatoes	Mustard	Total
\$2,107,597	\$434,700	\$99,000	\$74,844	\$22,500	\$83,700	\$2,822,341

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

Earthquakes

An earthquake is a sudden motion or trembling of the Earth caused by an abrupt release of stored energy in the rocks beneath the Earth's surface. The energy released results in vibrations which are known as seismic waves. Ground motion from seismic waves is expressed as peak ground acceleration (PGA), the fastest measured change in speed for a particle at ground level that is moving because of an earthquake. PGA is commonly measured as a percentage of acceleration due to Earth's gravity (%g). This measurement is relied upon to determine seismic load engineering design and construction requirements. Earthquakes are typically described in terms of magnitude and intensity. Magnitude is the measure of the amplitude of the seismic wave and is often expressed by the Richter scale, and intensity is a measure of how strong the shock was felt at a particular location, indexed by the Modified Mercalli Intensity (MMI) scale. The Richter scale is a logarithmic measurement whereby an increase in the scale by one whole number represents a tenfold increase in measured ground motion of the earthquake (and an increase in energy released of more than 30 times). An increase by two whole numbers represents a 102 (or 100-fold) increase in ground motion, and thus more than 302 (or 900) times the energy released. [Table 2-15](#) 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 2-15: 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.
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. East Baton Rouge Parish has two fault lines with one running almost parallel with US Interstate 10 in the southern portion of the parish and the second intruding from West Baton Rouge Parish into portions of Baton Rouge (*Figure 2-10*). Effects of an earthquake may be felt throughout the parish.

Previous Occurrences / Extents

Both the SHELDES and National Climatic Data Center report no earthquake events occurring within the boundaries of East Baton Rouge Parish between the years of 1990 to 2015. The National Oceanic and Atmospheric Administration's National Geophysical Data Center reports two earthquake events occurring within the boundaries of East Baton Rouge Parish between the years 1811 – 2014. *Table 2-16* summarizes the earthquake events that occurred within East Baton Rouge Parish. *Figure 2-10* displays the location and intensity of each earthquake event in East Baton Rouge Parish and surrounding parishes. Based on the previous earthquake event presented in the following table, an earthquake with an intensity level of MMI 2 could occur within the planning area. This intensity of an earthquake would only be felt by a very few people.

Table 2-16: Summary of Earthquakes in East Baton Rouge Parish

Date	Location	Intensity (MMI)
November 19, 1958	Baker	2
February 13, 1980	Baton Rouge	2

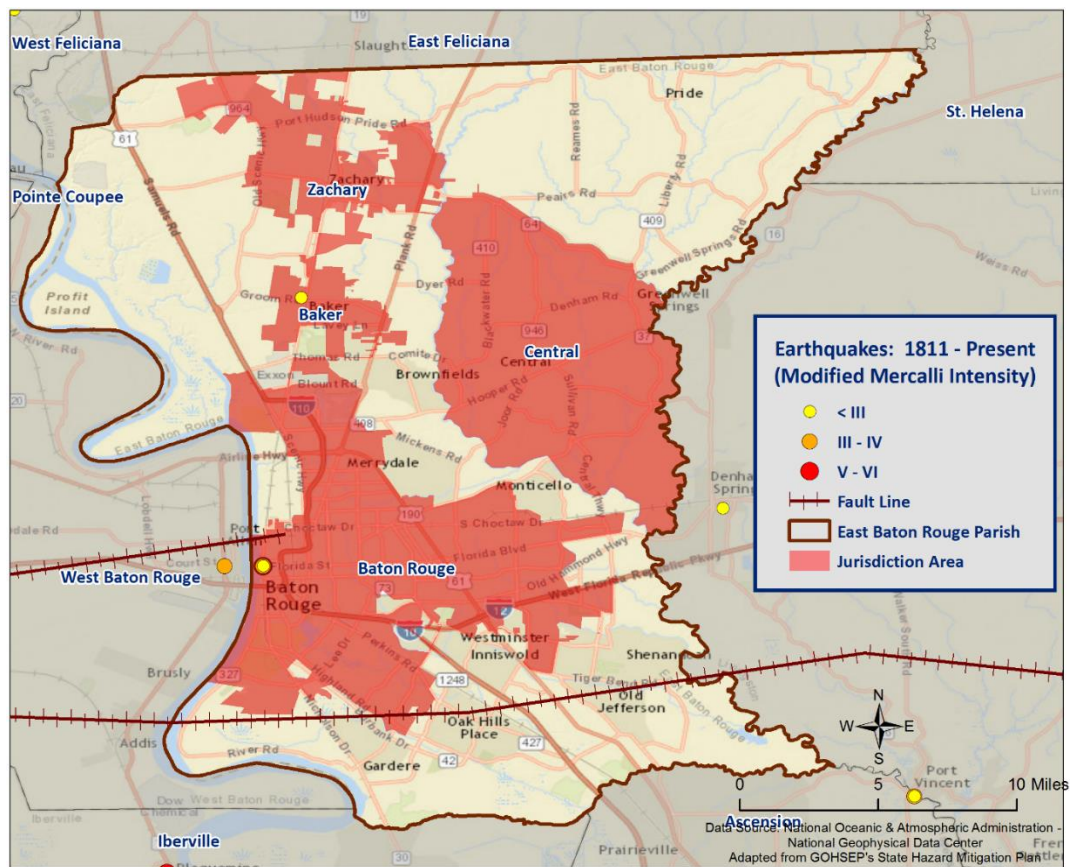


Figure 2-10: Location and Intensity (MMI) of Earthquakes in East Baton Rouge Parish

Frequency / Probability

Earthquakes are an extremely rare occurrence in the State of Louisiana and East Baton Rouge Parish, with two occurrences of an earthquake event within the boundaries of the parish from the years 1811 – 2014. Based on this historical record and Louisiana's State Hazard Mitigation Plan, it is determined that an earthquake event has less than a 1% annual chance of occurrence and the hazard does not impact the planning area. Therefore, earthquakes are discounted, and are not carried forward into risk assessment.

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 2-11](#).

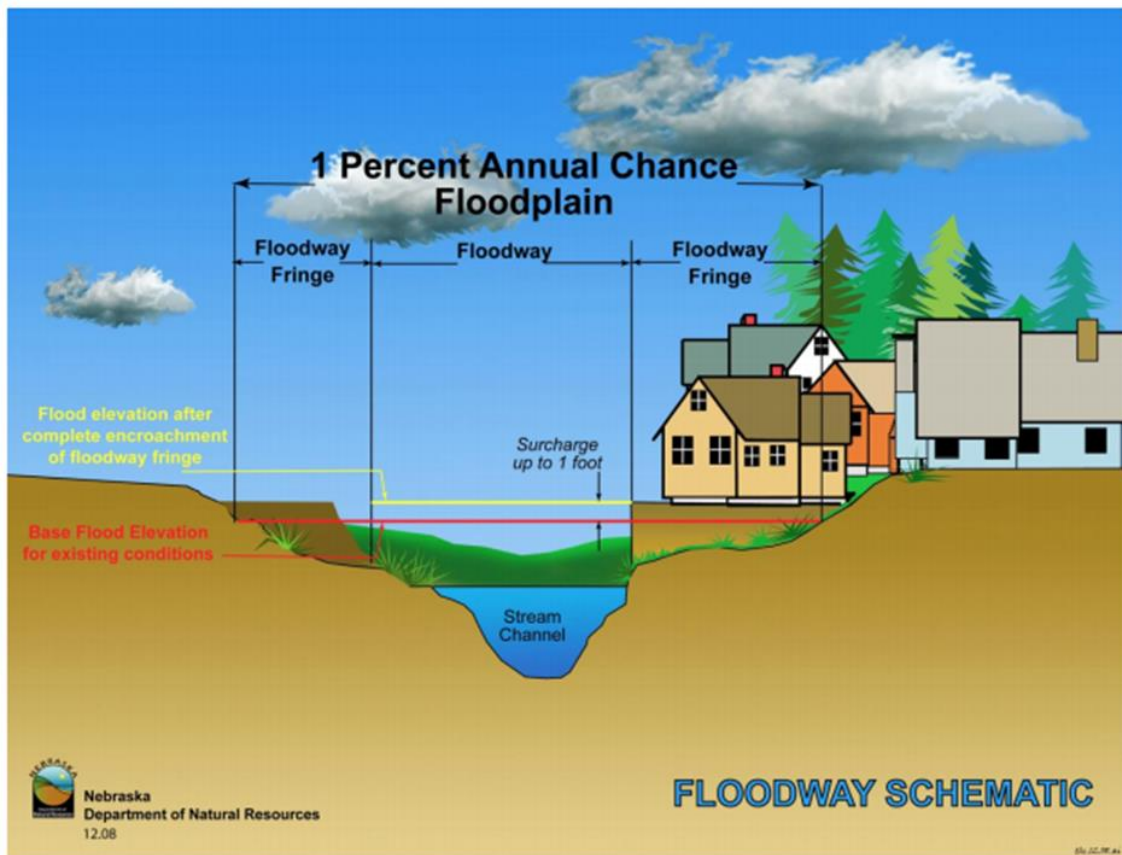


Figure 2-11: Schematic of 100-Year Floodplain. The Special Flood Hazard Area (SFHA) extends to the end of the floodway fringe.

(Source: Nebraska Department of Natural Resources)

A SFHA is the land area covered by the floodwaters of the base flood (red line in [Figure 2-11](#)), 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 East Baton Rouge Parish are provided in the table below:

Table 2-17: Repetitive Loss Structures for East Baton Rouge Parish

Jurisdiction	Number of Structures	Residential	Commercial	Government	Total Claims	Total Claims Paid	Average Claim Paid
East Baton Rouge Parish*	763	729	34	0	2,696	\$50,482,316	\$18,725
Baker	18	18	0	0	49	\$610,926	\$12,468
Central	123	122	1	0	586	\$12,163,880	\$20,757
Zachary	20	19	1	0	61	\$915,450	\$15,007
Total	924	888	36	0	3,392	\$64,172,572	\$18,919

* East Baton Rouge Unincorporated and Baton Rouge repetitive loss data is included in the East Baton Rouge Parish category

All 924 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 2-12* shows the approximate location of the 924 structures, while *Figure 2-13* shows where the highest concentration of repetitive loss structures are located. Through the repetitive loss map, it is clear that the primary concentrated area of repetitive loss structures is focused in and around the incorporated areas of East Baton Rouge Parish.

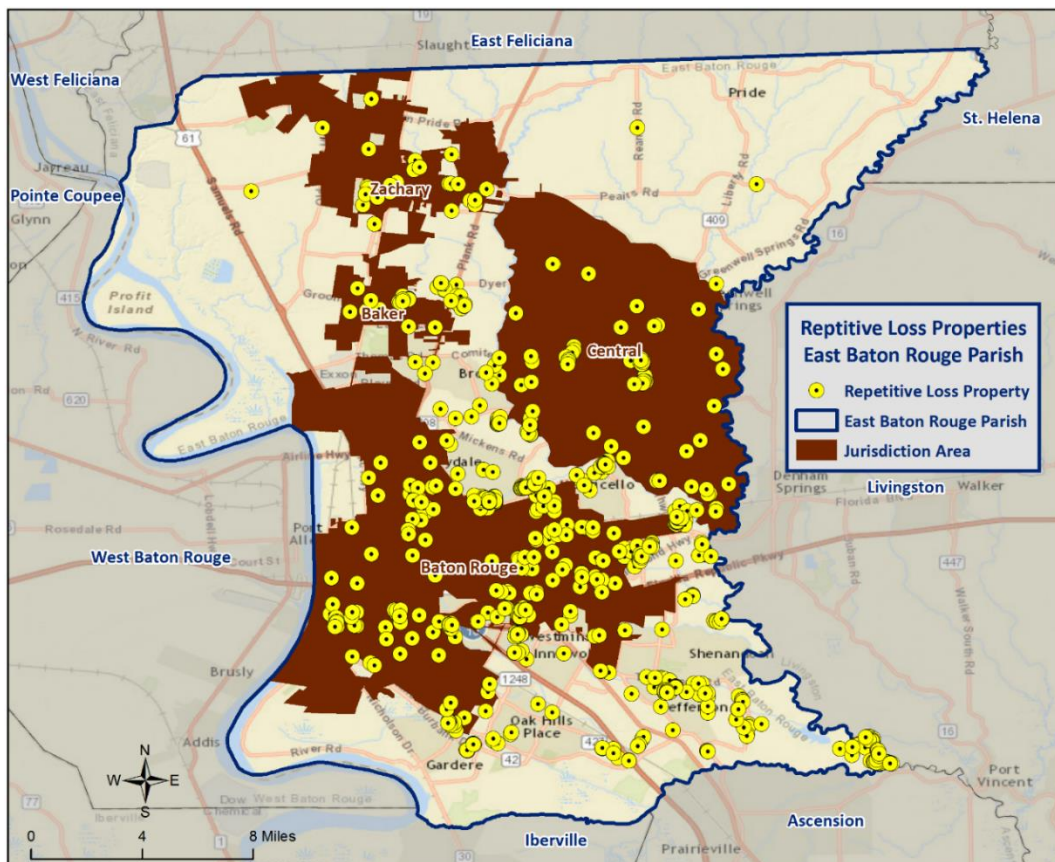


Figure 2-12: Repetitive Loss Properties in East Baton Rouge Parish

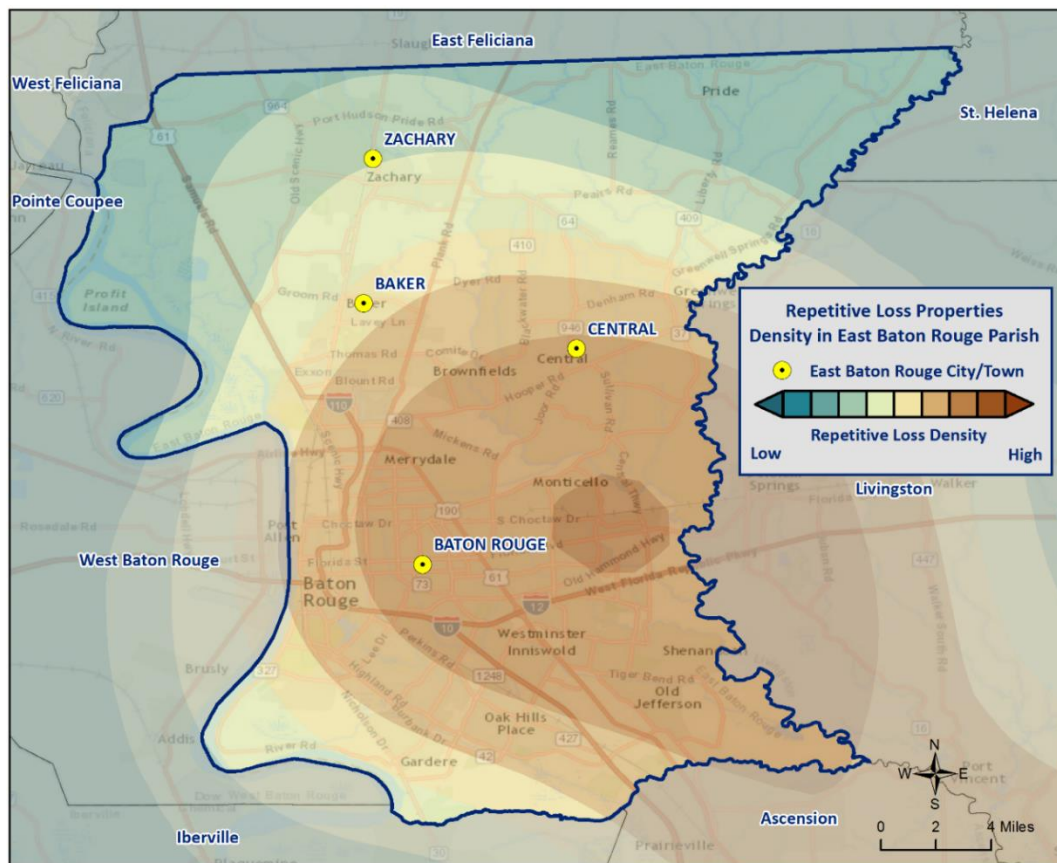


Figure 2-13: Repetitive Loss Property Densities in East Baton Rouge Parish

National Flood Insurance Program

Flood insurance statistics indicate that East Baton Rouge Parish has 26,729 flood insurance policies with the NFIP, with total annual premiums of \$19,541,950. East Baton Rouge Parish and the incorporated areas of Baker, Baton Rouge, Central, and Zachary are all participants in the NFIP. East Baton Rouge 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 East Baton Rouge Parish are provided in the tables on the next page.

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

Table 2-18: Summary of NFIP Policies for East Baton Rouge Parish

Location	No. of Insured Structures	Total Insurance Coverage Value	Annual Premiums Paid	No. of Insurance Claims Filed Since 1978	Total Loss Payments
East Baton Rouge Parish*	23,692	\$5,455,150,700	\$17,152,063	7,892	\$100,959,066
Baker	443	\$81,631,300	\$369,711	215	\$1,515,722
Central	2,057	\$410,425,500	\$1,650,796	12	\$105,795
Zachary	537	\$133,874,900	\$369,380	177	\$2,322,541
Total	26,729	\$6,081,082,400	\$19,541,950	8,296	\$104,903,124

* East Baton Rouge Unincorporated and Baton Rouge NFIP policies are included in the East Baton Rouge Parish category

Table 2-19: Summary of Community Flood Maps for East Baton Rouge Parish

CID	Community Name	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Date Joined the NFIP	Tribal
225193#	Baker	9/9/1970	9/11/1970	5/2/2008	10/19/1973	No
220060#	Central	-	7/2/1979	6/19/2012	4/6/2007	No
220058#	East Baton Rouge Parish*	11/22/1974	7/2/1979	6/19/2012	7/2/1979	No
220061#	Zachary	-	11/18/1977	6/19/2012	9/15/1977	No

* East Baton Rouge Unincorporated and Baton Rouge summary is included in the East Baton Rouge Parish category

According to the Community Rating System (CRS) list of eligible communities dated June 1, 2014, East Baton Rouge Parish and the incorporated areas of Baker, Baton Rouge, Central, and Zachary all participate in the CRS.

Table 2-20: List of Areas within East Baton Rouge Parish that Participate in the Community Rating System

Community Number	Name	CRS Entry Date	Current Effective Date	Current Class	% Discount for SFHA	% Discount for Non-SFHA	Status
225193	Baker	10/1/1991	10/1/2011	8	10	5	C
220060	Central	5/1/2014	5/1/2014	8	10	5	C
220058	East Baton Rouge Parish*	10/1/1991	10/1/2011	6	20	10	C
220061	Zachary	10/1/1992	10/1/2012	7	15	5	C
225193	Baker	10/1/1991	10/1/2011	8	10	5	C

* East Baton Rouge Unincorporated and Baton Rouge are included under the East Baton Rouge Parish category.

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 East Baton Rouge 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 East Baton Rouge 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 Mississippi River crests at flood stage levels, causing extensive flooding in low-lying areas.

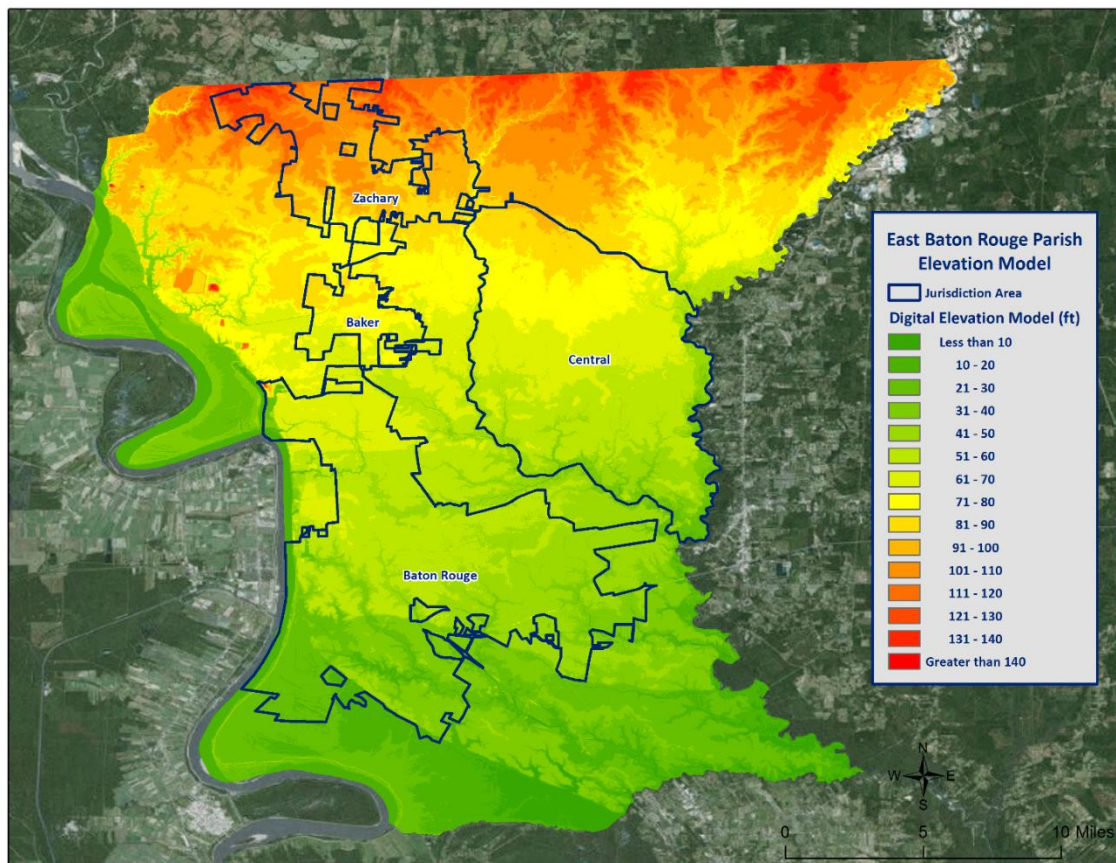


Figure 2-14: Elevation throughout East Baton Rouge Parish

Looking at the digital elevation model (DEM) in the figure above for East Baton Rouge Parish is instructive in visualizing where the low lying and high risk areas are for the parish. Elevations in the parish range from near sea level to over 140 feet. The highest elevations in the parish are approximately 140 feet, located in the unincorporated areas of the parish. These higher elevations are located in the northern portions of the parish. The incorporated areas range in elevation from 56 to 102 feet, with Baton Rouge averaging 56 feet, Central averaging 66 feet, Baker averaging 79 feet, and Zachary averaging 102 feet.

Location

East Baton Rouge Parish has experienced significant flooding in its history and can expect more in the future. East Baton Rouge Parish lies wholly within the Ouachita River Basin. The parish is bordered on the west by the Mississippi River, and a series of creeks and bayous provide natural drainage from Baton Rouge to the east and to the southeast. Hurricane Creek provides drainage from the Scotlandville area and the industrial district in Baton Rouge's northern section. Since World War II, urban expansion has encroached on low-lying and poorly drained areas in the parish. The principle flooding in the parish is caused by backwater flooding along the Amite and Comite Rivers and their tributaries.

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

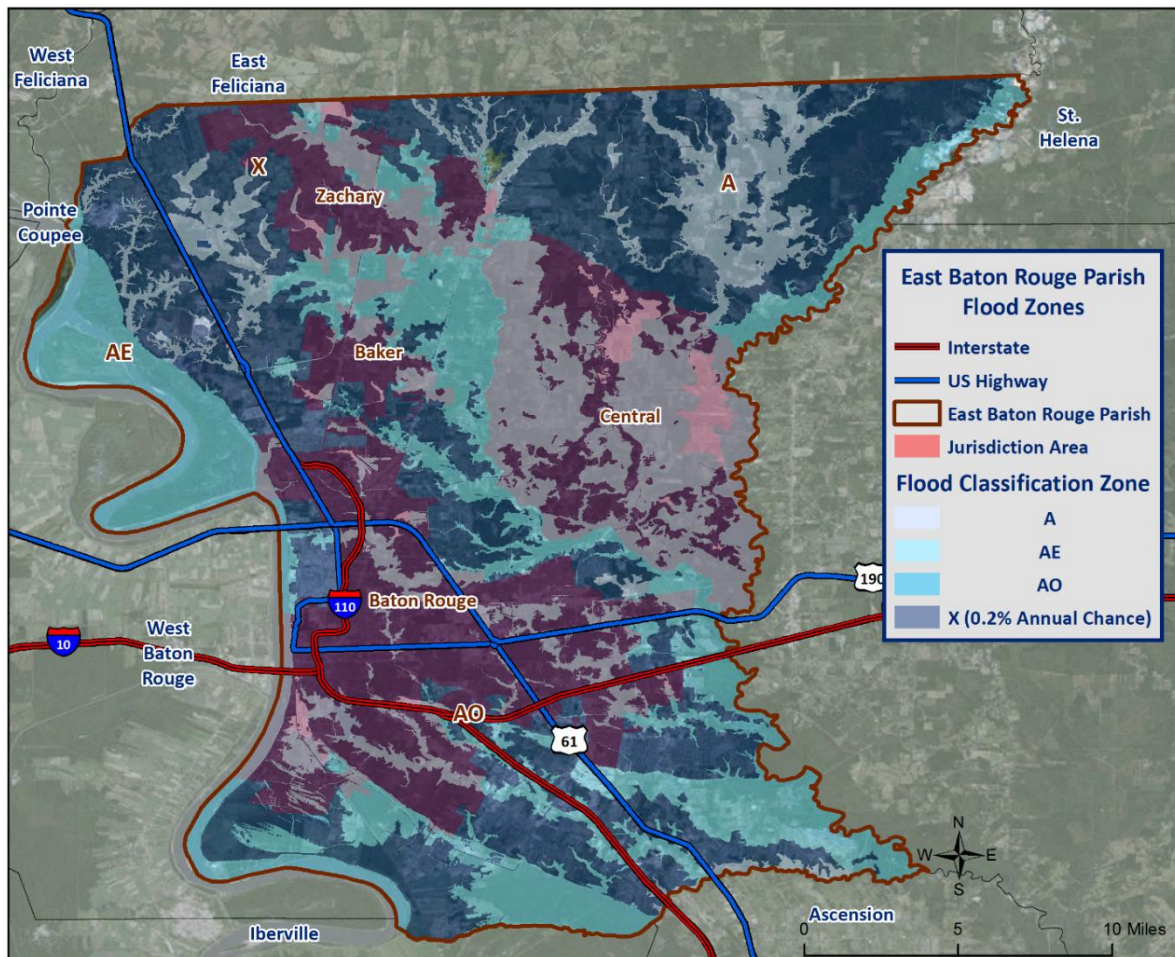


Figure 2-15: East Baton Rouge Parish Areas within the Flood Zones

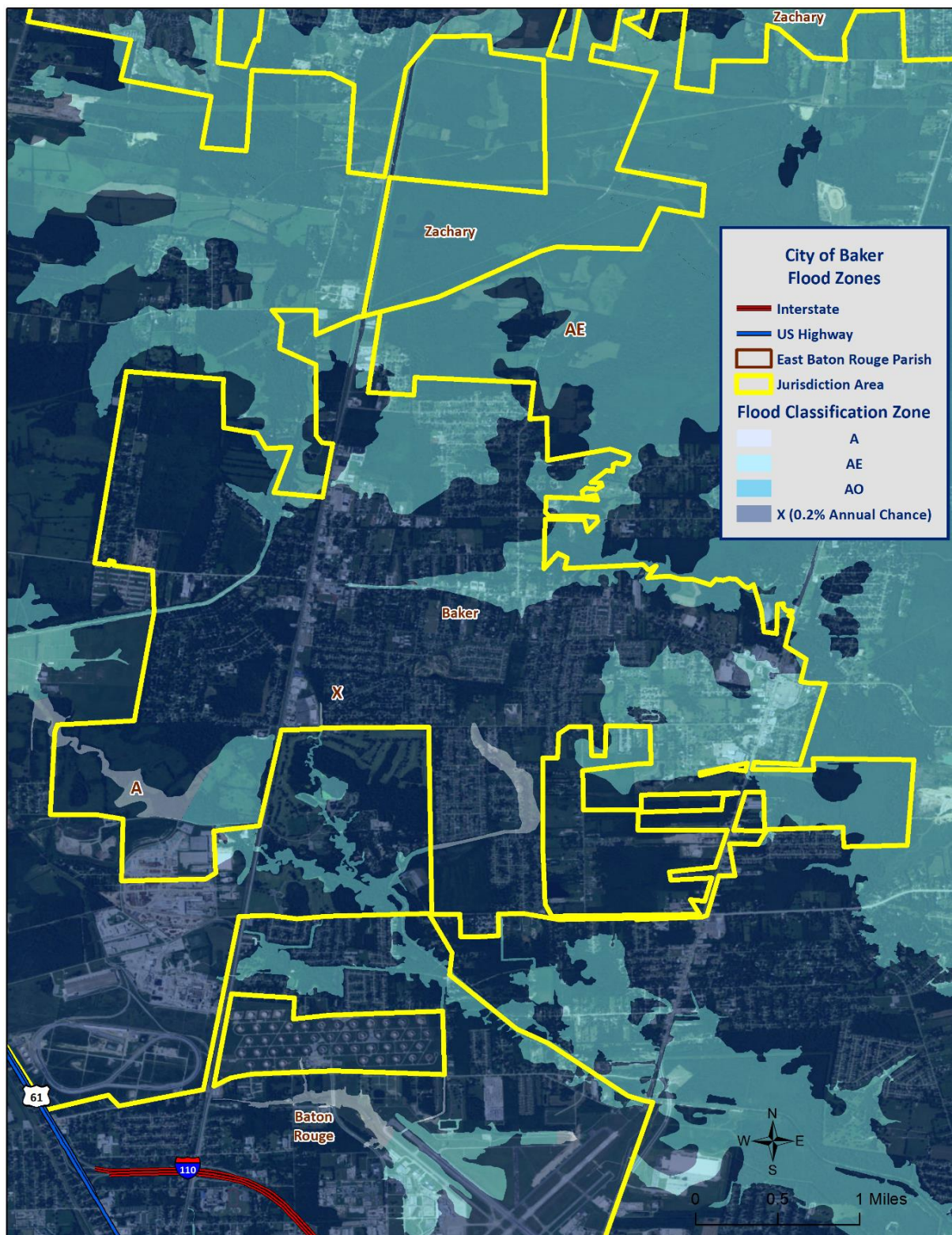


Figure 2-16: City of Baker Areas within the Flood Zones

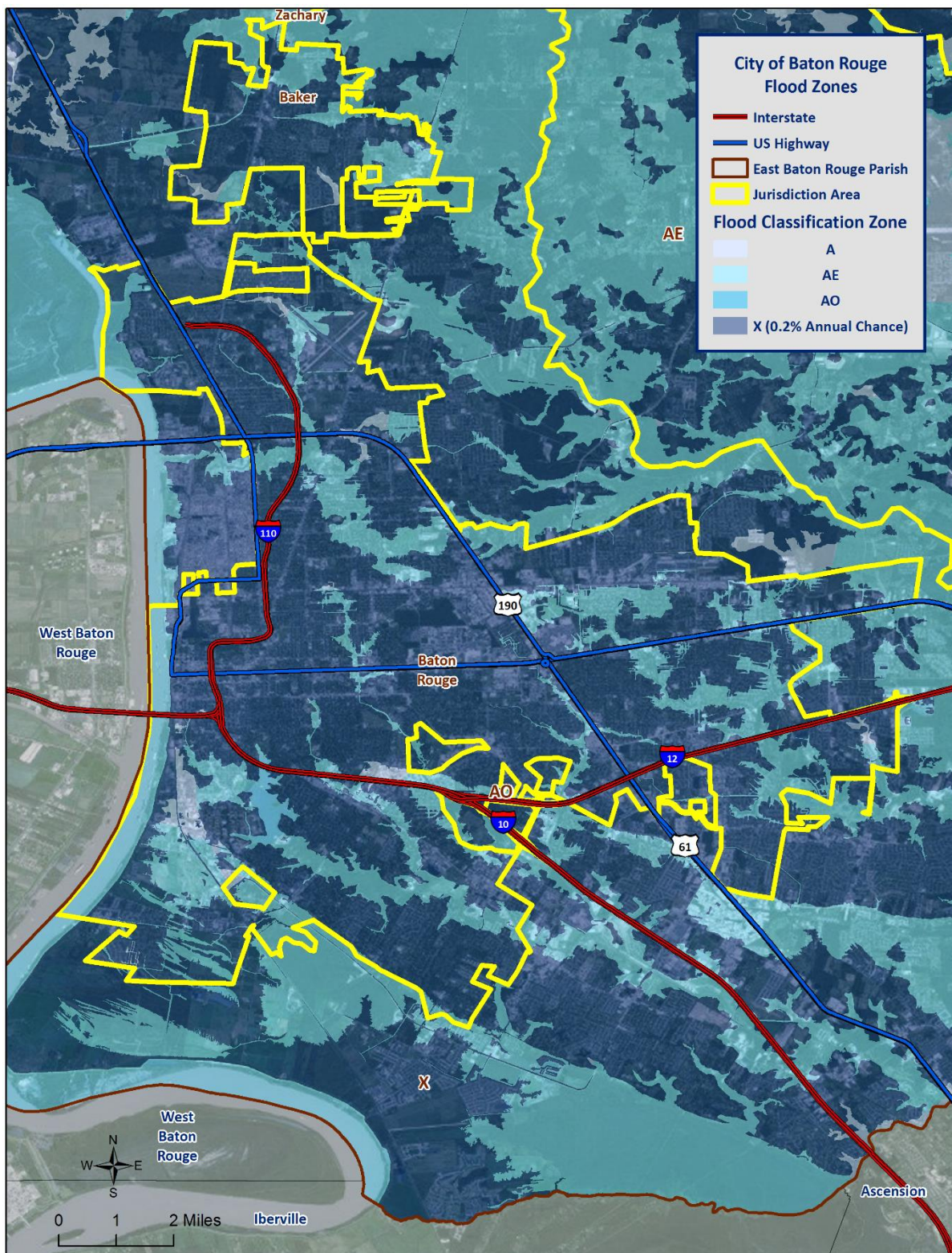


Figure 2-17: City of Baton Rouge Areas within the Flood Zones

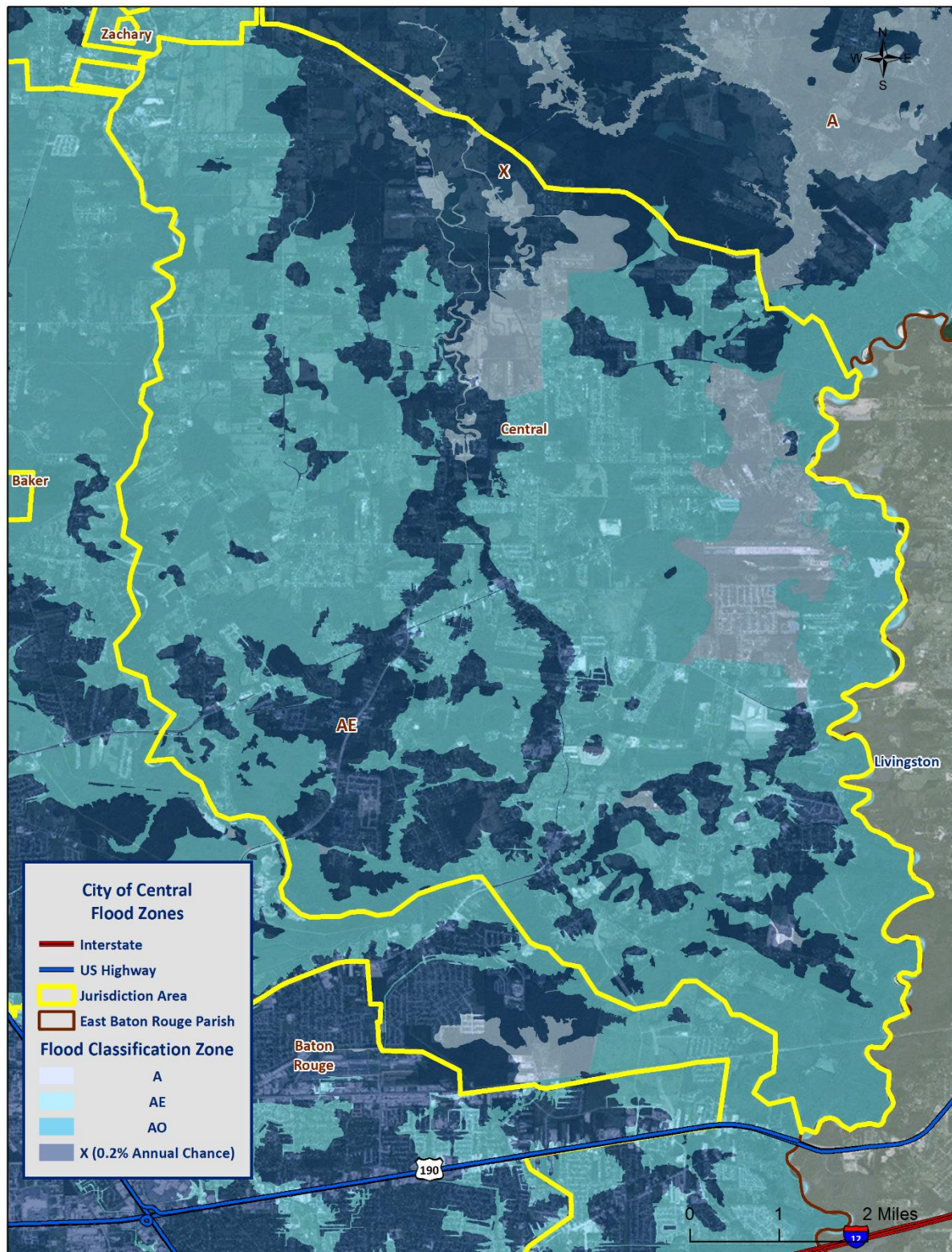


Figure 2-18: City of Central Areas within the Flood Zones

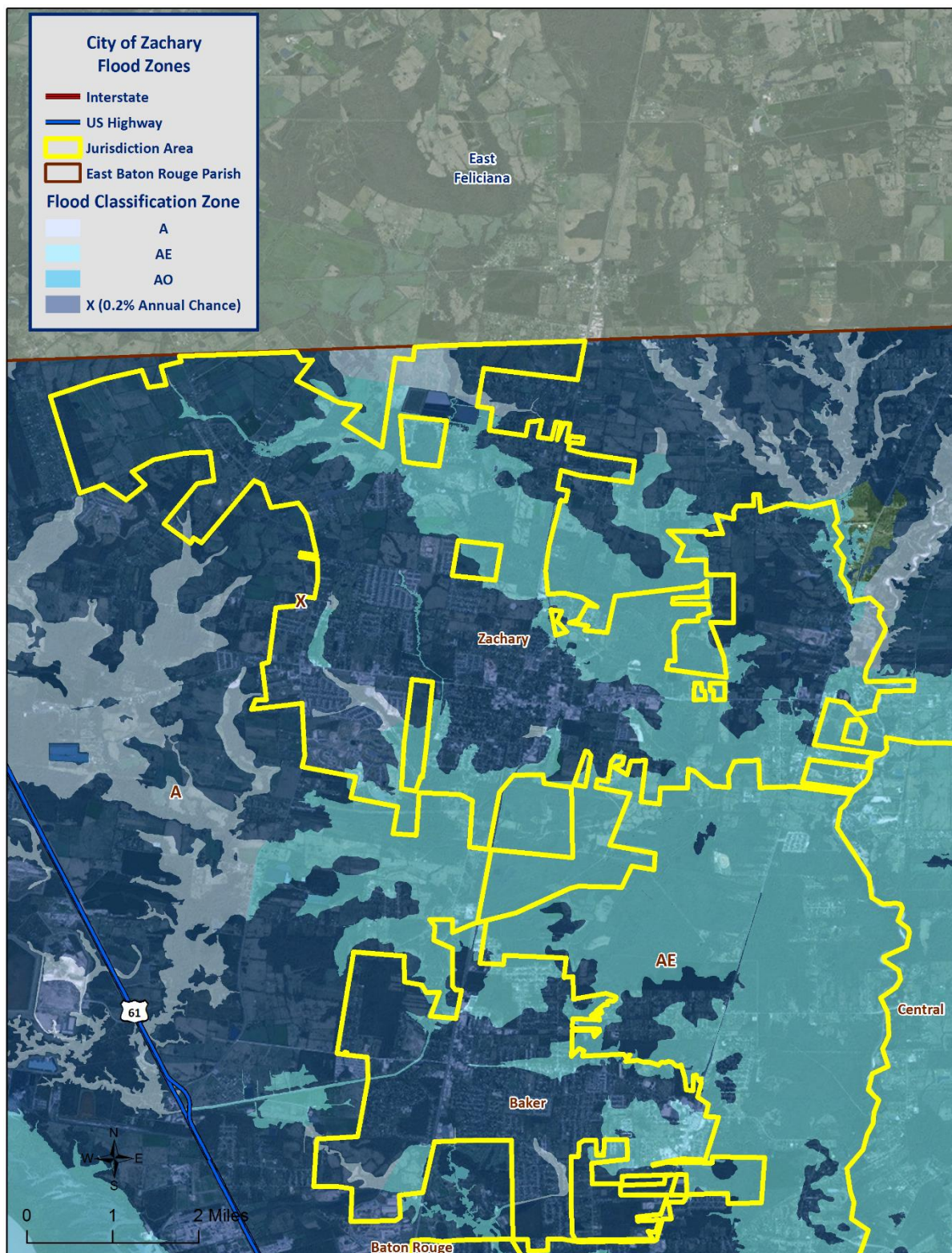


Figure 2-19: City of Zachary Areas within the Flood Zones

Previous Occurrences / Extents

Historically, there have been 20 flooding events that have created significant flooding in East Baton Rouge Parish between 1990 and 2015. Below is a brief synopsis of the 7 flooding events that have occurred since 2010, including flooding events that have occurred since the parish's last planning update.

Table 2-21: Historical Floods in East Baton Rouge Parish with Locations from 2010 - 2015

Date	Extents	Type of Flooding	Estimated Damages	Location
August 5, 2010	Heavy rain flooded Wooddale Avenue and flood waters entered a food market.	Flash Flood	\$0	BATON ROUGE
August 17, 2010	Slow moving thunderstorms brought heavy rainfall that caused localized flooding.	Flash Flood	\$0	BATON ROUGE
March 8, 2011	Heavy rainfall caused extensive flooding on the Old Scenic Highway area. Several vehicles were submerged and the entrance to Sweet Briar Mobile Home Park was impassable.	Flash Flood	\$10,000	ZACHARY
March 8, 2011	Heavy rainfall caused flooding on many roadways. A nursing home had water coming under the doorway in Greenwell Springs.	Flash Flood	\$10,000	GREENWELL SPRINGS
May 2, 2012	An underpass on Acadian Throughway flooded trapping a vehicle. Minor street flooding was also reported in the 4100 block of Essen Lane.	Flash Flood	\$2,000	BATON ROUGE
June 9, 2015	Significant street flooding was reported in various parts of Baton Rouge including North Street, College Drive, Sherwood Forest Boulevard, Goodwood Drive, and Perkins Road.	Flash Flood	\$0	BATON ROUGE
June 24, 2015	In the Bluebonnet Road and Jefferson Highway area, at least one vehicle was flooded and one structure reported water entering the building. Flooding was also reported on the Jefferson Highway and Airline Highway areas and on Sherwood Forest and Coursey Boulevard.	Flash Flood	\$0	BATON ROGUE

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

The worst-case scenarios are based on several different types of flooding events. Storm water excesses and riverine flooding primarily affect the low-lying areas of the parish, and flood depths of up to eight feet can be expected in the unincorporated areas of the parish. The incorporated areas of Baton Rouge and Central can expect flood depths of approximately three to six feet, while the incorporated areas of Baker and Zachary can expect flooding levels of approximately two to four feet.

Frequency / Probability

While other parts of this plan, along with the State's Hazard Mitigation Plan, have relied on the SHELUS database to provide the annual probability, due to East Baton Rouge Parish having multiple jurisdictions, it was necessary to assess the historical data found in the National Climatic Data Center for East Baton Rouge 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 2-22: Annual Flood Probabilities for East Baton Rouge Parish

Jurisdiction	Annual Probability	Return Frequency
East Baton Rouge (Unincorporated)	44%	2 – 3 years
Baker	20%	5 years
Baton Rouge	48%	2 – 3 years
Central	20%	5 years
Zachary	24%	4 – 5 years

Based on historical record, the overall flooding probability for the entire East Baton Rouge Parish planning area is 80%, with 20 events occurring over a 25-year period.

Estimated Potential Losses

Using the Hazus 2.2 Flood Model, along with the Parish DFIRM, the 100-year flood scenario was analyzed to determine losses from this worst-case scenario. *Table 2-23* shows the total economic losses that would result from this occurrence.

*Table 2-23: Estimated Losses in East Baton Rouge Parish from a 100-Year Flood Event
(Source: Hazus 2.2)*

Jurisdiction	Estimated Total Losses from 100-Year Flood Event
East Baton Rouge (Unincorporated)	\$332,444,000
Baker	\$55,137,000
Baton Rouge	\$221,163,000
Central	\$93,136,000
Zachary	\$19,072,000
Total	\$720,952,000

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 2-24: Estimated 100-Year Flood Losses for Unincorporated East Baton Rouge Parish by Sector
(Source: Hazus 2.2)*

East Baton Rouge Parish (Unincorporated)	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$141,000
Commercial	\$65,971,000
Government	\$1,964,000
Industrial	\$20,968,000
Religious / Non-Profit	\$11,224,000
Residential	\$231,666,000
Schools	\$510,000
Total	\$332,444,000

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

Baker	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$219,000
Commercial	\$6,412,000
Government	\$623,000
Industrial	\$732,000
Religious / Non-Profit	\$907,000
Residential	\$46,039,000
Schools	\$205,000
Total	\$55,137,000

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

Baton Rouge	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$809,000
Commercial	\$59,914,000
Government	\$1,667,000
Industrial	\$9,440,000
Religious / Non-Profit	\$6,188,000
Residential	\$141,860,000
Schools	\$1,285,000
Total	\$221,163,000

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

Central	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$940,000
Commercial	\$8,584,000
Government	\$12,000
Industrial	\$2,919,000
Religious / Non-Profit	\$3,289,000
Residential	\$76,972,000
Schools	\$420,000
Total	\$93,136,000

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

Zachary	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$142,000
Commercial	\$7,568,000
Government	\$302,000
Industrial	\$662,000
Religious / Non-Profit	\$794,000
Residential	\$9,604,000
Schools	\$0
Total	\$19,072,000

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
East Baton Rouge Parish (Unincorporated)	154,959	52,580	33.9%
Baker	13,895	4,298	30.9%
Baton Rouge	229,493	29,337	12.8%
Central	26,864	14,604	54.4%
Zachary	14,960	3,706	24.8%
Total	440,171	104,525	23.7%

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 East Baton Rouge Parish
(Source: Hazus 2.2)

East Baton Rouge Parish (Unincorporated)		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	52,580	33.9%
Persons Under 5 Years	3,523	6.7%
Persons Under 18 Years	8,860	16.9%
Persons 65 Years and Over	5,736	10.9%
White	25,675	48.8%
Minority	26,905	51.2%

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

Baker		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	4,298	30.9%
Persons Under 5 Years	326	7.6%
Persons Under 18 Years	906	21.1%
Persons 65 Years and Over	495	11.5%
White	882	20.5%
Minority	3,416	79.5%

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

Baton Rouge		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	29,337	12.8%
Persons Under 5 Years	1,916	6.5%
Persons Under 18 Years	4,668	15.9%
Persons 65 Years and Over	3,295	11.2%
White	11,550	39.4%
Minority	17,787	60.6%

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

Central		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	14,604	54.4%
Persons Under 5 Years	870	6.0%
Persons Under 18 Years	2,496	17.1%
Persons 65 Years and Over	9,212	63.1%
White	13,043	89.3%
Minority	1,561	10.7%

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

Zachary		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	3,706	24.8%
Persons Under 5 Years	277	7.5%
Persons Under 18 Years	820	22.1%
Persons 65 Years and Over	383	10.3%
White	2,285	61.7%
Minority	1,421	38.3%

Vulnerability

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

Land Subsidence

Coastal land loss is the loss of land (especially beach, shoreline, or dune material) by natural and/or human influences. Coastal land loss occurs through various means, including erosion, subsidence (the sinking of land over time as a result of natural and/or human-caused actions), saltwater intrusion, coastal storms, littoral drift, changing currents, manmade canals, rates of accretion, and sea level rise. The effects of these processes are difficult to differentiate because of their complexity and because they often occur simultaneously, with one influencing each of the others.

Some of the worst recent contributors to coastal land loss in the state are the tropical cyclones of the past decade. Two storms that stand out in this regard are Hurricanes Katrina and Rita. These powerful cyclones completely covered large tracts of land in a very brief period, permanently altering the landscape. The disastrous legacy of these storms galvanized already ongoing efforts to combat coastal land loss. Consistent with the 2014 State Hazard Mitigation Plan Update, coastal land loss is considered in terms of two of the most dominant factors: sea level rise and subsidence.

Sea level rise and subsidence impact Louisiana in a similar manner—again making it difficult to separate impacts. Together, rising sea level and subsidence—known together as relative sea level rise—can accelerate coastal erosion and wetland loss, exacerbate flooding, and increase the extent and frequency of storm impacts. According to NOAA, global sea level rise refers to the upward trend currently observed in the average global sea level. Local sea level rise is the level that the sea rises relative to a specific location (or, benchmark) at the coastline. The most prominent causes of sea level rise are thermal expansion, tectonic actions (such as sea floor spreading), and the melting of the Earth’s glacial ice caps.

The current U.S. Environmental Protection Agency (EPA) estimate of global sea level rise is ten to twelve inches per century, while future sea level rise could be within the range of one to four feet by 2100. According to the U.S. Geological Survey (USGS), the Mississippi Delta plain is subject to the highest rate of relative sea level rise of any region in the nation largely due to rapid geologic subsidence.

Subsidence results from a number of factors including:

- Compaction/consolidation of shallow strata caused by the weight of sediment deposits, soil oxidation, and aquifer draw-down (shallow component)
- Gas/oil/resource extraction (shallow & intermediate component)
- Consolidation of deeper strata (intermediate components)
- Tectonic effects (deep component)

For the most part, subsidence is a slow-acting process with effects that are not as evident as hazards associated with discrete events. Although the impacts of subsidence can be readily seen in coastal parishes over the course of decades, subsidence is a “creeping” hazard. The highest rate of subsidence is occurring at the Mississippi River Delta (estimated at greater than 3.5 feet/century). Subsidence rates tend to decrease inland, and they also vary across the coast.

Overall, subsidence creates three distinct problems in Louisiana:

- By lowering elevations in coastal Louisiana, subsidence accelerates the effects of saltwater intrusion and other factors that contribute to land loss
- By lowering elevations, subsidence may make structures more vulnerable to flooding
- By destabilizing elevations, subsidence undermines the accuracy of surveying benchmarks (including those affecting levee heights, coastal restoration programs, surge modeling, BFEs, and other engineering inputs), which can contribute to additional flooding problems if construction occurs at lower elevations than anticipated or planned

Location

Historic areas of coastal land loss and gain (*Figure 2-20*) and subsidence rates (*Figure 2-21*) have been quantified for East Baton Rouge Parish using data from the U.S. Geologic Survey and Louisiana Coastal Protection and Restoration Authority (CPRA). Since 1932, the average annual land loss in Louisiana is 35 mi², while the average annual land gain has been 3 mi² for a net loss of 32 mi² per year. However, the models reflect no measurable land loss or subsidence currently in East Baton Rouge Parish (*Figure 2-20* and *Figure 2-21*).

Frequency / Probability

Subsidence, sea level rise, and coastal land loss are ongoing hazards. Based on historical subsidence rates and land loss/gain trends, the probability of future land loss in Louisiana is 100% certain, but actual rates of subsidence and land loss/gain vary along the coast based on various meteorological, geological, and human-influenced dynamics (e.g., water/resource extraction, canal dredging, saltwater intrusion, marsh restoration projects, etc.). In East Baton Rouge Parish, there have been no measurable loss estimates due to land subsidence. Therefore, land subsidence is not carried forward into the risk assessment and is discounted.

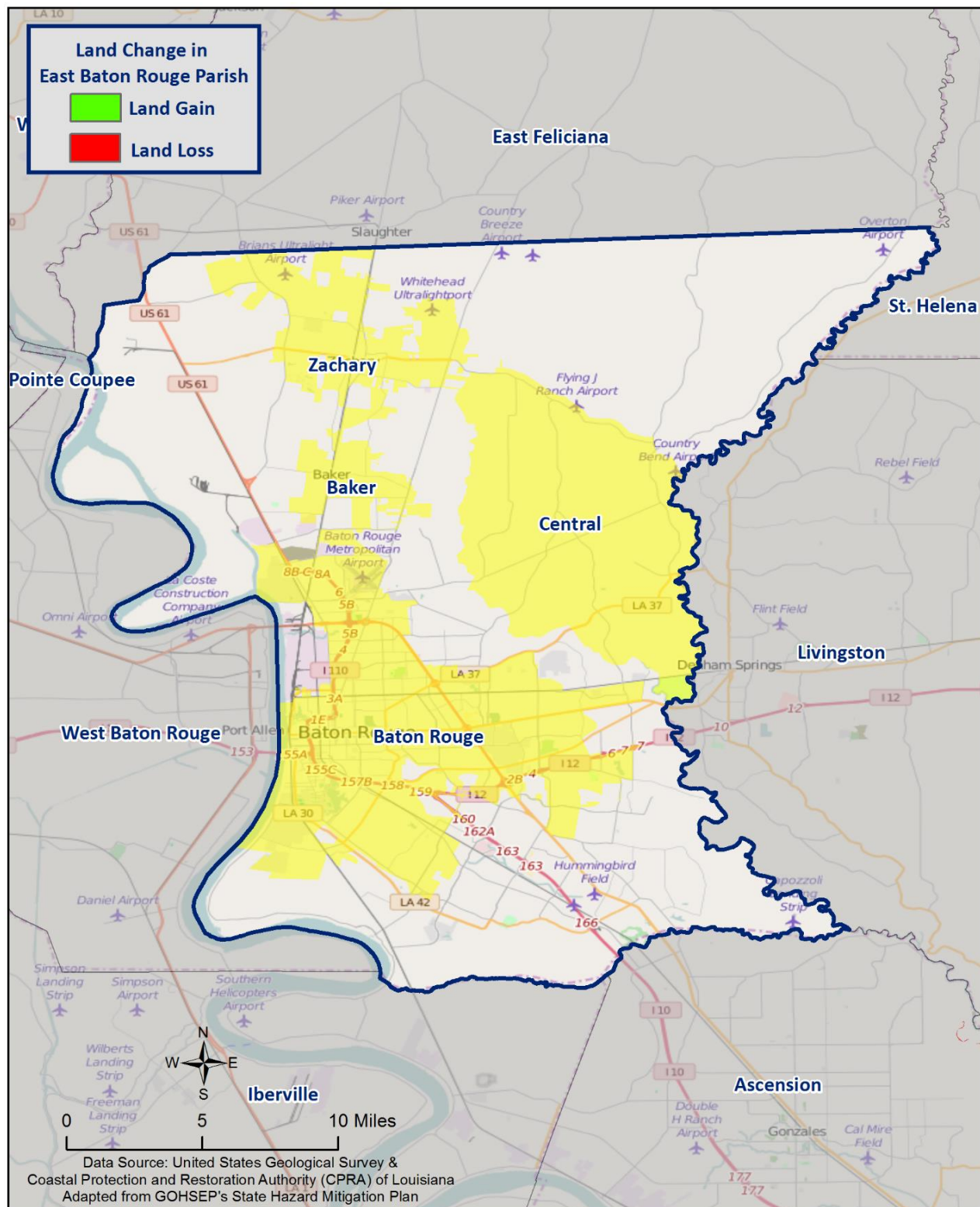


Figure 2-20: Historical Areas of Land Loss and Gain between 1932 and 2010
(Source: State of Louisiana Hazard Mitigation Plan)

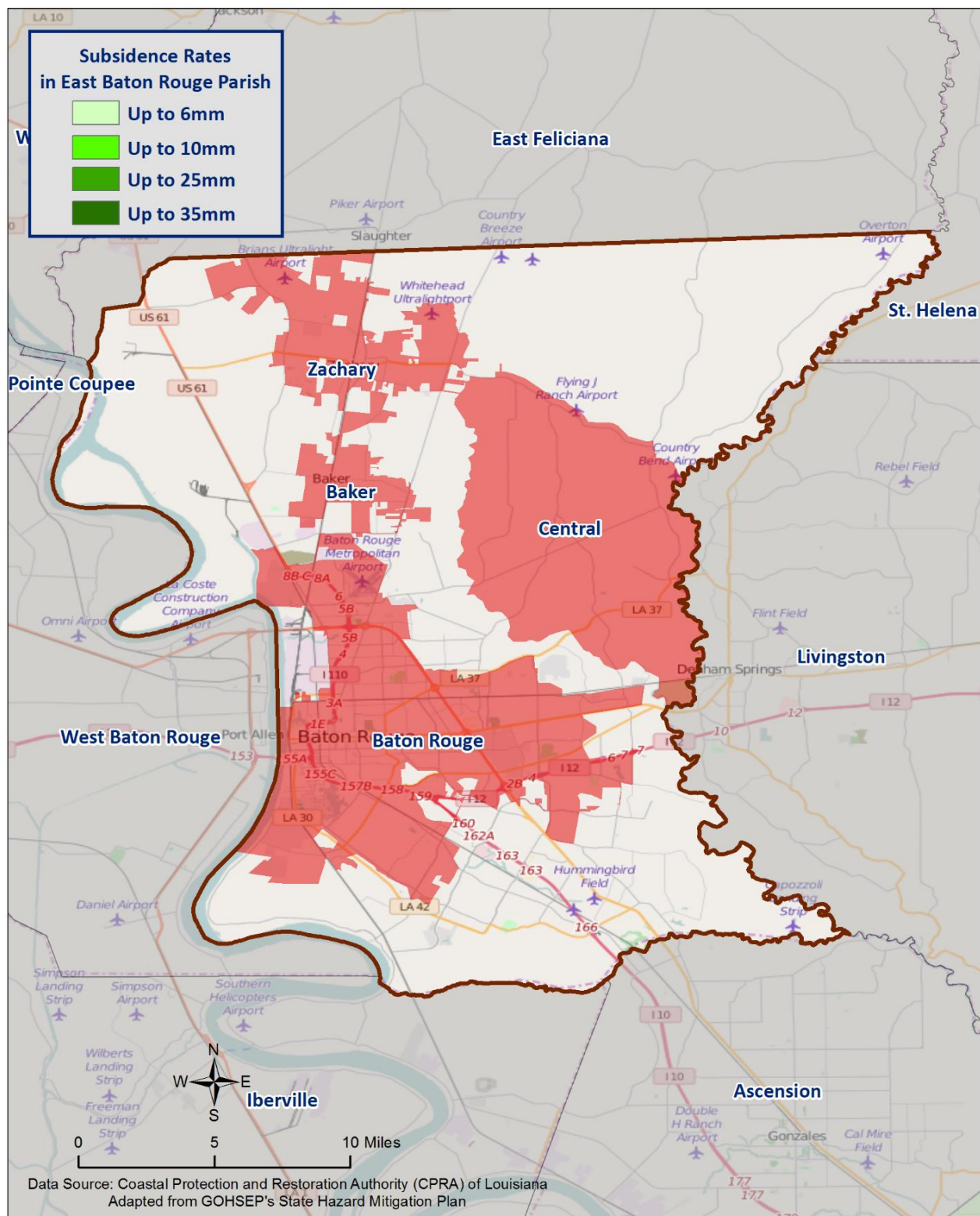


Figure 2-21: Maximum Annual Subsidence Rates Based on Subsidence Zones in Coastal Louisiana
(Source: State of Louisiana Hazard Mitigation Plan)

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 2-35: 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 2-36: 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 2-37: 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 2-38: 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 2-39: 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 East Baton Rouge Parish is equally at risk for hailstorms.

Previous Occurrences / Extents

The SHELDUS database reports 53 significant hailstorm events occurring within the boundaries of East Baton Rouge Parish between the years of 1990 - 2015. According to the National Climatic Data Center, hailstorm diameters experienced in East Baton Rouge Parish have ranged from 0.75 inches to 2.75 inches since 1990. The most frequently recorded hail size has been 0.75 inch diameters. [Figure 2-22](#) displays the density of hailstorms in East Baton Rouge Parish and adjacent parishes. Based on the National Climatic Data Center dataset, [Table 2-40](#) provides an overview of hailstorms that have impacted the East Baton Rouge Parish planning area since 2010. East Baton Rouge Parish can expect to experience hail up to 2.75 inches in diameter for future events.

Table 2-40: Previous Occurrences of Hailstorms in East Baton Rouge Parish from 2010 - 2015
(Source: NCDC)

Date	Recorded Hail Size (inches)	Location
May 30, 2010	1.5	BATON ROUGE
May 30, 2010	1	BATON ROUGE
April 15, 2011	1	BROADMOOR
April 15, 2011	1	JONES CREEK
April 15, 2011	1.75	ESSEN
June 6, 2011	1.25	ZION CITY
September 28, 2011	1	GREENWELL SPGS
September 28, 2011	2	GREENWELL SPGS
April 2, 2012	1	WOODLAWN
April 2, 2012	1	ZACHARY
March 31, 2013	0.88	WESTMINSTER
May 10, 2013	1	WESTMINSTER
February 25, 2014	0.75	BATON ROUGE
February 25, 2014	0.75	WOODLAWN
April 6, 2014	0.88	WESTMINSTER
April 6, 2014	1.75	MAGNOLIA WOODS
April 6, 2014	1	BATON ROUGE
April 6, 2014	1	BROADMOOR
April 6, 2014	1	CEDAR CREST
April 6, 2014	1.75	GREENWELL SPGS
April 6, 2014	1	BATON ROUGE
April 6, 2014	1.75	GREENWELL SPGS
December 23, 2014	1.75	BATON ROUGE
December 23, 2014	1	BATON ROUGE
May 19, 2015	1	BATON ROUGE

Since 2010, there have been no significant hailstorm events in the incorporated areas of Baker and Central.

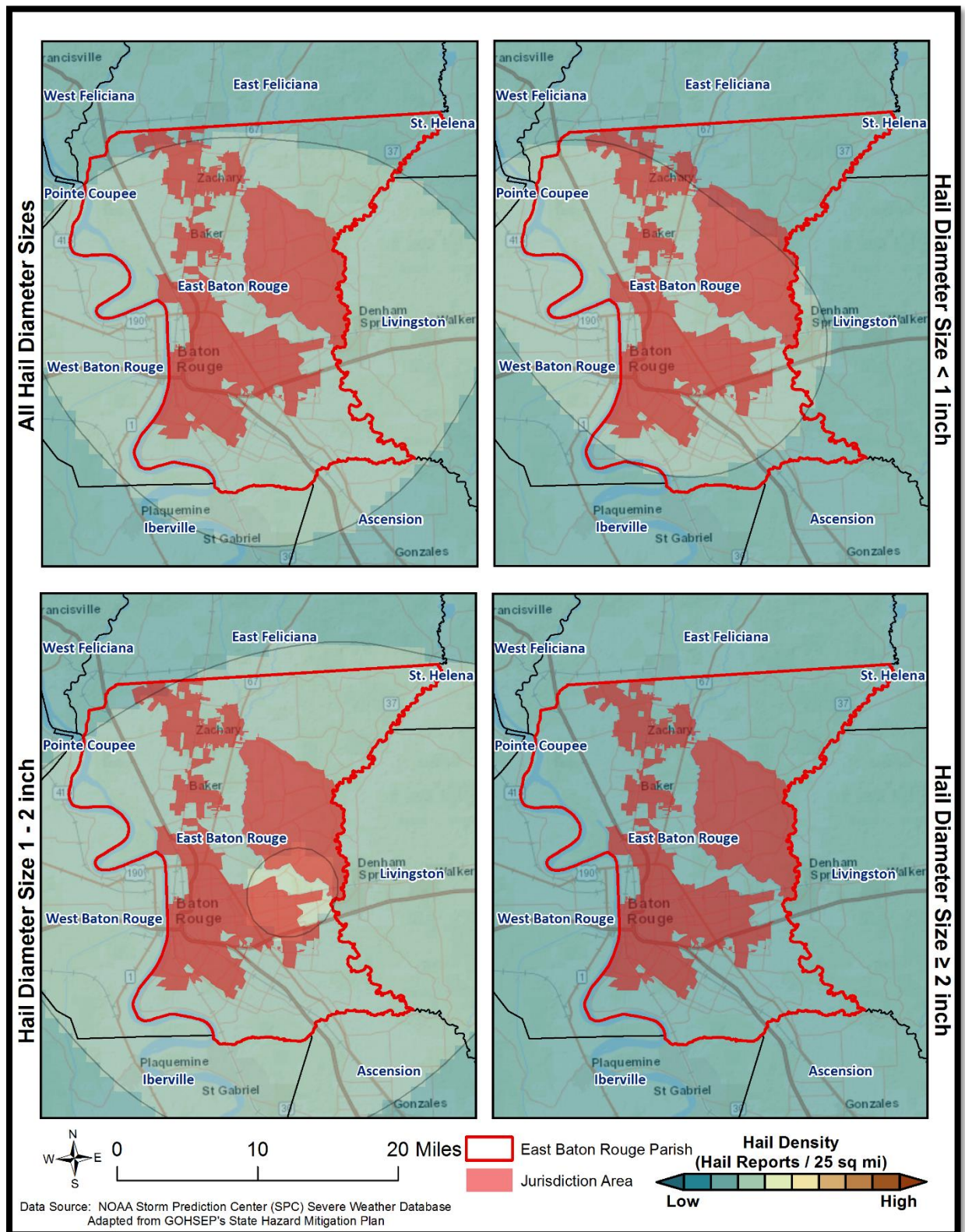


Figure 2-22: Density of Hailstorms by Diameter from 1950-2012
(Source: State of Louisiana Hazard Mitigation Plan 2014)

Frequency

Based on historical data from SHELUDS 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 East Baton Rouge Parish has had 53 recorded events.

Estimated Potential Losses

According to the SHELUDS database, property damage due to hailstorms in East Baton Rouge Parish have totaled approximately \$1,671,667 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 SHELUDS (1990 – 2015). This provides an annual estimated potential loss of \$31,541. *Table 2-41* provides an estimate of potential property losses for East Baton Rouge Parish.

Table 2-41: Estimated Annual Property Losses in East Baton Rouge Parish from Hailstorms

Estimated Annual Potential Losses from Hailstorms for East Baton Rouge Parish				
Unincorporated East Baton Rouge Parish (35.2% of Population)	Baker (3.2% of Population)	Baton Rouge (52.1% of Population)	Central (6.1% of Population)	Zachary (3.4% of Population)
\$23,540	\$2,111	\$34,862	\$4,081	\$2,273

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

Previous Occurrences / Extents

The SHELUDS database reports a total of 123 thunderstorm wind events occurring within the boundaries of East Baton Rouge Parish between the years of 1990 to 2015. The significant thunderstorm wind events experienced in East Baton Rouge Parish have ranged in wind speed from 58 mph to 81 mph. East Baton Rouge Parish can expect to receive thunderstorm winds up to 81 mph for future high wind events. The table below provides an overview of significant high wind events over the last five years:

Table 2-42: Previous Occurrences for Thunderstorm High Wind Events

Location	Date	Recorded Wind Speeds (mph)	Property Damage	Crop Damage
GREENWELL SPGS	June 27, 2010	63	\$2,000	\$0
PRIDE	June 27, 2010	63	\$2,000	\$0
BATON ROUGE	March 5, 2011	59	\$0	\$0

Location	Date	Recorded Wind Speeds (mph)	Property Damage	Crop Damage
BATON ROUGE	April 4, 2011	81	\$20,000	\$0
BROADMOOR	April 4, 2011	69	\$5,000	\$0
NESSER	April 4, 2011	69	\$5,000	\$0
(BTR)RYAN FLD BATON	April 26, 2011	65	\$0	\$0
(BTR)RYAN FLD BATON	April 26, 2011	63	\$0	\$0
GREENWELL SPGS	April 26, 2011	63	\$1,000	\$0
GREENWELL SPGS	May 13, 2011	69	\$5,000	\$0
WOODLAWN	June 4, 2011	69	\$15,000	\$0
NESSER	June 4, 2011	69	\$10,000	\$0
ESSEN	June 4, 2011	63	\$1,000	\$0
ZACHARY	June 4, 2011	69	\$10,000	\$0
UNIVERSITY	June 21, 2011	63	\$5,000	\$0
ISTROUMA	July 3, 2011	58	\$1,000	\$0
ZACHARY	August 19, 2011	69	\$10,000	\$0
(BTR)RYAN FLD BATON	May 31, 2012	60	\$3,000	\$0
GREENWELL SPGS	December 10, 2012	60	\$15,000	\$0
MILLERVILLE	December 20, 2012	60	\$10,000	\$0
ZACHARY	December 25, 2012	65	\$10,000	\$0
INDIAN MOUND	March 31, 2013	70	\$2,000	\$0
BATON ROUGE	July 14, 2013	70	\$10,000	\$0
FOREST OAKS	April 6, 2014	65	\$10,000	\$0
MAGNOLIA WOODS	April 6, 2014	65	\$0	\$0
BROADMOOR	April 6, 2014	69	\$0	\$0
MAGNOLIA WOODS	October 13, 2014	63	\$0	\$0
NORTH MERRYDALE	October 13, 2014	63	\$0	\$0
BROWNFIELDS	October 13, 2014	63	\$0	\$0
BROADMOOR	April 27, 2015	69	\$0	\$0
UNIVERSITY	April 27, 2015	69	\$0	\$0
WOODLAWN	April 27, 2015	62	\$0	\$0
GREENWELL SPGS	May 26, 2015	63	\$0	\$0
BATON ROUGE	May 26, 2015	69	\$0	\$0
UNIVERSITY	June 23, 2015	58	\$0	\$0
BROWNFIELDS	July 4, 2015	63	\$0	\$0

Since 2010, there have been no significant thunderstorm wind events in the incorporated areas of Baker and Central.

Frequency

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

Estimated Potential Losses

Since 1990, there have been 123 significant wind events that have resulted in property damages according to the SHELUDS database. The total property damages associated with those storms have totaled \$6,169,837. 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 SHELUDS (1990 – 2015). This provides an annual estimated potential loss of \$246,793. The following table provides an estimate of potential property losses for East Baton Rouge Parish:

Table 2-43: Estimated Annual Property Losses in East Baton Rouge Parish Resulting from High Winds

Estimated Annual Potential Losses from Thunderstorm Winds for East Baton Rouge Parish				
Unincorporated East Baton Rouge Parish (35.2% of Population)	Baker (3.2% of Population)	Baton Rouge (52.1% of Population)	Central (6.1% of Population)	Zachary (3.4% of Population)
\$86,882	\$7,791	\$128,671	\$15,062	\$8,388

There have been 13 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 East Baton Rouge Parish.

Previous Occurrences / Extents

The SHELUDS database reports a total of 94 lightning events occurring within the boundaries of East Baton Rouge Parish between the years of 1990 - 2015. The SHELUDS 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 East Baton Rouge Parish, which occur on a nearly monthly basis. The planning area can expect to have a lightning density of 9 - 10 flashes per sq. mile per year. The table on the next page provides an overview of significant lightning strikes over the last five years.

Table 2-44: Previous Occurrences of Significant Lightning Strikes in East Baton Rouge Parish from 2010 – 2015

(Source: NCDC and SHEL DUS)

Location	Date	Summary	Property Damage
BATON ROUGE	May 30, 2010	An eight year old boy from Columbus, Mississippi was fatally injured by lightning when the tree he was standing near was struck by lightning.	\$0
UNIVERSITY	June 19, 2010	Lightning triggered a fire at a condominium.	\$16,285
BAKER	August 13, 2010	Lightning caused electrical damage to a home, and knocked down a tree which fell on an automobile and a home.	\$21,713
KLEINPETER	June 7, 2011	Lightning struck a house on Garden Lake Court which started a fire in the attic. Two residents were home, but no injuries were reported.	\$10,480
KLEINPETER	June 8, 2011	A house on Charleston Road was struck by lightning causing minor damage.	\$5,311
KLEINPETER	May 2, 2012	A house fire was started when lightning struck a home on Hoo Shoo Too Road. One firefighter was injured while fighting the blaze.	\$50,845
BATON ROUGE	May 2, 2012	A house fire was started by a lightning strike.	\$71,321
JONES CREEK	July 2, 2012	Lightning struck a tree and traveled into a nearby home starting a fire. The fire caused significant damage to one room and the roof of the home.	\$30,933
MAGNOLIA WOODS	May 10, 2013	The Louisiana Association of Realtors building caught fire due to a lightning strike.	\$1,321,088
BROADMOOR	July 8, 2014	Lightning striking a roof triggered a fire that produced significant damage to a home on Kenmore Avenue.	\$220,000
UNIVERSITY	July 8, 2014	Lightning struck a roof of a home causing a house fire that produced significant damage to the home on Destrehan Drive.	\$90,000

Since 2010, there have been no lightning events that have caused property damage or loss of life in the incorporated areas of Central and Zachary.

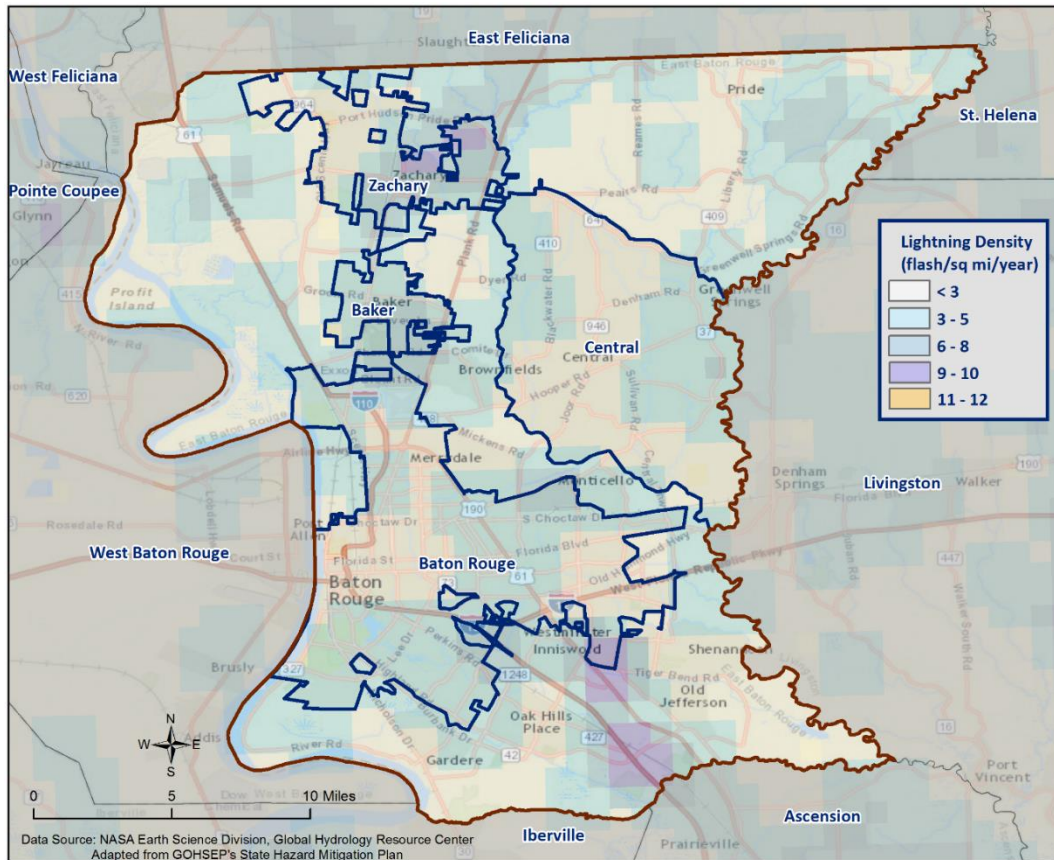


Figure 2-23: Lightning Density Reports for East Baton Rouge Parish

Frequency

Lightning can strike anywhere and is produced by every thunderstorm, so the chance of lightning occurring in East Baton Rouge Parish is high. However, lightning that meets the definition that is used by SHELDUS and the NCDL that actually results in damages to property and injury or death is a less likely event. According to SHELDUS, there have been 94 lightning events that have caused property damages or injuries over the last 25 years, establishing an annual probability of 100%.

Estimated Potential Losses

Since 1990, there have been 94 significant lightning events that have resulted in property damages according to the SHELDUS database. The total property damages associated with lightning events totaled \$6,614,126. 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 \$264,565. The table on the next page provides an estimate of potential property losses for East Baton Rouge Parish:

Table 2-45: Estimated Annual Property Losses in East Baton Rouge Parish from Lightning

Estimated Annual Potential Losses from Thunderstorm Lightning for East Baton Rouge Parish				
Unincorporated East Baton Rouge Parish (35.2% of Population)	Baker (3.2% of Population)	Baton Rouge (52.1% of Population)	Central (6.1% of Population)	Zachary (3.4% of Population)
\$93,138	\$8,352	\$137,937	\$16,147	\$8,992

There have been five reported injuries and three fatalities in East Baton Rouge 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 2-46* 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 2-46: Comparison of the Enhanced Fujita (EF) Scale to the Fujita (F) Scale

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

Table 2-47: Fujita and Enhanced Fujita Tornado Damage Scale

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

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

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

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

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

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

Location

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

Previous Occurrences / Extents

SHELDUS reports a total of 14 tornadoes or waterspouts occurring within the boundaries of East Baton Rouge Parish between the years of 1990 - 2015. The tornadoes experienced in East Baton Rouge Parish have from ranged EF0 to EF1 on the EF scale, and ranged from F0 to F3 on the F scale. The worst case scenario East Baton Rouge Parish can expect in the future is an EF3 tornado.

The tornado that caused the most damage to property and accounted for the most injuries occurred on June 8, 1989. The F2 tornado was responsible for over \$2.5 million in damage and 58 injuries. The tornado touched down on the west side of the incorporated area of Iowa, destroying two homes and heavily damaging a small mall. The tornado responsible for the most fatalities occurred on June 7, 2001. The tornado downed a tree which fell on a pick-up truck killing the driver.

Table 2-48: Historical Tornadoes in East Baton Rouge Parish with Locations from 2010 - 2015

Date	Impacts	Property Damage	Location	Magnitude
November 3, 2010	0.25 mile path with a width of 50 yards. Blew a tin roof off a building and corrugated metal peeled off a lumber yard building.	\$5,428	ZACHARY	EF0
March 5, 2011	0.3 mile path with a width of 40 yards. A small tornado removed a portion of a home's roofing.	\$26,311	ZACHARY	EF1
March 21, 2012	0.63 mile path with a width of 40 yards. Several trees were blown down and several homes suffered roof damage.	\$51,555	BATON ROUGE	EF1
December 10, 2012	5.42 mile path with a width of 100 yards. Several homes with moderate to severe roof damage.	\$206,221	ALSEN	EF1
January 13, 2013	8.21 mile path with a width of 40 yards. Damage was mostly fencing knocked down and yard play equipment toppled.	\$20,324	PLAINS	EF0

The incorporated areas of Central and Baker have not experienced a tornado event from 2010 to the present. Since 2011, the year in which the last update to this hazard mitigation plan was written, East Baton Rouge Parish has had three tornadoes touchdown in the unincorporated areas of the parish and the incorporated area of Baton Rouge. The following is a brief synopsis of these events:

March 21, 2012 – EF1 Tornado in Baton Rouge

A tornado blew down several trees and numerous homes suffered roof damage along Hoo Shoo Too Road in Baton Rouge.

December 10, 2012 – EF1 Tornado in Alsen

A tornado touched down on Highway 61 near the intersection with the Baton Rouge Barge Canal. The tornado caused moderate damage to a roof of a single family residence and minor damage to a convenience store. A tree was uprooted at the same located. The tornado traveled east-northeast, causing sporadic tree damage until it crossed over New Rafe Meyer Road and moved into the Lincoln Heights subdivision. This was the location of the worst damage with numerous trees snapped and a few residences with moderate to major roof damage. A travel trailer was rolled over 25 yards and destroyed. The tornado then crossed Highway 19 and caused moderate damage to the roof of a car wash. The tornado eventually lifted near the intersection of Plank Road and Dyer Road.

January 13, 2013 – EF0 Tornado in Plains

A weak tornado touched down near the Zachary Community Park west of Highway 964. The tornado crossed into the Ravenwood subdivision, and then traveled into the Live Oak Trace subdivision. Damage was mostly fencing that was knocked down and to yard equipment toppled. The tornado traveled across Highway 64/Church Street and into a large open pasture. It then lifted over Zachary High School.

Frequency / Probability

Tornadoes are a sporadic occurrence within East Baton Rouge Parish, with an annual chance of occurrence calculated at 56% based on the records for the past 25 years (1990 - 2015). The following figure displays the density of tornado touch downs in East Baton Rouge Parish and neighboring parishes.

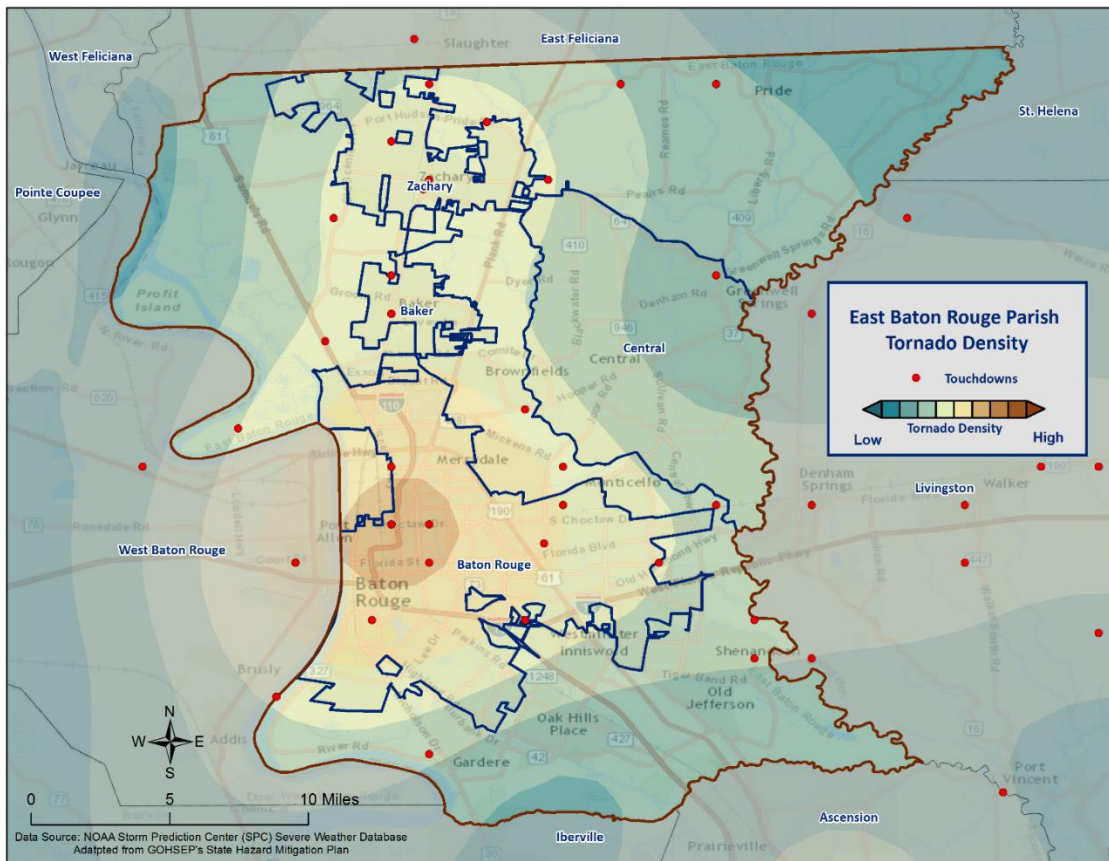


Figure 2-24: Location and Density of Tornadoes to Touch Down in East Baton Rouge Parish
(Source: NOAA/SPC Severe Weather Database)

Estimated Potential Losses

According to the SHELATUS database, there have been 14 tornadoes that have caused some level of property damage. The total damage from the actual claims for property is \$2,800,712, with an average cost of \$200,051 per tornado strike. When annualizing the total cost over the 25-year record, total annual losses based on tornadoes are estimated to be \$112,028. To provide an estimated annual estimated potential loss per jurisdiction, the 2010 Census population was used to assign the estimated potential losses proportionally across the jurisdictions. Based on the 2010 Census data, the table on the next page provides an annual estimate of potential losses for East Baton Rouge Parish.

Table 2-49: Estimated Annual Losses from Tornadoes in East Baton Rouge Parish

Estimated Annual Potential Losses from Tornadoes for East Baton Rouge Parish				
Unincorporated East Baton Rouge Parish (35.2% of Population)	Baker (3.2% of Population)	Baton Rouge (52.1% of Population)	Central (6.1% of Population)	Zachary (3.4% of Population)
\$39,439	\$3,536	\$58,409	\$6,837	\$3,807

Table 2-50 presents an analysis of building exposure that is susceptible to tornadoes by general occupancy type for East Baton Rouge Parish, along with the percentage of building stock that are mobile homes.

Table 2-50: Building Exposure by General Occupancy Type for Tornadoes in East Baton Rouge 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 (%)
57,789,290	15,747,167	2,707,651	142,816	1,763,292	1,179,537	1,016,152	24.4%

The parish has suffered through a total of two days in which tornadoes or waterspouts have accounted for one injury and one fatality during this 25-year period (*Table 2-51*). The average number of injuries and fatalities per event for East Baton Rouge Parish is 0.07 per tornado, with an average of 0.04 per year for the 25-year period.

Table 2-51: Tornadoes in East Baton Rouge Parish by Magnitude that Caused Injuries or Deaths

Date	Magnitude	Deaths	Injuries
March 1, 1991	F1	0	1
June 7, 2001	F1	1	0

In assessing the overall risk to population, the most vulnerable population throughout the parish are those residing in manufacturing housing. Approximately 24.4% of all housing in East Baton Rouge Parish consists of manufactured housing. Based on location data collected in a previous hazard mitigation project, there are 43 known locations where manufactured housing is concentrated. Each of those 43 locations have an overall number of manufactured houses ranging from one to 145. The location and density of manufactured houses can be seen in *Figure 2-25*.

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 East Baton Rouge Parish (*Table 2-52*). 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 2-52: Manufactured Home Distribution throughout East Baton Rouge Parish

Location	Number of Manufactured Home Parks	% of Manufactured Home Parks
Unincorporated Area	17	39.5%
Baker	3	7.0%
Baton Rouge	10	23.3%
Central	8	18.6%
Zachary	5	11.6%

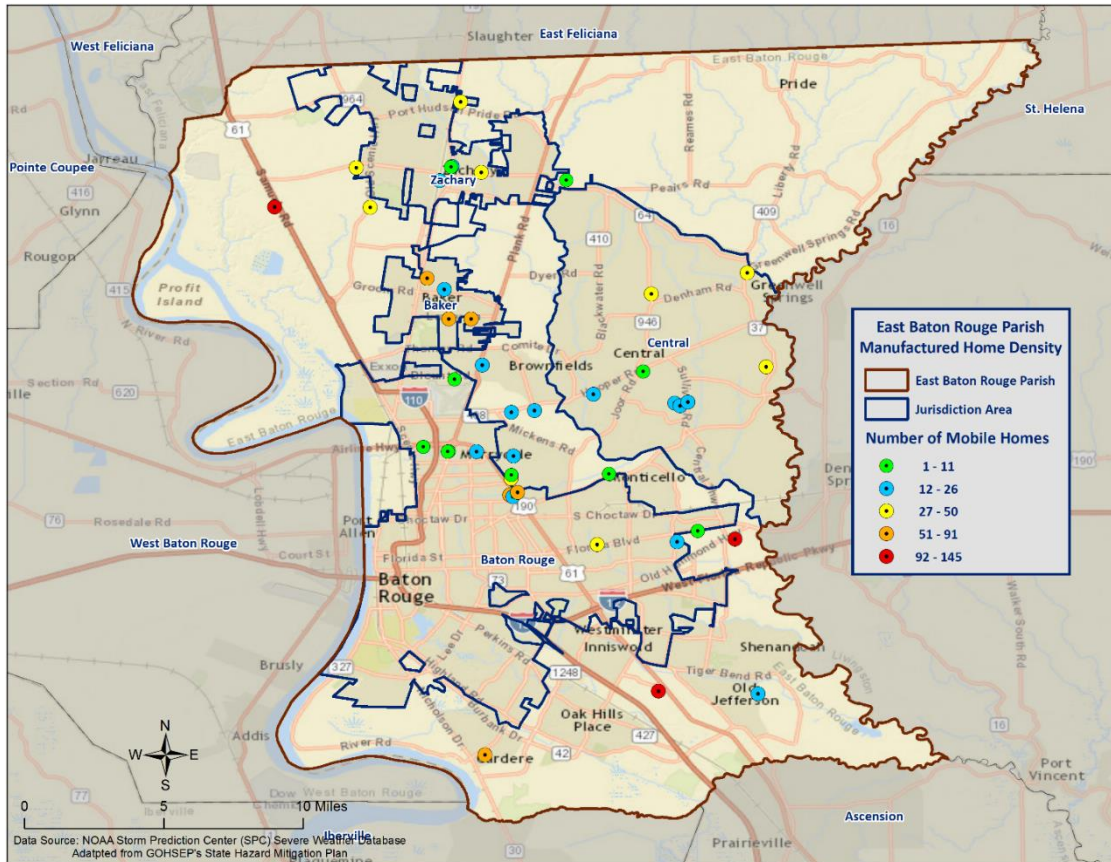


Figure 2-25: Location and Approximate Number of Units in Manufactured Housing Locations throughout East Baton Rouge Parish

Vulnerability

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

Tropical Cyclones

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

Table 2-53: Saffir-Simpson Hurricane Wind Scale

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

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

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

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

Location

Hurricanes are the single biggest threat to all of South Louisiana. With any single hurricane having the potential to devastate multiple parishes at once, the risk of a tropical cyclone has the probability of impacting anywhere within the planning area for East Baton Rouge 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 SHELATUS database reports a total of six tropical cyclone events occurring within the boundaries of East Baton Rouge Parish between the years 2002 and 2014 ([Table 2-54](#)). The tropical cyclone events experienced in East Baton Rouge Parish include depressions, storms, and

hurricanes. As a worst case scenario, East Baton Rouge Parish can expect to experience hurricanes at the Category 4 level in the future.

*Table 2-54: Historical Tropical Cyclone Events in East Baton Rouge Parish from 2002- 2015
(Source: SHEL DUS)*

Date	Name	Storm Type At Time of Impact
October 2, 2002	Lili	Hurricane –Category 1
August 28, 2005	Katrina	Hurricane – Category 3
September 23, 2005	Rita	Tropical Storm
August 24, 2008	Fay	Tropical Depression
September 11, 2008	Ike	Tropical Storm
September 2, 2011	Lee	Tropical Storm

[Hurricane Lili \(2002\)](#)

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

The primary impact in East Baton Rouge Parish was localized flooding. Wind estimates were approximately 47 mph. Minor structural damage was reported throughout the parish.

[Hurricane Katrina \(2005\)](#)

Hurricane Katrina was one of the strongest and most destructive hurricanes on record to impact the coast of the United States. The National Hurricane Center ranked Katrina as the costliest storm (both before and after adjusting for inflation) and the third deadliest in the U.S. since 1851. The hurricane initially made landfall in Plaquemines Parish on August 29, 2005, as a Category 3 storm and continued on a north-northeast track, with a second landfall occurring near the Louisiana- Mississippi border. Hurricane Katrina caused widespread devastation along the central Gulf Coast states. Following the passage of Katrina, the flooding of New Orleans was catastrophic, resulting in the displacement of more than 250,000 people.

The most significant impact of Hurricane Katrina on East Baton Rouge Parish was to the building and equipment at Our Lady of the Lake Hospital in Baton Rouge. The total damage including contents was approximately \$6,692.

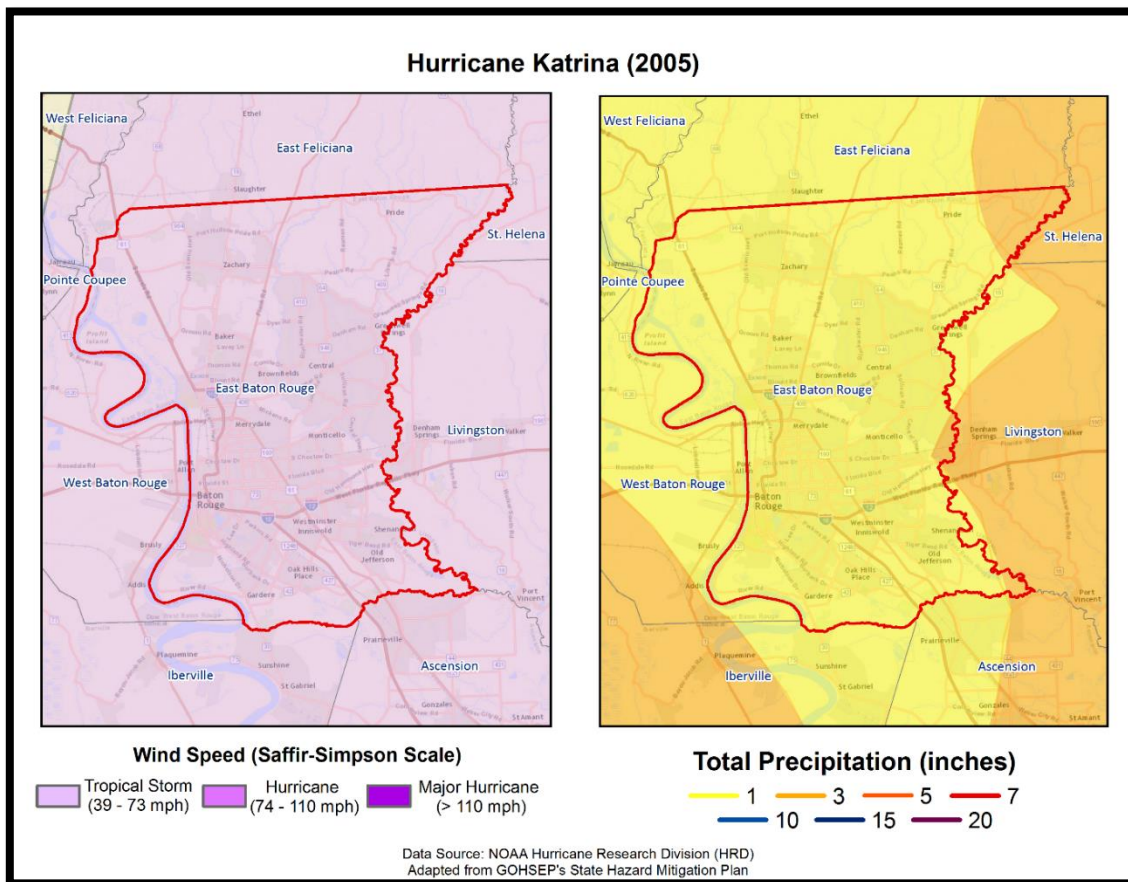


Figure 2-26: Wind Speed and Precipitation Totals in East Baton Rouge Parish for Hurricane Katrina

Hurricane Rita (2005)

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

Hurricane Rita was the most powerful hurricane to impact southwestern Louisiana since Hurricane Audrey in 1957. Estimated damages in southwest Louisiana totaled near \$4 billion, with the majority of those losses occurring in Cameron and Calcasieu Parishes. Entire towns were destroyed in Cameron Parish, including

downtown Cameron, Creole, Holly Beach, and Grand Chenier. An estimated 90 to 95 percent of the homes in the parish were severely damaged or destroyed. Storm surge values were estimated around 15 feet in parts of Cameron Parish.

In East Baton Rouge Parish, the storm resulted in localized flooding throughout the parish. The maximum sustained winds in East Baton Rouge Parish was 42 mph with approximately one to four inches of rain.

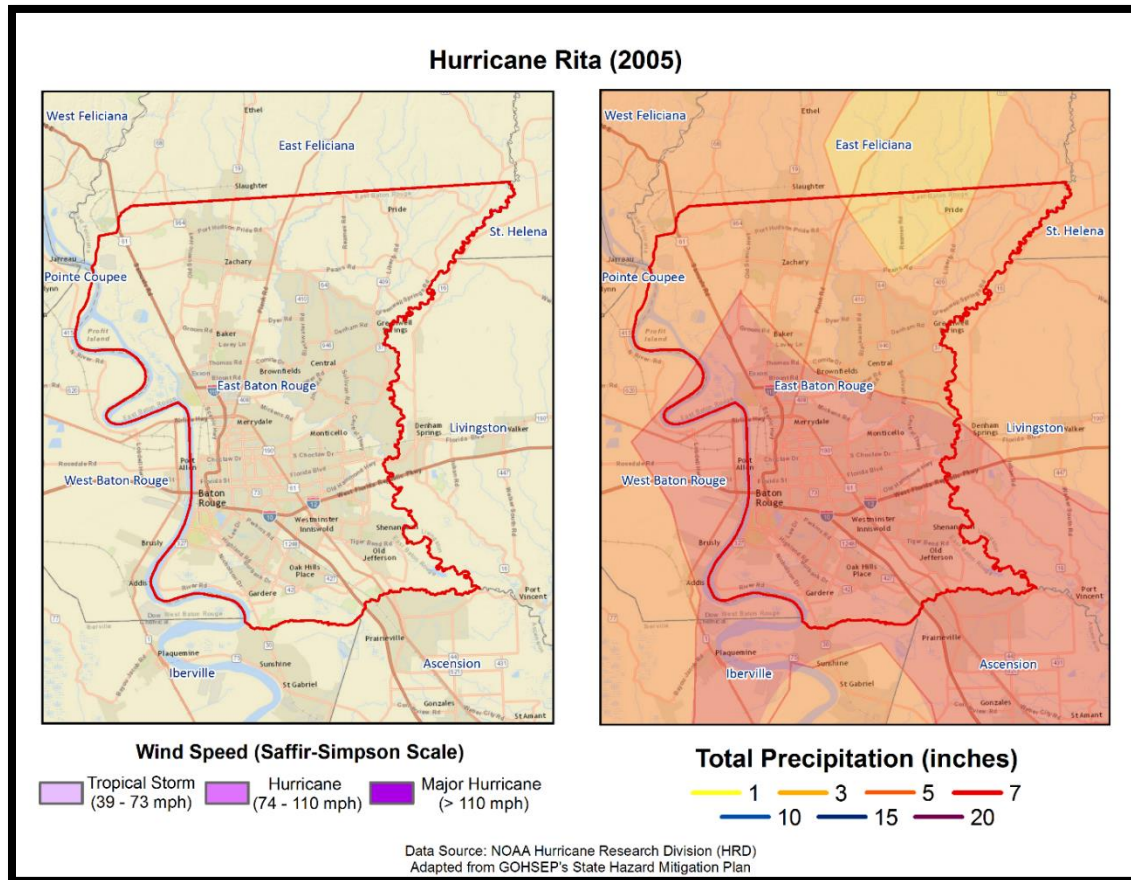


Figure 2-27: Wind Speed and Precipitation Totals in East Baton Rouge Parish for Hurricane Rita

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.

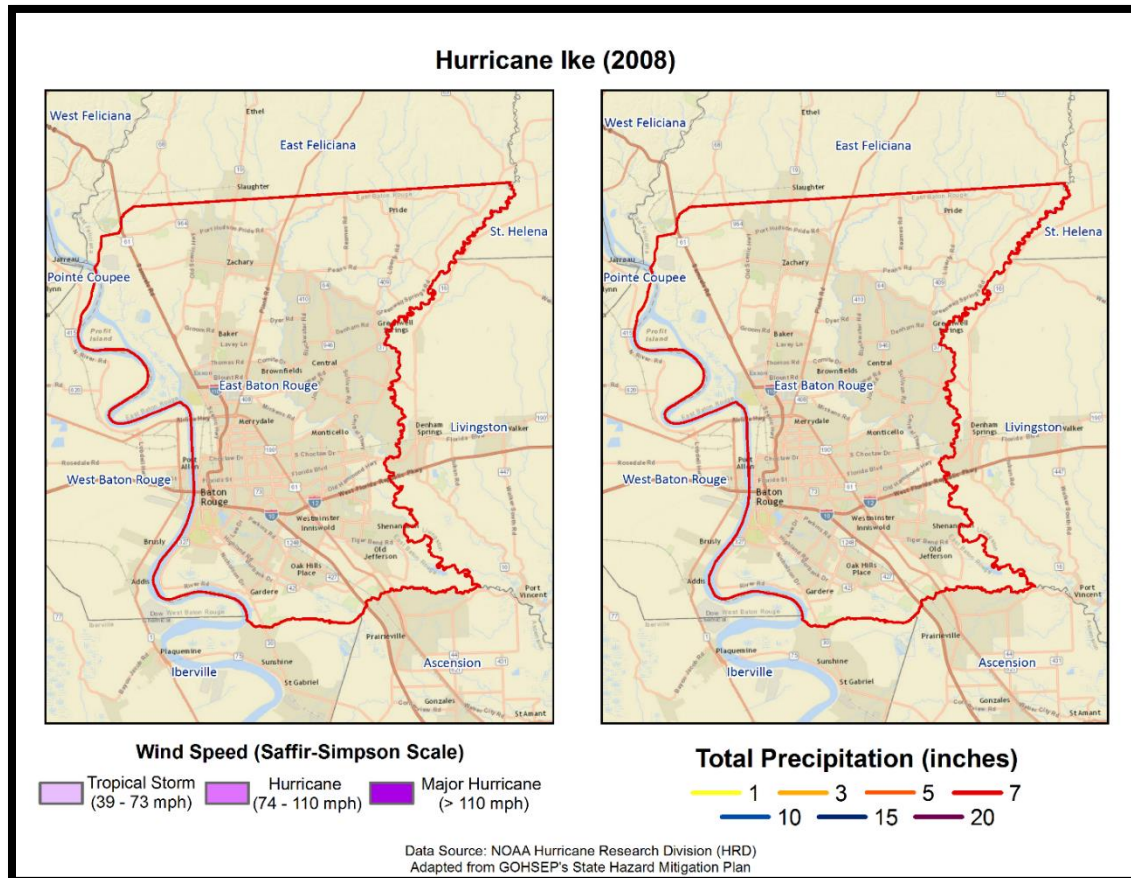


Figure 2-28: Wind Speed and Precipitation Totals in East Baton Rouge Parish for Hurricane Ike

In East Baton Rouge Parish, no significant damage was reported for any buildings and flooding was minimal.

Tropical Storm Lee (2011)

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

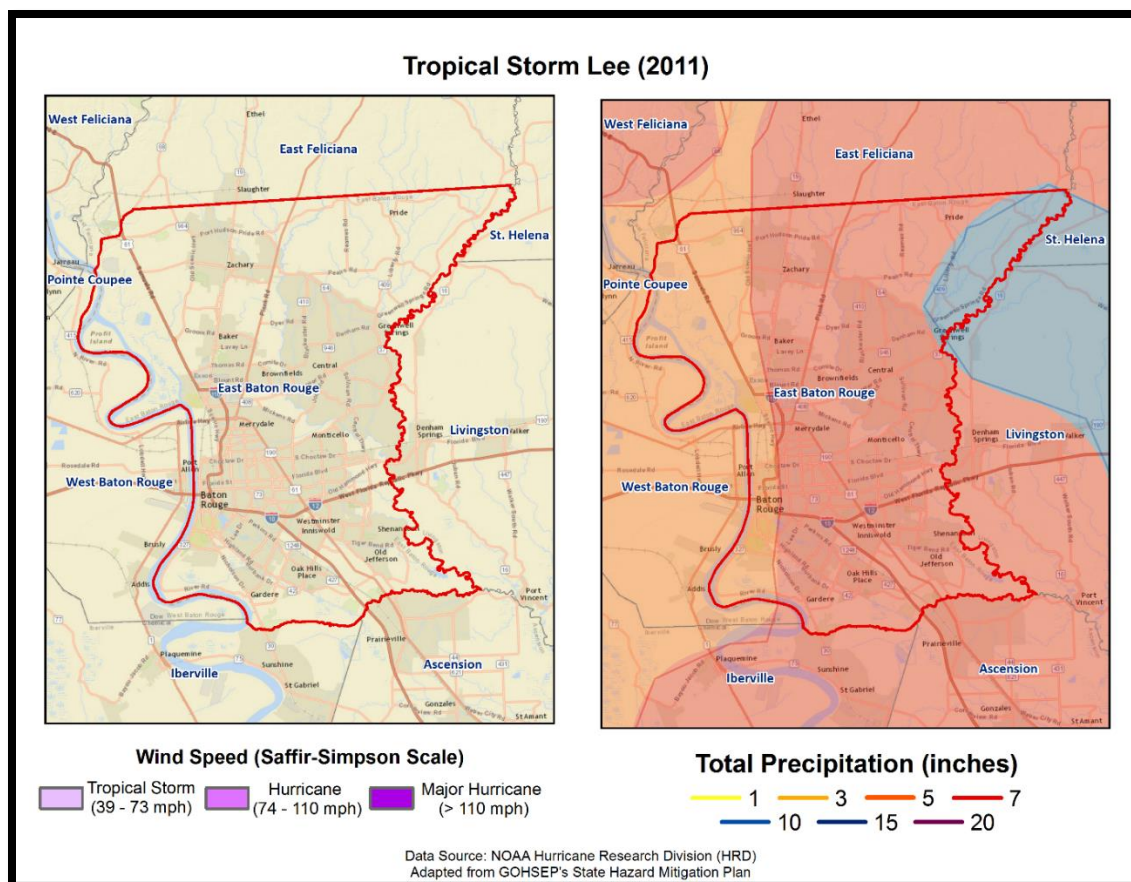


Figure 2-29: Wind Speed and Precipitation Totals in East Baton Rouge Parish for Tropical Storm Lee

The main impacts associated with Tropical Storm Lee were storm surge and rainfall. Both of these impacts were related to its slow speed as it crossed the region, which allowed the circulation to linger over the area for several days. Storm surge associated with Lee caused storm tides three to five feet above normal, resulting in lowland flooding. Additional detailed information about Tropical Storm Lee's storm surge is contained in the separate storm surge report. Four day rainfall totals ranged from seven to 15 inches across the area. A maximum of 15.48 inches was recorded near Holden in Livingston Parish. Due to dry antecedent conditions, river flooding was minimal for the amount of rainfall that occurred. Wind impacts were generally minimal due to only tropical cyclone strength winds being recorded, resulting in tree limbs being blown down and weak trees toppling, causing power outages.

Overall, there were minimal reports of damage to residences or infrastructure in East Baton Rouge Parish. Localized flooding was experienced in low-lying areas of the parish, but flood damage was minimal.

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

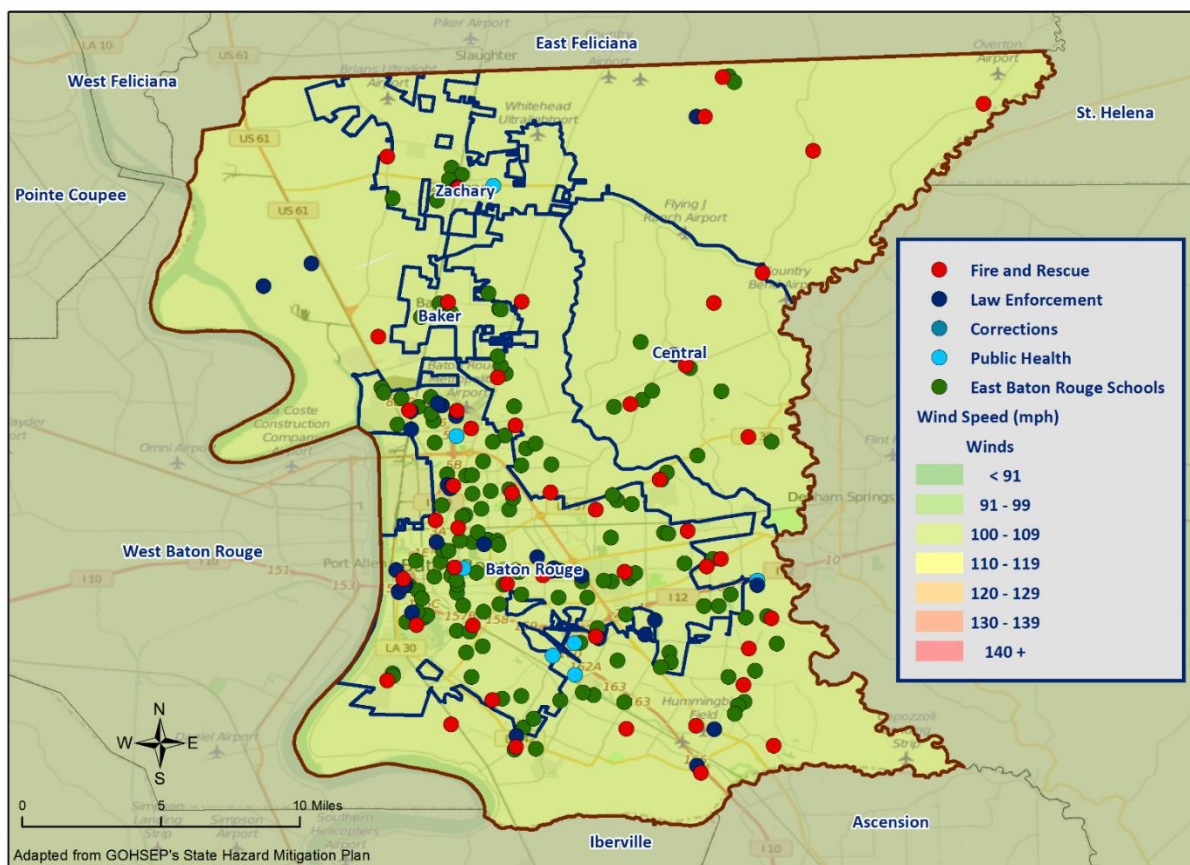


Figure 2-30: Winds Zones for East Baton Rouge Parish in Relation to Critical Facilities

Frequency / Probability

Tropical cyclones are large natural hazard events that regularly impact East Baton Rouge Parish. The annual chance of occurrence for a tropical cyclone is estimated at 24% for East Baton Rouge Parish and its municipalities, with six 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, East Baton Rouge Parish is highly vulnerable to tropical cyclones. This area has experienced several tropical cyclone events in the past and can expect more in the future.

Estimated Potential Losses

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

*Table 2-55: Total Estimated Losses for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Jurisdiction	Estimated Total Losses from 100-Year Hurricane Event
East Baton Rouge Parish (Unincorporated)	\$242,434,028
Baker	\$21,738,788
Baton Rouge	\$359,042,795
Central	\$42,028,845
Zachary	\$23,404,985
Total	\$688,649,440

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 2-56: Ratio of Total Losses to Total Estimated Value of Assets for each Jurisdiction in East Baton Rouge 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	\$242,434,028	\$29,230,443,000	0.8%
Baker	\$21,738,788	\$1,782,234,000	1.2%
Baton Rouge	\$359,042,795	\$42,646,733,000	0.8%
Central	\$42,028,845	\$4,300,291,000	1.0%
Zachary	\$23,404,985	\$2,386,204,000	1.0%

Based on the Hazus 2.2 Hurricane Model, estimated total losses range from 0.8% to 1.2% of the total estimated value of all assets for the unincorporated area of East Baton Rouge Parish, and the incorporated areas of Baker, Baton Rouge, Central, and Zachary.

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

*Table 2-57: Estimated Losses in Unincorporated East Baton Rouge Parish for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

East Baton Rouge Parish (Unincorporated)	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$294,953
Commercial	\$17,712,941
Government	\$1,218,667
Industrial	\$1,173,374
Religious / Non-Profit	\$1,096,324
Residential	\$220,414,981
Schools	\$522,788
Total	\$242,434,028

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

Baker	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$26,448
Commercial	\$1,588,300
Government	\$109,276
Industrial	\$105,215
Religious / Non-Profit	\$98,306
Residential	\$19,764,365
Schools	\$46,878
Total	\$21,738,788

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

Baton Rouge	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$436,823
Commercial	\$26,232,720
Government	\$1,804,835
Industrial	\$1,737,758
Religious / Non-Profit	\$1,623,646
Residential	\$326,432,768
Schools	\$774,245
Total	\$359,042,795

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

Central	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$51,134
Commercial	\$3,070,751
Government	\$211,270
Industrial	\$203,418
Religious / Non-Profit	\$190,061
Residential	\$38,211,579
Schools	\$90,632
Total	\$42,028,845

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

Zachary	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$28,475
Commercial	\$1,710,037
Government	\$117,652
Industrial	\$113,280
Religious / Non-Profit	\$105,841
Residential	\$21,279,229
Schools	\$50,471
Total	\$23,404,985

Threat to People

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

*Table 2-62: Number of People Susceptible to a 100-Year Hurricane Event in East Baton Rouge Parish
(Source: Hazus 2.2)*

Number of People Exposed to Hurricane Hazards			
Location	# in Community	# in Hazard Area	% in Hazard Area
East Baton Rouge Parish (Unincorporated)	154,959	154,959	100%
Baker	13,895	13,895	100%
Baton Rouge	229,493	229,493	100%
Central	26,864	26,864	100%
Zachary	14,960	14,960	100%
Total	440,171	440,171	100%

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 2-63: Vulnerable Populations in Unincorporated East Baton Rouge Parish for a 100-Year Hurricane Event

(Source: Hazus 2.2)

East Baton Rouge Parish (Unincorporated)		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	154,959	100.0%
Persons Under 5 Years	10,382	6.7%
Persons Under 18 Years	26,111	16.9%
Persons 65 Years and Over	16,906	10.9%
White	75,666	48.8%
Minority	79,293	51.2%

Table 2-64: Vulnerable Populations in Baker for a 100-Year Hurricane Event

(Source: Hazus 2.2)

Baker		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	13,895	100.0%
Persons Under 5 Years	1,053	7.6%
Persons Under 18 Years	2,928	21.1%
Persons 65 Years and Over	1,601	11.5%
White	2,853	20.5%
Minority	11,042	79.5%

Table 2-65: Vulnerable Populations in Baton Rouge for a 100-Year Hurricane Event

(Source: Hazus 2.2)

Baton Rouge		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	229,493	100.0%
Persons Under 5 Years	14,986	6.5%
Persons Under 18 Years	36,512	15.9%
Persons 65 Years and Over	25,772	11.2%
White	90,351	39.4%
Minority	139,142	60.6%

*Table 2-66: Vulnerable Populations in Central for a 100-Year Hurricane Event
(Source: Hazus 2.2)*

Central		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	26,864	100.0%
Persons Under 5 Years	1,601	6.0%
Persons Under 18 Years	4,591	17.1%
Persons 65 Years and Over	16,946	63.1%
White	23,992	89.3%
Minority	2,872	10.7%

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

Zachary		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	14,960	100.0%
Persons Under 5 Years	1,118	7.5%
Persons Under 18 Years	3,311	22.1%
Persons 65 Years and Over	1,545	10.3%
White	9,224	61.7%
Minority	5,736	38.3%

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 2-31](#) displays the areas of wildland-urban interaction in East Baton Rouge 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 2-68: 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 East Baton Rouge Parish and its jurisdictions.

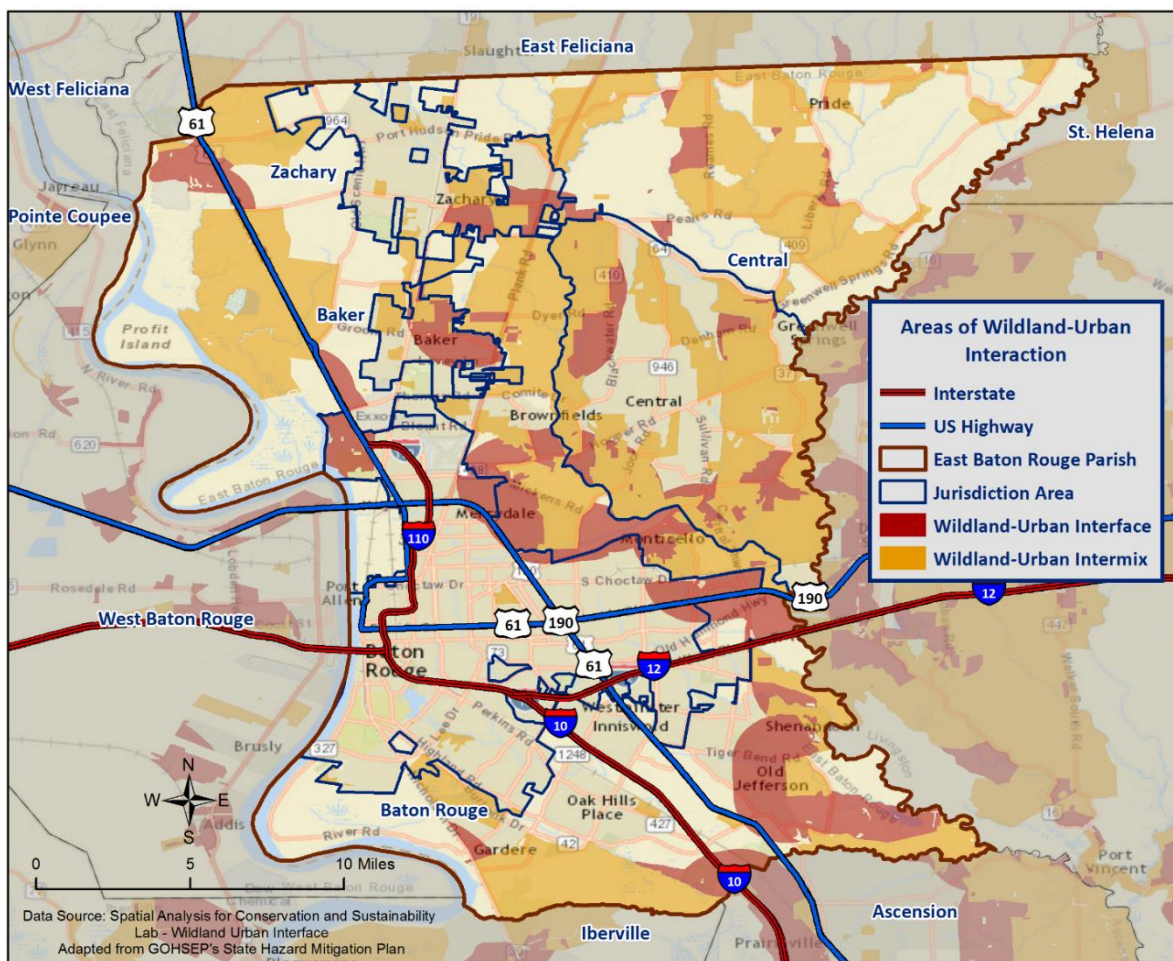


Figure 2-31: Wildland-Urban Interaction in East Baton Rouge Parish

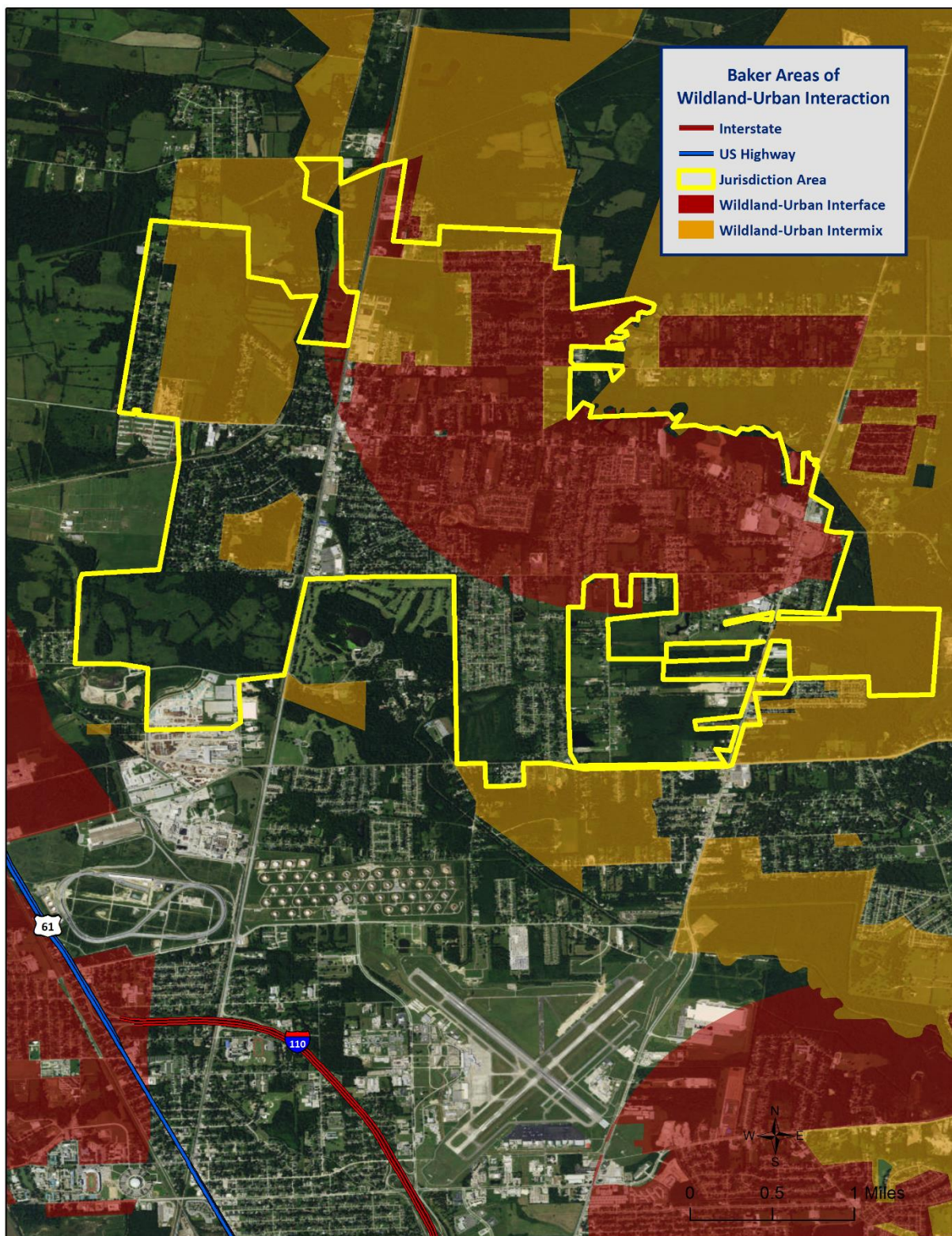


Figure 2-32: Wildland-Urban Interaction in Baker

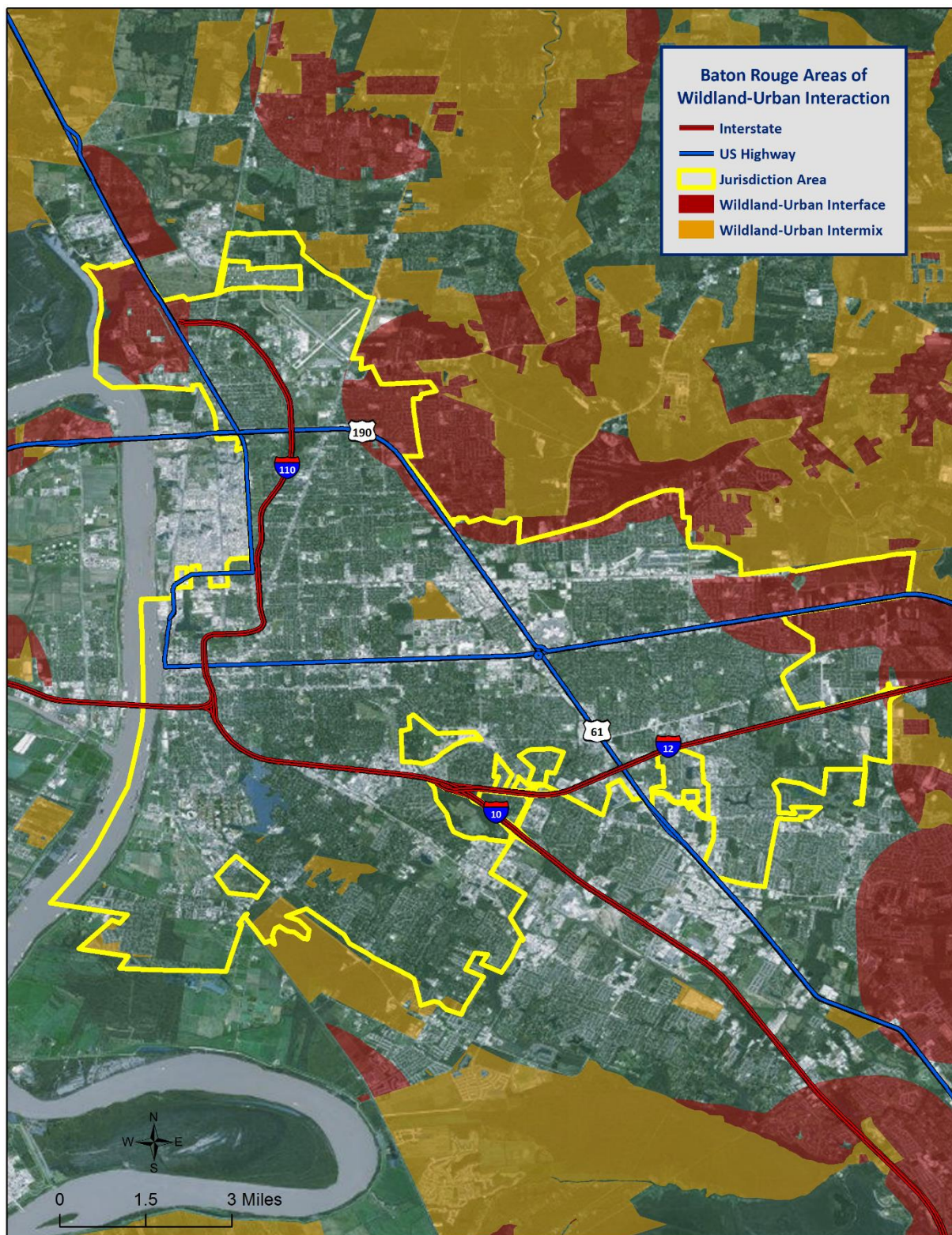


Figure 2-33: Wildland-Urban Interaction in Baton Rouge

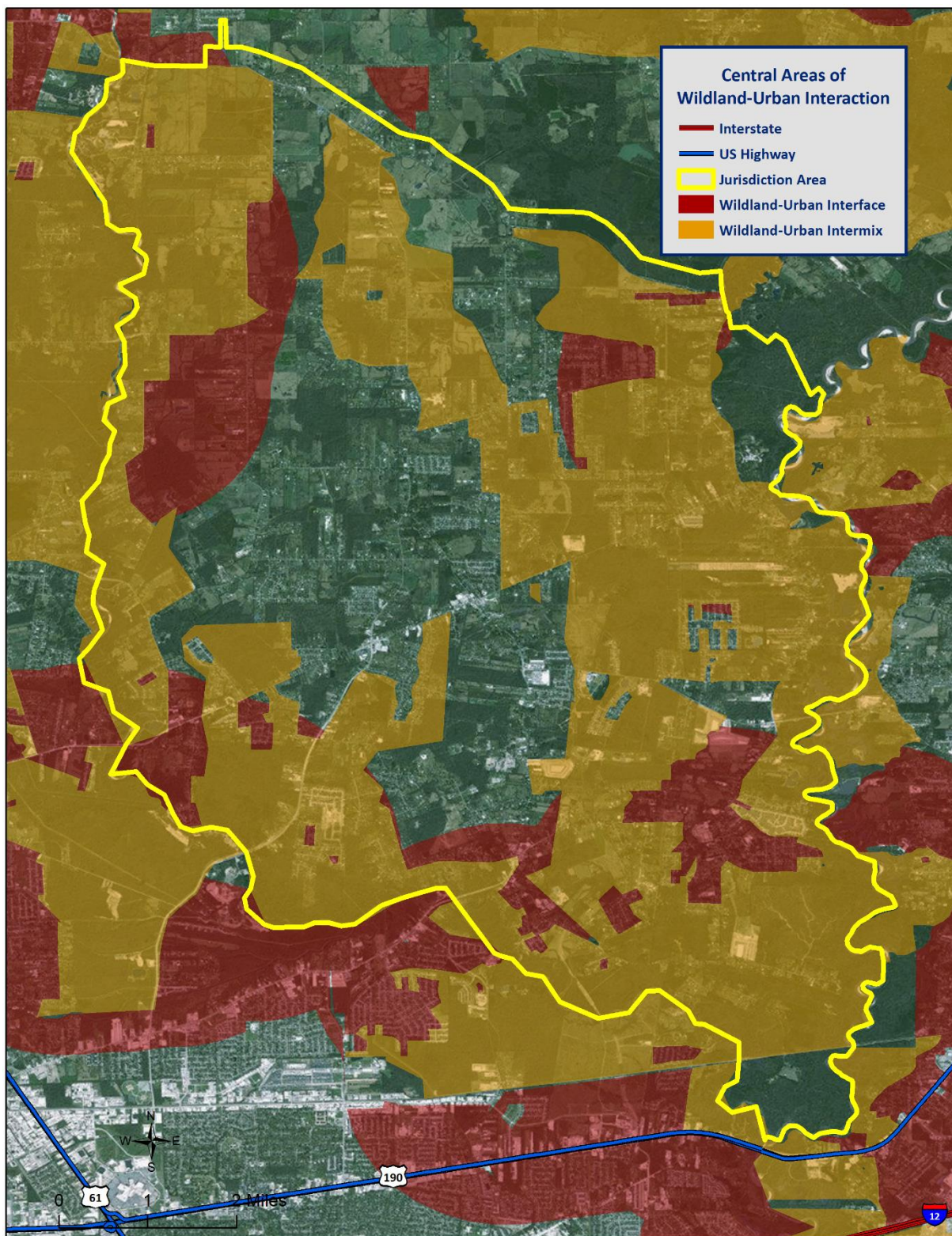


Figure 2-34: Wildland-Urban Interaction in Central

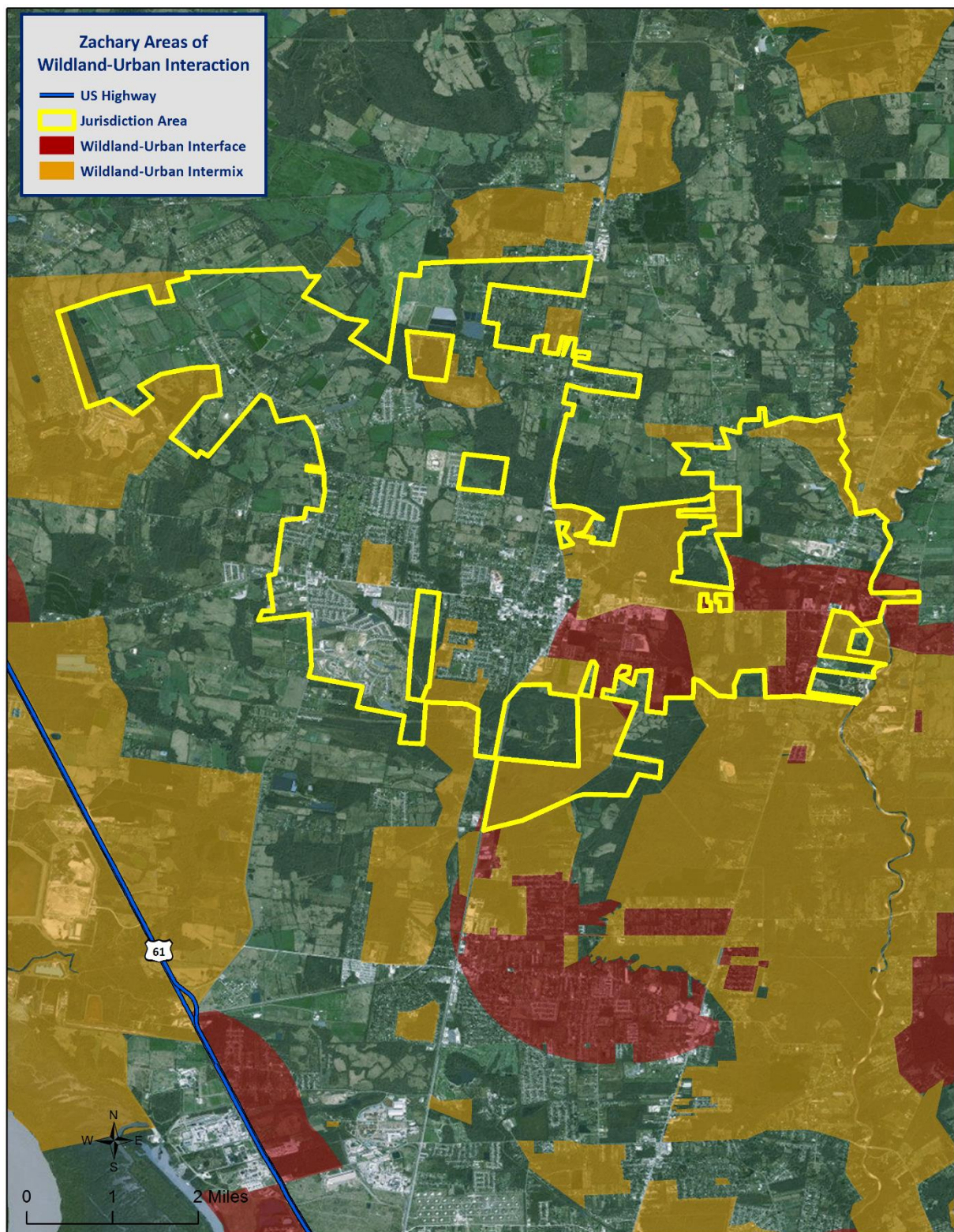


Figure 2-35: Wildland-Urban Interaction in Zachary

Previous Occurrences / Extents

There have been no reported wildfire events that have occurred within the boundaries of East Baton Rouge 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 East Baton Rouge Parish could potential experience due to a wildfire event.

*Table 2-69: Potential Wildfire Intensity Levels for East Baton Rouge Parish
(Source: Southern Wildfire Assessment Portal)*

Potential Wildfire Intensity	
East Baton Rouge Parish (Unincorporated)	Highest Intensity Level 5
Baker	Moderate to High Intensity Level 3.5
Baton Rouge	High Intensity Level 4
Central	Moderate to High Intensity Level 3.5
Zachary	High Intensity Level 4

Frequency / Probability

With no recorded events in 25 years, wildfire events within the boundaries of East Baton Rouge 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 East Baton Rouge Parish. In assessing the overall risk to population, the most vulnerable population throughout the parish consists of those residing in areas of wildland-urban interaction. *Figure 2-31* displays the areas of wildland-urban interaction in East Baton Rouge 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 2-70: Total Building Exposure by Wildland-Urban Interaction Areas
(Source: Hazus 2.2)*

Jurisdiction	Estimated Total Building Exposure
East Baton Rouge Parish (Unincorporated)	\$14,889,814,000
Baker	\$1,457,634,000
Baton Rouge	\$6,594,300,000
Central	\$3,752,266,000
Zachary	\$1,178,722,000
Total	\$27,872,736,000

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 2-71: Estimated Exposure for Unincorporated East Baton Rouge Parish by Sector
(Source: Hazus 2.2)*

East Baton Rouge Parish (Unincorporated)	Estimated Total Building Exposure by Sector
Agricultural	\$25,464,000
Commercial	\$1,205,449,000
Government	\$29,477,000
Industrial	\$425,038,000
Religious / Non-Profit	\$215,948,000
Residential	\$12,930,028,000
Schools	\$58,410,000
Total	\$14,889,814,000

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

Baker	Estimated Total Building Exposure by Sector
Agricultural	\$1,540,000
Commercial	\$208,353,000
Government	\$13,404,000
Industrial	\$57,582,000
Religious / Non-Profit	\$52,788,000
Residential	\$1,112,840,000
Schools	\$11,127,000
Total	\$1,457,634,000

*Table 2-73: Estimated Exposure for Baton Rouge by Sector
(Source: Hazus 2.2)*

Baton Rouge	Estimated Total Building Exposure by Sector
Agricultural	\$8,518,000
Commercial	\$1,100,569,000
Government	\$32,275,000
Industrial	\$237,788,000
Religious / Non-Profit	\$122,602,000
Residential	\$4,967,919,000
Schools	\$124,629,000
Total	\$6,594,300,000

Table 2-74: Estimated Exposure for Central by Sector
(Source: Hazus 2.2)

Central	Estimated Total Building Exposure by Sector
Agricultural	\$6,118,000
Commercial	\$330,869,000
Government	\$5,215,000
Industrial	\$84,075,000
Religious / Non-Profit	\$64,866,000
Residential	\$3,255,285,000
Schools	\$5,838,000
Total	\$3,752,266,000

Table 2-75: Estimated Exposure for Zachary by Sector
(Source: Hazus 2.2)

Zachary	Estimated Total Building Exposure by Sector
Agricultural	\$3,296,000
Commercial	\$315,523,000
Government	\$4,814,000
Industrial	\$27,050,000
Religious / Non-Profit	\$22,222,000
Residential	\$792,045,000
Schools	\$13,772,000
Total	\$1,178,722,000

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 2-76: 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
East Baton Rouge Parish (Unincorporated)	154,959	90,724	58.5%
Baker	13,895	11,698	84.2%
Baton Rouge	229,493	42,123	18.4%
Central	26,864	23,584	87.8%
Zachary	14,960	6,778	45.3%
Total	440,171	174,907	39.7%

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

Table 2-77: Population in Unincorporated East Baton Rouge Parish Located within a Wildland-Urban Interaction Area

(Source: 2010 U.S. Census Data)

East Baton Rouge Parish (Unincorporated)		
Category	Total Numbers	Percentage of People in Wildland-Urban Interaction Area
Number in Hazard Area	90,724	58.5%
Persons Under 5 Years	6,079	6.7%
Persons Under 18 Years	15,287	16.9%
Persons 65 Years and Over	9,898	10.9%
White	44,301	48.8%
Minority	46,423	51.2%

Table 2-78: Population in Baker Located within a Wildland-Urban Interaction Area

(Source: 2010 U.S. Census Data)

Baker		
Category	Total Numbers	Percentage of People in Wildland-Urban Interaction Area
Number in Hazard Area	11,698	84.2%
Persons Under 5 Years	887	7.6%
Persons Under 18 Years	2,465	21.1%
Persons 65 Years and Over	1,348	11.5%
White	2,402	20.5%
Minority	9,296	79.5%

Table 2-79: Population in Baton Rouge Located within a Wildland-Urban Interaction Area

(Source: 2010 U.S. Census Data)

Baton Rouge		
Category	Total Numbers	Percentage of People in Wildland-Urban Interaction Area
Number in Hazard Area	42,123	18.4%
Persons Under 5 Years	2,751	6.5%
Persons Under 18 Years	6,702	15.9%
Persons 65 Years and Over	4,730	11.2%
White	16,584	39.4%
Minority	25,539	60.6%

*Table 2-80: Population in Central Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)*

Central		
Category	Total Numbers	Percentage of People in Wildland-Urban Interaction Area
Number in Hazard Area	23,584	87.8%
Persons Under 5 Years	1,406	6.0%
Persons Under 18 Years	4,031	17.1%
Persons 65 Years and Over	14,877	63.1%
White	21,063	89.3%
Minority	2,521	10.7%

*Table 2-81: Population in Zachary Located within a Wildland-Urban Interaction Area
(Source: 2010 U.S. Census Data)*

Zachary		
Category	Total Numbers	Percentage of People in Wildland-Urban Interaction Area
Number in Hazard Area	6,778	45.3%
Persons Under 5 Years	506	7.5%
Persons Under 18 Years	1,500	22.1%
Persons 65 Years and Over	700	10.3%
White	4,179	61.7%
Minority	2,599	38.3%

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 2-82: 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 East Baton Rouge Parish as all of the adjacent parishes, the entire planning area for East Baton Rouge Parish is equally at risk for winter storms.

Previous Occurrences / Extents

According to SHELDES, there have been eight reported winter storm events that have occurred within the boundaries of East Baton Rouge Parish between the years of 1990 and 2015. The following table provides a brief synopsis of each event that has occurred since 2010. Based on historic data, East Baton Rouge Parish can expect an ice damage index of 2 on the Sperry-Piltz Ice Accumulation Index.

Table 2-83: Previous Occurrences for Winter Storm Events

Date	Synopsis	Property Damage	Crop Damage
January 12, 2010	A band of snow developed over southeast Louisiana and southwest Mississippi. Two to three inches of snow accumulated in Baker.	\$0	\$0
January 24, 2014	A combination of freezing rain, sleet, and snow fell across the area. The precipitation produced very hazardous conditions especially along bridges, overpasses, and other elevated roadways. Just under an inch of snow fell in 30 minutes northwest of Baton Rouge.	\$0	\$0
March 4, 2014	Freezing rain caused icing on Interstate 110, as well as the Mississippi River Bridge on Interstate 10. The icing was responsible for multiple accidents in East Baton Rouge Parish.	\$0	0

Based on previous winter storm events, the worst-case scenario for the East Baton Rouge Parish planning area is two to three inches of snow accumulation and approximately one tenth to one quarter inch of ice accumulation.

Frequency / Probability

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

Estimated Potential Losses

Since 1990, there have been eight reported winter weather events that have resulted in property and/or crop damages according to the SHEL DUS database. The total property damages associated with these storms have totaled \$1,048,154. 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 SHEL DUS (1990 – 2015). This provides an annual estimated potential loss of \$41,926. 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 East Baton Rouge Parish based on the 2010 Census data:

Table 2-84: Estimated Annual Losses for Winter Weather Events in East Baton Rouge Parish

Estimated Annual Potential Losses from Winter Weather for East Baton Rouge Parish				
Unincorporated East Baton Rouge Parish (35.2% of Population)	Baker (3.2% of Population)	Baton Rouge (52.1% of Population)	Central (6.1% of Population)	Zachary (3.4% of Population)
\$14,760	\$1,323	\$21,859	\$2,559	\$1,425

From 1990 to 2015, there have been three injuries and one fatality as a result of winter weather in East Baton Rouge 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

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

Previous Occurrences / Extents

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

Levee Failure

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

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

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

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

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

Location

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

Previous Occurrences / Extents

There have been no reported levee failures in East Baton Rouge Parish from 1990 to 2015. Levee information including the extent of a levee failure has been requested from the U.S. Army Corps of Engineers. East Baton Rouge Parish is awaiting a response from the USACE, and will continue to update this information as new data is received.

Frequency / Probability

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

East Baton Rouge 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 East Baton Rouge 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 East Baton Rouge Parish and its jurisdictions are shown in the table on the following page.

Table 3-1: East Baton Rouge Parish Planning and Regulatory Capabilities

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

Building Codes, Permitting, Land Use Planning and Ordinances

The East Baton Rouge Parish Government provides oversight for building permits and codes, land use planning, and all parish ordinances where applicable.

As of the 2016 update, East Baton Rouge 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 East Baton Rouge Parish Government is also responsible for enforcing the Parish Ordinances relating to health and safety, property maintenance standards, and condemnation of unsafe structures.

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

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

Table 3-2: East Baton Rouge Parish Administrative and Technical Capabilities

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

Financial capabilities are the resources that East Baton Rouge 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 East Baton Rouge Parish and its jurisdictions:

Table 3-3: East Baton Rouge Parish Financial Capabilities

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

Education and Outreach

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

East Baton Rouge 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 outlined in the table below.

Table 3-4: East Baton Rouge Parish Education and Outreach Capabilities

Education and Outreach						
Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.						
	East Baton Rouge Parish	City of Baton Rouge	Baker	Central	Zachary	
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	No	
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	Yes	Yes	Yes	No	Yes	
Natural Disaster or safety related school program	Yes	Yes	ONGOING	yes	Yes	
Storm Ready certification	Yes	Yes	No		No	
Firewise Communities certification	Yes	Yes	FORMING CERT TEAM	No	No	
Public/Private partnership initiatives addressing disaster-related issues	Yes	Yes	Yes	No	Yes	
Other	No	No	No	No	No	

In some cases, the jurisdictions rely on East Baton Rouge Parish MOHSEP and/or East Baton Rouge Parish Government Agencies for the above listed planning and regulatory, administrative and technical, financial, and education and outreach capabilities. Comments regarding the jurisdictions utilization or intentions to utilize and leverage the capabilities of the parish government can be found in Appendix E in the jurisdictional specific worksheets.

As reflected in the aforementioned existing regulatory mechanisms, programs, and resources within each jurisdiction, East Baton Rouge 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 East Baton Rouge 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:

- City of Baker
- City of Baton Rouge
- City of Central
- City of Zachary

Flood Insurance and Community Rating System

East Baton Rouge Parish is a participant in the Community Rating System (CRS), as well as the cities of Baker, Central, and Zachary. Obtaining the CRS rating for the parish and participating jurisdictions is recognized as an eventual goal by the Hazard Mitigation Steering Committee. Participation in the CRS strengthens local capabilities by lowering flood insurance premiums for jurisdictions that exceed NFIP minimum requirements.

Under the Federal Emergency Management Agency (FEMA), the National Flood Insurance Program (NFIP) administers the Community Rating System. Under the CRS, flood insurance premiums for properties in participating communities are reduced to reflect the flood protection activities that are being implemented. This program can have a major influence on the design and implementation of flood mitigation activities, so a brief summary is provided here.

A community receives a CRS classification based upon the credit points it receives for its activities. It can undertake any mix of activities that reduce flood losses through better mapping, regulations, public information, flood damage reduction and/or flood warning and preparedness programs.

There are ten CRS classes: class 1 requires the most credit points and gives the largest premium reduction; class 10 receives no premium reduction (see [Figure 3-1](#)). A community that does not apply for the CRS or that does not obtain the minimum number of credit points is a class 10 community.

During the last update, 38 Louisiana communities participated, including Lake Charles (class 8) and Calcasieu Parish (class 8). Mandeville, Shreveport, and Jefferson and East Baton Rouge Parishes had the best classifications in the state, class 7. As of the 2016 update, Jefferson, East Baton Rouge, and Terrebonne Parishes all lead the state with best classifications.

CLASS	DISCOUNT	CLASS	DISCOUNT
1	45%	6	20%
2	40%	7	15%
3	35%	8	10%
4	30%	9	5%
5	25%	10	—

SFHA (Zones A, AE, A1-A30, V, V1-V30, AO, and AH): Discount varies depending on class.
 SFHA (Zones A99, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO): 10% discount for Classes 1-6; 5% discount for Classes 7-9.*
 Non-SFHA (Zones B, C, X, D): 10% discount for Classes 1-6; 5% discount for Classes 7-9.

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

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

As of May 2012, 310 communities in the State of Louisiana participate in the Federal Emergency Management Agency's NFIP. Of these communities, 41 (or 13%) participate in the Community Rating System (CRS). Of the top fifty Louisiana communities, in terms of total flood insurance policies held by residents, 27 participate in the CRS. The remaining 23 communities present an outreach opportunity for encouraging participation in the CRS.

The CRS provides an incentive not just to start new mitigation programs, but to keep them going. There are two requirements that “encourage” a community to implement flood mitigation activities.

First, the parish and jurisdictions will receive CRS credit for this plan when it is adopted. To retain that credit, though, the parish must submit an evaluation report on progress toward implementing this plan to FEMA by October 1st of each year. That report must be made available to the media and the public.

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

In 2011¹, the National Flood Insurance Program (NFIP) completed a comprehensive review of the Community Rating System that will result in the release of a new CRS Coordinator's Manual.

The changes to the 2013 CRS Coordinator's Manual are the result of a multi-year program evaluation that included input from a broad group of contributors in order to evaluate the CRS and refine the program to meet its stated goals.

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

The 2013 CRS Coordinator's Manual changes will impact each CRS community differently. Some communities will see an increase in the points they receive since points for certain activities have increased (e.g., Activity 420 Open Space Preservation). Other communities will receive fewer points for certain activities (e.g., Activity 320 Map Information Service). It is likely that some communities with marginal CRS class 9 programs will have to identify new CRS credits in order to remain in the CRS.

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

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

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

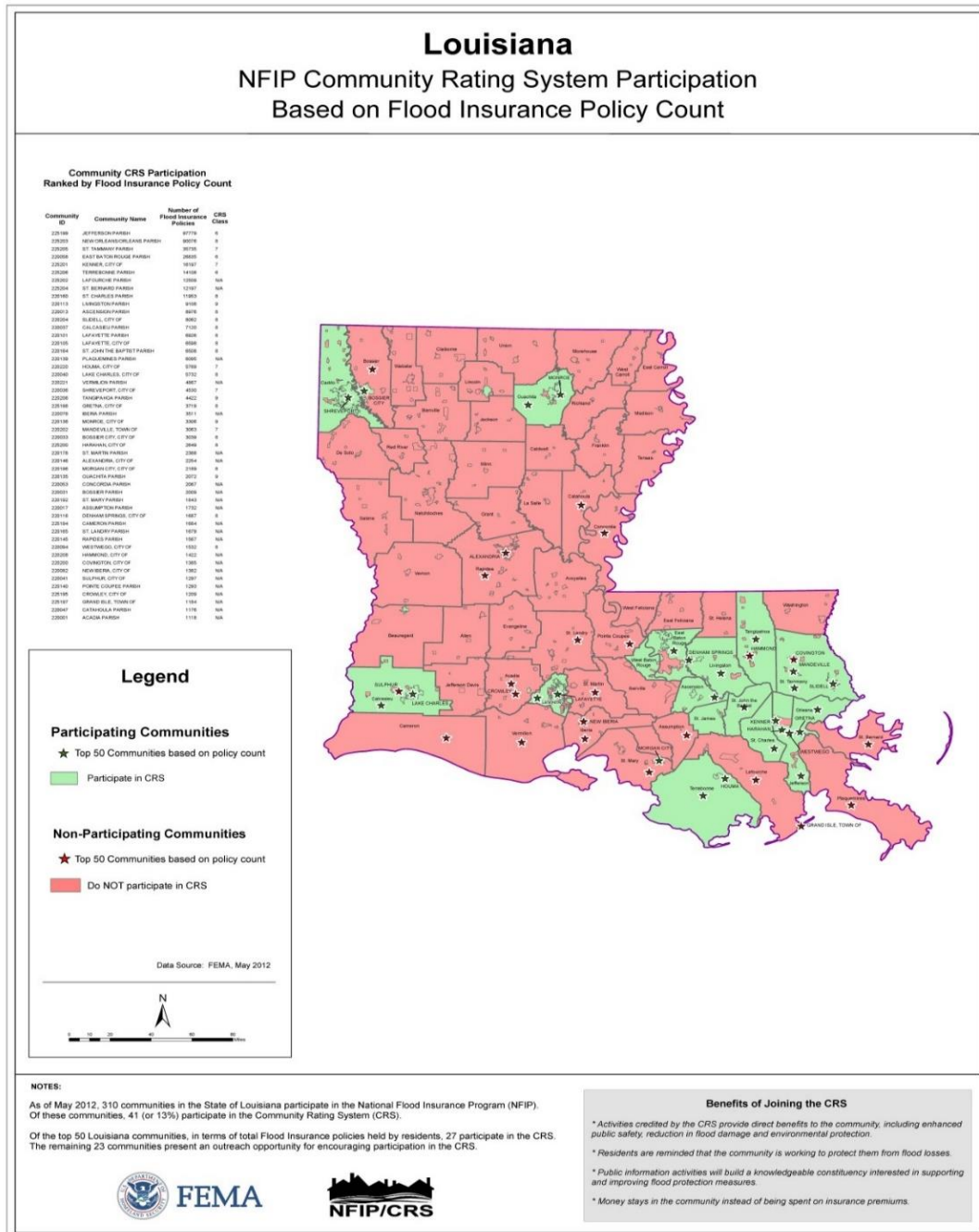


Figure 3-2: Louisiana CRS NFIP Participation
(Source: FEMA²)

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

In addition to the direct financial reward for participating in the Community Rating System, there are many other reasons to participate in the CRS. As FEMA staff often say, “If you are only interested in saving premium dollars, you’re in the CRS for the wrong reason.” The other benefits that are more difficult to measure in dollars include:

1. The activities credited by the CRS provide direct benefits to residents, including:
 - Enhanced public safety
 - A reduction in damage to property and public infrastructure
 - Avoidance of economic disruption and losses
 - Reduction of human suffering
 - Protection of the environment
2. A community’s flood programs will be better organized and more formal. Ad hoc activities, such as responding to drainage complaints rather than an inspection program, will be conducted on a sounder, more equitable basis.
3. A community can evaluate the effectiveness of its flood programs against a nationally recognized benchmark.
4. Technical assistance in designing and implementing a number of activities is available at no charge from the Insurance Services Office.
5. The public information activities will build a knowledgeable constituency interested in supporting and improving flood protection measures.
6. A community would have an added incentive to maintain its flood programs over the years. The fact that its CRS status could be affected by the elimination of a flood related activity or a weakening of the regulatory requirements for new developments would be taken into account by the governing board when considering such actions.
7. Every time residents pay their insurance premiums, they are reminded that the community is working to protect them from flood losses, even during dry years.

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

NFIP Worksheets

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

4. Mitigation Strategy

Introduction

East Baton Rouge 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.

East Baton Rouge 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 East Baton Rouge Parish Hazard Mitigation Plan Steering Committee, under the coordination of the East Baton Rouge Parish Mayor's 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 May 2016 – October 2016.

East Baton Rouge Parish reviewed the goals, objectives, actions and projects over the period of the hazard mitigation plan update process. The mitigation actions and projects in this 2016 Hazard Mitigation Plan Update are a product of analysis and review of the East Baton Rouge Parish Hazard Mitigation Plan Steering Committee under the coordination of the East Baton Rouge Parish Mayor's 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 May 2016 – October 2016.

An online public opinion survey was conducted of East Baton Rouge Parish residents between July and October 2016. The survey was designed to capture public perceptions and opinions regarding natural hazards in East Baton Rouge 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. Five citizens elected to take the survey but none completed it.

This activity was created in an effort to confirm that the goals and action items developed by the East Baton Rouge Parish Hazard Mitigation Plan Steering Committee are representative of the outlook of the community at large. However, because there were so few responses to the survey, an accurate depiction of the public's opinion could not be gathered. Therefore, this public feedback could not be incorporated into the plan. The full East Baton Rouge Parish survey can be found at the following link:

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

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

Goals

The goals represent the guidelines that the parish and its communities want to achieve with this plan update. To help implement the strategy and adhere to the mission of the Hazard Mitigation Plan, the preceding section of the plan update was focused on identifying and quantifying the risks faced by the residents and property owners in East Baton Rouge 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, East Baton Rouge 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 East Baton Rouge 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:

- To mitigate critical infrastructure and governmental/parish facilities to prepare for, protect against, respond to, and recover from natural hazards within East Baton Rouge Parish
- To minimize the NFIP payouts by reducing repetitive flooding in all areas of East Baton Rouge Parish, including all municipalities
- To promote an all-hazards public awareness campaign that focuses on preparing for and mitigating against natural disasters that may affect our community
- To improve the drainage system capacity for all river, creeks, and canals within East Baton Rouge Parish

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

East Baton Rouge Parish 2011 Hazard Mitigation Action Update

East Baton Rouge Parish Unincorporated Areas					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
E1: Building Enhancement	Perform mitigation measures that will enhance the performance of new and existing buildings, expansions, or infrastructure during high wind and flood events. This may include hardening structures, installing hurricane clips, elevating utilities or adding back up power supply / generators.	Parish Funding / Grant Funding	Parish Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
E2: Emergency Response Capabilities	Improve emergency response capabilities during disasters by performing mitigation measures that will enhance the performance of emergency response facilities during disasters. This may include hardening structures, installing hurricane clips, elevating utilities, or adding back up power supply / generators.	Parish Funding / Grant Funding	Medical Services Director / Parish Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carry Over
E3: Emergency Shelters and Safe Rooms	Provide shelter to local residents by constructing new emergency shelters or safe rooms, and enhancing the performance of existing shelters and safe rooms in the parish.	Parish Funding / Grant Funding	Parish Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carry Over
E4: Damaged Property Database	Maintain a database of all properties or areas that sustain damage as a result of a hazard. Include information about the nature and extent of the damage.	Staff Time / Grant Funding	Planning and Zoning	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
E5: Emergency Power and Utility Services	Provide reliable emergency power and essential utility services (water, sewer, etc.) to meet the needs of critical emergency responders during disaster events.	Parish Funding / Grant Funding	Public Works / Parish Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing

East Baton Rouge Parish Unincorporated Areas					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
E6: Public Notification System	Implement a public notification system, such as sirens or a call down system with a backup communication system.	Parish Funding / Grant Funding	Parish Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
E7: Communication Capabilities	Improve both technological and administrative communication capabilities among fire, police, 911, and other state and local emergency operations through improved planning and the upgrading of communication infrastructure and equipment.	Staff Time / Grant Funding	Parish Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
E8: New Development Regulation	Evaluate, develop and pass new ordinances and strengthen local codes and ordinances to help regulate new development in the parish.	Parish Council	Parish Emergency Manager / Planning Director	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carry Over
E9: Day to Day Operations	Continue day to day operations and handle increased surge capacity of critical facilities and services in the event of a hazard or disaster.	Staff Time / Grant Funding	Parish Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
E10: New Initiatives	Implement new initiatives including, but not limited to, the Pilot Planning Grant Program (PPGP), Pilot Reconstruction, and Repetitive Flood Claims, developed by the State and FEMA.	Staff Time / Grant Funding	Parish Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carry Over
E11: Hazard Event Database	Create and maintain a database for all hazard events where data for extent and previous occurrence information is not readily available.	Staff Time / Grant Funding	Parish Emergency Manager	Dam and Levee Failure / Drought / Earthquake / Land Subsidence / Wildfire	Ongoing
E12: Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost and coverage of flood insurance through the National Flood Insurance Program (NFIP).	Parish Funding / Grant Funding	Parish Emergency Manager / Floodplain Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Ongoing
E13: Repetitive Loss Reconstruction Projects	Pursue elevation / acquisition / flood proofing / pilot reconstruction projects and structural solutions to flooding using available grant funding for the repetitive loss structures. Annually review and correct the Repetitive Loss List by submitting correction worksheets to FEMA.	Parish Funding / Grant Funding	Emergency Manager / Floodplain Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Ongoing
E14: Masters and Disasters	"Masters and Disasters" Education Program	Parish Funding / Grant Funding	Parish Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing

East Baton Rouge Parish Unincorporated Areas					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
E15: Educational Brochures	Provide brochures and other publications through media, mail, libraries, Post Offices, utility bill inserts, inserts in the phone book, and/or the Internet that inform residents of hazards and measures that may be taken to protect life and property.	Parish Funding / Grant Funding	Parish Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
E16: Multi-Hazard Awareness Week	Sponsor a "Multi-Hazard Awareness Week", to educate the public on hurricanes, severe storms and tornadoes (sheltering in place, evacuation, emergency preparedness, and structural retrofitting), flooding (evacuation, emergency preparedness, retrofitting, and flood insurance), thunderstorms and lightning (emergency preparedness).	Parish Funding / Grant Funding	Parish Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Tornadoes	Ongoing
E17: Localized Interior Drainage Projects	Improve drainage by implementing localized interior drainage projects such as adding new drainage pumps, enlarging culverts, lining canals with concrete, replacing / improving any substandard bridges, berms, retention ponds, and other drainage projects where necessary	Parish Funding / Grant Funding	Public Works	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Carry Over
E18: Master Drainage Plan	Develop a master drainage plan which will evaluate drainage projects to determine the best method of increasing drainage capacity. Implement recommended projects resulting from drainage plan.	Parish Funding / Grant Funding	Public Works	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Carry Over
E19: Comite River Diversion Project	Comite River Diversion Project which will reduce flood stages on the Comite River downstream of the diversion.	Parish Funding / Grant Funding	Public Works	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Carry Over
E20: Jones Creek and Tributaries Modification	Jones Creek & Tributaries- Modifications to approximately 20 miles of channel along Jones Creek, Jones Creek Tributary, Weiner Canal, Lively Bayou, Lively Bayou Tributary, the addition of 91,000 linear feet of reinforced concrete lining to existing channels, and necessary clearing and snagging.	Parish Funding / Grant Funding	Public Works	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Carry Over
E21: Ward Creek Watershed	Ward Creek Watershed- Clear and line approximately 14 miles of channel. Concrete line approximately 5,600 linear feet from downstream of I-10 to immediately downstream of I-12.	Parish Funding / Grant Funding	Public Works	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Carry Over
E22: Bayou Fountain Watershed	Bayou Fountain Watershed- modifications of 12 miles of channel, clearing and snagging, and widening and adding concrete to a portion of the channel.	Parish Funding / Grant Funding	Public Works	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Carry Over

City of Baker					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
B1: Building Enhancement	Perform mitigation measures that will enhance the performance of new and existing buildings, expansions, or infrastructure during high wind and flood events. This may include hardening structures, installing hurricane clips, elevating utilities or adding back up power supply / generators.	Local Funding / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
B2: Emergency Response Capabilities	Improve emergency response capabilities during disasters by performing mitigation measures that will enhance the performance of emergency response facilities during disasters. This may include hardening structures, installing hurricane clips, elevating utilities, or adding back up power supply / generators.	Local Funding / Grant Funding	Medical Services Director / Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
B3: Damaged Property Database	Maintain a database of all properties or areas that sustain damage as a result of a hazard. Include information about the nature and extent of the damage.	Staff Time / Grant Funding	Planning and Zoning	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	In progress
B4: Emergency Power and Utility Services	Provide reliable emergency power and essential utility services (water, sewer, etc.) to meet the needs of critical emergency responders during disaster events.	Local Funding / Grant Funding	Public Works / Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
B5: Day to Day Operations	Continue day to day operations and handle increased surge capacity of critical facilities and services in the event of a hazard or disaster.	Staff Time / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
B6: New Initiatives	Implement new initiatives including, but not limited to, the Pilot Planning Grant Program (PPGP), Pilot Reconstruction, and Repetitive Flood Claims, developed by the State and FEMA.	Staff Time / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
B7: Educational Brochures	Provide brochures and other publications through media, mail, libraries, Post Offices, utility bill inserts, inserts in the phone book, and/or the Internet that inform residents of hazards and measures that may be taken to protect life and property.	Local Funding / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
B8: Multi-Hazard Awareness Week	Sponsor a "Multi-Hazard Awareness Week", to educate the public on hurricanes, severe storms and tornadoes (sheltering in place, evacuation, emergency preparedness, and structural retrofitting), flooding (evacuation, emergency preparedness,	Local Funding / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Tornadoes	Ongoing

City of Baker					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
	retrofitting, and flood insurance), thunderstorms and lightning (emergency preparedness).				
B9: Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost and coverage of flood insurance through the National Flood Insurance Program (NFIP).	Local Funding / Grant Funding	Emergency Manager / Floodplain Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Ongoing
B10: Repetitive Loss Reconstruction Projects	Pursue elevation / acquisition / floodproofing / pilot reconstruction projects and structural solutions to flooding using available grant funding for the repetitive loss structures. Annually review and correct the Repetitive Loss List by submitting correction worksheets to FEMA.	Local Funding / Grant Funding	Emergency Manager / Floodplain Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	In Progress
B11: Public Notification System	Implement a public notification system, such as sirens or a call down system with a backup communication system.	Local Funding / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
B12: Communication Capabilities	Improve both technological and administrative communication capabilities among fire, police, 911, and other state and local emergency operations through improved planning and the upgrading of communication infrastructure and equipment.	Staff Time / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	In Progress
B13: New Development Regulation	Evaluate, develop and pass new ordinances and strengthen local codes and ordinances to help regulate new development in the parish.	Local Government	Emergency Manager / Planning Director	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
B14: Localized Interior Drainage Projects	Improve drainage by implementing localized interior drainage projects such as adding new drainage pumps, enlarging culverts, lining canals with concrete, replacing / improving any substandard bridges, berms, retention ponds, and other drainage projects where necessary	Local Funding / Grant Funding	Public Works	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Ongoing
B15: Master Drainage Plan	Develop a master drainage plan which will evaluate drainage projects to determine the best method of increasing drainage capacity. Implement recommended projects resulting from drainage plan.	Local Funding / Grant Funding	Public Works	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Ongoing

City of Central					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
C1: Building Enhancement	Perform mitigation measures that will enhance the performance of new and existing buildings, expansions, or infrastructure during high wind and flood events. This may include hardening structures, installing hurricane clips, elevating utilities or adding back up power supply / generators.	Local Funding / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carry Over
C2: Emergency Response Capabilities	Improve emergency response capabilities during disasters by performing mitigation measures that will enhance the performance of emergency response facilities during disasters. This may include hardening structures, installing hurricane clips, elevating utilities, or adding back up power supply / generators.	Local Funding / Grant Funding	Medical Services Director / Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carry Over
C3: Damaged Property Database	Maintain a database of all properties or areas that sustain damage as a result of a hazard. Include information about the nature and extent of the damage.	Staff Time / Grant Funding	Planning and Zoning	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carry Over
C4: Emergency Power and Utility Services	Provide reliable emergency power and essential utility services (water, sewer, etc.) to meet the needs of critical emergency responders during disaster events.	Local Funding / Grant Funding	Public Works / Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carry Over
C5: Day to Day Operations	Continue day-to-day operations and handle increased surge capacity of critical facilities and services in the event of a hazard or disaster.	Staff Time / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carry Over
C6: New Initiatives	Implement new initiatives including, but not limited to, the Pilot Planning Grant Program (PPGP), Pilot Reconstruction, and Repetitive Flood Claims, developed by the State and FEMA.	Staff Time / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carry Over
C7: Educational Brochures	Provide brochures and other publications through media, mail, libraries, Post Offices, utility bill inserts, inserts in the phone book, and/or the Internet that inform residents of hazards and measures that may be taken to protect life and property.	Local Funding / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carry Over
C8: Multi-Hazard Awareness Week	Sponsor a "Multi-Hazard Awareness Week", to educate the public on hurricanes, severe storms and tornadoes (sheltering in place, evacuation, emergency preparedness, and structural retrofitting), flooding (evacuation, emergency preparedness, retrofitting, and flood insurance), thunderstorms and lightning (emergency preparedness).	Local Funding / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Tornadoes	Carry Over

City of Central					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
C9: Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost and coverage of flood insurance through the National Flood Insurance Program (NFIP).	Local Funding / Grant Funding	Emergency Manager / Floodplain Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Carry Over
C10: Repetitive Loss Reconstruction Projects	Pursue elevation / acquisition / floodproofing / pilot reconstruction projects and structural solutions to flooding using available grant funding for the repetitive loss structures. Annually review and correct the Repetitive Loss List by submitting correction worksheets to FEMA.	Local Funding / Grant Funding	Emergency Manager / Floodplain Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Carry Over
C11: Public Notification System	Implement a public notification system, such as sirens or a call down system with a backup communication system.	Local Funding / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carry Over
C12: Communication Capabilities	Improve both technological and administrative communication capabilities among fire, police, 911, and other state and local emergency operations through improved planning and the upgrading of communication infrastructure and equipment.	Staff Time / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carry Over
C13: New Development Regulation	Evaluate, develop and pass new ordinances and strengthen local codes and ordinances to help regulate new development in the parish.	Local Government	Emergency Manager / Planning Director	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carry Over
C14: Localized Interior Drainage Projects	Improve drainage by implementing localized interior drainage projects such as adding new drainage pumps, enlarging culverts, lining canals with concrete, replacing / improving any substandard bridges, berms, retention ponds, and other drainage projects where necessary	Local Funding / Grant Funding	Public Works	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Carry Over
C15: Master Drainage Plan	Develop a master drainage plan which will evaluate drainage projects to determine the best method of increasing drainage capacity. Implement recommended projects resulting from drainage plan.	Local Funding / Grant Funding	Public Works	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Carry Over

City of Baton Rouge					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
B1: Building Enhancement	Perform mitigation measures that will enhance the performance of new and existing buildings, expansions, or infrastructure during high wind and flood events. This may include hardening structures, installing hurricane clips, elevating utilities or adding back up power supply / generators.	Local Funding / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
B2: Emergency Response Capabilities	Improve emergency response capabilities during disasters by performing mitigation measures that will enhance the performance of emergency response facilities during disasters. This may include hardening structures, installing hurricane clips, elevating utilities, or adding back up power supply / generators.	Local Funding / Grant Funding	Medical Services Director / Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carry Over
B3: Damaged Property Database	Maintain a database of all properties or areas that sustain damage as a result of a hazard. Include information about the nature and extent of the damage.	Staff Time / Grant Funding	Planning and Zoning	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
B4: Emergency Power and Utility Services	Provide reliable emergency power and essential utility services (water, sewer, etc.) to meet the needs of critical emergency responders during disaster events.	Local Funding / Grant Funding	Public Works / Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
B5: Day to Day Operations	Continue day to day operations and handle increased surge capacity of critical facilities and services in the event of a hazard or disaster.	Staff Time / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
B6: New Initiatives	Implement new initiatives including, but not limited to, the Pilot Planning Grant Program (PPGP), Pilot Reconstruction, and Repetitive Flood Claims, developed by the State and FEMA.	Staff Time / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carry Over
B7: Educational Brochures	Provide brochures and other publications through media, mail, libraries, Post Offices, utility bill inserts, inserts in the phone book, and/or the Internet that inform residents of hazards and measures that may be taken to protect life and property.	Local Funding / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
B8: Multi-Hazard Awareness Week	Sponsor a "Multi-Hazard Awareness Week", to educate the public on hurricanes, severe storms and tornadoes (sheltering in place, evacuation, emergency preparedness, and structural retrofitting), flooding (evacuation, emergency preparedness,	Local Funding / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Tornadoes	Ongoing

City of Baton Rouge					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
	retrofitting, and flood insurance), thunderstorms and lightning (emergency preparedness).				
B9: Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost and coverage of flood insurance through the National Flood Insurance Program (NFIP).	Local Funding / Grant Funding	Emergency Manager / Floodplain Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Ongoing
B10: Repetitive Loss Reconstruction Projects	Pursue elevation / acquisition / floodproofing / pilot reconstruction projects and structural solutions to flooding using available grant funding for the repetitive loss structures. Annually review and correct the Repetitive Loss List by submitting correction worksheets to FEMA.	Local Funding / Grant Funding	Emergency Manager / Floodplain Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Ongoing
B11: Public Notification System	Implement a public notification system, such as sirens or a call down system with a backup communication system.	Local Funding / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
B12: Communication Capabilities	Improve both technological and administrative communication capabilities among fire, police, 911, and other state and local emergency operations through improved planning and the upgrading of communication infrastructure and equipment.	Staff Time / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
B13: New Development Regulation	Evaluate, develop and pass new ordinances and strengthen local codes and ordinances to help regulate new development in the parish.	Local Government	Emergency Manager / Planning Director	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carry Over
B14: Localized Interior Drainage Projects	Improve drainage by implementing localized interior drainage projects such as adding new drainage pumps, enlarging culverts, lining canals with concrete, replacing / improving any substandard bridges, berms, retention ponds, and other drainage projects where necessary	Local Funding / Grant Funding	Public Works	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Carry Over
B15: Master Drainage Plan	Develop a master drainage plan which will evaluate drainage projects to determine the best method of increasing drainage capacity. Implement recommended projects resulting from drainage plan.	Local Funding / Grant Funding	Public Works	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Carry Over

City of Zachary					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
Z1: Building Enhancement	Perform mitigation measures that will enhance the performance of new and existing buildings, expansions, or infrastructure during high wind and flood events. This may include hardening structures, installing hurricane clips, elevating utilities or adding back up power supply / generators.	Local Funding / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
Z2: Emergency Response Capabilities	Improve emergency response capabilities during disasters by performing mitigation measures that will enhance the performance of emergency response facilities during disasters. This may include hardening structures, installing hurricane clips, elevating utilities, or adding back up power supply / generators.	Local Funding / Grant Funding	Medical Services Director / Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
Z3: Damaged Property Database	Maintain a database of all properties or areas that sustain damage as a result of a hazard. Include information about the nature and extent of the damage.	Staff Time / Grant Funding	Planning and Zoning	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
Z4: Emergency Power and Utility Services	Provide reliable emergency power and essential utility services (water, sewer, etc.) to meet the needs of critical emergency responders during disaster events.	Local Funding / Grant Funding	Public Works / Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
Z5: Day to Day Operations	Continue day to day operations and handle increased surge capacity of critical facilities and services in the event of a hazard or disaster.	Staff Time / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
Z6: New Initiatives	Implement new initiatives including, but not limited to, the Pilot Planning Grant Program (PPGP), Pilot Reconstruction, and Repetitive Flood Claims, developed by the State and FEMA.	Staff Time / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
Z7: Educational Brochures	Provide brochures and other publications through media, mail, libraries, Post Offices, utility bill inserts, inserts in the phone book, and/or the Internet that inform residents of hazards and measures that may be taken to protect life and property.	Local Funding / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
Z8: Multi-Hazard Awareness Week	Sponsor a "Multi-Hazard Awareness Week", to educate the public on hurricanes, severe storms and tornadoes (sheltering in place, evacuation, emergency preparedness, and structural retrofitting), flooding (evacuation, emergency preparedness,	Local Funding / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Tornadoes	Ongoing

City of Zachary					
Jurisdiction-Specific Action	Action Description	Funding Source	Responsible Party, Agency, or Department	Hazard	Status
	retrofitting, and flood insurance), thunderstorms and lightning (emergency preparedness).				
Z9: Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost and coverage of flood insurance through the National Flood Insurance Program (NFIP).	Local Funding / Grant Funding	Emergency Manager / Floodplain Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Ongoing
Z10: Repetitive Loss Reconstruction Projects	Pursue elevation / acquisition / floodproofing / pilot reconstruction projects and structural solutions to flooding using available grant funding for the repetitive loss structures. Annually review and correct the Repetitive Loss List by submitting correction worksheets to FEMA.	Local Funding / Grant Funding	Emergency Manager / Floodplain Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Ongoing
Z11: Public Notification System	Implement a public notification system, such as sirens or a call down system with a backup communication system.	Local Funding / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Carried Over
Z12: Communication Capabilities	Improve both technological and administrative communication capabilities among fire, police, 911, and other state and local emergency operations through improved planning and the upgrading of communication infrastructure and equipment.	Staff Time / Grant Funding	Emergency Manager	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
Z13: New Development Regulation	Evaluate, develop and pass new ordinances and strengthen local codes and ordinances to help regulate new development in the parish.	Local Government	Emergency Manager / Planning Director	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes / Winter Storms / Tornadoes	Ongoing
Z14: Localized Interior Drainage Projects	Improve drainage by implementing localized interior drainage projects such as adding new drainage pumps, enlarging culverts, lining canals with concrete, replacing / improving any substandard bridges, berms, retention ponds, and other drainage projects where necessary	Local Funding / Grant Funding	Public Works	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Ongoing
Z15: Master Drainage Plan	Develop a master drainage plan which will evaluate drainage projects to determine the best method of increasing drainage capacity. Implement recommended projects resulting from drainage plan.	Local Funding / Grant Funding	Public Works	Flood / Severe Storms (Thunderstorms, High Winds, Lightning, Hail) / Hurricanes	Carried Over

Unincorporated Baton Rouge New Mitigation Actions

East Baton Rouge Unincorporated - New Mitigation Actions						
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Status * pending availability of funding
E1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after storms.	FEMA HMGP, Local	1-5 years	East Baton Rouge Parish OHSEP	Wind, Hail, Tropical Cyclones, Tornadoes	New
E2: Drainage Improvement	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA HMGP, Local	1-5 years	East Baton Rouge Parish OHSEP	Flooding, Tropical Cyclones	New
E3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties.	FEMA HMGP, Local	1-5 years	East Baton Rouge Parish OHSEP	Flooding, Tropical Cyclones, Dam Failure, Levee Failure	New
E4: Safe Room Projects	Construction of a safe room for first responders located in East Baton Rouge Parish. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	East Baton Rouge Parish OHSEP	Tornadoes, Wind, Tropical Cyclones	New
E5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclones, Tornadoes, wildfire, thunderstorms (lightning, high wind, hail), Drought, dam and levee failure and winter storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA HMGP, Local	1-5 years	East Baton Rouge Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfires, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure, Levee Failure	New

East Baton Rouge Unincorporated - New Mitigation Actions						
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Status * pending availability of funding
E6: 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	East Baton Rouge Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail) , Flooding, Dam Failure, Levee Failure	New
E7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA HMGP, Local	1-5 years	East Baton Rouge Parish OHSEP	Lightning	New
E8: Warning Systems	Update/upgrade public warning system components throughout East Baton Rouge Parish as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	East Baton Rouge Parish OHSEP	Winter Storms, Wildfires, Tornadoes, Tropical Cyclones, Flooding, Dam Failure, Levee Failure	New
E9: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in Parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.	FEMA HMGP, Local	1-5 years	East Baton Rouge Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes, Flooding, Drought, Dam Failure, Levee Failure	New
E10: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	FEMA HMGP, Local	1-5 years	East Baton Rouge Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure, Levee Failure	New
E11: Levee Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a dam and levee failure.	FEMA HMGP, Local	1-5 years	East Baton Rouge Parish OHSEP	Dam Failure, Levee Failure, Flooding	New

City of Baker - New Mitigation Actions

City of Baker						
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Status * pending availability of funding
B1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after storms.	FEMA HMGP, Local	1-5 years	City of Baker/East Baton Rouge Parish OHSEP	Wind, Hail, Tropical Cyclones, Tornadoes	New
B2: Drainage Improvement	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA HMGP, Local	1-5 years	City of Baker/East Baton Rouge Parish OHSEP	Flooding, Tropical Cyclones	New
B3: 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 Baker/East Baton Rouge Parish OHSEP	Flooding, Tropical Cyclones, Dam Failure, Levee Failure	New
B4: Safe Room Projects	Construction of a safe room for first responders located in Baker. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	City of Baker/East Baton Rouge Parish OHSEP	Tornadoes, Wind, Tropical Cyclones	New
B5: 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, Wildfires, Thunderstorms (lightning, high wind, hail), Drought, dam and levee failure and winter storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities	FEMA HMGP, Local	1-5 years	City of Baker/East Baton Rouge Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfires, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure, Levee Failure	New

City of Baker						
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Status * pending availability of funding
	will create resiliency within the parish and its communities.					
B6: 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 Baker/East Baton Rouge Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail) , Flooding, Dam Failure, Levee Failure	New
B7: 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 Baker/East Baton Rouge Parish OHSEP	Lightning	New
B8: Warning Systems	Update/upgrade public warning system components throughout Baker as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	City of Baker/East Baton Rouge Parish OHSEP	Winter Storms, Wildfires, Tornadoes, Tropical Cyclones, Flooding, Dam Failure, Levee Failure	New
B9: 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 Baker/East Baton Rouge Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes, Flooding, Drought, Dam Failure, Levee Failure	New
B10: 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 Baker/East Baton Rouge Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure, Levee Failure	New
B11: Levee Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a dam and levee failure.	FEMA HMGP, Local	1-5 years	City of Baker/East Baton Rouge Parish OHSEP	Dam Failure, Levee Failure, Flooding	New

City of Baton Rouge – New Mitigation Actions

City of Baton Rouge						
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Status * pending availability of funding
B1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after storms.	FEMA HMGP, Local	1-5 years	City of Baton Rouge/East Baton Rouge Parish OHSEP	Wind, Hail, Tropical Cyclones, Tornadoes	New
B2: Drainage Improvement	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA HMGP, Local	1-5 years	City of Baton Rouge/East Baton Rouge Parish OHSEP	Flooding, Tropical Cyclones	New
B3: 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 Baton Rouge/East Baton Rouge Parish OHSEP	Flooding, Tropical Cyclones, Dam Failure, Levee Failure	New
B4: Safe Room Projects	Construction of a safe room for first responders located in Baton Rouge. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	City of Baton Rouge/East Baton Rouge Parish OHSEP	Tornadoes, Wind, Tropical Cyclones	New
B5: 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, Wildfires, Thunderstorms (lightning, high wind, hail), Drought, dam and levee failure and winter storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA HMGP, Local	1-5 years	City of Baton Rouge/East Baton Rouge Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfires, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure, Levee Failure	New

City of Baton Rouge						
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Status * pending availability of funding
B6: 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 Baton Rouge/East Baton Rouge Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail) , Flooding, Dam Failure, Levee Failure	New
B7: 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 Baton Rouge/East Baton Rouge Parish OHSEP	Lightning	New
B8: Warning Systems	Update/upgrade public warning system components throughout Baton Rouge as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	City of Baton Rouge/East Baton Rouge Parish OHSEP	Winter Storms, Wildfires, Tornadoes, tropical cyclone, Flooding, Dam Failure, Levee Failure	New
B9: 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 Baton Rouge/East Baton Rouge Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes, Flooding, Dam Failure, Levee Failure	New
B10: 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 Baton Rouge/East Baton Rouge Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure, Levee Failure	New
B11: Levee Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a levee failure.	FEMA HMGP, Local	1-5 years	City of Baton Rouge/East Baton Rouge Parish OHSEP	Dam Failure, Levee Failure, Flooding	New

City of Central – New Mitigation Actions

City of Central						
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Status * pending availability of funding
C1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after storms.	FEMA HMGP, Local	1-5 years	City of Central/East Baton Rouge Parish OHSEP	Wind, Hail, Tropical Cyclones, Tornadoes	New
C2: Drainage Improvement	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA HMGP, Local	1-5 years	City of Central/East Baton Rouge 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	City of Central/East Baton Rouge Parish OHSEP	Flooding, Tropical Cyclones, Dam Failure, Levee Failure	New
C4: Safe Room Projects	Construction of a safe room for first responders located in Central. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	City of Central/East Baton Rouge Parish OHSEP	Tornadoes, 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, Wildfires, Thunderstorms (lightning, high wind, hail), Drought, dam and levee failure and winter storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA HMGP, Local	1-5 years	City of Central/East Baton Rouge Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfires, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure, Levee Failure	New

City of Central						
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Status * pending availability of funding
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	City of Central/East Baton Rouge Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Flooding, Dam Failure, Levee Failure	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	City of Central/East Baton Rouge Parish OHSEP	Lightning	New
C8: Warning Systems	Update/upgrade public warning system components throughout Central as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	City of Central/East Baton Rouge Parish OHSEP	Winter storm, Wildfires, Tornadoes, Tropical Cyclones, Flooding, Dam Failure, Levee 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	City of Central/East Baton Rouge Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes, Flooding, Drought, Dam Failure, Levee Failure	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	City of Central/East Baton Rouge Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure, Levee Failure	New
C11: Levee Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a dam and levee failure.	FEMA HMGP, Local	1-5 years	City of Central/East Baton Rouge Parish OHSEP	Dam Failure, Levee Failure, Flooding	New

City of Zachary – New Mitigation Actions

City of Zachary						
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Status * pending availability of funding
Z1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after storms.	FEMA HMGP, Local	1-5 years	City of Zachary/East Baton Rouge Parish OHSEP	Wind, Hail, Tropical Cyclones, Tornadoes	New
Z2: Drainage Improvement	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA HMGP, Local	1-5 years	City of Zachary/East Baton Rouge Parish OHSEP	Flooding, Tropical Cyclones	New
Z3: 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 Zachary/East Baton Rouge Parish OHSEP	Flooding, Tropical Cyclones, Dam Failure, Levee Failure	New
Z4: Safe Room Projects	Construction of a safe room for first responders located in Zachary. Other locations will be identified based on funding availability.	FEMA HMGP, Local	1-5 years	City of Zachary/East Baton Rouge Parish OHSEP	Tornadoes, Wind, Tropical Cyclones	New
Z5: 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, Wildfires, Thunderstorms (lightning, high wind, hail), Drought, dam and levee failure and winter storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA HMGP, Local	1-5 years	City of Zachary/East Baton Rouge Parish OHSEP	Flooding, Tropical Cyclones, Tornadoes, Wildfires, Thunderstorms (lightning, high wind, hail), Winter Storms, Drought, Dam Failure, Levee Failure	New

City of Zachary						
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Status * pending availability of funding
Z6: 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 Zachary/East Baton Rouge Parish OHSEP	Tornadoes, Winter Storms, Tropical Cyclones, Thunderstorms (lightning, high wind, hail) , Flooding, Dam Failure, Levee Failure	New
Z7: 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 Zachary/East Baton Rouge Parish OHSEP	Lightning	New
Z8: Warning Systems	Update/upgrade public warning system components throughout Zachary as necessary. Install audible and/or reverse 911 warning system(s)	FEMA HMGP, Local	1-5 years	City of Zachary/East Baton Rouge Parish OHSEP	Winter storm, Wildfires, Tornadoes, Tropical Cyclones, Flooding, Dam Failure, Levee Failure	New
Z9: 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 Zachary/East Baton Rouge Parish OHSEP	Tropical Cyclones, Thunderstorms (lightning, high wind, hail), Tornadoes, Flooding, Drought Dam Failure, Levee Failure	New
Z10: 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 Zachary/East Baton Rouge Parish OHSEP	Tropical Cyclones, Flooding, Dam Failure, Levee Failure	New
Z11: Levee Failure Working Group	Create a working group in order to assess the extent and determine the possible effects of a levee failure.	FEMA HMGP, Local	1-5 years	City of Zachary/East Baton Rouge Parish OHSEP	Dam Failure, Levee Failure, Flooding	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 East Baton Rouge Parish and the jurisdiction's mitigation actions. On-going actions, as well as actions which can be undertaken by existing parish or local staff without need for additional funding, were given high priority. The actions with high benefit and low cost, political support, and public support but require additional funding from parish or external sources were given medium priority. The actions that require substantial funding from external sources with relatively longer completion time were given low priority. There have been no changes in financial, legal and political priorities within the past 5 years, with the methodology and prioritization process remaining the same.

East Baton Rouge 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 East Baton Rouge Parish Hazard Mitigation Plan Update

The East Baton Rouge Parish Hazard Mitigation Plan Update process began in May 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.

East Baton Rouge Parish includes four incorporated municipalities that participated in the plan update process – the Cities of Baker, Central, Baton Rouge, and Zachary. East Baton Rouge Parish Mayor's 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
5/25/2016	Initial Coordination	Telephone/ Email	No	Discuss with Parish HM coordinator and any Steering Committee members expectations and requirements of the project.
6/20/2016	Kick-Off Meeting	Baton Rouge, LA	No	Discuss with the plan steering committee expectations and requirements of the project. Assign plan worksheets to jurisdictions.
9/29/2016	Risk Assessment Overview	Baton Rouge, LA	No	Discuss and review the risk assessment with the steering committee discuss and review expectations for public meeting.
9/29/2016	Public Meeting	Baton Rouge, 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 East Baton Rouge 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 East Baton Rouge 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/EastBatonRougeParish
2 Week Period	Public Plan Review (Digital)		Yes	Parish Website and East Baton Rouge Parish OHSEP

Planning

The plan update process consisted of several phases:

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

Coordination

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

The Parish MOHSEP Director, Operations Officer and SDMI were jointly responsible for inviting the Steering Committee and key stakeholders to all planned meetings and activities by email invitations and calendar invites. SDMI assisted the Parish Director and Operations Officer 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 some of the following parish, municipal, or community stakeholders:

- East Baton Rouge Parish Government
- City of Baker
- City of Baton Rouge
- City of Central
- City of Zachary

The Parish OHSEP Director of Ascension Parish was invited by the East Baton Rouge Parish MOHSEP via email and verbal invitation to participate in all meetings and activities as well in an effort to collaborate with neighboring communities. In addition, the participation of the GOHSEP Region 2 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	Email
Richard Webre	Director	Ascension Parish	rwebre@apgov.us
Dr. Herman Brister	Superintendent	Baker School System	hbrister@bakerschools.org
Anthony Marino	Director	Baton Rouge Airport	amarino@brgov.com
Ralph Hennessy	Assistant Director of Aviation	Baton Rouge Airport	rhennessy@brgov.com
Richard Sullivan	Chief	Baton Rouge Fire Department	rsullivan@brgov.com
Ed Smith	Chief	Baton Rouge Fire Department	esmith@brgov.com
Connie DeLeo	Region 2 Designated Regional Coordinator	Baton Rouge General Hospital	connie.deleo@brgeneral.org
William Daniel	Chief Administrative Officer	Baton Rouge Mayor's Office	wdaniel@brgov.com
Scott Dyer	Media Relations	Baton Rouge Mayor's Office	sdyer@brgov.com
Carl Dabadie	Chief	Baton Rouge Police Department	cdabadie@brgov.com
Bubba Cashio	Director	Buildings and Grounds	bcashio@brgov.com
Harold Rideau	Mayor	City of Baker	hrideau@cityofbakerla.com
Melvin L. "Kip" Holden	Mayor	City of Baton Rouge	kholden@brgov.com
Jr. Shelton	Mayor	City of Central	jr.shelton@central-la.gov

Name	Title	Agency	Email
David Amrhein	Mayor	City of Zachary	david.amrhein@cityofzachary.org
Eric Ducote	Architect	Department of Buildings and Grounds	educote@brgov.com
Jim Frey	Special Projects Architect	Department of Buildings and Grounds	jfrey@brgov.com
Marlon Lemond	Floodplain Manager	Department of Development	mlemond@brgov.com
Shannon Dupont	Special Projects Engineer	Department of Development	SDUPONT@brgov.com
Patricia Friedrich	East Baton Rouge Parish School Board	East Baton Rouge Parish School System	pfriedri@ebrpss.k12.la.us
Eric Johnson	Training and Safety Officer	East Baton Rouge Parish School System	ejohnson13@ebrschools.org
Catherine Fletcher	Chief Business Operations Officer	East Baton Rouge Parish School System	cfletcher@ebrschools.org
Lawrence McLeary	Colonel	East Baton Rouge Parish Sheriff's Office	lmcleary@ebrso.org
Chad Guillot	Director	Emergency Medical Services	cguillot@brgov.com
Obie Cambre	Emergency Preparedness and Security Advisor ExxonMobil	ExxonMobil	obie.c.cambre@exxonmobil.com
Darren Guidry	R2 Coordinator	GOHSEP	darren.guidry@la.gov
Brian Bernard	Director	Human Resources	bbernard@brgov.com
Eric Romero	Director	Information Services	eromero@brgov.com
Warren Kron	GIS Manager	Information Services	wkron@brgov.com
Kevin Scott	Lieutenant	LSU Police Department	krscott@lsu.edu
Lauren Stevens	Project Manager, Education, & Training	LSU-SDMI	lstevens@lsu.edu
Chris Rippetoe	GIS Analyst	LSU-SDMI	crippe2@lsu.edu
JoAnne Moreau	Director	MOHSEP	jmoreau@brgov.com
Tuesday Mills	Assistant Director	MOHSEP	tmills@brgov.com
Kellie McGaha	Chief of Operations	MOHSEP	kmcgaha@brgov.com
Darcee Smith	Emergency Preparedness Coordinator	MOHSEP	dksmith@brgov.com
Caroline Gardner	Engineering Intern	MOHSEP	cgardner@brgov.com
Monica Salins	Executive Director	Pontchartrain Levee District	msalins@leveedistrict.org
Carey Chauvin	Interim Assistant Chief Administrative Officer	Public Works	cchauvin@brgov.com
Joycelyn Johnson	Chief	Southern Police Department	joycelyn_johnson@subr.edu

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 East Baton Rouge 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 East Baton Rouge 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 2011 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 (Parish and Jurisdictions)
- Sea, Lake, and Overland Surge from Hurricanes (SLOSH)
- Flood Insurance Rate Maps
- B.R.A.M.A.S

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 East Baton Rouge Parish.

Meeting #1: Coordination Discussion

Date: May 25, 2016

Location: Email/Phone

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

Public Initiation: No

Invitees Included: East Baton Rouge Parish OHSEP, SDMI Staff

Meeting #2: Hazard Mitigation Plan Update Kick-Off

Date: June 20, 2016

Location: Baton Rouge, Louisiana

Purpose: Discuss the expectations and requirements of the Hazard Mitigation Plan Update process and to establish an 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
Richard Webre	Director	Ascension Parish
Dr. Herman Brister	Superintendent	Baker School System
Anthony Marino	Director	Baton Rouge Airport
Ralph Hennessy	Assistant Director of Aviation	Baton Rouge Airport
Richard Sullivan	Chief	Baton Rouge Fire Department
Ed Smith	Chief	Baton Rouge Fire Department
Connie DeLeo	Region 2 Designated Regional Coordinator	Baton Rouge General Hospital
William Daniel	Chief Administrative Officer	Baton Rouge Mayor's Office
Scott Dyer	Media Relations	Baton Rouge Mayor's Office
Carl Dabadie	Chief	Baton Rouge Police Department
Bubba Cashio	Director	Buildings and Grounds
Harold Rideau	Mayor	City of Baker
Melvin L. "Kip" Holden	Mayor	City of Baton Rouge
Jr. Shelton	Mayor	City of Central
David Amrhein	Mayor	City of Zachary
Eric Ducote	Architect	Department of Buildings and Grounds
Jim Frey	Special Projects Architect	Department of Buildings and Grounds
Marlon Lemond	Floodplain Manager	Department of Development
Shannon Dupont	Special Projects Engineer	Department of Development
Patricia Friedrich	East Baton Rouge Parish School Board	East Baton Rouge Parish School System

Name	Title	Agency
Eric Johnson	Training and Safety Officer	East Baton Rouge Parish School System
Catherine Fletcher	Chief Business Operations Officer	East Baton Rouge Parish School System
Lawrence McLeary	Colonel	East Baton Rouge Parish Sheriff's Office
Chad Guillot	Director	Emergency Medical Services
Obie Cambre	Emergency Preparedness and Security Advisor ExxonMobil	ExxonMobil
Darren Guidry	R2 Coordinator	GOHSEP
Brian Bernard	Director	Human Resources
Eric Romero	Director	Information Services
Warren Kron	GIS Manager	Information Services
Kevin Scott	Lieutenant	LSU Police Department
Lauren Stevens	Project Manager, Education, & Training	LSU-SDMI
Chris Rippetoe	GIS Analyst	LSU-SDMI
JoAnne Moreau	Director	MOHSEP
Tuesday Mills	Assistant Director	MOHSEP
Kellie McGaha	Chief of Operations	MOHSEP
Darcee Smith	Emergency Preparedness Coordinator	MOHSEP
Caroline Gardner	Engineering Intern	MOHSEP
Monica Salins	Executive Director	Pontchartrain Levee District
Carey Chauvin	Interim Assistant Chief Administrative Officer	Public Works
Joycelyn Johnson	Chief	Southern Police Department

Meeting #3: Risk Assessment Overview

Date: September 29, 2016

Location: Baton Rouge, 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
Richard Webre	Director	Ascension Parish
Dr. Herman Brister	Superintendent	Baker School System
Anthony Marino	Director	Baton Rouge Airport
Ralph Hennessy	Assistant Director of Aviation	Baton Rouge Airport
Richard Sullivan	Chief	Baton Rouge Fire Department
Ed Smith	Chief	Baton Rouge Fire Department
Connie DeLeo	Region 2 Designated Regional Coordinator	Baton Rouge General Hospital
William Daniel	Chief Administrative Officer	Baton Rouge Mayor's Office
Scott Dyer	Media Relations	Baton Rouge Mayor's Office

Name	Title	Agency
Carl Dabadie	Chief	Baton Rouge Police Department
Bubba Cashio	Director	Buildings and Grounds
Harold Rideau	Mayor	City of Baker
Melvin L. "Kip" Holden	Mayor	City of Baton Rouge
Jr. Shelton	Mayor	City of Central
David Amrhein	Mayor	City of Zachary
Eric Ducote	Architect	Department of Buildings and Grounds
Jim Frey	Special Projects Architect	Department of Buildings and Grounds
Marlon Lemond	Floodplain Manager	Department of Development
Shannon Dupont	Special Projects Engineer	Department of Development
Patricia Friedrich	East Baton Rouge Parish School Board	East Baton Rouge Parish School System
Eric Johnson	Training and Safety Officer	East Baton Rouge Parish School System
Catherine Fletcher	Chief Business Operations Officer	East Baton Rouge Parish School System
Lawrence McLeary	Colonel	East Baton Rouge Parish Sheriff's Office
Chad Guillot	Director	Emergency Medical Services
Obie Cambre	Emergency Preparedness and Security Advisor ExxonMobil	ExxonMobil
Darren Guidry	R2 Coordinator	GOHSEP
Brian Bernard	Director	Human Resources
Eric Romero	Director	Information Services
Warren Kron	GIS Manager	Information Services
Kevin Scott	Lieutenant	LSU Police Department
Lauren Stevens	Project Manager, Education, & Training	LSU-SDMI
Chris Rippetoe	GIS Analyst	LSU-SDMI
JoAnne Moreau	Director	MOHSEP
Tuesday Mills	Assistant Director	MOHSEP
Kellie McGaha	Chief of Operations	MOHSEP
Darcee Smith	Emergency Preparedness Coordinator	MOHSEP
Caroline Gardner	Engineering Intern	MOHSEP
Monica Salins	Executive Director	Pontchartrain Levee District
Carey Chauvin	Interim Assistant Chief Administrative Officer	Public Works
Joycelyn Johnson	Chief	Southern Police Department

Meeting #4: Public Meeting

Date: September 29, 2016**Location:** Baton Rouge, 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 East Baton Rouge Parish communities were provided for the meeting attendees to identify specific areas where localized hazards occur.

Public Initiation: Yes**Invitees Included:**

Name	Title	Agency
Richard Webre	Director	Ascension Parish
Dr. Herman Brister	Superintendent	Baker School System
Anthony Marino	Director	Baton Rouge Airport
Ralph Hennessy	Assistant Director of Aviation	Baton Rouge Airport
Richard Sullivan	Chief	Baton Rouge Fire Department
Ed Smith	Chief	Baton Rouge Fire Department
Connie DeLeo	Region 2 Designated Regional Coordinator	Baton Rouge General Hospital
William Daniel	Chief Administrative Officer	Baton Rouge Mayor's Office
Scott Dyer	Media Relations	Baton Rouge Mayor's Office
Carl Dabadie	Chief	Baton Rouge Police Department
Bubba Cashio	Director	Buildings and Grounds
Harold Rideau	Mayor	City of Baker
Melvin L. "Kip" Holden	Mayor	City of Baton Rouge
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David Amrhein	Mayor	City of Zachary
Eric Ducote	Architect	Department of Buildings and Grounds
Jim Frey	Special Projects Architect	Department of Buildings and Grounds
Marlon Lemond	Floodplain Manager	Department of Development
Shannon Dupont	Special Projects Engineer	Department of Development
Patricia Friedrich	East Baton Rouge Parish School Board	East Baton Rouge Parish School System
Eric Johnson	Training and Safety Officer	East Baton Rouge Parish School System
Catherine Fletcher	Chief Business Operations Officer	East Baton Rouge Parish School System
Lawrence McLeary	Colonel	East Baton Rouge Parish Sheriff's Office
Chad Guillot	Director	Emergency Medical Services
Obie Cambre	Emergency Preparedness and Security Advisor ExxonMobil	ExxonMobil
Darren Guidry	R2 Coordinator	GOHSEP
Brian Bernard	Director	Human Resources
Eric Romero	Director	Information Services
Warren Kron	GIS Manager	Information Services
Kevin Scott	Lieutenant	LSU Police Department

Name	Title	Agency
Lauren Stevens	Project Manager, Education, & Training	LSU-SDMI
Chris Rippetoe	GIS Analyst	LSU-SDMI
JoAnne Moreau	Director	MOHSEP
Tuesday Mills	Assistant Director	MOHSEP
Kellie McGaha	Chief of Operations	MOHSEP
Darcee Smith	Emergency Preparedness Coordinator	MOHSEP
Caroline Gardner	Engineering Intern	MOHSEP
Monica Salins	Executive Director	Pontchartrain Levee District
Carey Chauvin	Interim Assistant Chief Administrative Officer	Public Works
Joycelyn Johnson	Chief	Southern Police Department

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

Meeting Public Notice

MELVIN L. "KIP" HOLDEN
MAYOR-PRESIDENT



JOANNE H. MOREAU, CEM, LEM
DIRECTOR

East Baton Rouge Parish
**MAYOR'S OFFICE OF HOMELAND SECURITY
AND
EMERGENCY PREPAREDNESS**

September 20, 2016

**Re: East Baton Rouge Parish
Hazard Mitigation Grant Program (HMGP)
Steering Committee Update Meeting & Public Meeting**

Dear 2016 Hazard Mitigation Plan Steering Committee,

East Baton Rouge Parish is in the final stages of updating its hazard mitigation plan. A Steering Committee Update Meeting will be held on **September 22nd**, at the Mayor's Office of Homeland Security and Emergency Preparedness (MOHSEP) located at 3773 Harding Blvd, Baton Rouge, LA from **4:30PM to 5:00PM** to discuss our current status in the East Baton Rouge Parish Hazard Mitigation Plan Update Process.

A Public meeting will be held following the Update Meeting, at the Mayor's Office of Homeland Security and Emergency Preparedness (MOHSEP) located at 3773 Harding Blvd, Baton Rouge, LA from **5:00PM to 6:00PM** for all citizens interested in learning about and participating in discussions concerning the East Baton Rouge Parish Hazard Mitigation Plan Update Process.

We are asking that residents of East Baton Rouge Parish and our Municipalities 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/EastBatonRougeParish>

If you have any questions, please contact the MOHSEP at (225) 389-2100. I look forward to seeing you.

Sincerely,

JoAnne H. Moreau, CEM, LEM,
Director

3773 Harding Boulevard · Baton Rouge, LA 70807 · (225) 389-2100 · Fax (225) 389-2114
www.brgov.com/dept/oep · www.redstickready.com

Outreach Activity #1: Public Opinion Survey

Date: Ongoing throughout planning process

Location: Web Survey

Public Initiation: Yes

Outreach Activity #2: Incident Questionnaire

Date: Public Meeting Activity

Location: Public Meeting

Public Initiation: Yes

Outreach Activity #3: Mapping Activities

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

Public Plan Review Documentation

The East Baton Rouge Parish Hazard Mitigation Draft Plan was placed on the East Baton Rouge 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. Feedback was collected and reviewed by East Baton Rouge MOHSEP and LSU.

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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 East Baton Rouge 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

East Baton Rouge 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

East Baton Rouge 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 East Baton Rouge 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 indicate a substantial change in hazard profile and risk assessment in the parish.

Additionally, the public will be canvassed to solicit public input to continue East Baton Rouge 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 East Baton Rouge Parish Hazard Mitigation Plan Steering Committee and participating jurisdictions to determine additional implementation procedures when appropriate. This may include integrating the requirements of the East Baton Rouge Parish Hazard Mitigation Plan into each jurisdiction's planning documents, processes, or mechanisms as follows:

- Ordinances, Resolutions, Regulations
- Floodplain Ordinances (Parish and Jurisdictions)
- Emergency Operations Plan (Parish and Jurisdictions)
- Comprehensive Master Plan (Entire Parish)
- Economic Development Plan (Parish and Jurisdictions)
- Stormwater Management Plan
- Transportation Plan
- Continuity of Operations Plan

Opportunities to integrate the requirements of this plan into other local planning mechanisms will continue to be identified through future meetings of the East Baton Rouge 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 East Baton Rouge Parish Hazard Mitigation Plan, and will not contribute to increased hazard vulnerability within the parish.

During the planning process for new and updated local planning documents at the parish and jurisdiction level, such as a risk assessment, comprehensive plan, capital improvements plan, or emergency operations plan, the jurisdictions will provide a copy of the Parish Hazard Mitigation Plan to the appropriate parties and recommend that all goals and strategies of new and updated local planning documents are consistent with and support the goals of the Parish Hazard Mitigation Plan and will not contribute to increased hazards.

Although it is recognized that there are many possible benefits to integrating components of this plan into other parish and jurisdiction planning mechanisms, the development and maintenance of this stand-alone Hazard Mitigation Plan is deemed by the steering committee to be the most effective and appropriate method to ensure implementation of parish and local hazard mitigation actions.

On behalf of the jurisdictions of the Cities of Baker, Baton Rouge, Central, and Zachary, East Baton Rouge 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:

East Baton Rouge Unincorporated

Comprehensive Master Plan/Updated as needed/East Baton Rouge Parish Government
Local Emergency Operations Plan/Updated as needed/EBR MOHSEP
Economic Development/Plan/Updated as needed/East Baton Rouge Parish Economic Development
Capital Improvements Plan/Updated as needed/East Baton Rouge Parish Government
Continuity of Operations Plan/Updated as needed/EBR MOHSEP
Transportation Plan/Updated as needed/EBR MOHSEP
Stormwater Management Plan/Updated as needed/EBR MOHSEP

City of Baton Rouge

Comprehensive Master Plan/Updated as needed/East Baton Rouge Parish Government
Local Emergency Operations Plan/Updated as needed/EBR MOHSEP
Economic Development/Plan/Updated as needed/East Baton Rouge Parish Economic Development
Capital Improvements Plan/Updated as needed/East Baton Rouge Parish Government
Continuity of Operations Plan/Updated as needed/EBR MOHSEP
Transportation Plan/Updated as needed/EBR MOHSEP
Stormwater Management Plan/Updated as needed/EBR MOHSEP

City of Baker

Comprehensive Master Plan/Updated as needed/East Baton Rouge Parish Government
Local Emergency Operations Plan/Updated as needed/EBR MOHSEP
Capital Improvements Plan/Updated as needed/East Baton Rouge Parish Government
Stormwater Management Plan/Updated as needed/EBR MOHSEP

City of Central

Comprehensive Master Plan/Updated as needed/East Baton Rouge Parish Government

Local Emergency Operations Plan/Updated as needed/EBR MOHSEP

Stormwater Management Plan/Updated as needed/EBR MOHSEP

City of Zachary

Comprehensive Master Plan/Updated as needed/East Baton Rouge Parish Government

Local Emergency Operations Plan/Updated as needed/EBR MOHSEP

Economic Development/Plan/Updated as needed/East Baton Rouge Parish Economic Development

Capital Improvements Plan/Updated as needed/East Baton Rouge Parish Government

Continuity of Operations Plan/Updated as needed/EBR MOHSEP

Transportation Plan/Updated as needed/EBR MOHSEP

Stormwater Management Plan/Updated as needed/EBR MOHSEP

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

East Baton Rouge Parish Essential Facilities – All Jurisdictions

East Baton Rouge Unincorporated Essential Facilities										
Type	Name	Drought*	Flooding	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfires	Winter Storms*
Fire and Rescue	Alsen/St.Irma Lee Volunteer Fire Department - Station #25			X	X	X	X	X	X	
	Baton Rouge Fire Department Station #17		X	X	X	X	X	X		
	Brownsfield Volunteer Fire Department - Station #71		X	X	X	X	X	X	X	
	Brownsfield Volunteer Fire Department - Station #72			X	X	X	X	X	X	
	Central Fire Department - Station #32			X	X	X	X	X	X	
	Chaneyville Volunteer Fire Department - Station #40			X	X	X	X	X	X	
	District 6 Fire Department - Station #51			X	X	X	X	X	X	
	District 6 Fire Department - Station #52			X	X	X	X	X	X	
	East Side Fire Department - Station #91			X	X	X	X	X	X	
	East Side Fire Department			X	X	X	X	X	X	
	Lt. Michael Scott Lamana Memorial Fire Station			X	X	X	X	X	X	

	Michael G. Roubique, Sr. Memorial Fire Station			X	X	X	X	X		
	Pride Volunteer Fire Department - Station #10		X	X	X	X	X	X		
	Pride Volunteer Fire Department - Station #12			X	X	X	X	X		
	Pride Volunteer Fire Department - Station #13			X	X	X	X	X	X	
	St. George Fire Department - Station #61			X	X	X	X	X		
	St. George Fire Department - Station #62			X	X	X	X	X		
	St. George Fire Department - Station #63		X	X	X	X	X	X	X	
	St. George Fire Department - Station #65			X	X	X	X	X		
	St. George Fire Department - Station #68			X	X	X	X	X	X	
	St. George Fire Station			X	X	X	X	X		
Government	City-Parish Department of Public Works - Central Garage		X	X	X	X	X	X	X	
	City-Parish Department of Public Works - Irene Road Facility		X	X	X	X	X	X	X	
	City-Parish Department of Public Works - North Lot		X	X	X	X	X	X	X	
	East Baton Rouge Parish North Landfill		X	X	X	X	X	X	X	
	Ronaldson Field Landfill		X	X	X	X	X	X	X	

	East Baton Rouge Parish Registrar of Voters Office Baker Branch		X	X	X	X	X	X	X	
Law Enforcement	East Baton Rouge Parish Sheriff's Office - Kleinpeter Substation			X	X	X	X	X		
	East Baton Rouge Parish Sheriff's Office Training Facility			X	X	X	X	X	X	
	East Baton Rouge Parish Sheriff's Office - Traffic Division		X	X	X	X	X	X		
	East Baton Rouge Parish Sheriff's Office - Burbank Substation		X	X	X	X	X	X	X	
	East Baton Rouge Parish Sheriff's Office - Pride-Chaneyville Substation			X	X	X	X	X	X	
	Joint Emergency Services Training Center			X	X	X	X	X	X	
Schools	Brownsfield Elementary School			X	X	X	X	X	X	
	Forest Heights Academy of Excellence			X	X	X	X	X	X	
	Glen Oaks High School			X	X	X	X	X	X	
	Glen Oaks Park Elementary School			X	X	X	X	X	X	
	Greenbrier Elementary School			X	X	X	X	X	X	
	Jefferson Terrace Elementary School			X	X	X	X	X		
	Merrydale Elementary School			X	X	X	X	X	X	

Northeast Elementary School			X	X	X	X	X	X	
Northeast High School			X	X	X	X	X		
Riveroaks Elementary School			X	X	X	X	X	X	
Sharon Hills Elementary School			X	X	X	X	X	X	
Shenedoah Elementary School			X	X	X	X	X	X	
South Baton Rouge Charter Academy		X	X	X	X	X	X		
Westminster Elementary School			X	X	X	X	X		
White Hills Elementary School			X	X	X	X	X	X	
Woodlawn Elementary School		X	X	X	X	X	X	X	
Woodlawn High School			X	X	X	X	X	X	
Woodlawn Middle School			X	X	X	X	X	X	

Baker Essential Facilities										
Type	Name	Drought*	Flooding	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfires	Winter Storms*
Fire and Rescue	Baker Fire Department - Station #21			X	X	X	X	X	X	
Government	Baker City Hall		X	X	X	X	X	X	X	
	City of Baker Public Works and Utilities Department		X	X	X	X	X	X	X	
	Municipal Annex		X	X	X	X	X	X	X	
Schools	Baker Heights Elementary			X	X	X	X	X	X	
	Baker High School			X	X	X	X	X	X	
	Baker Middle School			X	X	X	X	X	X	
	Bakersfield Elementary School			X	X	X	X	X	X	
	Park Ridge Elementary			X	X	X	X	X	X	

Baton Rouge Essential Facilities										
Type	Name	Drought*	Flooding	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfires	Winter Storms*
Fire and Rescue	Baton Rouge Metropolitan Airport Rescue Fire Fighting Facility			X	X	X	X	X		
	Baton Rouge Fire Department			X	X	X	X	X		
	Baton Rouge Fire Department - Station #1			X	X	X	X	X		
	Baton Rouge Fire Department - Station #10			X	X	X	X	X		
	Baton Rouge Fire Department - Station #11		X	X	X	X	X	X		
	Baton Rouge Fire Department - Station #13			X	X	X	X	X		
	Baton Rouge Fire Department - Station #14			X	X	X	X	X		
	Baton Rouge Fire Department - Station #15			X	X	X	X	X		
	Baton Rouge Fire Department - Station #18			X	X	X	X	X	X	
	Baton Rouge Fire Department - Station #2			X	X	X	X	X		
	Baton Rouge Fire Department - Station #3			X	X	X	X	X		
	Baton Rouge Fire Department - Station #4			X	X	X	X	X		
	Baton Rouge Fire Department - Station #5			X	X	X	X	X		
	Baton Rouge Fire Department - Station #9			X	X	X	X	X		

	Fire and EMS station No 7			X	X	X	X	X		
	Independence Park Fire Station			X	X	X	X	X		
	Osage Street Fire Station			X	X	X	X	X		
	Robert A. Bogan Fire Station			X	X	X	X	X		
Government	19th Judicial District Clerk of Court		X	X	X	X	X	X		
	19th Judicial District Courthouse		X	X	X	X	X	X		
	American Legion		X	X	X	X	X	X		
	American Legion Auxiliary		X	X	X	X	X	X		
	Baton Rouge City Constable		X	X	X	X	X	X		
	Baton Rouge City Court		X	X	X	X	X	X		
	Baton Rouge City-Parish Employees' Retirement System		X	X	X	X	X	X		
	Choctaw Administrative Center East Baton Rouge School Board		X	X	X	X	X	X		
	City-Parish Department Of Public Works - Building Maintenance For Parish Prison		X	X	X	X	X	X	X	
	City-Parish Department Of Public Works - Environmental Division		X	X	X	X	X	X		
	City-Parish Department Of Public Works - Permit And Inspection Division		X	X	X	X	X	X		

City-Parish Department Of Public Works - Service Station		X	X	X	X	X	X		
City-Parish Department Of Public Works - South Lot		X	X	X	X	X	X		
City-Parish Department Of Public Works - Waste Management Division		X	X	X	X	X	X		
City-Parish Mosquito Abatement And Rodent Control		X	X	X	X	X	X		
City-Parish Planning Commission		X	X	X	X	X	X		
East Baton Rouge Parish City Hall		X	X	X	X	X	X		
East Baton Rouge Parish Devils Swamp Landfill		X	X	X	X	X	X	X	
East Baton Rouge Parish Housing Authority		X	X	X	X	X	X		
East Baton Rouge Parish Housing Authority		X	X	X	X	X	X		
East Baton Rouge Parish Juvenile Court		X	X	X	X	X	X		
East Baton Rouge Parish Recycling Office		X	X	X	X	X	X	X	
East Baton Rouge Parish School Board Office		X	X	X	X	X	X		
EBRP School System - Transportation Offices		X	X	X	X	X	X		
EBRP School System - Warehouse Services		X	X	X	X	X	X		
Information Services		X	X	X	X	X	X		

	Municipal Employees' Retirement System		X	X	X	X	X	X		
	Municipal Police Employees' Retirement System		X	X	X	X	X	X		
Law Enforcement	Baton Rouge Police			X	X	X	X	X		
	Baton Rouge Police Academy			X	X	X	X	X		
	Baton Rouge Police Department			X	X	X	X	X		
	Baton Rouge Police Department			X	X	X	X	X		
	Baton Rouge Police Department			X	X	X	X	X		
	Baton Rouge Police Department - Evidence			X	X	X	X	X		
	Baton Rouge Police Department - Evidence			X	X	X	X	X		
	Baton Rouge Police Department - Misdemeanor Investigations			X	X	X	X	X		
	Baton Rouge Police Department - SMU			X	X	X	X	X		
	Baton Rouge Police Department District 3			X	X	X	X	X		
	Baton Rouge Police Department K-9 Training Office and Kennel			X	X	X	X	X		
	Baton Rouge Police Department District 2		X	X	X	X	X	X		

	Baton Rouge Police Department District 4			X	X	X	X	X		
	East Baton Rouge Parish Sheriff's Office			X	X	X	X	X		
	East Baton Rouge Parish Sheriff's Office - Scotlandville Substation			X	X	X	X	X		
	East Baton Rouge Sheriff's Office			X	X	X	X	X		
Corrections	East Baton Rouge Parish Prison			X	X	X	X	X		
Schools	Audubon Elementary School			X	X	X	X	X		
	Baton Rouge Center For Visual & Performing Arts			X	X	X	X	X		
	Baton Rouge Foreign Language Academic Immersion Magnet			X	X	X	X	X		
	Baton Rouge Magnet High School			X	X	X	X	X		
	Belaire High School			X	X	X	X	X	X	
	Belfair Montessori Magnet Elementary School			X	X	X	X	X		
	Bernard Terrace Elementary School			X	X	X	X	X		
	Brighton School			X	X	X	X	X		
	Broadmoor Elementary School			X	X	X	X	X		
	Broadmoor High School			X	X	X	X	X		
	Broadmoor Middle			X	X	X	X	X		
	Brookstown Elementary			X	X	X	X	X		

Buchanan Elementary School		X	X	X	X	X	X		
Capitol Elementary School			X	X	X	X	X		
Capitol Middle School			X	X	X	X	X		
Cedarcrest-Southmoor Elementary School			X	X	X	X	X		
Celerity Crestworth Charter School			X	X	X	X	X	X	
Celerity Dalton Charter School			X	X	X	X	X		
Children's Charter School			X	X	X	X	X		
Children's Charter School (Middle)		X	X	X	X	X	X		
Claiborne Elementary School			X	X	X	X	X		
Crestworth Elementary School			X	X	X	X	X	X	
Delmont Elementary			X	X	X	X	X		
Eden Park Elementary			X	X	X	X	X		
Friendship Capitol High School			X	X	X	X	X		
Glasgow Middle School			X	X	X	X	X		
Glen Oaks Middle School			X	X	X	X	X	X	
Greenville Alternative At Wyandotte			X	X	X	X	X		
Greenville Superintendent's Academy			X	X	X	X	X		
Highland Elementary School			X	X	X	X	X		
Howell Park Elementary School			X	X	X	X	X		
Istrouma High School			X	X	X	X	X		

J. K. Haynes Elementary Charter School			X	X	X	X	X		
J.K. Haynes Middle Charter School			X	X	X	X	X		
Kenilworth Science And Technology School			X	X	X	X	X		
Lasalle Elementary			X	X	X	X	X		
Lee High School			X	X	X	X	X		
Lee High School			X	X	X	X	X		
Louisiana Key Academy			X	X	X	X	X		
Magnolia Woods Elementary School			X	X	X	X	X		
Mayfair Laboratory School			X	X	X	X	X		
McKinley High School		X	X	X	X	X	X		
McKinley Middle Magnet School			X	X	X	X	X		
Melrose Elementary School			X	X	X	X	X		
North Banks Middle School Of Excellence			X	X	X	X	X	X	
Park Elementary School			X	X	X	X	X		
Park Forest Elementary School			X	X	X	X	X		
Park Forest Middle School			X	X	X	X	X		
Polk Elementary School			X	X	X	X	X		
Prescott Middle School			X	X	X	X	X		
Progress Elementary School			X	X	X	X	X	X	
Redemptorist Elementary School			X	X	X	X	X		
Redemptorist High School		X	X	X	X	X	X		
Ryan Elementary			X	X	X	X	X		

Scotlandville Magnet High Center Of Excellence			X	X	X	X	X		
Scotlandville Middle Pre-Engineering Magnet School			X	X	X	X	X		
Sherwood Middle Academic Magnet School			X	X	X	X	X		
Southeast Middle School			X	X	X	X	X		
Tara High School			X	X	X	X	X		
The Brighton School			X	X	X	X	X		
The Dufrocq School			X	X	X	X	X		
Trinity Episcopal Day School			X	X	X	X	X		
Twin Oaks Elementary School			X	X	X	X	X		
University Terrace Elementary School			X	X	X	X	X		
Villa Del Rey Elementary School			X	X	X	X	X		
Wedgewood Elementary School			X	X	X	X	X		
Westdale Heights Academic Magnet			X	X	X	X	X		
Westdale Middle School			X	X	X	X	X		
Wildwood Elementary School			X	X	X	X	X		
Winbourne Elementary School			X	X	X	X	X		

Central Essential Facilities										
Type	Name	Drought*	Flooding	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfires	Winter Storms*
Fire and Rescue	Central Fire Department - Station #31			X	X	X	X	X		
	Central Fire Department - Station #33			X	X	X	X	X	X	
	Central Fire Department - Station #34		X	X	X	X	X	X	X	
	Central Fire Department - Station #35			X	X	X	X	X	X	
	Pride Volunteer Fire Department - Station No 11		X	X	X	X	X	X	X	
Government	City of Central Chamber of Commerce		X	X	X	X	X	X	X	
	Gas Utility District No 1 of East Baton Rouge Parish		X	X	X	X	X	X	X	
Law Enforcement	East Baton Rouge Parish Sheriff's Office - Central Substation		X	X	X	X	X	X	X	
Schools	Bellingrath Hills Elementary School			X	X	X	X	X	X	
	Central Christian Academy			X	X	X	X	X		
	Central High School		X	X	X	X	X	X	X	
	Central Intermediate School		X	X	X	X	X	X	X	
	Tanglewood Elementary			X	X	X	X	X	X	

Zachary Essential Facilities										
Type	Name	Drought*	Flooding	Hail	Lightning	Wind	Tornado	Tropical Cyclone	Wildfires	Winter Storms*
Fire and Rescue	Zachary Fire Department			X	X	X	X	X		
	Zachary Fire Department			X	X	X	X	X		
Government	Assessor's Office		X	X	X	X	X	X	X	
	Zachary Chamber of Commerce		X	X	X	X	X	X	X	
	Zachary City Hall		X	X	X	X	X	X	X	
	Zachary City Hall Annex		X	X	X	X	X	X	X	
	Zachary Community School Board		X	X	X	X	X	X	X	
	Zachary Courthouse		X	X	X	X	X	X	X	
	Zachary School Board Warehouse		X	X	X	X	X	X	X	
	Zachary Town Hall		X	X	X	X	X	X	X	
Law Enforcement	Zachary Police Department			X	X	X	X	X		
Public Health	Lane Regional Medical Center			X	X	X	X	X	X	
Schools	Copper Mill Elementary			X	X	X	X	X		
	Northwestern Elementary School			X	X	X	X	X		
	Northwestern Middle School			X	X	X	X	X		
	Zachary Elementary School			X	X	X	X	X		
	Zachary High School			X	X	X	X	X		

* There are no critical facilities vulnerable to the hazard.

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Appendix D: Plan Adoption

By Jr. Freiberg
Introduced 2-8-17
P.H. 2-22-17

ADOPTED
METROPOLITAN COUNCIL

FEB 22 2017

17-00106

RESOLUTION 52721

Lesly Cash
COUNCIL ADMINISTRATOR TREASURER

AUTHORIZING THE MAYOR-PRESIDENT TO ACCEPT AND ADOPT THE EAST BATON ROUGE PARISH HAZARD MITIGATION PLAN UPDATE AS THE OFFICIAL HAZARD MITIGATION PLAN FOR EAST BATON ROUGE PARISH.

WHEREAS, the East Baton Rouge Parish Office of Homeland Security and Emergency Preparedness in conjunction with the East Baton Rouge Parish Hazard Mitigation Planning Committee has prepared a Hazard Mitigation Plan which covers the entire Parish of East Baton Rouge and all municipalities within the parish; and

WHEREAS, this plan is a living document and may be updated annually with major revisions every five (5) years; and

WHEREAS, having an approved plan is a requirement from the Federal Emergency Management Agency (FEMA) in order to receive federal mitigation grants.

BE IT RESOLVED by the Metropolitan Council of the Parish of East Baton Rouge and City of Baton Rouge that:

Section 1. The Mayor-President is hereby authorized to accept and adopt the East Baton Rouge Parish Hazard Mitigation Plan as the official hazard mitigation plan of East Baton Rouge Parish.

RESOLUTION**ADOPTION OF EAST BATON ROUGE PARISH
HAZARD MITIGATION PLAN**

**GIVING NOTICE BY PUBLICATION IN THE OFFICIAL JOURNAL OF THE
CITY OF BAKER, LOUISIANA,**

*IN THE SPIRIT and INTEREST of Acknowledging and Encouraging the safety and
welfare of all Citizens of the Baker, Louisiana Community and of East Baton Rouge
Parish:*

BE IT RESOLVED, by the **Mayor of the City of Baker and the Baker City Council**,
during the regular session of the Baker City Council assembled on **June 13, 2017** a
proper quorum being there and then present, as follows, to wit:

SECTION 1: Whereas in recognition of the need and desire to embrace prudent
safety and adequately well planned response measures for the protection of
citizens and property within the City of Baker, Louisiana and East Baton Rouge
Parish as a whole,

**Therefore, Be It Resolved by the Mayor and the Baker City
Council, corporately and on behalf of the Citizens of Baker,
Louisiana, that We fully and confidently Adopt the currently proposed
and/or adopted East Baton Rouge Parish Wide Hazard Mitigation Plan.**

*The foregoing Resolution having been read in full and out loud,
and thence submitted to a vote, was declared Adopted on the 13th
day of June, 2017.*

ATTEST:


Angela Canady, LCMC, Clerk of Council


Darnell Waites, Mayor

CITY OF CENTRAL

The following resolution was offered by Councilman Ellis:

RESOLUTION NO. 2017-10**A RESOLUTION ADOPTING THE
PARISH-WIDE MITIGATION PLAN**

WHEREAS, East Baton Rouge Parish has received grant funds from the Federal Emergency Management Agency (FEMA), through the GOHSEP, for the update of a Hazard Mitigation Plan (HMP) and;

WHEREAS, our community has participated in the process to update a Disaster Mitigation Act (DMA) compliant HMP based on the FEMA guidance available in the How to Guides;

WHEREAS, our community wishes to participate in the HMP update prepared by the East Baton Rouge Parish government under the oversight of a Steering Committee comprised of Parish-wide representatives;

WHEREAS, East Baton Rouge Parish and local representatives and governments have participated in the mitigation planning process;

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

WHEREAS, the updated plan has been recommended for adoption by the Steering Committee;

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

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

THEREFORE BE IT RESOLVED that the City of Central hereby adopts the East Baton Rouge Parish HMP update.

This Resolution having been submitted to a vote, the vote thereon was as follows:

For:	Ellis, Evans, Fralick, Messina
Against:	None
Absent:	Vance

CERTIFICATION

The above and foregoing Resolution was duly adopted at a regular meeting of the Council for the City of Central held on the 11th day of July, 2017.


Mark Miley, City Clerk

13th day of July, 2017.

WHEREAS, at the Regular Meeting of the **Zachary City Council**, duly convened and held in accordance with law at 6:30 p.m. on the 27th day of June, 2017, at the regular meeting place of the said governing body, with the following members:

PRESENT: Nezianya, Noel, O'Brien, Womack

ABSENT: Cavin

The meeting was called to order and the roll called with the above results.

The following Resolution was offered by Councilman Womack, and seconded by Councilwoman O'Brien.

RESOLUTION NO. 2017-07

A RESOLUTION ADOPTING THE PARISHWIDE HAZARD MITIGATION PLAN UPDATE AS THE OFFICIAL HAZARD MITIGATION PLAN FOR THE CITY OF ZACHARY AND PROVIDING FOR OTHER MATTERS IN CONNECTION THEREWITH.

WHEREAS, the City of Zachary (the "**City**") as a duly created and existing political subdivision of the State of Louisiana pursuant to applicable state law and other constitutional and statutory authorities proposes;

WHEREAS, the East Baton Rouge Parish Office of Homeland Security and Emergency Preparedness in conjunction with the East Baton Rouge Parish Hazard Mitigation Planning Committee (the "Planning Committee") have prepared a Hazard Mitigation Plan (the "HMP") which covers the entire Parish of East Baton Rouge and all municipalities within the parish;

WHEREAS, the City participated in the Planning Committee whom oversaw the process and provided input to the update of the HMP;

WHEREAS, this plan is a living document and may be updated annually with major revisions every five (5) years;

WHEREAS, having an approved plan is a requirement from the Federal Emergency Management Agency ("FEMA") in order to receive federal mitigation grants;

WHEREAS, the Mayor (the "**Mayor**") and the Zachary City Council (the "**Council**") are in general agreement regarding the HMP as contained in this Resolution (the "**Resolution**"); and

NOW THEREFORE, be it hereby:

RESOLVED that the City hereby adopts the East Baton Rouge Parish Hazard Mitigation Plan as the official Hazard Mitigation Plan of the City of Zachary and providing for other matters in connection therewith.

THE ABOVE AND FOREGOING Resolution was thereupon submitted to a vote, and the vote thereon was as follows:


YEAS: Neziannya, Noel, O'Brien, Womack

NAYS: None

ABSTAIN: None

WHEREUPON, the Mayor declared the above Resolution duly adopted on this 27th day of June, 2017.

ATTEST:



Dana LeJeune, Clerk of the City Council



David Amrhein, Mayor



Ben Cavin, Mayor Pro Tempore

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	Email	Phone
Richard Webre	Director	Ascension Parish	rwebre@apgov.us	621-8360
Dr. Herman Brister	Superintendent	Baker School System	hbrister@bakerschools.org	778-2362
Anthony Marino	Director	Baton Rouge Airport	amarino@brgov.com	355-0333
Ralph Hennessy	Assistant Director of Aviation	Baton Rouge Airport	rhennessy@brgov.com	355-0333
Richard Sullivan	Chief	Baton Rouge Fire Department	rsullivan@brgov.com	354-1421
Ed Smith	Chief	Baton Rouge Fire Department	esmith@brgov.com	354-1401
Connie DeLeo	Region 2 Designated Regional Coordinator	Baton Rouge General Hospital	connie.deleo@brgeneral.org	387-7852
William Daniel	Chief Administrative Officer	Baton Rouge Mayor's Office	wdaniel@brgov.com	389-5104
Scott Dyer	Media Relations	Baton Rouge Mayor's Office	sdyer@brgov.com	389-7957
Carl Dabadie	Chief	Baton Rouge Police Department	cdabadie@brgov.com	389-3802
Bubba Cashio	Director	Buildings and Grounds	bcashio@brgov.com	389-3168
Harold Rideau	Mayor	City of Baker	hrideau@cityofbakerla.com	778-0300
Melvin L. "Kip" Holden	Mayor	City of Baton Rouge	kholden@brgov.com	389-5102
Jr. Shelton	Mayor	City of Central	jr.shelton@central-la.gov	261-5989
David Amrhein	Mayor	City of Zachary	david.amrhein@cityofzachary.org	654-0287
Eric Ducote	Architect	Department of Buildings and Grounds	educote@brgov.com	389-4694
Jim Frey	Special Projects Architect	Department of Buildings and Grounds	jfrey@brgov.com	389-4694

Name	Title	Agency	Email	Phone
Marlon Lemond	Floodplain Manager	Department of Development	mlemond@brgov.com	389-3196
Shannon Dupont	Special Projects Engineer	Department of Development	SDUPONT@brgov.com	389-3198
Patricia Friedrich	East Baton Rouge Parish School Board	East Baton Rouge Parish School System	pfriedri@ebrpss.k12.la.us	772-3084
Eric Johnson	Training and Safety Officer	East Baton Rouge Parish School System	ejohnson13@ebrschools.org	226-3715
Catherine Fletcher	Chief Business Operations Officer	East Baton Rouge Parish School System	cfletcher@ebrschools.org	922-5650
Lawrence McLeary	Colonel	East Baton Rouge Parish Sheriff's Office	lmcleary@ebrso.org	389-3274
Chad Guillot	Director	Emergency Medical Services	cguillot@brgov.com	389-5155
Obie Cambre	Emergency Preparedness and Security Advisor ExxonMobil	ExxonMobil	obie.c.cambre@exxonmobil.com	977-1384
Darren Guidry	R2 Coordinator	GOHSEP	darren.guidry@la.gov	925-7500
Brian Bernard	Director	Human Resources	bbernard@brgov.com	389-5307 Ext. 218
Eric Romero	Director	Information Services	eromero@brgov.com	389-7745
Warren Kron	GIS Manager	Information Services	wkron@brgov.com	389-3144
Kevin Scott	Lieutenant	LSU Police Department	krscott@lsu.edu	578-7691
Lauren Stevens	Project Manager, Education, & Training	LSU-SDMI	lstevens@lsu.edu	
Chris Rippetoe	GIS Analyst	LSU-SDMI	crippe2@lsu.edu	
JoAnne Moreau	Director	MOHSEP	jmoreau@brgov.com	389-2100
Tuesday Mills	Assistant Director	MOHSEP	tmills@brgov.com	389-2100
Kellie McGaha	Chief of Operations	MOHSEP	kmcgaha@brgov.com	389-2100
Darcee Smith	Emergency Preparedness Coordinator	MOHSEP	dksmith@brgov.com	389-2100
Caroline Gardner	Engineering Intern	MOHSEP	cgardner@brgov.com	389-2100
Monica Salins	Executive Director	Pontchartrain Levee District	msalins@leveedistrict.org	869-9721 Ext. 800
Carey Chauvin	Interim Assistant Chief Administrative Officer	Public Works	cchauvin@brgov.com	389-3158
Joycelyn Johnson	Chief	Southern Police Department	joycelyn_johnson@subr.edu	771-2770

Capability Assessment

East Baton Rouge Unincorporated

Worksheet 4.1: Capability Assessment Worksheet		
Local mitigation capabilities are existing authorities, polices and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible.		
Planning and Regulatory		
Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place.		
East Baton Rouge Unincorporated		
Plans	Yes/No	Comment
Comprehensive / Master Plan	Yes	
Capital Improvements Plan	Yes	
Economic Development Plan	Yes	
Local Emergency Operations Plan	Yes	
Continuity of Operations Plan	Yes	
Transportation Plan	Yes	
Stormwater Management Plan	Yes	
Community Wildfire Protection Plan	No	
Other plans (redevelopment, recovery, coastal zone management)		
Building Code, Permitting and Inspections		
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	
Fire Department ISO/PIAL rating	Yes	
Site plan review requirements	Yes	
Land Use Planning and Ordinances		
Zoning Ordinance	Yes	
Subdivision Ordinance	Yes	

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

Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes/No	Comment
Capital Improvements project funding	Yes	
Authority to levy taxes for specific purposes	Unknown	
Fees for water, sewer, gas, or electric services	Yes	
Impact fees for new development	Yes	
Stormwater Utility Fee	No	
Community Development Block Grant (CDBG)	Yes	
Other Funding Programs	Yes	
Education and Outreach		
Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.		
Program / Organization	Yes/No	Comment
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Yes	
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	Yes	
Natural Disaster or safety related school program	Yes	
Storm Ready certification	Yes	
Firewise Communities certification	Yes	
Public/Private partnership initiatives addressing disaster-related issues	Yes	

City of Baton Rouge

Worksheet 4.1: Capability Assessment Worksheet		
Local mitigation capabilities are existing authorities, polices and resources that reduce hazard impacts or that could be used to		
implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible.		
Planning and Regulatory		
Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place.		
City of Baton Rouge		
Plans	Yes/No	Comment
Comprehensive / Master Plan	Yes	
Capital Improvements Plan	Yes	
Economic Development Plan	Yes	
Local Emergency Operations Plan	Yes	
Continuity of Operations Plan	Yes	
Transportation Plan	Yes	
Stormwater Management Plan	Yes	
Community Wildfire Protection Plan	No	
Other plans (redevelopment, recovery, coastal zone management)	Yes	
Building Code, Permitting and Inspections		
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	
Fire Department ISO/PIAL rating	Yes	
Site plan review requirements	Yes	
Land Use Planning and Ordinances		
Zoning Ordinance	Yes	
Subdivision Ordinance	Yes	
Floodplain Ordinance	Yes	

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

Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes/No	Comment
Capital Improvements project funding	Yes	
Authority to levy taxes for specific purposes	Unknown	
Fees for water, sewer, gas, or electric services	Yes	
Impact fees for new development	Yes	
Stormwater Utility Fee	No	
Community Development Block Grant (CDBG)	Yes	
Other Funding Programs	Yes	
Education and Outreach		
Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.		
Program / Organization	Yes/No	Comment
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Yes	
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	Yes	
Natural Disaster or safety related school program	Yes	
Storm Ready certification	Yes	
Firewise Communities certification	Yes	
Public/Private partnership initiatives addressing disaster-related issues	Yes	

City of Baker

Worksheet 4.1: Capability Assessment Worksheet		
Local mitigation capabilities are existing authorities, policies and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible.		
Planning and Regulatory		
Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place.		
Baker		
Plans	Yes/No	Comment
Comprehensive / Master Plan	YES	
Capital Improvements Plan	YES	
Economic Development Plan	NO	IN PROGRESS
Local Emergency Operations Plan	YES	
Continuity of Operations Plan	NO	
Transportation Plan	NO	EBR
Stormwater Management Plan	YES	
Community Wildfire Protection Plan	NO	STATE
Other plans (redevelopment, recovery, coastal zone management)	No	
Building Code, Permitting and Inspections		
Building Code	YES	
Building Code Effectiveness Grading Schedule (BCEGS) Score	NO	
Fire Department ISO/PIAL rating	YES	CATEGORY 2
Site plan review requirements	NO	
Land Use Planning and Ordinances		
Zoning Ordinance	YES	
Subdivision Ordinance	YES	
Floodplain Ordinance	YES	

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

Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes/No	Comment
Capital Improvements project funding	YES	
Authority to levy taxes for specific purposes	YES	
Fees for water, sewer, gas, or electric services	YES	NOT ELECTRICAL
Impact fees for new development	YES	
Stormwater Utility Fee	NO	
Community Development Block Grant (CDBG)	YES	
Other Funding Programs	YES	
Education and Outreach		
Identify education and outreach programs and methods, already in place that could be used to implement mitigation		
activities and communicate hazard-related information.		
Program / Organization	Yes/No	Comment
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	YES	ROTARY
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	YES	
Natural Disaster or safety related school program	ONGOING	IN PROGRESS
Storm Ready certification	NO	
Firewise Communities certification	FORMING CERT TEAM	IN PROGRESS
Public/Private partnership initiatives addressing disaster-related issues	YES	

City of Central

Worksheet 4.1: Capability Assessment Worksheet		
Local mitigation capabilities are existing authorities, policies and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible.		
Planning and Regulatory		
Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place.		
Central		
Plans	Yes/No	Comment
Comprehensive / Master Plan	Yes	
Capital Improvements Plan	Yes	
Economic Development Plan	Yes	
Local Emergency Operations Plan	Yes	
Continuity of Operations Plan	Yes	
Transportation Plan	Yes	
Stormwater Management Plan	Yes	
Community Wildfire Protection Plan	No	
Other plans (redevelopment, recovery, coastal zone management)	No	
Building Code, Permitting and Inspections		
Building Code	yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	no	
Fire Department ISO/PIAL rating	yes, 3	
Site plan review requirements	yes	
Land Use Planning and Ordinances		
Zoning Ordinance	yes	
Subdivision Ordinance	yes	
Floodplain Ordinance	yes	

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

Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes/No	Comment
Capital Improvements project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	Yes	
Impact fees for new development	Yes	
Stormwater Utility Fee	No	
Community Development Block Grant (CDBG)	Yes	
Other Funding Programs	Yes	
Education and Outreach		
Identify education and outreach programs and methods, already in place that could be used to implement mitigation		
activities and communicate hazard-related information.		
Program / Organization	Yes/No	Comment
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	No	
Natural Disaster or safety related school program	yes	Through CRS Activities
Storm Ready certification		
Firewise Communities certification	No	
Public/Private partnership initiatives addressing disaster-related issues	No	
Other	No	

City of Zachary

Worksheet 4.1: Capability Assessment Worksheet		
Local mitigation capabilities are existing authorities, policies and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible.		
Planning and Regulatory		
Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place.		
Zachary		
Plans	Yes/No	Comment
Comprehensive / Master Plan	Yes	
Capital Improvements Plan	Yes	
Economic Development Plan	Yes	
Local Emergency Operations Plan	Yes	
Continuity of Operations Plan	Yes	
Transportation Plan	Yes	
Stormwater Management Plan	Yes	
Community Wildfire Protection Plan	No	
Other plans (redevelopment, recovery, coastal zone management)	No	
Building Code, Permitting and Inspections		
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	
Fire Department ISO/PIAL rating	Yes	
Site plan review requirements	Yes	
Land Use Planning and Ordinances		
Zoning Ordinance	Yes	
Subdivision Ordinance	Yes	
Floodplain Ordinance	Yes	

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

Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes/No	Comment
Capital Improvements project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	Yes	
Impact fees for new development	Yes	
Stormwater Utility Fee	Yes	
Community Development Block Grant (CDBG)	Yes	
Other Funding Programs	Yes	
Education and Outreach		
Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.		
Program / Organization	Yes/No	Comment
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	Yes	
Natural Disaster or safety related school program	Yes	
Storm Ready certification	No	EBR
Firewise Communities certification	No	
Public/Private partnership initiatives addressing disaster-related issues	Yes	
Other	No	

Building Inventory

****Building Inventory on file with the Mayor's Office of Homeland Security and Emergency Preparedness****

Vulnerable Populations

Vulnerable Populations Worksheet

East Baton Rouge Parish

Name	Street	City	Zip Code	Latitude	Longitude
All Hospitals (Private or Public)					
Senior Residences of Central	10816 Hooper Rd.	CENTRAL	70818	30.546275	-91.05778889
Progressive Mental Health Center	12038 Greenwell Springs - Port Hudson Rd	CENTRAL	70791	30.62827778	-91.05241111
Lane Regional Medical Center	6300 MAIN ST	ZACHARY	70791	30.6490932	-91.13753362
Lane Rehabilitation Center	4601 MCHUGH RD., BLDG. A	ZACHARY	70791	30.6472	-91.139718
The Neuromedical Center	10101 Park Rowe Avenue	Baton Rouge	70810	30.38015635	-91.094045
Mary Bird Perkins Cancer Center	4950 Essen Lane	Baton Rouge	70809	30.39572962	-91.10734602
Our Lady of the Lake Regional Medical Center	5000 Hennessy Boulevard	Baton Rouge	70806	30.40362021	-91.10654763
Mary Bird Perkins Cancer Center	4950 Essen Lane	Baton Rouge	70809	30.40379057	-91.10476867
Baton Rouge Rehab Hospital	8595 United Plaza Boulevard	Baton Rouge	70809	30.41023811	-91.0950383
Baton Rouge General Gastroenterology Center	7777 Hennessy Boulevard #409	Baton Rouge	70808	30.40355517	-91.12024251
Ochsner Medical Center	17000 Medical Center Drive	Baton Rouge	70816	30.44285134	-90.99980407
Family Solutions of Louisiana	862 O'Neal Lane	Baton Rouge	70816	30.45627651	-91.00886879
VACANT HOSPITAL	9050 AIRLINE HWY	Baton Rouge	70815	30.44382054	-91.09075604
BATON ROUGE GENERAL HOSPITAL	3600 FLORIDA ST	Baton Rouge	70806	30.44923091	-91.15298766
BATON ROUGE GENERAL PENNINGTON CANCER CENTER	3401 NORTH BLVD	Baton Rouge	70806	30.44869049	-91.15400561
OCHSNER HEALTH CENTER	9001 SUMMA AVE	Baton Rouge	70809	30.39281811	-91.09192061
BATON ROUGE GENERAL MEDICAL CENTER	8585 PICARDY AVE	Baton Rouge	70809	30.39370078	-91.0948095
BATON ROUGE FAMILY MEDICAL CTR	8595 PICARDY AVE	Baton Rouge	70809	30.39361965	-91.09407028

PROMISE HOSPITAL OF BATON ROUGE	5130 MANCUSO LN	Baton Rouge	70809	30.39747914	-91.10257083
EARL K. LONG MEDICAL CENTER (VACANT)	5825 AIRLINE HWY	Baton Rouge	70812	30.50451305	-91.13113494
CHAMPION MEDICAL CENTER	7855 HOWELL BLVD	Baton Rouge	70807	30.51839372	-91.15687546
EBR HEALTH UNIT & CSHS CLINIC	353 12TH ST	Baton Rouge	70802	30.45016319	-91.17772271
AMG Longterm Acute Care Center	4601 MCHUGH RD., BLDG. B	ZACHARY	70791	30.64722	-91.140198

Nursing Homes (Private or Public)

NORTHRIDGE CARE CENTER LLC	3612 BAKER BLVD	BAKER	70714	30.59337263	-91.15960433
Oakwood Village	4400 MCHUGH RD.	ZACHARY	70791	30.64565586	-91.13834515
Zachary Manor Nursing Home and Rehab	6161 MAIN ST	ZACHARY	70791	30.6505885	-91.139104
Lane Nursing Home	6300 MAIN ST	ZACHARY	70791	30.649364	-91.138494
ST. JAMES PLACE OF BATON ROUGE	333 LEE DR	BATON ROUGE	70808	30.39814031	-91.15753744
LAKEWOOD QUARTERS	8585 SUMMA AVE	BATON ROUGE	70809	30.39813697	-91.0965305
LOUISIANA GUEST HOUSE	7414 SUMRALL DR	BATON ROUGE	70812	30.5152521	-91.11684068
BATON ROUGE HEALTHCARE	5550 THOMAS RD	BATON ROUGE	70811	30.55778911	-91.13707544
WESTMINSTER SCOTLANDVILLE SENIOR LIVING	None	BATON ROUGE	70807	30.53070084	-91.17444792
RETIREMENT CENTER	14686 OLD HAMMOND HWY	BATON ROUGE	70816	30.45111084	-91.02178955
JEFFERSON MANOR NURSING HOME	9919 JEFFERSON HWY	BATON ROUGE	70809	30.41181893	-91.07399126
THE CARE CENTER	11188 FLORIDA BLVD	BATON ROUGE	70815	30.45757071	-91.06051451
HOSPICE CARE OF LA	8704 JEFFERSON HWY	BATON ROUGE	70809	30.418401	-91.0933381
ST JOSEPH HOSPICE	10615 JEFFERSON HWY	BATON ROUGE	70809	30.40866702	-91.06508049
Southside Assisted Living	Nearby: 4604 Perkins Road	BATON ROUGE	70808	30.41538883	-91.1425124
Carrington Place	Nearby: 8225 Summa Avenue	BATON ROUGE	70809	30.39913464	-91.09926992
Magnolia Residential Care Veterans Home	16950 Florida Boulevard	BATON ROUGE	70819	30.4667807	-90.99998943
Bridgeway Healthcare & Hospice	Nearby: 5425 Hickory Ridge Boulevard	BATON ROUGE	70817	30.40638736	-91.02487382
VONNIEABS RESPITE CARE INC	3535 GOVERNMENT ST	BATON ROUGE	70806	30.44443053	-91.15350793
TRINITY LIFE ASSISTED LIV INC	8680 JEFFERSON HWY	BATON ROUGE	70809	30.4178424	-91.09418796
SUNRISE OF BATON ROUGE	8502 JEFFERSON HWY	BATON ROUGE	70809	30.41875103	-91.09603151

OAKS OF MIDCITY NURSING CENTER	4100 NORTH BLVD	BATON ROUGE	70806	30.44798877	-91.14696302
AFFINITY NURSING AND REHAB CENTER	4005 NORTH BLVD	BATON ROUGE	70806	30.44878834	-91.14843129
STERLING PLACE	3888 NORTH BLVD	BATON ROUGE	70806	30.44809307	-91.1498884
PACE BATON ROUGE	7436 BISHOP OTT DR	BATON ROUGE	70806	30.45744339	-91.11142152
ST. CLARE MANOR NURSING HOME	7435 BISHOP OTT DR	BATON ROUGE	70806	30.45886338	-91.11207591
Canon Hospice	1761 Physicians Park Drive # B	BATON ROUGE	70816	30.4405	-90.99939454
Hospice In His Care	3233 South Sherwood Forest Boulevard #102	BATON ROUGE	70816	30.4231596	-91.05115702
Provident Assisted Living	4311 Colonial Park Blvd.	ZACHARY	70791	30.648862	-91.20791
Mobile Home Parks					
LAVEY LANE MOBILE HOME COMMUNITY	5510 LAVEY LANE	BAKER	70714	30.57431586	-91.14034691
AZALEA GARDENS MOBILE HOME PARK	3300 BAKER BLVD.	BAKER	70714	30.59551764	-91.16321266
ST. JAMES MOBILE HOME PARK	4702 LAVEY LANE	BAKER	70714	30.57439734	-91.15195463
LITTLE ACRES MOBILE HOME PARK	MANCHESTER DR	BAKER	70714	30.58975721	-91.15418058
CRESTVIEW MOBILE HOME PARK	5885 LAVEY LANE	BAKER	70714	30.5759	-91.1379
OAK GLEN MOBILE HOME PARK	3838 THOMAS ROAD	BAKER	707414	30.5581	-91.1524
TANGLEWOOD WEST TRAILER PARK	9477 Lansdowne Road	CENTRAL	70818	30.53518585	-91.07667714
MICOSHA MOBILE HOME PARK	13939 Leanne Drive	CENTRAL	70818	30.53065646	-91.03439159
LEANNE DRIVE TRAILER PARK	14138 Leanne Drive	CENTRAL	70818	30.52922878	-91.03146009
SULLIVAN ROAD TRAILER PARK	8888 Sullivan Raod	CENTRAL	70818	30.53117382	-91.02737788
HOOPER ROAD MOBILE HOME PARK	12148 Hooper Road	CENTRAL	70818	30.54703984	-91.05075595
JOOR ROAD MOBILE HOME PARK	14853 Joor Road	CENTRAL	70791	30.58735000	-91.04644444
TIFFANY ESTATES MOBILE HOME PARK	17960 Will Avenue	CENTRAL	70739	30.54946111	-90.98483889
BUNCHES MOBILE HOME PARK	25100 Greenwell Springs Rd	CENTRAL	70739	30.59829167	-90.99674444
Oak alley Estates	1550 MT. PLEASANT-ZACHARY RD	ZACHARY	70791	30.65298068	-91.20009772
Doss-Wheeler Trainer Park	5157 HWY. 19	ZACHARY	70791	30.65378033	-91.15021381
Town and Country Mobile Home	4957 & 4979 SAINT LOUIS STREET	ZACHARY	70791	30.65329967	-91.1507254
Mobile home Park	6401 MAIN STREET	ZACHARY	70791	30.65059068	-91.13507062
NELSON'S MOBILE HOME VILLAGE	None	BATON ROUGE	70805	30.48277214	-91.12013212
CAMPLAND MOBILE HOME PARK	3575 VICTORIA DR	BATON ROUGE	70805	30.48189255	-91.1185995
SHERWOOD FOREST MOBILE HOMES PARK	349 FLANNERY RD	BATON ROUGE	70815	30.45843445	-91.03307809
FOUR SEASONS MOBILE HOME PARK	7950 HOOPER RD	BATON ROUGE	70811	30.52679126	-91.10736809

ONCE AROUND MOBILE HOME PARK	4415 VICTORIA DR	BATON ROUGE	70812	30.49143616	-91.11952287
BILLS TRAILER PARK	4647 VICTORIA DR	BATON ROUGE	70812	30.49326531	-91.1192873
UNKNOWN TRAILER PARK	None	BATON ROUGE	70805	30.50558841	-91.15198517
UNKNOWN TRAILER PARK	11558 PLANK RD	BATON ROUGE	70811	30.55031438	-91.13458501
BIG OAK MOBILE HOME PARK	3700 VICTORIA DR	BATON ROUGE	70812	30.4842972	-91.11607935
UNKNOWN MOBILE HOME PARK	7550 PECUE LN	BATON ROUGE	70809	30.38094421	-91.04287606
GARDERE MOBILE HOME PARK	2575 GARDERE LN	BATON ROUGE	70810	30.34780049	-91.13311163
Unknown	Nearby: 8042 Elliot Road	BATON ROUGE	70817	30.37953743	-90.99103065
Torrey Pines	None	BATON ROUGE	70816	30.45988926	-91.00290243
Evergreen Mobile Home Park	Nearby: Nicholson Lane	BATON ROUGE	70814	30.49383657	-91.06848581
SHADY GROVE TRAILER PARK	6060 WINCHESTER AVE	BATON ROUGE	70805	30.50547428	-91.13757827
UNKNOWN TRAILER PARK	4250 BLOUNT RD	BATON ROUGE	70807	30.54286847	-91.14897503
CARROLL'S TRAILER PARK	6442 BOURGEOIS ST	BATON ROUGE	70805	30.50793064	-91.16518111
UNKNOWN TRAILER PARK	3724 CANNON ST	BATON ROUGE	70805	30.50535742	-91.15254638
UNKNOWN TRAILER PARK	None	BATON ROUGE	70811	30.52590082	-91.11928125
UNKNOWN TRAILER PARK	7185 GREENWELL ST	BATON ROUGE	70812	30.50308424	-91.11828447
BROADMOOR MOBILE HOME PARK	9955 FLORIDA BLVD	BATON ROUGE	70815	30.45709229	-91.07470703
NIGHT RV PARK ESQUIVEL LLC	14740 FLORIDA BLVD	BATON ROUGE	70819	30.46404851	-91.02230353
GURNEY ROAD MOBILE HOME PARK	11653 Gurney Road	CENTRAL	70714	30.56517778	-91.05866667

National Flood Insurance Program (NFIP)

East Baton Rouge Parish

ELEMENT F: STATE REQUIREMENT

National Flood Insurance Program (NFIP)

Jurisdiction: East Baton Rouge Parish

	East Baton Rouge Parish	Baker	Central	Zachary
Insurance Summary				
How many NFIP policies are in the community? What is the total premium and coverage?	23,528 policies/ \$17,259,375 in premiums / \$5,426,781,600 in coverage	424 policies; \$371,854.00 premium coverage; \$78,443,800.00	2040 policies; \$1,646,272 premiums; \$409,893,600 coverage	540 Policies, \$379,873.00 Premiums, \$135,055,300.00 insurance in force
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?	6,367 closed paid losses. \$101,264,787 in paid losses. 595 Substantial Damage.	166 claims paid \$1,515,722.00 total paid claims 13 SD losses	5 claims; \$114,860 paid claims; 0 were for substantial damage	144 Claims Paid, \$2,373,745.00 in Paid Claims, 9 for substantial damage
How many structures are exposed to flood risk with in the community?	14,321 policies in Zone AE. 972 policies in Zone A. 8,324 policies in Zone X.	933	5711	914
Describe any areas of flood risk with limited NFIP policy coverage.	None	509 structures uninsured	none to my knowledge	Little Farms and 39th street area have low policy coverage.
Staff Resources				
Is the Community FPA or NFIP Coordinator certified?	Yes	NO	yes	Yes
Is flood plain management an auxiliary function?	No	NO	No	Yes

Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Permit review, GIS, Flood education and outreach, inspections.	Flood Plain Administrator, Inspector, Administrative Permit Officer	Permits are required & reviewed for compliance with the city's NFIP requirements	Elevation Certificate review, GIS, education or outreach, inspections, and engineering capability
What are the barriers to running an effective NFIP program in the community, if any?	None	Existing pre-firm structures - mitigation funding limitations	Funding and staffing	Time
Compliance History				
Is the community in good standing with the NFIP?	Yes	YES	yes	Yes
Are there any outstanding compliance issues(i.e., current violations)?	No	NO	no	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact(CAC)?	CAV: 2/19/2014 CAC: 10/11/2012	CAV 12-11-07 CAC 2-6-13	CAV 08/31/2010; CAC 10/12/2012	12/12/13 (CAV), 10/11/12 (CAC)
Is a CAV or CAC scheduled or needed? If so when?	No	No	Not at this time	No
Regulation				
When did the community enter the NFIP?	7/2/1979	10/19/1973 regular	2005	9/15/1977
Are the FIRMs digital or paper?	Both	Both	digital & paper	Both
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	Yes. Freeboard requirements outside the SFHA as well as in. Fill mitigation. Floodproofing for non-residential structures.	Yes	exceeds	Exceed
Community Rating System (CRS)				
Does the community participate in CRS?	Yes	Yes	yes	Yes
What is the community's CRS Class Ranking?	6	8	8	7
Does the plan include CRS planning requirements?	Yes	YES	yes	Yes

