DECEMBER 2010

ST. JOHN THE BAPTIST PARISH

FINAL
HAZARD MITIGATION PLAN

SUPPLEMENT 1
TO THE ST. JOHN THE BAPTIST PARISH
EMERGENCY OPERATIONS PLAN

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Project Number 623-001

PROVIDENCE

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St. John the Baptist Parish
Hazard Mitigation Plan Update
Overview of Section 1.0 Revisions

Section 1.0 of the St. John the Baptist Parish Hazard Mitigation Plan (HMP) Update is the Introduction Section. This section discusses the scope of the plan, authority, plan preparation and organization, local mitigation plan criteria, and prerequisites. A summary of the revisions that were made to this section are addressed below.

Details from the planning process for the 2006 HMP such as meeting dates, contacts, and submittal dates were removed from this section and details of this 2010 update were added. Another change within this section was to the resolution in Appendix B. The HMP is considered a supplement to the St. John the Baptist Parish Emergency Operations Plan.

1.0 INTRODUCTION

St. John the Baptist Parish prepared this Hazard Mitigation Plan (HMP) to be better equipped for disasters before they occur. It is our hope that, with proper planning, our citizens can be more knowledgeable of things they can do to protect their property and their lives from the devastation caused by hazards like floods, hurricanes, severe storms (thunderstorms, lightning, and high winds), and tornadoes. In addition, it is our desire to objectively evaluate the hazards that occur in our Parish and, as government officials, prioritize the actions that we need to take to provide a safe place to live.

The Parish's original HMP was funded by a Planning Grant from the Federal Emergency Management Agency (FEMA) in early 2002. The Parish applied for and was awarded a Flood Mitigation Assistance grant in May 2002. The plan was finalized in 2006.

Subsequently, St. John the Baptist Parish was made aware of a Planning Grant that would assist us in updating our existing HMP using funds made available through FEMA from the Hazard Mitigation Grant Program (HMGP) fund created after Hurricanes Katrina and Rita. The Parish applied for a Planning Grant and was awarded the grant in November 2009.

These funds assisted St. John the Baptist Parish in updating our HMP to reflect new information and identify specific cost-effective mitigation projects, focusing on those particular types of projects that may be eligible for HMGP funding. We felt it was important to have the assistance of someone skilled in preparing such plans, so after receiving the grant, we hired a hazard mitigation consulting firm, Providence, to guide us in this process.

What follows in Section 1.0 is a description of the "scope of the plan" which addresses why we are preparing the plan, a discussion of the "authority" for preparation of the plan which addresses the federal acts that drive the preparation of such plans, and "plan preparation and organization" which outlines how the plan was prepared and what can be found in the rest of the plan.

1.1 Scope of the Plan

The St. John the Baptist Parish HMP is a concerted effort on the part of the Parish to develop an all hazards, parish-wide approach to disaster damage reduction. In order to focus on a process needed to attain a sustainable future for the community, St. John the Baptist Parish utilized a FEMA-approved process to identify and assess all potential natural hazards that may affect the community and develop an action plan to address those hazards. This plan will be utilized to better articulate accurate needs for the community based on a process that involves all stakeholders including the general public, government, business, and industry.

1.2 Authority

Authority for the preparation of the HMP is derived from the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988, P.L. 93-288, as amended by the Disaster Mitigation Act of 2000 (DMA 2000), P.L. 106-390. The Disaster Mitigation Act of 2000 (the Act) requires state and local governments to develop and formally adopt natural HMPs by November 2003 in order to be eligible to apply for federal assistance under the HMGP. The Act was further amended, extending the planning requirement deadline to November 2004.

When the DMA 2000 was signed into law on October 30, 2000, the Robert T. Stafford Disaster Relief and Emergency Assistance Act was amended by adding a new section, 322 – Mitigation Planning. Section 322 places new emphasis on local mitigation planning. It requires local governments to develop and submit mitigation plans as a condition of receiving HMGP project grants.

In addition to the plan requirement, the Act also requires communities to utilize a specific planning process developed for an all-hazards approach to mitigation planning. This-four step planning process is crucial to ensure that the effective planning by a community meets all the plan content criteria required by the Act. The Act requires adoption by the local governing body and specifies a stringent review process, by which states and FEMA regional offices will review, evaluate, and approve HMPs.

1.3 Plan Preparation and Organization

The Parish recognized early that planning is not a product, but rather a process. Although the result of the planning process would be a plan, it would be the planning process that helps us obtain our desired outcome – a disaster resilient community. Therefore, from the beginning, we wanted to involve the community in this process.

To begin the planning process for updating the HMP, the Parish invited members of the community with a variety of backgrounds (*i.e.* law enforcement, schools, utilities, and emergency response) to attend a project initiation meeting on May 5, 2010. Mr. Paul Oncale, Director of the Parish Office of Homeland Security and Emergency Preparedness (OHSEP), was the primary point of contact and lead representative for the Parish. He was assisted by Ms. Kathy Gilmore, Deputy Director. A meeting sign in sheet is included in **Appendix A**.

The Steering Committee developed a mission statement that would be referred to frequently in keeping the Committee focused on our tasks:

The Hazard Mitigation Plan will provide St. John the Baptist Parish a framework for action to be better prepared to save lives and property as well as acquire available mitigation grant funding.

The Steering Committee followed the planning process outlined by FEMA as detailed in the "State and Local Mitigation Planning How-To Guides":

- Getting Started – Building Support for Mitigation Planning
- Understanding Your Risks – Identifying Hazards and Estimating Losses
- Developing a Mitigation Plan – Identifying Mitigation Measures and Implementation Strategies
- Bringing the Plan to Life – Assuring the Success of the HMP

1.4 Local Mitigation Plan Criteria

Hazard mitigation planning is the process of determining how to reduce or eliminate the loss of life and property damage resulting from hazards such as floods, hurricanes, severe storms (thunderstorms, lightning, and high winds), and tornadoes. The primary purpose of hazard mitigation planning is to identify community policies, actions, and tools for implementation over the long term that will result in a community-wide reduction in risk and potential for future losses. This is accomplished by using a systematic process of learning about the hazards that can affect a community, setting clear goals, identifying appropriate actions, following through with an effective mitigation strategy, and keeping the plan current.

The hazard mitigation planning process, as detailed in these How-To Guides is as follows:

- Organize Resources
- Assess Risks
- Develop a Mitigation Plan
- Implement the Plan and Monitor Progress

In order to document this process, the Steering Committee chose to follow the format of the DMA 2000 Local Mitigation Plan Criteria. These criteria are required to be met in order for FEMA to approve the plan. Therefore, we have documented our responses to each plan criteria, while referring to appendices that contain supporting documentation. The purpose of this format is to enable an efficient and accurate review by FEMA.

The Local Mitigation Plan Criteria defined by the U.S. Congress in the DMA 2000 consist of the following:

- Prerequisites
- Planning Process
- Risk Assessment
- Mitigation Strategy
- Plan Maintenance Procedures

This HMP layout is as follows:

- Section 2.0 – Parish Profile
- Section 3.0 – Planning Process
- Section 4.0 – Risk Assessment
- Section 5.0 – Mitigation Strategy
- Section 6.0 – Plan Maintenance Procedures
- Section 7.0 – Action Plan

Prior to addressing the Local Mitigation Planning Criteria, we set the stage for each reader by presenting a detailed description of our Parish in Section 2.0 – Parish Profile. Then we address each of the Local Mitigation Plan Criteria in a question and answer type format in Sections 3.0 - 6.0. Finally, any effective plan must result in actions taken to implement that plan. Section 7.0 encapsulates the actions that St. John the Baptist Parish plans to implement in order to build a more disaster resilient parish.

1.5 Prerequisites

The Local Mitigation Plan Criteria state that the plan must satisfy the related three prerequisites before the plan will be approved by the State and FEMA. If these prerequisites have not been fulfilled, the plan will not be approved.

The three prerequisites are:

- For single-jurisdictional plans, the local governing body must adopt the plan.
- For multi-jurisdictional plans, each jurisdiction must adopt the plan.
- For multi-jurisdictional plans, each jurisdiction must participate in the planning process.

Our plan is not a multi-jurisdictional plan, so only the first prerequisite applies to this plan.

1.5.1 Adoption by the Local Governing Body – Single Jurisdiction

Requirement 201.6(c)(5):
[The local hazard mitigation plan shall include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Police Jury, County Commissioner, Tribal Police Jury)…

The resolution showing adoption of this plan by the St. John the Baptist Parish Council appears in **Appendix B**. The inclusion of the adoption resolution is intended to confirm the commitment of the local community to follow through with the implementation of the plan.

1.5.2 Multi – Jurisdictional Plan Adoption

Requirement 201.6(c)(5)
For multi – jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

Not Applicable – this plan is not multi-jurisdictional.

1.5.3 Multi – Jurisdictional Planning Participation

Requirement 201.6 (a)(3)
Multi – jurisdictional (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process… Statewide plans will not be accepted as multi – jurisdictional plans.

Not Applicable – this plan is not multi-jurisdictional.

St. John the Baptist Parish
Hazard Mitigation Plan Update
Overview of Section 2.0 Revisions

Section 2.0 of the St. John the Baptist Parish Hazard Mitigation Plan (HMP) Update is the Parish Profile Section. This section discusses certain characteristics of the Parish such as geography, transportation, history, topography, climate, economics, and community assets. A summary of the revisions that were made to this section are addressed below.

Several changes were made within this section. Table 1 – St. John the Baptist Parish Population was updated to reflect the 2009 population estimate. Details pertaining to transportation and topography were revised. Fire departments, schools, and parks and recreation facilities in the Parish have been updated to reflect changes to the number of these facilities that are in the Parish.

2.0 PARISH PROFILE

Prior to addressing the hazards that our community faces, this plan presents a brief overview of our community, taking into account the geography, population, transportation routes, parish history, topography, climate, economics, and community assets.

2.1 Geography

St. John the Baptist Parish is located between Baton Rouge and New Orleans along the Mississippi River. Lake Maurepas and Pass Manchac form the watery northern border with Livingston and Tangipahoa Parishes. Lake Pontchartrain forms the eastern border with St. Charles Parish. Lac Des Allemands forms the southern border with LaFourche Parish. To the west is St. James Parish. St. John the Baptist Parish is divided into two sections by the Mississippi River with 70% of the land being east of the river and the balance on the west bank. St. John the Baptist Parish consists of an area of 219 square miles, or 140,104 acres of land and 129 square miles or 82,529 acres of water, and is located in the terrace and Mississippi flood plain region of southeast Louisiana.

St. John the Baptist Parish contains four unincorporated towns: LaPlace, Reserve, Garyville, and Edgard. See **Figure 1**, Base Map.

Although the 2010 census is pending, the 2009 population estimate reports the St. John the Baptist Parish population at 47,086 people, a population change of 8.6% more than in 2000. The 2000 census reports the Parish population at 43,044 people with 15,532 households. The population for 1990 was 39,996 people. See **Table 1**.

TABLE 1: ST. JOHN THE BAPTIST PARISH POPULATION [1]

Name	Estimated 2009 Population	Total 2000 Population	Total 1990 Population	Total 1980 Population
St. John the Baptist Parish	47,086	43,044	39,996	31,924
LaPlace, CDP	Not available	27,684	24,194	16,112
Reserve, CDP	Not available	9,111	8,847	7,288
Garyville, CDP	Not available	2,775	3,181	2,844
Edgard, CDP	Not available	2,637	2,753	----

[1] Source: http://factfinder.census.gov, CDP: Census Designated Place

St. John the Baptist Parish's southernmost tip is about 30 miles from the Gulf of Mexico. The average elevation throughout the Parish is 15 feet above sea level. In the southern portion of the Parish, the land is dominated by wetlands, 10 to 15 feet above sea level along the riverbanks, sloping gradually down to five feet away from the river towards Lac Des Allemands. On the east bank of the river going north, the land is comprised of forested wetlands. The land on the eastern side of the Mississippi River drains into the Lake Pontchartrain drainage area.

2.2 Transportation

The main transportation arteries through St. John the Baptist Parish are Interstates I-10 and I-55, U.S. Highways 61 and 51, and State Highways 44, 18, and 3127. See **Figure 1**, Base Map.

U.S. Highway 61 runs parallel to I-10 within the Parish and turns north after becoming a major thoroughfare in Baton Rouge. Between Baton Rouge and New Orleans, U.S. Highway 61 is also known as Airline Highway and has been in continuous use for decades.

U.S. Highway 51 runs north/south and connects I-55 with I-10 and U.S. Highway 61. State Highways 44 and 18 run parallel to the Mississippi River within the Parish. Both highways continue north into other parishes such as St. James and Ascension. The Veterans Memorial Bridge crosses the Mississippi River and connects with LA 44 on the east bank and LA 18 on the west bank. It also connects with LA 3127, U.S. Highway 61, and I-10.

Some of these roadways are significant evacuation routes for St. John the Baptist Parish, as well as surrounding Parishes during states of emergency. **Figure 1** shows the location of these evacuation routes.

St. John the Baptist Parish is served by the Canadian National Railroad (CNRR) and the Kansas City Southern Railroad (KCS) on the east bank of the Mississippi River. The KCS tracks run parallel to U.S. Highway 61 and the Canadian National tracks are near the river, where most of the industry is located. On the west bank of the Mississippi River, the Louisiana & Arkansas Railroad and Union Pacific Railroad serves the industrial corridor between Baton Rouge and New Orleans. Rail rates in Louisiana for many commodities tend to be lower than those in other states because of the competition from barge carriers. All lines handle a significant volume of containers, trailers on flat cars, and carload traffic between New Orleans and other parts of the U.S.

St. John the Baptist Parish is serviced by the New Orleans International Airport, 20 miles to the east. Every major domestic airline and several international carriers serve the New Orleans International Airport, providing one-and-two-stop service to nearly all major domestic and international destinations. A second airport is located 62 miles to the north in Baton Rouge and is served by five commercial carriers with 31 flights daily. General aviation facilities are also available at the Baton Rouge Metro Airport and one commuter airline for shorter destinations.

St. John the Baptist Parish Airport is located in Reserve and can accommodate corporate and private aircraft with a 4,000 foot runway. Services include freight and cargo deliveries for local industry and private transportation, along with hangar space and facilities for storing and servicing private and corporate planes.

Louisiana's lower Mississippi corridor is the leading port area in the world with a total annual tonnage of over 345 million tons. The port area stretches 230 miles inland on both banks of the river with more than 110,000 acres of large, affordable deep water sites having barge and ship access.

2.3 History

Located along the Mississippi River in an area historically known "La Cote des Allemands" or the "German Coast"; St. John the Baptist Parish was one of the original parishes created by the territorial government in 1807. The Parish was initially settled by Germans in the early 1720s. In 1768 the Acadians began arriving and the French and German cultures mixed well, with French becoming the dominant language. The pioneers established prosperous small farms along the Mississippi River.

In the early nineteenth century, these small farms were replaced by plantations, and, up until the Civil War, the Parish was one of the nation's most important sugar producing areas. Today, agriculture and the petrochemical industry constitute the foundations of the local economy.

2.4 Topography

St. John the Baptist Parish topography is relatively flat. In the southern portion of the Parish, the land is 10 to 15 feet above sea level along the riverbanks, sloping gradually down to five feet away from the river. This sloping resulted from natural levees formed by the Mississippi River.

St. John the Baptist Parish is located between Baton Rouge and New Orleans along the Mississippi River and is largely rural. Land uses within the Parish consist of industrial, commercial, and residential areas; agricultural land;

woodlands; and wetlands. The majority of the industrial and commercial areas are located along the Mississippi River corridor. The residential areas are along the Mississippi River and in the northeast portion of the Parish near the intersection of I-10 and I-55. Agricultural land, woodlands, and wetlands comprise the rest of the Parish's acreage.

Approximately 80% of the total land area of the Parish is located within FEMA's 100-year floodplain. The majority of the floodplain is found between Interstate I-10 and the Parish's northern boundary and is south of LA 3127 to the Parish boundary. The floodplain is illustrated on **Figure 2**, Repetitive Loss Structures. The land is mostly devoted to manufacturing, with large industrial sites along the river. With little commercial land use, the land is more devoted to both recreational and public use. See **Figure 3** for St. John the Baptist Zoning.

2.5 Climate

St. John the Baptist Parish is characterized by humid summers and mild winters. Average summer and winter temperatures are 83 degrees Fahrenheit (°F) and 53°F, respectively. The annual precipitation averages 54 to 58 inches.

2.6 Economics

Geographically, St. John the Baptist Parish is small in size, yet it is a great location for business and industry. St. John the Baptist Parish's focus is on improving the quality of life and providing jobs for a growing population. The current major employers in the Parish are industrial based, and growth in the petroleum refining and petrochemical industries is important to establishing a solid job base in the Parish. The manufacturing industry contributes to most of the wealth of the Parish. Firms such as DuPont, Bayou Steel, Marathon Oil, Constar Plastics, Inc., Cargill, Inc., and Degussa employ between 100 and 600 employees in each plant. Other sectors are also expected to show job creation over the years, including retail/service sector, trade sector, information sector, and the manufacturing sector.

2.7 Community Assets

Law Enforcement – The St. John the Baptist Parish Sheriff's Office is located in LaPlace at 1801 W. Airline Highway. Also in LaPlace is the Main Division Office, located at 100 Deputy Barton Granier Drive. These facilities handle all of the criminal, civil and tax division operations, as well as police protection throughout the Parish. The Parish also has two Sheriff Substations located in Edgard and Garyville and a prison located in LaPlace. See **Figure 4**, Law Enforcement.

Fire Departments – St. John the Baptist Parish has 18 fire stations located parish-wide with over 125 volunteer, fully trained, certified firemen and 43 career firefighters. The latest in fire and safety apparatus includes 13 fire engines, two

tankers, five rescue units, two ladder trucks, a hazardous material unit, and portable breathing unit. See **Figure 5**, Fire Stations.

Medical Services – There is one hospital in the Parish with a total of 106 beds, with nearly 200 affiliated physicians. A nursing home with a total of 148 beds also serves the community. Acadian Ambulance Service is available in the Parish. Residents also have access to the large number of medical facilities located in the regional area, including the Louisiana State University (LSU) and Tulane Medical Centers in New Orleans and numerous other public and private medical facilities in Baton Rouge and New Orleans. See **Figure 6**, Health Care Facilities.

Schools – There are 24 schools in St. John the Baptist Parish including public, private, parochial schools, and magnet schools. Four schools are used as last resort relocation centers and are located in Edgard, Garyville, LaPlace, and Reserve. See **Figure 7**, Schools.

All public and private schools are accredited by the Southern Association of Colleges and Secondary Schools and the Louisiana Independent School Association.

South Central Louisiana Technical College, offering a full scope of industrial, technical, office and medical training courses, is conveniently located in Reserve.

Parks and Recreation – There is an abundance of outdoor recreational activities available to local residents. Most of the Parish is a labyrinth of bayous, lakes, and rivers which offer many miles of navigable waters to boaters and wonderful fishing, camping, and hunting grounds for other residents and visitors.

Historic buildings and other points of interest are a source of pride for residents and offer visitors a variety of things to see and do. The San Francisco Plantation and St. John the Baptist Parish Catholic Church provide a glimpse of 19th century culture.

There are several sports leagues in the Parish. St. John the Baptist Parish also has four libraries, two golf courses, and numerous public parks with baseball fields, basketball, tennis and racquetball courts, swimming pools, playgrounds and picnic areas. Boating and fishing on local lakes, bayous and rivers are also major activities for visitors and residents of the Parish.

The Parish also has access to the vast recreational and cultural facilities of the metropolitan New Orleans area, including the Aquarium of the Americas, the New Orleans Symphony, opera and ballet, the National Football League's New Orleans Saints, NCAA college athletics from Tulane University, University of New Orleans, LSU, and others.

Media – Communications in the area include daily newspapers from metropolitan areas ("*The Times-Picayune*" in New Orleans, "*The Morning Advocate*" in Baton Rouge) and a bi-weekly newspaper ("*L'Observateur*" in LaPlace).

Many radio stations from nearby metropolitan areas cover all musical tastes and information needs, including a New Orleans station that reads printed publications and books for the sight impaired residents in the area.

Television stations can be received from nearby metropolitan areas including all four networks (ABC, CBS, NBC, and FOX) as well as several independent and public broadcast stations. Cable service is also available in the Parish.

St. John the Baptist Parish
Hazard Mitigation Plan Update
Overview of Section 3.0 Revisions

Section 3.0 of the St. John the Baptist Parish Hazard Mitigation Plan (HMP) Update is the Planning Process Section. This section discusses the documentation of the planning process for the update. A summary of the revisions that were made to this section are addressed below.

This section reflects many updates that were made due to the 2010 planning process. The steering committee list (Table 2) has been updated and names have been changed where necessary to reflect those persons currently holding the positions mentioned and who participated in the planning process. The dates for the five planning meetings held with the Steering Committee have also been changed to reflect the meeting dates for the HMP Update, beginning with the Project Initiation Meeting held on May 5, 2010. Detailed explanations of each of the five meetings have also been included. Additions to pertinent parish documents were included.

3.0 PLANNING PROCESS

As addressed earlier, the Steering Committee followed FEMA's hazard mitigation planning process as prescribed in the How-To Guides. This planning process assured public involvement and the participation of interested agencies and private organizations. Letters were mailed to a compiled list of invitees (see **Appendix C**) and public notices were distributed via the local newspaper (see **Appendix D**) and posted throughout the Parish. Documentation of the planning process for the updated HMP is addressed in this section.

The planning process was led by the Parish's mitigation consultant, Providence, located at 1201 Main Street in Baton Rouge, Louisiana.

3.1 Documentation of the Planning Process

Requirement 201.6(c)(1):
[The plan must document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

The Parish applied for an HMGP grant and was awarded the grant in November 2009. The focus of this plan update is to incorporate new data which will help communities update HMPs to mitigate against future disasters.

Five meetings were held before submittal of the draft HMP. Prior to the first meeting (the project initiation meeting) representatives from the community were invited to participate in the planning process. Representatives from a wide cross section of the public, including fire, law, health care, schools, municipal, and public utilities, were invited to attend. See **Appendix C** for a list of the people from the communities who were invited to the project initiation meeting.

The first meeting (the project initiation meeting) was held on May 5, 2010. This meeting was aimed at informing the attendees of the planning process for updating the HMP, because they would continue to meet with our consultant and guide the planning process. At this meeting, the concept of mitigation planning and project scoping was explained to the audience, and ideas on what the community felt about mitigation were discussed. The Steering Committee's role was discussed, and data sources, past hazards, and past and potential critical facilities were reviewed at this meeting. See **Table 2** for a list of those serving on the Steering Committee.

TABLE 2: ST. JOHN THE BAPTIST PARISH HAZARD MITIGATION STEERING COMMITTEE MEMBERS	
Committee Member	**Organization**
Ms. Terry Ann Abadie	Economic Development
Mr. Reed Alexander	St. John the Baptist Parish Utilities
Mr. Neil Bernard	Faith Based
Mr. Casey Berniard	Marathon
Mr. Heath Bittel	Marathon
Mr. Doug Braisington	Fire Department
Mr. Ken Buhler	Louisiana Technical College
Ms. Sheila Butler	Entergy
Ms. Phyl Cornman	St. John the Baptist Parish Planning & Zoning
Mr. Cal Desselle	St. John the Baptist Parish Utilities
Ms. Rebecca Falterman	St. John the Baptist Parish Emergency Operations Center (EOC)
Mr. Harold Flynn, Jr.	Belle Terre Land, LLC
Ms. Stephanie Gardner	LaPlace Dialysis
Mr. Joey Gennaro	St. John the Baptist Parish Public Works
Ms. Kathy Gilmore	St. John the Baptist Parish OHSEP
Mr. Ron Johnson	Port of South Louisiana
Mr. Verdell Kindrick	St. John Public Works
Mr. Clayton King	FEMA
Mr. Jeffrey LaCour	FEMA
Mr. Errol Manuel	St. John the Baptist Parish Recreation
Mr. Troy Miles	St. John the Baptist Parish Utilities
Mr. Paul Oncale	St. John the Baptist Parish OHSEP
Mr. Elton Oubre	St. John the Baptist Parish School Board
Ms. Rajender Pannu	Belle Terre Civic Association
Ms. Julia Remondet	Economic Development
Ms. Carrie Robinette	Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP)
Mr. Henry Sullivan	Port of South Louisiana
Ms. Elaine Tassara	St. John the Baptist Parish Public Works
Ms. Iraida Villa	St. John the Baptist Parish Public Works
Ms. Lou Vaughn	St. John the Baptist Parish Planning & Zoning

Pertinent parish and municipal documents were discussed and reviewed at this meeting. The specific plans are listed below along with a discussion on how they were incorporated into this HMP.

Floodplain Ordinances – The Parish joined the National Flood Insurance Program (NFIP) and, therefore, adopted the floodplain ordinance. The ordinance amended Chapter 107 of the St. John the Baptist Parish Code of Ordinances by adding or deleting language to various sections and to adopt the 2010 Flood Insurance Rate Maps (FIRMs). This ordinance was reviewed. The ordinance was used to develop most of Section 5.2.5 – Floodplain Management and Building Codes.

Emergency Operations Plan (EOP) – The EOP was used to determine which critical facilities had been previously identified. The EOP was also reviewed to determine which action items were needed to improve emergency preparedness.

FIRMs – These maps were used to evaluate the risk associated with the 100- and 500-year floods. Data from these maps are summarized in Section 4.3.1.1.

Southeast Louisiana Hurricane Preparedness Study 1994, Technical Data Report by the Federal Emergency Management Agency, Region VI, U.S. Army Corps of Engineers, New Orleans District National Weather Serves – This document was used to evaluate the Parish's vulnerability to hurricanes and to develop action items that would benefit the Parish.

St. John the Baptist Parish Comprehensive Planning Project (2007) – This document provided a framework for the Parish to establish policies and programs that allow the Parish to channel new development in a smart and sustainable pattern. It was used to develop a comprehensive approach to planning and development.

Other information used to develop action items that would benefit the Parish included St. John the Baptist Zoning Regulations, Subdivision Regulations, Regulations for Parks and Recreation, Coastal Zone Management Regulations, Comprehensive Planning Project, and Building and Construction Regulations.

In order to prepare the plan, four additional meetings with the Steering Committee were held. All four of these meetings were open for the public to attend. Public notices were distributed via the local newspaper (**Appendix D**). After the first meeting, a press release was prepared informing the public about the HMP update and urging them to participate by stating when the next meeting would be held. After the second meeting, a press release was prepared to keep the public involved, explaining the hazard summaries, hazard loss data, and hazard statistics, and urging the public to participate by stating when the next meeting would be held. After the third meeting, a press release was prepared to keep the public involved, explaining mapping of the Parish, introducing potential mitigation projects, reviewing the existing goals of the plan, and informing the public of whom to contact regarding the next meeting. After the fourth meeting, a press release was prepared informing the public that the Steering Committee discussed goals, action items, and projects that will be reflected in the plan. After the fifth meeting, a press release was prepared informing the public that the preliminary draft plan was under review.

The press releases that were issued after each of the five meetings informed the public about what was discussed during the meetings. Anyone from the public who wanted to be involved could have attended the meetings, joined the Steering Committee, become part of the planning process, and offered any changes or recommendations. These press releases gave neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties an opportunity to be involved in the planning process.

Our consultant, Providence, facilitated each meeting to address the next stage in the planning process and gain input from the committee on local conditions and the Steering Committee's desires. After each meeting, Providence researched ideas presented in the meeting and summarized their findings for presentation and input by the Steering Committee at the next meeting. This approach allowed the Steering Committee to play a valuable role in getting ideas and issues addressed in the plan. Each member of the Steering Committee was an equal member in the overall process. Everyone on the Steering Committee had an opportunity to review the draft plan, as well as the final plan. All the meetings were open discussions, where each person attending, whether a Steering Committee member or not, had the opportunity to volunteer information about the community and present ideas. Data was also collected from the respective jurisdiction representatives.

The second meeting on risk assessment was held on June 9, 2010 and addressed hazard summaries, hazard loss data, and hazard statistics. Updated maps of critical facilities were reviewed at the third meeting (the maps and goals meeting) on July 21, 2010. The action plan and goals of the original HMP were reviewed. The fourth meeting on August 25, 2010, focused on the mitigation strategy. The current goals were updated as well as action items and projects and are reflected in the action plan.

On October 6, 2010, a fifth meeting was held, and a draft of the HMP was reviewed. The Steering Committee had an opportunity to comment on the draft HMP.

The Steering Committee agreed to recommend the HMP for adoption by the local governing body pending FEMA and GOHSEP final approval.

This plan was developed over a period of six months. See a copy of the sign-in sheets for each meeting in **Appendix A**. See **Appendix E** for a Summary of Meeting Attendees. See the Milestone Schedule in **Appendix F.** Meeting minutes for the five meetings were prepared and are found in **Appendix G**.

As stated earlier, in an effort to keep the public informed and to invite additional input, press releases were utilized. Copies of the press releases can be found in **Appendix D**.

The role of the Steering Committee was to attend the planning meetings where they provided valuable information on the Parish, develop parts of the plan, and review the results of the research conducted by our consultant. Tasks completed by the Steering Committee include:

- Developing a list of potential hazards, such as flooding and hurricanes within the Parish
- Assembling a list of the critical facilities, such as hospitals, police stations, and relocation centers within the Parish

- Evaluating potential losses to vulnerable assets in the Parish
- Establishing goals and objectives for the Parish
- Determining prudent mitigation measures

St. John the Baptist Parish
Hazard Mitigation Plan Update
Overview of Section 4.0 Revisions

Section 4.0 of the St. John the Baptist Parish Hazard Mitigation Plan (HMP) Update is the Risk Assessment Section. This section discusses identifying hazards, hazard profiles, identifying assets, estimating potential losses, analyzing development trends, and multi-jurisdictional risk assessment. A summary of the revisions that were made to this section are addressed below.

In this section, many dates have been updated to reflect the recent events that have occurred in the Parish since the finalization of the previous plan. Table 3 – Federally Declared Disasters in St. John the Baptist Parish now includes additional disasters such as Hurricanes Gustav and Ike. Table 4 – Hazard Identification Table has been updated to include additional hazard data since the last plan. The priority of the hazards remained the same. Table 5 – Hazard History, Table 6 – Estimated Dollar Losses per Year, and Table 7 – Probability of Reoccurrence have all been edited to include recent events, details, and data.

In section 4.3 – Assessing Vulnerability: Identifying Assets, all of the hazard summaries have been updated with information pertaining to the recent events that have occurred since the finalization of the last plan. Table 8 – Documentation and Elimination of Hazards has been revised to include updated information.

Under the flood profile section, changes include updated risk assessment information, number of structures with flood insurance, number of insurance claims, dollar values paid, Table 9 – Flood Insurance Statistics for St. John the Baptist Parish, and previous occurrence dates and descriptions. Also added to this section is the number of repetitive loss properties (all residential). Flood insurance study (FIS) information was updated to reflect the 2010 FIS.

Under the hurricane profile section, the hazard identification section was updated with recent information and Table 10 – Hurricane Development, Table 11a – Saffir/Simpson Hurricane Scale, Table 11b – Saffir/Simpson Hurricane Wind Scale, and Table 12 – Estimated Damages from Louisiana Hurricanes were added. The risk assessment section now includes additional impacts experienced in St. John the Baptist Parish during hurricanes/tropical storms. Under Previous Occurrences, recent hurricane seasons are discussed, and additional events and details have been added. Additional events and details have also been added as previous occurrences.

Under severe storms profile, additional dates were added to show the recent events that took place. Table 13 – Annual Thunderstorm and High Wind Summary was added.

In the tornado profile, the hazard identification section was updated with recent information. Table 14 – Fujita Scale and Table 15 – Tornado Occurrences have been added. New events and details have been included to the list of previous occurrences.

Under winter storms, hazard identification information was updated. No additional storm information has been reported. Winter storms have been discounted and will be reassessed during the plan evaluation process.

Under hailstorms, hazard identification information was updated. No additional storm information has been reported. Hailstorms have been discounted and will be reassessed during the plan evaluation process.

In the drought profile, the hazard identification section was updated and details from the 2006 to 2008 drought period have been added. Table 17 – Drought Severity Classification has been added. Drought has been discounted and will be reassessed during the plan evaluation process.

In the extreme heat profile, the details in the hazard identification section have been updated. No recent events have been reported, however, the addition of the Parish's participates in a fan program has been added. Extreme heat has been discounted and will be reassessed during the plan evaluation process.

In the expansive soils profile, the details in the hazard identification section have been updated. No additional expansive soils data has been reported. Expansive soils have been discounted and will be reassessed during the plan evaluation process.

In the Vulnerability of Structures and Critical Facilities within the Parish section, Table 18 – Estimated Percent of the Parish that Could be Impacted by Hazards at Any One Time was updated. Also updated was Table 19 – Potential Dollar Losses to the Community. The Population section was updated to reflect the 2009 population estimate for the Parish. Several vulnerable priority critical facilities were used to estimate potential losses in the Assessing Vulnerability section. The Parish's Comprehensive Planning Project was used to analyze development trends.

4.0 RISK ASSESSMENT

Risk assessment is the process of measuring the potential loss to a community, including loss of life, personal injury, economic injury, and property damage resulting from hazard events. This process involves five steps:

- Identify Hazards
- Profile Hazards
- Inventory Assets
- Estimate Losses
- Analyze Development Trends

The risk assessment section profiles hazards that pose a threat to St. John the Baptist Parish based on a variety of factors, including its history, topography, and land development patterns. The list of hazards to be profiled in the Plan was developed based on information from a variety of sources including recent events, historical records, existing emergency management plans, and the knowledge of local residents and experts.

The first step in doing a risk assessment is to identify the hazards that can affect the Parish. A hazard is any source of potential danger or adverse conditions that exist with or without the presence of people and land development. The Steering Committee identified the hazards that occur most frequently in the Parish. The following hazards were selected for the St. John the Baptist Parish HMP: floods, hurricanes, severe storms (thunderstorms, lightning, and high winds), tornadoes, winter storms, hailstorms, drought, extreme heat, and expansive soils.

The avalanche and volcano hazards were not selected due to the topography of the St. John the Baptist Parish region. These hazards do not pose any known threat to the Parish. The Parish is at a low risk for landslides and land subsidence; therefore, landslide and land subsidence hazards are not addressed in this Plan. The Parish is at a very low risk for earthquakes. The earthquake hazard is not profiled in the risk assessment due to this low probability, combined with no history of previous occurrence of earthquakes. There are no dams located in St. John the Baptist Parish; therefore, it is considered to be a low hazard potential. There is one levee, the Mississippi River Levee, located in St. John the Baptist Parish; however, there have been no reports of flooding due to levee failure. St. John the Baptist Parish is not located on the West Coast and is not a Pacific Island or a Caribbean Island, and the tsunami is not profiled in the State of Louisiana Plan. Therefore, the Parish is not at risk and the tsunami hazard is not profiled in the risk assessment.

The second step is to develop hazard profiles. The Steering Committee identified the characteristics and potential consequences of the hazards that were identified in the first step. Included in this section are the hazard profiles for each hazard addressed by the Plan. Hazard profiles are descriptions of a typical occurrence of a given hazard in the Parish. They describe the conditions that will likely be present when a hazard occurs and answer the question “How bad can things get?” for different hazards.

Hazard profiles are important because they describe how the Parish is likely to be affected by each hazard. The effects from each of the hazards covered by the Plan vary dramatically. Furthermore, any given hazard may affect St. John the Baptist Parish differently than it would affect another community. Because occurrences of a given hazard can vary in terms of magnitude, duration, and intensity, it is important to specify the conditions that each hazard is likely to create in St. John the Baptist Parish.

The third step is to evaluate which assets will be affected in the Parish by the hazard events. The Steering Committee conducted an inventory of the vulnerable assets to understand what exactly could be affected by the different types of hazard events.

The fourth step is to determine how the community's assets will be affected by the hazard events. The Steering Committee estimated losses in terms of the expected losses from hazard events to people, buildings, and other important assets. Some buildings, infrastructure, or functions will be damaged more than others because of their vulnerability. Vulnerability is defined as how exposed or susceptible due to location, or construction, an asset is from a hazard event. Following each of the hazard profiles is the vulnerability assessment and a hazard impact analysis (including loss estimations).

The fifth step is to analyze developmental trends within the Parish such as land uses and where the majority of growth is expected to take place so that vulnerable areas can be avoided. This section ends with a discussion of the trends in land use in St. John the Baptist Parish, a description which helps identify areas where the vulnerability to hazards may change in the near future due to changes in land use patterns.

4.1 Identifying Hazards

Requirement 201.6(c)(2)(i):
[The risk assessment shall include a] description of the type … of all natural hazards that can affect the jurisdiction…

St. John the Baptist Parish identified many hazards that affected the community in the past, and may possibly affect the Parish in the future. These hazards are addressed individually through a widespread process that included input from the Steering Committee members (comprised of representatives from Parish/State departments and agencies, Parish and State Emergency Preparedness Offices, local businesses, and local residents), public involvement, researching archived articles published or documented within the Parish pertaining to those disasters, past disaster declarations in the Parish, and a review of current FIRMs and Flood Insurance Studies (FISs).

FEMA has tracked and compiled a list of all the federally declared disasters for the State of Louisiana. Therefore, we know that this data is a complete and accurate list of all the federally declared disaster events in St. John the Baptist Parish since 1965.

St. John the Baptist Parish has been a Presidentially-declared major disaster area on 16 different occasions since 1965. **Table 3** contains a detailed account of the federally declared disaster history of St. John the Baptist Parish.

TABLE 3: FEDERALLY DECLARED DISASTERS IN ST. JOHN THE BAPTIST PARISH

DR #	Declaration Type	Declaration Date
208	Hurricane Betsy	9/10/65
315	Hurricane Edith	10/13/71
374	Severe Storm, Flood	4/27/73
556	Severe Storm, Flood	5/9/78
752	Hurricane Juan	11/1/85
956	Hurricane Andrew	8/26/92
1049	Severe Storm, Flood	5/10/95
1246	Tropical Storm Frances and Hurricane Georges	9/23/98
1380	Flood, Tropical Storm Allison	6/5/01
1435	Tropical Storm Isidore	9/26/02
1437	Hurricane Lili	10/3/02
1548	Hurricane Ivan	10/18/04
1603	Hurricane Katrina	8/29/05
1607	Hurricane Rita	9/24/05
1786	Hurricane Gustav	9/2/08
1792	Hurricane Ike	9/13/08

Table 4 summarizes the hazards the Steering Committee identified as impacting the Parish. The hazards were prioritized based on a number of factors, including frequency, severity, life and death consequences, potential impact, and ultimately ranked based on the Steering Committee's determinations. This table also explains how the hazards were identified and why they were identified.

TABLE 4: ST. JOHN THE BAPTIST PARISH HAZARD IDENTIFICATION TABLE			
Hazard	**How Identified**	**Why Identified**	**Priority**
Floods	• Input from local residents and businesses • Input from Parish and State Emergency Preparedness Offices • Review of past disaster declarations • Review of FIRMs and FISs • Identification of NFIP repetitive loss properties in the Parish • Input from Parish Planning Department • Input from State Flood Insurance Coordinator	• Major floods occurred in 1973, 1978, 1995, 1998, 2001, 2002, 2005, and 2008 • Effects from hurricanes which caused tremendous devastation in the Parish • Numerous repetitive loss properties are located in the Parish • Four federally declared disasters	High
Hurricanes	• Input from local residents and businesses • Input from Parish and State Emergency Preparedness Office • Review of past disaster declarations	• Fourteen federally declared disasters • Wind damage can be severe and rain from the storm can cause major flooding • Potential for loss of life and bodily injury • Power outages throughout the Parish	High
Severe Storms (Thunderstorms/ Lightning/High Winds)	• Input from local residents and businesses • Input from Parish Emergency Preparedness Office • Input from Parish Utilities Department	• Can be damaging to homes and businesses • Three federally declared events • Potential for losses to property • Severe lightning has struck the 911 Center in the past causing thousands of dollars of damage	High

TABLE 4: ST. JOHN THE BAPTIST PARISH HAZARD IDENTIFICATION TABLE			
Hazard	**How Identified**	**Why Identified**	**Priority**
Tornadoes	• Input from local industry • Input from the Parish Sheriff's Office • Input from the Department of Public Works • Input from Parish Planning Commission • Input from the Parish and State Office of Emergency Preparedness (OEP)	• The Parish has encountered several tornadoes that have caused significant damage in isolated areas • 13 separate events recorded in National Climatic Data Center's (NCDC's) database • Potential for losses to property and crops • Potential for loss of residential and commercial structures • Potential for loss of life and bodily injury	High
Winter Storms	• Input from Parish Emergency Preparedness Agency	• The Parish encountered a snow and ice storm in 1989	Medium
Hailstorms	• Input from local residents and businesses • Input from Parish and State Emergency Preparedness Offices	• Storms in 1993, 1995, 1996, 1999, 2000, and 2003 • Damage to houses and automobiles • Potential for losses to property • Potential for hail storms • Hail occurred after Hurricanes Andrew and Opal	Medium
Drought	• Input from local residents and business • Input from Parish and State Homeland Security and Emergency Preparedness Offices • Input from Parish Utilities Department	• Possible impacts on agriculture • From 1998-2001, the Parish suffered from drought-like conditions • There has been at least one local declaration for drought • The Parish has been in a drought for eight of ten years between 1998-2008	Medium

TABLE 4: ST. JOHN THE BAPTIST PARISH HAZARD IDENTIFICATION TABLE			
Hazard	**How Identified**	**Why Identified**	**Priority**
Extreme Heat	• Input from local residents and businesses • Input from the Department of Public Works • Input from Parish Emergency Preparedness Office	• The Parish is in an area subject to heat index values in excess of 115°F for the 5-percent-annual-chance event	Medium
Expansive Soils	• Input from local residents and businesses • Input from Parish Department of Planning and Zoning • Input from Public Works Department • Input from State Department of Transportation and Development	• Expansive soils are an ongoing problem that have occurred for years • Its effects are seen on Highway 51 with visible waviness • The only water line serving the Parish recently broke and may have been caused by expansive soils	Medium

4.2 Profile Hazard Events

Requirement 201.6(c)(2)(i):
[The risk assessment shall include a] description of the… location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

Natural hazards, the largest single contributor to catastrophic or repetitive damage to communities nationwide, evolve from atmospheric, geologic, hydrologic, and seismic events. They pose threats in all areas of the U.S.

The impacts of natural hazards can be local or widespread, predictable or unpredictable. Resulting property and infrastructure damage can range from minor to major, depending on whether hazard events affect major or minor population centers. When the damage to life and property becomes real, not just potential, the event is commonly called a natural disaster.

Risk assessment provides the foundation for the rest of the mitigation planning process. It focuses attention on areas most in need by evaluating which populations and facilities are most vulnerable to natural hazards and to what extent injuries and damages may occur. It provides:

- The hazards to which the community is susceptible
- What these hazards can do to physical, social, and economic assets
- Which areas are most vulnerable to damage from these hazards
- The resulting cost of damages or costs avoided through future mitigation projects

In addition to the description of each hazard, the detailed hazard profiles will discuss:

- How likely it is that a hazard will impact the area (probability), often supported by previous occurrences, with the dates, frequency, extent, and damage. When past events have not occurred, or data is missing or incomplete, probability potential is based on conditions that may cause the hazard event, *e.g.*, dam failure, earthquake, storm surge, etc.
- How severe the hazard will be (magnitude)
- Where the hazards will affect the community (geographic extent or location)
- Conditions in the community that may increase or reduce the effects of the hazard

Based on the overall impact of the above considerations, the four hazards for which this plan will develop mitigation actions are floods, hurricanes, severe storms (thunderstorms, lightning, and high winds), and tornadoes.

4.2.1 Location

A Geographic Information System (GIS) database was developed, which mapped the Parish's repetitive loss structures, zoning, and critical facilities in the Parish. See **Figures 1** through **9**. The Steering Committee did not feel it wise to show "hazard areas" for certain hazards that could potentially affect the entire Parish. Floods are most likely to occur in areas identified on FEMA's FIRMs. These maps are discussed in greater detail in Section 4.3.1.1. **Figure 2** illustrates the 100- and 500-year floodplains that are delineated on the FIRMs. Hurricanes affect the entire Parish. See Section 4.3.1.2. Severe storms (thunderstorms, lightning, and high winds) affect the entire Parish. See Section 4.3.1.3. Tornadoes affect the entire Parish. See Section 4.3.1.4. Winter storms affect the entire Parish. See Section 4.3.1.5. Hailstorms affect the entire Parish. See Section 4.3.1.6. Drought events affect the entire Parish. See Section 4.3.1.7. Extreme heat events affect the entire Parish. See Section 4.3.1.8. Expansive soils affect the entire Parish. See Section 4.3.1.9.

4.2.2 Previous Occurrences and Extent of Damages

FIRMs, the FISs, records of past federally declared disasters, NCDC data, and Steering Committee recollections were reviewed in order to prepare the hazard history found below. There were data limitations in gathering an all-inclusive hazard history.

Table 5 provides a detailed summary of the Parish's hazard history including federally declared hazards that have historically impacted the community.

TABLE 5: ST. JOHN THE BAPTIST PARISH HAZARD HISTORY	
Hazard Event Date & Location	**Description**
Presidential Declaration DR# 208 Hurricane Betsy September 10, 1965 Parish-wide	• Winds measured up to 115 miles per • Part of I-10 broke off and floated away, making traffic movement impossible • Rising flood waters completely blocked the Illinois Central right of way • Many trains were stopped on their southbound journey to New Orleans • Between $25,000 – $30,000 worth of cattle were lost • Crops suffered severe damage • Estimated 250,000 eggs were lost • Shingles were ripped off and the roofs of many business and residential structures were blown away or collapsed • Buildings were smashed and windows shattered • Uprooted and fallen trees created heavy damage to homes, businesses and snapped power lines • Over 14,000 people took refuge to shelters • Several people were injured due to effects from the storm
Presidential Declaration DR# 315 Hurricane Edith October 13, 1971 Parish-wide	• Flooding was caused by heavy rain • Damage to homes and businesses from flood waters • Power was knocked out • Downed trees due to high winds
Presidential Declaration DR# 374 Severe Storm, Flood April 27, 1973 Parish-wide	• Major damage to crops throughout the Parish • Several bridges collapsed from overflow of water • Backwaters and overflow created problems in the Parish • Spring rains swell Mississippi River for more than 1500 miles • Flooded major portions of Louisiana
Presidential Declaration DR# 556 Severe Storm, Flood May 9, 1978 Parish-wide	• 10.5 inches of rain fell over night • Debris and wreckage in streets • All school closed for a few days
Presidential Declaration DR# 752 Hurricane Juan November 1, 1985 Parish-wide	• Hurricane Juan spawned rain for five days straight • Backed up water in rivers throughout the Parish caused flooding • 3.5 feet of water in buildings at peak

TABLE 5: ST. JOHN THE BAPTIST PARISH HAZARD HISTORY	
Hazard Event Date & Location	**Description**
Presidential Declaration DR# 956 Hurricane Andrew August 25, 1992 Parish-wide	• Winds were estimated to have reached 75 miles per hour • All schools in the Parish were closed • Fallen trees, power lines and high water blocked many streets and roads throughout the Parish • Virtually every road in the area contained debris • Parts of State and Federal highways were impassable • About 8,000 customers were without electricity throughout the Parish
Presidential Declaration DR# 1049 Severe Storm, Flood May 8, 1995 Parish-wide	• Received 12 inches of water in two days • Several culverts washed out and roads underwater throughout the Parish • Flooding in subdivisions • Roads closed throughout the Parish
Presidential Declaration DR# 1246 Tropical Storm Frances and Hurricane Georges September 23, 1998 Parish-wide	• Hurricane Georges winds hit at 30 to 40 miles per hour • Schools were closed throughout the Parish • Reported wind damage to homes and power lines • Downed trees and widespread power outages were the main problems in the Parish • Residents were forced to evacuate
Presidential Declaration DR# 1380 Flood, Tropical Storm Allison June 5, 2001 Parish-wide	• Estimated rainfall received was more than 20 inches • Parish disbursed over 3,000 sandbags • Reports of over a dozen weather related accidents • Parish received extensive street flooding
Presidential Declaration DR# 1435 Tropical Storm Isidore September 26, 2002 Parish-wide	• Storm surge of four to five feet above normal • Four to eight inches of rainfall occurred within six hours • Drainage systems were overwhelmed • Streets, homes and automobiles were flooded • Sustained winds of 35 to 45 mph, with gusts of 50 mph in squalls
Presidential Declaration DR# 1437 Hurricane Lili October 3, 2002 Parish-wide	• More than 40 roads were closed due to high water • Downed trees and power lines were widespread throughout the Parish • About 10,700 customers were without power in the Parish

TABLE 5: ST. JOHN THE BAPTIST PARISH HAZARD HISTORY	
Hazard Event Date & Location	**Description**
Presidential Declaration DR # 1548 Hurricane Ivan October 18, 2004 Parish-wide	• Heavy winds and rain • Passed within 70 miles (to the east) of the mouth of the Mississippi River, and within 125 miles of the city of New Orleans • Southwest Pass at the mouth of the Mississippi River recorded the highest winds in the State with a peak gust of 89 mph • Weakened some before making landfall near the Louisiana-Texas border
Presidential Declaration DR# 1603 Hurricane Katrina August 29, 2005 Parish-wide	• Heavy winds and rain • Downed power and communications • Public water supply was damaged and under a boil order • Debris blocked roadways • Heavy emergency traffic • FEMA has provided over $24,740,900 in the Individuals and Households Program and over $3,965,869 in Public Assistance Program grants
Presidential Declaration DR# 1607 Hurricane Rita September 24, 2005 Parish-wide	• Produced significant storm surge that devastated coastal communities in southwestern Louisiana • Southwest Louisiana saw wind gusts in excess of 180 mph • Spawned an estimated 90 tornadoes over the southern U.S. • Storm-surge flooding of 10 to 15 feet above normal tide levels along the southwestern coast of Louisiana • Inundated portions of the New Orleans area previously flooded by Katrina • Produced rainfalls of 5 to 9 inches over large portions of Louisiana, Mississippi, and eastern Texas
Presidential Declaration DR# 1786 Hurricane Gustav September 2, 2008 Parish-wide	• Gustav severely impacted 43 parishes • High winds severely damaged and destroyed trees throughout the Parish depositing large volumes of debris on city streets • FEMA has provided over $3.5 million in Public Assistance Program funds for debris removal, emergency services, and permanent work in the Parish

TABLE 5: ST. JOHN THE BAPTIST PARISH HAZARD HISTORY	
Hazard Event Date & Location	**Description**
Presidential Declaration DR# 1792 Hurricane Ike September 13, 2008 Parish-wide	• Ike severely impacted 14 parishes • Approximately 750 people were evacuated from the Parish days before the storm • High winds and rain severely damaged vegetation and trees throughout the Parish • Storm surge of six feet pushed water into drainage canals • Several homes and businesses were damaged • Roads were closed due to high water • FEMA has provided over $5.5 million in Public Assistance Program funds for debris removal and emergency services in the Parish

Additional data on the extent of damage caused by these hazards were obtained using data from the NCDC. Estimated dollar amount of damages from the NCDC is summarized in **Table 6**.

TABLE 6: ST. JOHN THE BAPTIST PARISH ESTIMATED DOLLAR LOSSES PER YEAR

Hazard	Estimated Damage From NCDC $	Time Period	Projected Yearly Losses $
Floods	$1,035,000	13 years	$79,615
Hurricanes	$17,391,000 (1)	14 years	$1,242,214 (1)
Severe Storms (Thunderstorms/ Lightning/ High Winds)	$466,000	49 years	$9,510
Tornadoes	$52,340,000	53 years	$987,547
Winter Storms	$202,022,000	12 years	$16,835,167 (1)
Hailstorms	See Note (2)	9 years	See Note (2)
Drought	$158,330,000 (3)	2 years	$79,165,000 (3)
Extreme Heat	See Note (4)	See Note (4)	See Note (4)
Expansive Soils	See Note (5)	See Note (5)	See Note (5)
Total			$98,319,053

(1) NCDC damage estimates for some major disasters were for multiple parishes and were not specific to St. John the Baptist Parish.
(2) Although NCDC contains events in St. John the Baptist Parish, no losses were reported.
(3) NCDC damage estimates were for crop damage not property damage.
(4) Although this type of event is known to occur in St. John the Baptist Parish and NCDC contains these types of events, none were reported for the Parish.
(5) NCDC does not track data statistics for this hazard.

Again, a variety of sources was searched, including local newspapers, the NCDC database, and the Parish OHSEP records. All of the sources used were found to have data limitations in gathering an all-inclusive hazard history, as the records are limited and insufficient.

4.2.3 Probability of Future Events

The statistical probability of a hazard event for St. John the Baptist Parish is not known, but a qualitative probability of its occurrence can be provided. Probability is defined as highly likely, likely, possible, or unlikely for the given hazard to occur. Highly likely was given the parameters of 75% to 100% that the hazard would occur each year. Likely was given the parameters of 35% to 74% that the hazard would occur each year. Possible was given the parameters of 10% to 34% that the hazard would occur each year. Unlikely was given the parameters of 0% to 9% that the hazard would occur each year. See **Table 7** for a summary of probability of reoccurrence.

TABLE 7: PROBABILITY OF REOCCURRENCE	
Hazard	**Probability**
Floods	Highly Likely (4 federally declared events) [(1)]
Hurricanes	Highly Likely (14 federally declared events)
Severe Storms (Thunderstorms/Lightning/High Winds)	Highly Likely (3 federally declared events) [(1)]
Tornadoes	Possible
Winter Storms	Likely
Hailstorms	Possible [(1)]
Drought	Highly Likely
Extreme Heat	Likely
Expansive Soils	Possible

[(1)] Although statistics showed a probability based on only what has been reported to NCDC, the Steering Committee proposed to change the probability of floods and severe storms to "highly likely" based on occurrences that have not been included in the NCDC database. It was also noted that the probability of hailstorms should be changed to "possible."

For all of the hazard rankings, a profile of each hazard is discussed in Sections 4.3.1.1 through 4.3.1.9. All unlikely hazards, such as earthquakes, are omitted from the plan discussions, based on the initial risk assessment of possible hazards.

4.3 Assessing Vulnerability: Identifying Assets

Requirement 201.6(c)(2) (ii)(A):
[The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. The plan should describe vulnerability in terms of: The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas…

4.3.1 Hazard Summary

As previously mentioned, the hazards that pose the greatest potential for a negative impact are floods, hurricanes, severe storms (thunderstorms, lightning, high winds), and tornadoes. Specific mitigation measures have been included to protect buildings, people, infrastructure, and critical facilities for the aforementioned hazards. There are three other hazards that will be discussed and profiled in this plan, but no mitigation action items for those hazards will be pursued at this time.

Rankings by the Steering Committee were used along with the current available data from the NCDC, the hazard history of St. John the Baptist Parish, and priorities set by the State HMP in order to eliminate low priority hazards and determine which hazards would be profiled and which hazards would have mitigation action items. **Table 8** shows the hazards that were eliminated based on the available criteria.

TABLE 8: DOCUMENTATION AND ELIMINATION OF HAZARDS

Hazard Type	NCDC Data Available	Query Results computed Highly Likely	High Priority by Steering Committee	Federally Declared Disasters	High Profile Area in State HMP	Hazards Identified (Action Items in Bold) [1]
Avalanche						
Coastal Erosion						
Dam Failure (See Flood)						
Drought	X	X				X
Earthquake						
Expansive Soils						X
Extreme Heat						X
Flood	X	X	X	X		**X**
Hailstorm	X					X
Hurricane	X	X	X	X		**X**
Land Subsidence					X	
Landslide						
Winter Storm	X					X
Tornado	X		X		X	**X**
Tsunami						
Volcano						
Wildfire						
Severe Storms	X	X	X	X		**X**

[1] Hazards that meet three or more of the criteria have been selected for mitigation action items.
[2] Action items were developed for this hazard because of its impact on the Parish.

4.3.1.1 Floods

Hundreds of floods occur each year in the U.S., including overbank flooding of rivers and streams and shoreline inundation along lakes and coasts. Flooding typically results from large-scale weather systems generating prolonged rainfall. Flooding in St. John the Baptist Parish can be the result of the following weather events: hurricanes, thunderstorms, or winter storms.

Hazard Identification

Flooding is defined as the accumulation of water within a water body and the overflow of excess water onto adjacent floodplain lands. The floodplain is the land adjoining the channel of a river, stream, ocean, lake, or other watercourse or water body that is susceptible to flooding.

According to the Federal Interagency Floodplain Management Task Force, flooding in the U.S. can be separated into several types:

- Riverine flooding, including overflow from a river channel, flash floods, alluvial fan floods
- Local drainage or high groundwater levels
- Fluctuating lake levels
- Coastal flooding, including storm surges
- Debris flows
- Subsidence

Riverine Flooding

Overbank flooding of rivers and streams is the most common type of flood event. Riverine floodplains range from narrow, confined channels in the steep valleys of hilly and mountainous areas, and wide, flat areas in the Plains states and low-lying coastal regions.

In relatively flat floodplains, areas may remain inundated for days or even weeks, but floodwaters are typically slow moving and relatively shallow, and may accumulate over long periods of time.

Flooding in large rivers usually results from large-scale weather systems that generate prolonged rainfall over wide areas.

Flash Floods

Flash floods are characterized by a rapid rise in water level, high velocity, and large amounts of debris. They are capable of tearing out trees, undermining

buildings and bridges, and scouring new channels. Major factors in flash flooding are the high intensity and short duration of rainfall and 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 (“sheet flow”), water may accumulate (“pond”) and cause flooding problems.

Fluctuating Lake Levels

Water levels in U.S. lakes can fluctuate on a short-term, seasonal basis or on a long-term basis over periods of months or years. Heavy seasonal rainfall can cause high lake levels for short periods of time. Not only does this cause the lake levels to rise, but it prevents natural drainage and causes flooding. An example of this is Lakes Maurepas and Pontchartrain, as well as Lac des Allemands.

Dam and Levee Failure

A secondary hazard to floods is dam and levee failure. Dam and Levee Failure are addressed in Section 4.3.1.10.

Risk Assessment

The NFIP was authorized by the U.S. Congress with the enactment of the National Flood Insurance Act of 1968. Under the NFIP, flood insurance is made available at rates that are intended to be affordable in return for community adoption of ordinances to regulate development in mapped flood hazard areas.

The 100-year or 1-percent-annual-chance event was selected as the national standard that defines the degree of risk and damage worth protecting against without imposing excessive cost on property owners.

The 1-percent-annual-chance flood and the associated Special Flood Hazard Area (SFHA) have been widely adopted as the common design and national regulatory standard in the U.S.

Over 87% of the total land area of St. John the Baptist Parish has been designated by FEMA as a special flood hazard area. These areas are assigned as Zones "A", “AE”, "V", and “VE” and are the areas of the Parish that are at risk for flooding. Zones "A" and “AE” are referred to as the "100-year floodplain" meaning that this is an area that will be flooded on the average of once every 100 years, with a 1% chance of being flooded in any given year. The areas along

the shore of Lake Maurepas and Pontchartrain are designated as "V" or “VE” zones. Almost all of the rest of the Parish is designated as “B” or "X" zone, or the area of the 500-year floodplain. In other words, flooding would likely occur once every 500 years. Localized flooding can occur anywhere in the Parish when isolated rainstorms drop large amounts of rain in relatively short periods of time. Of the 72 repetitive loss structures in St. John the Baptist Parish, over half are located in LaPlace, with a few in Garyville, Mount Airy, Reserve, and Vacherie. The floodplain is illustrated on **Figure 2**, Repetitive Loss Structures, and a list of the repetitive losses is found in **Appendix H**.

The following are areas that have been impacted in St. John the Baptist Parish during flood events:

- Flooding along the drainage ways adjacent to roads and highways and its intersection with railroads
- Flooding at major drainage laterals along highways that connect to water bodies
- Flooding at the 72 repetitive loss structure locations
- Residential streets built below parish specifications

There are other needs in the Parish that are not geographically specific, as those indicated above, such as increasing public awareness and education, improving the Community Rating System (CRS) rating, updating the FIRM maps, creating new subdivision guidelines, implementing a public notification system, and promoting flood insurance. These issues are addressed in the Parish’s Action Plan found in Section 7.0.

Probability and Frequency

The water depths and areas inundated by the 100-year flood are determined through the use of hydraulic models that reflect topographic characteristics.

Computed water surface elevations are combined with topographic mapping data to develop flood hazard maps, termed FIRMs. FIRMs illustrate:

- Areas inundated by the 1-percent-annual-chance flood where water surface elevations or water depths are computed by hydraulic models (Zone AE)
- Areas inundated by the 1-percent-annual-chance flood for which flood elevations are not determined by hydraulic models (Zone A)
- Floodway areas (cross-hatched areas)
- Elevations of the 1-percent-annual-chance flood, also known as base flood elevations
- Areas outside the 500-year flood or 0.2-percent-annual-chance flood (Zone X)
- Locations of cross sections used to develop the hydraulic model

The Parish's digital FIRMs (DFIRMs) become effective on November 4, 2010.

As seen on **Table 7**, the probability of floods reoccurring each year in St. John the Baptist Parish is highly likely, with a range of 75% to 100%. NCDC's data indicates that there have been nine separate flood events in St. John the Baptist Parish since 1997, yielding a 69% reoccurrence rate. As noted in the table, the Steering Committee stated that although the statistics show higher estimated losses for other hazards, floods have accumulated the most losses. Therefore, the Steering Committee proposed to change the probability of floods to "highly likely" based on occurrences that have not been included in the NCDC database.

The Steering Committee noted that flooding in the Parish occurs more often from rain storms than from hurricanes; however, storm surge produced from hurricanes causes problems as well.

FIRMs provide information on areas subject to flooding. They are used to guide future development away from flood-prone areas and to regulate development that is proposed to occur within such areas. FIRMs are used by insurance agents to assign flood insurance rates.

The Steering Committee noted that the key element in the Parish in terms of flooding is geography. The new flood maps factor, which will be in effect November 4, 2010, will factor in the geography of the Parish.

Exposure – Location

Floods occur in all 50 states and the U.S. territories. FEMA indicated that the states with the most land area subject to flooding by the 1-percent-annual-chance flood are Texas, Louisiana, Florida, and Arkansas. In terms of percentage of a state's total land area, the states with the most flood-prone lands are Louisiana, Florida, Arkansas, and Mississippi.

There are approximately 20,300 communities across the U.S. and its territories that participate in the NFIP by adopting and enforcing floodplain management ordinances to reduce future flood damage. Over 5.5 million people currently hold flood insurance policies in those communities. In exchange, the NFIP makes federally backed flood insurance available to homeowners, renters, and business owners in these communities. In these communities, over 5.4 million flood insurance policies have been issued providing financial protection in the event of flood damage. The NFIP reports that from 1996-2005, annual flood losses in the U.S. averaged $2.4 billion per year. During five hurricane seasons (2002-2006), insured flood losses in Louisiana totaled more than $13.4 billion. Approximately 96% of flood insurance claims in Louisiana have occurred during hurricane season over the past ten years.

Presently, 6,579 structures located within the unincorporated area of St. John the Baptist Parish have flood insurance policies with the NFIP and have annual premiums totaling approximately $3,891,318. The total coverage value of these

policies is approximately $1.6 billion. Since 1978, NFIP policies within St. John the Baptist Parish have filed 1,499 insurance claims for a total loss value of approximately $9.1 million. This data is summarized in **Table 9**.

TABLE 9: FLOOD INSURANCE STATISTICS FOR ST. JOHN THE BAPTIST PARISH [2]

Name	No. of Insured Structures	Total Insurance Coverage Value	No. of Insurance Claims Filed Since 1978	Annual Premiums Paid	Total Paid Claims
St. John the Baptist Parish	6,579	$1,608,561,800	1,499	$3,891,318	$9,110,274

Damage to life and property averaged about $316.7 million annually in Louisiana between 1994 and 2003. Staying out of the FEMA designated "100-year" floodplain can significantly reduce damage to life and property. See **Figure 2** for the 100–year and 500–year floodplains as determined by FEMA. The shaded area for the floodplains indicates the areas that are prone to flooding problems.

Repetitive Flood Losses

As part of the process to reduce or eliminate repetitive flooding to structures across the U.S., FEMA has developed an official Severe Repetitive Loss (SRL) Properties Strategy. The purpose behind the national strategy is to identify, catalog, and propose mitigation measures to reduce flood losses to the relatively few number of structures that absorb the majority of the premium dollars from the national flood insurance fund.

Nationwide, FEMA has identified approximately 6,501 validated SRL properties. Many of these structures have suffered extensive flooding and filed claims that equal or exceed the value of the property. Of these 6,501 structures nationwide, 2,544, or 39%, are located in Louisiana, more than twice the number in any other state. There are three SRL properties in St. John the Baptist Parish; see **Figure 2** for their location.

Another category of known flood susceptible structures are those appearing on the NFIP repetitive loss list as structures that have sustained flood damage twice or more. The following is a list of the number of repetitive loss properties in the communities of the Parish:

- Garyville – 4
- LaPlace – 48
- Reserve – 9
- Other areas – 11

[2] Source: National Flood Insurance Program (as of December 31, 2009)

The number of repetitive loss structures in St. John the Baptist Parish has increased from 25 structures that were identified by FEMA in 2006 to 72 structures to date in 2010. All of the structures identified are residential structures. Through the use of GIS mapping analysis of known flood-susceptible structures within the Parish, a series of definable repetitive loss areas emerge. **Appendix H** addresses these areas. **Figure 2** shows the areas where the majority of these structures are located.

Flood Insurance Studies

Fortunately, most of the known floodplains in the U.S. have been mapped by FEMA, which administers the NFIP. When a flood study is completed by the NFIP, the information and maps are assembled into a FIS. An FIS is a compilation and presentation of flood risk data for specific water courses, lakes, and coastal flood hazard areas within a community and includes causes of flooding. The FIS report and associated maps delineate SFHAs, designate flood risk zones, and establish base flood elevations (BFEs), based on the flood that has a 1% chance of occurring annually, or the 100-year flood.

St. John the Baptist Parish's previous FIS was completed in 1982. This study was a wave height analysis, which revised the original study to include wave crest predictions from storm surge. The original flood insurance study titled "Type 5, Flood Insurance Study, Louisiana Coastal Region," predicted stillwater elevations only. Because there is a pronounced tendency for buildings to be constructed to meet minimum requirements only, without thought to the additional hazard due to wave height, further study was conducted on potential wave damage in St. John the Baptist Parish. A revised FIS will be effective later this year.

St. John the Baptist Parish Flood Insurance Study Summary[3]

St. John the Baptist is subject to heavy flooding due to Lake Pontchartrain, Lake Maurepas, and Lac Des Allemands effects and the associated wetlands. In St. John the Baptist Parish, flooding can occur during any season of the year. Because so much of the land is low lying, all properties may be subject to flooding. Floodwater collects in a saucer of land prone to subsidence or sinking. The low, flat ground provides little gravity drainage. When the ground is saturated and heavy rain falls quickly, the system can be overwhelmed and flooding can result.

During high water levels, the area on the east side of the Mississippi River is susceptible to backwater flow through the wetlands. This prevents proper drainage of the land. All major canals that extend north of U.S. Highway 61 (Airline Highway) are subject to tidal influence. This tidal impact has serious detrimental effects on volume of the canals. Tidal backwater into canals severely restricts drainage by using the available capacity of the canals.

[3] Source: Flood Insurance Study, St. John the Baptist Parish, Louisiana, 1982

Previous drainage improvements have not kept up with land development projects. The canals that previously served sparsely populated communities and farmland now must drain developed urban areas and subdivisions. Many of canals and ditches are overgrown with vegetation which impedes drainage flow. The canals and culverts are undersized to carry the runoff from severe storm events. Roadside ditches draining urban areas are inadequate to carry the runoff from severe storms. As a result, the area retains water during severe storms. Several culverts have reversed slopes and constrictions under the Canadian National Railroad and Kansas City Southern Railroad tracks and at U.S. Highway 61 (Airline Highway). Another factor that aggravates these problems is that some subdivisions have been built on relatively low lying ground.

Another problem contributing to flooding in the area is the high water level in the woodlands and wetlands between the Union Pacific Railroad (UPRR) and LA 3127 which prevents the flow of drainage from north of the railroad tracks during heavy rainfall.

According to the Master Plan for Drainage Improvements for the Parish, populated areas that have been identified as high potential flooding zones are in the community of Mt Airy, Crevasse area, McReine Subdivision, areas north and south of LA 3217 and LA 3127, and areas along U.S. Highway 61 (Airline Highway) and along UPRR tracks. Actions to reduce the effects of flooding are widening and deepening the earthen canals, cleaning of existing ditches, and replacing existing culverts, and installing check valves in certain culverts.[4]

Principal Flood Problems

Past hurricanes affecting St. John the Baptist Parish were Hilda in 1964, Betsy in 1965, and Carmen in 1974. The maximum recorded stages on the west shore of Lake Pontchartrain for these events are 4.93 feet, 12.09 feet, and 4.54 feet NGVD, respectively.[5] The most recent hurricanes affecting St. John the Baptist Parish were Hurricanes Katrina and Rita, which occurred on August 29 and September 24, 2005, respectively.

Historical Flooding

Extensive damage due to flooding has occurred in recent years in St. John the Baptist Parish with large floods occurring in 1973, 1978, 1995, and 1998.[6] In March 1998, heavy rains caused flooding in Homewood, Magnolia, and Belle Pointe among other subdivisions, with many homes substantially damaged. In September of that year, flooding caused by three tropical cyclones, Earl, Francis, and Georges, inundated much of St. John the Baptist Parish. In May 1995, a federal disaster was declared due to storms that dumped up to 25 inches of rain

[4] Source: Master Plan for Drainage Improvements, January 2002, St. John the Baptist Parish
[5] Source: Flood Insurance Study, St. John the Baptist Parish, Louisiana, November 2010
[6] Source: Flood Insurance Study, St. John the Baptist Parish, Louisiana, 1982

on south Louisiana. Seventy-five homes were damaged in St. John the Baptist Parish with an average repair cost of $31,300.

Public Works Drainage Activities

The Parish Office of Public Works is responsible for all drainage in the Parish. The Public Works budget and man-hour efforts are directed towards the following type of tasks:

- Clean out culverts with a vacuum truck
- Weed control and clean ditches/canals
- Five grade-all crews
- Sandbagging and delivery

In addition, the Parish Office of Public Works continually maintains ditches and canals throughout the Parish by means of a Work Order System. The Parish has an active culvert and drainage permit program.

Currently, funding received from Hurricane Gustav grants is being used for projects to alleviate flooding in areas throughout the parish.

Consequences – Extent and Previous Occurrences

Reasonably good information is available for the significant floods that have caused serious loss of life or major property damage. As shown in **Table 3**, of the 16 federally declared disasters in St. John the Baptist Parish, four involved flooding.

Interpretation of flood loss data is difficult, and estimates are not necessarily comparable due to differences in reporting flood loss and in adjusting dollar amounts to reflect changes in monetary values, as well as other problems in coordinating data sources (*e.g.*, federal versus non-federal outlays). The most comprehensive source of annual flood loss data is prepared by the National Weather Service (NWS).

Since 1902, the NWS has compiled annual estimates of the number of lives lost and flood damages, excluding losses to agriculture. Despite known problems with the NWS data, they provide the most complete and consistent information over the longest period of record.

For the period 1916 to 1989, there has been a definite increase in flood damage. With adjustment for population and inflation, the average annual damage was $902 million for the 1916 to 1950 period, and $2.15 billion for the 1951 to 1985 period. In other words, annual flood damage was almost 2.5 times during the later period.

The NCDC recorded nine separate flood events in St. John the Baptist Parish between 1950 and 2009, all of which have occurred since 1997. Significant events are summarized below.

- March 5, 1997 – The Mississippi River exceeded flood stage during the first half of the month from Red River Landing to just west of New Orleans. It crested at Donaldsonville at 32.2 feet on March 27th. The crest at Red River Landing, 61.3 feet, on March 26th was a flood of record. The high stages on the river greatly impacted barge and ship traffic with restrictions in place through most of the month. The high stages and high flow also contributed to several barge and ship accidents. Approximately 25 miles of roads, around rivers and low-lying areas near rivers, were flooded after heavy rain.
- April 1, 1997 – The heavy rain occurred within a few hours and overwhelmed drainage pumping capacity resulting in widespread street flooding. Approximately $693,000 in damages resulted from this event.
- March 7, 1998 – Heavy rainfall of five inches in 90 minutes resulted in flooding of many streets with water in homes and garages throughout the Parish.
- June 26, 1999 – Between six and twelve inches of rain fell in the area overwhelming local drainage and causing flooding. Many homes were inundated with up to a foot of water causing much damage.
- June 8, 2001 – Tropical Storm Allison moved slowly across southeast Texas and Louisiana causing periods of torrential rain overwhelming local drainage and created severe ponding of water which flooded numerous roadways and low lying areas, with many houses and some businesses flooded. By the end of the event on June 11th, storm total rainfall of 15 to 25 inches was common with some locations reporting up to nearly 30 inches. About 30 roadways were flooded along with several houses. Approximately $250,000 in damages resulted from this event.
- April 25, 2004 – Twelve inches of rain developed from thunderstorms flooding homes and automobiles causing an estimated $2,000 in damages.
- Multiple rainstorms in December 2009 brought more than 24 inches of rain and flooded several communities in the Parish. The Parish declared a state of emergency on December 8th because of the heavy rainfall in excess of seven inches and high wind. Streets and homes were flooded throughout the area. Schools were closed because of the standing water on many roads and the forecasts called for more rain. Some homes took in one to two inches of water after the rain. Between 15 and 20 houses had minor flooding. Damages were estimated at $75,000.

Hurricanes, discussed in Section 4.3.1.2, present flooding, storm surge, and high wind hazards to the communities that they impact. Some flooding events associated with hurricanes are discussed below.

- September 26, 2002 - Tropical Storm Isidore moved north across southeast Louisiana and then into central Mississippi. Across Lake Pontchartrain and Lake Maurepas, storm surge of four to five feet above normal was measured. Low lying areas, roadways and some non-elevated structures surrounding Lake Pontchartrain and Maurepas were flooded. Four to eight inches of rainfall occurred within six hours. Drainage systems were overwhelmed by the heavy rain, and numerous streets were flooded. Rainfall total from the storm of 10 to 15 inches was common. Most areas recorded sustained winds of 35 to 45 mph with some gusts to 50 mph in squalls.
- October 3, 2002 – Hurricane Lili moved north-northwest across south central Louisiana before turning northeast across the northern portion of the state. Along Lake Pontchartrain and Maurepas, low lying roadways and structures were also flooded, many having been flooded a week earlier due to Tropical Storm Isidore. Strong wind gusts downed trees and large tree branches. Property damage occurred when the trees and tree limbs fell onto houses and automobiles. Several short lived tornadoes touched down producing only minor property damage.
- August 29, 2005 – Hurricane Katrina devastated Louisiana with severe wind and flood damage. St. John the Baptist Parish was included in the Presidential Disaster Area. Areas were flooded for two weeks including homes and streets.
- September 24, 2005 – Hurricane Rita devastated southwestern Louisiana with severe wind and flood damage. St. John the Baptist Parish was included in the Presidential Disaster Area.
- September 2, 2008 – Hurricane Gustav devastated Louisiana with severe wind and flood damage. St. John the Baptist Parish was included in the Presidential Disaster Area.
- September 13, 2008 – Hurricane Ike devastated Louisiana with severe wind and flood damage. St. John the Baptist Parish was included in the Presidential Disaster Area.

Of the 16 federally declared disasters addressed in Section 4.1, four were from flood events.

Mitigation Approaches

A Federal Interagency Floodplain Management Task Force report described four basic strategies for floodplain management: modify susceptibility to flood damage and disruption, modify flooding, modify the impacts of flooding, and manage natural and cultural resources.

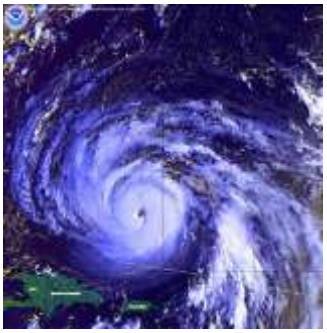
Modify Susceptibility to Flood Damage and Disruption

- Demolition and relocation of properties in flood-prone areas
- Floodplain regulations, building codes, and participation in CRS
- Flood proofing and elevation-in-place

- Disaster preparedness and response plans
- Flood forecasting and warning systems

Modify Flooding

- Construction of dams and reservoirs
- Construction of dikes, levees, and floodwalls
- Channel alterations
- High flow diversions and spillways



Modify the Impacts of Flooding

- Information and education
- Flood insurance
- Tax adjustments
- Flood emergency measures
- Disaster assistance
- Post-flood recovery

Manage Natural and Cultural Resources

- Preservation and restoration strategies
- Regulations to protect floodplain natural and cultural resources
- Information and education

In order for any of these basic floodplain strategies to be effective, the Parish must have an accurate Repetitive Flood Loss List which will enable them to identify where their greatest flood problem areas are located. This can be accomplished by annually reviewing and correcting the Repetitive Flood Loss List and submitting corrections to FEMA.

Specific mitigation measures recommended by the Steering Committee to address this hazard are provided in **Appendix I**, St. John the Baptist Parish Mitigation Measures.

4.3.1.2 Hurricanes

Hurricanes, tropical storms, and typhoons, collectively known as tropical cyclones, are among the most devastating naturally occurring hazards in the U.S. They present flooding, storm surge, and high wind hazards to the communities that they impact. Flooding is discussed in this plan in Section 4.3.1.1, and the high wind hazard associated with hurricanes is discussed below. Storm surge was not identified by the community as a concern, and NCDC confirmed that storm surge has not been a significant issue to the Parish. This is most likely due to the fact that wetlands provide a large buffer between the southernmost and easternmost incorporated areas bordered by Lake Pontchartrain and Lake Maurepas.

Hazard Identification

A hurricane is defined as a low-pressure area of closed circulation winds that originates over tropical waters. Hurricanes that affect Louisiana typically form in the warm waters of the Atlantic Ocean off the African coast and move into the Gulf of Mexico. A storm will intensify through four stages to develop into a hurricane (see **Table 15**). A hurricane typically begins as a tropical disturbance, which is an unorganized mass of thunderstorms. As the disturbance develops closed wind circulation around a center with wind speeds up to 38 mph, it becomes a tropical depression. Once wind speeds reach or exceed 39 mph, the system is considered a tropical storm and given a name. As the storm continues to intensify and wind speeds reach 74 mph, it matures into a hurricane.

TABLE 10: HURRICANE DEVELOPMENT [7]	
Stage of Development	**Criteria**
Tropical Depression (development)	Maximum sustained surface wind speed is ≤ 38 mph
Tropical Storm	Maximum sustained surface wind speed ranges from 39 to < 74 mph
Hurricane	Maximum sustained surface wind speed is at least 74 mph
Tropical Depression (dissipation)	Decaying stages of a cyclone in which maximum sustained surface wind speed has dropped below 39 mph

The distinguishing feature of a hurricane is the counterclockwise rotation of winds around a center eye. The eye, the storm's core, is an area of low barometric pressure that is an average of 20 miles in diameter with a surrounding storm vortex that is 250 to 500 miles in diameter. [8] Therefore, although hurricanes pose the greatest threat to coastal areas, their impact can be far reaching and threaten inland areas as well.

The Saffir/Simpson Hurricane Scale is used to classify tropical cyclones by numbered categories, Categories 1 through 5, from least to most catastrophic, based on multiple atmospheric and hydrologic characteristics, including central barometric pressure, storm surge height, and potential flood impact and wind speed (see **Table 11a**). However, to improve storm-rating accuracy, the National Hurricane Center (NHC) introduced a revised scale, the Saffir/Simpson Hurricane Wind Scale, in 2009. The Saffir/Simpson Hurricane Wind classifies storms into numbered categories, Categories 1 through 5, based solely upon on wind intensity (see **Table 11b**).[9] Though the Saffir/Simpson Hurricane Wind Scale is the most current hurricane classification system, its inclusion in this report is for reference only as all historical hurricane data presented throughout this report

[7] Neumann, C.J., B.R. Jarvinen, C.J. McAdie, and J.D. Elms (1993): Tropical Cyclones of the North Atlantic Ocean, 1871-1992, Prepared by the National Climatic Data Center, Asheville, NC, in cooperation with the NHC, Coral Gables, FL, 193pp
[8] Source: NWS. http://www.srh.noaa.gov/crp/docs/safety/Aware/reference/structure.html
[9] Source: National Weather Service, National Hurricane Center. http://www.nhc.noaa.gov/aboutsshs.shtml http://www.nhc.noaa.gov/aboutsshs.shtml

are based on the use of the Saffir/Simpson Hurricane Scale presented in **Table 11a**.

TABLE 11a: SAFFIR/SIMPSON HURRICANE SCALE				
Storm Category	**Central Pressure**	**Sustained Winds**	**Storm Surge**	**Potential Damage**
1	> 980 mbar	74 - 95 mph	4 – 5 ft	Minimal
2	965 – 979 mbar	96 - 110 mph	6 – 8 ft	Moderate
3	945 – 964 mbar	111 – 130 mph	9 – 12 ft	Extensive
4	920 – 944 mbar	131 – 155 mph	13 – 18 ft	Extreme
5	< 920 mbar	> 155 mph	> 18 ft	Catastrophic

TABLE 11b: SAFFIR/SIMPSON HURRICANE WIND SCALE		
Storm Category	**Sustained Winds**	**Potential Damage**
1	74 - 95 mph	Damaging winds are expected
2	96 - 110 mph	Very strong winds will produce widespread damage
3	111 – 130 mph	Dangerous winds will cause extensive damage
4	131 – 155 mph	Extremely dangerous winds causing devastating damage are expected
5	> 155 mph	Catastrophic damage is expected

Category 3, 4, or 5 hurricanes are defined as major hurricanes. Although major hurricanes account for only 21% of total tropical cyclone landfalls, they are responsible for over 83% of the damage in the U.S.[10]

The degree of hurricane-force winds damage will depend on several factors including wind intensity; the duration of high winds; height of the building; changes in wind direction; strength of the impacted structure; the amount of accompanying rainfall; the type, quantity, and velocity of windborne debris; the number, size, and location of openings to the structure; and the age of impacted structures.[11] Wind-related damage is also dependent upon how well and how long local building codes have been enforced. Older or improperly designed structures can suffer extensive damage from large lateral (horizontal) and uplift (vertical) forces caused by high winds. See **Appendix J** for recommended Stability System Design Tables for wind loads.

The NHC describes wind damages associated with each hurricane category as follows:

- Category 1: Damaging winds are expected. Minimal damage to vegetation and property. Some damage to building structures, primarily unanchored mobile homes and poorly constructed signs, possible. Some breakage of

[10] Landsea, C.W. (1993): "A climatology of intense (or major) Atlantic hurricanes" Mon. Wea. Rev., 121, pp.1703-1713
[11] Jones, C. (2001). Coastal Construction Manual: Principles and Practices of Planning, Siting, Designing, Constructing and Maintaining Residential Buildings in Coastal Areas. Diane Publishing. pp.7-23

large tree branches and some tree uprooting. Power outages and downed power poles likely.

- Category 2: Very strong winds will produce widespread damage to homes/small buildings. Considerable damage to mobile homes and poorly constructed signs likely. Some roofing material, door, and window damage of buildings will occur. Considerable amount of breakage of large branches and considerable tree uprooting. Extensive damage to power lines and poles will likely result in widespread power outages that could last a few to several days.

- Category 3: Dangerous winds will cause extensive damage to homes/small buildings. Destruction of mobile homes and poorly constructed signs. Some structural damage to houses and buildings. Possible wall failures. Extensive tree uprooting and blockage of numerous roads. Near total power loss is expected with outages that could last from several days to weeks.

- Category 4: Extremely dangerous winds causing devastating damage are expected. Expect extreme structural damage. Complete destruction of mobile homes and signs. Some wall failures with some complete roof structure failures on houses likely. Extensive damage to doors and windows is likely. Most trees will be snapped or uprooted. Fallen trees could cut off residential areas for days to weeks. Power outages will last for weeks.

- Category 5: Catastrophic damage is expected. All signs and mobile homes destroyed. Complete roof failure on many residences and industrial buildings will occur. Some complete building failures with small buildings blown over or away are likely. Nearly all trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months.

Hurricane season lasts from June 1 through November 30, with the majority of hurricane activity occurring during August and October and maximum activity occurring in early to mid-September.

For the period 1851 – 2006, an average of 5.2 hurricanes per year has occurred with an average of 1.78 hurricanes per year making landfall in the U.S.[12] The North Atlantic Ocean Tropical Cyclone Basin is considered to be the area north of the equator and west of the International Date Line and includes the North American and Central American east coasts.[13] This region is particularly vulnerable to hurricane impacts due to the frequency at which hurricanes occur, the proneness of the area to storm surge and coastal riverine flooding, and the

[12] Source: Atlantic Oceanographic and Meteorological Laboratory (AOML), Hurricane Research Division (HRD). http://www.aoml.noaa.gov/hrd/tcfaq/E17.html
[13] Source: AOML, HRD http://www.aoml.noaa.gov/hrd/tcfaq/F1.html

continually increasing population.[14] It is estimated that by the year 2010, the number of Americans living in hurricane-prone counties will have doubled from the number in 1995.[15] Hurricanes typically pose the greatest threat to coastal areas; however, as evidenced in recent years, inland areas can be severely impacted as well.

The coastlines of the southeastern Atlantic and Gulf of Mexico states have experienced hits from 279 hurricanes, 96 of which are considered major (Category 3, 4, and 5) hurricanes in the time period from 1851 – 2006 and represent the areas of the U.S. that are the most susceptible to severe hurricane damage[16]. According to the Atlantic Oceanographic and Meteorological Laboratory's Hurricane Research Division[17] 20 direct hits in that period were to Louisiana. During the same time period, Louisiana experienced 32 direct hits from other hurricanes (Category 1 and 2). Based on the above data, Louisiana has experienced an average of approximately one direct hit every three years.

[14] FEMA's Multi-Hazard Identification and Risk Assessment (MHIRA). Chapter 2, Part I, Subpart A, Chapter 1

[15] General Accounting Office. 1998. *Disaster Assistance: Information on Federal Costs and Approaches for Reducing Them* (GAO/T-RCED-98-139). Washington, DC: GAO

[16] Blake, E.S., Rappaport, E.N., and Lansea, C.W. The Deadliest, Costliest, and Most Intense United States Tropical Cyclones from 1851-2006 (and Other Frequently Requested Hurricane Facts). National Weather Service, National Hurricane Center, Miami, FL. 2007

[17] Source: AOML, HRD. http://www.aoml.noaa.gov/hrd/tcfaq/E19.html

Risk Assessment

Heavy precipitation, storm surge, and high winds result in the various hazard components and risks associated with hurricanes which include flooding, tornadoes, and wind. A storm surge is an abnormally large dome of ocean water generated by high winds that has become a long period swell and is pushed onshore ahead of its generating force (typically a hurricane). Storm surge is mentioned here as it is a defining characteristic of hurricane force; however, flooding hazards associated with storm surge and rainfall are discussed later in this plan. High winds impact utilities, create debris, cause agricultural and structural damage, and can result in loss of both life and property. The wind-specific impacts of hurricanes are so great that interest and participation in separate wind insurance programs, similar to the flood insurance program, that provide business and home owners specific coverage for wind damage associated with hurricanes, has recently experienced rapid growth in southeastern coastal states.[18]

The following are areas that have been impacted in St. John the Baptist Parish during hurricanes or tropical storms:

- Flooding along the drainage ways adjacent to roads and highways and its intersection with railroads
- Flooding at major drainage laterals along highways that connect to water bodies
- Flooding at the 72 repetitive loss structure locations
- Residential streets built below parish specifications

There are other needs in the Parish that are not geographically specific, as those indicated above, such as increasing public awareness and education, adopting the International Building Codes, creating new subdivision guidelines, implementing a public notification system, and promoting flood insurance. These issues are addressed in the Parish's Action Plan found in Section 7.0.

Probability and Frequency

NCDC's data indicates that there have been 15 hurricane events in St. John the Baptist Parish between 1950 and 2009. However, the information compiled in NCDC is not a complete dataset and is often changing. Even though the database originated in 1950, each dataset (hazard) actually begins recording data in different years. Fifteen hurricanes have occurred from 1995 to 2009, yielding over a 100% reoccurrence rate. Therefore, as seen on **Table 7**, the probability of hurricanes occurring each year in St. John the Baptist Parish is highly likely, with a range of 75% to 100%.

[18] Pompe, J, and Rinehart, J. Property Insurance for Coastal Residents *Governments' "Ill Wind".* The Independent Review, v.13, n.2, 2008. pp189-207

The frequency of occurrence of hurricanes can be determined by the number of landfall events over a given time period. The frequencies of landfall events are measured from historical data for specific geographic areas of the U.S. Florida had the greatest number of direct hits by hurricanes from 1851 through 2006, with 113, with Texas at 60, Louisiana at 52, North Carolina at 50, South Carolina at 30, and Alabama at 26 ranked in order behind Florida.[19]

Exposure - Location

Hurricanes present one of the greatest potentials for substantial loss of life, property damage, and economic impact because more than 153 million U.S. residents live in the coastal counties from Texas to Maine that have the greatest exposure to hurricanes.

The highest population growth rates in the U.S. have been in Gulf and Atlantic coastal counties. These areas have experienced an estimated 28% increase in population, more than 33 million people, from 1980 to 200318, surpassing earlier estimates that by the year 2010, the population would have increased to 76 million.[20] For the period from 1988 to 1990, the value of insured residential and commercial property has increased an estimated 65 percent, with even more significant increases expected as the population in these regions continues to grow.

Estimated damages from hurricanes Louisiana has faced are summarized in the following table.

[19] FEMA's Multi-Hazard Identification and Risk Assessment (MHIRA). Chapter 2, Part I, Subpart A, Chapter 1

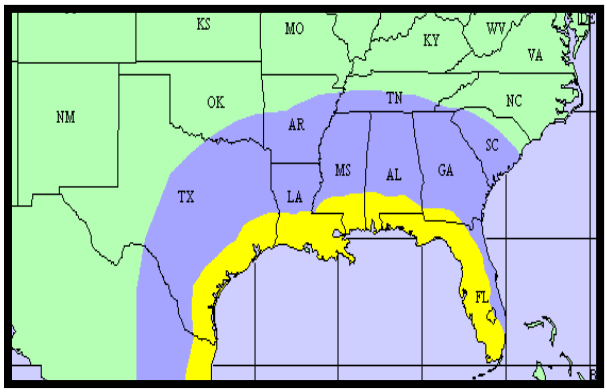
[20] General Accounting Office. 1998. *Disaster Assistance: Information on Federal Costs and Approaches for Reducing Them* (GAO/T-RCED-98-139). Washington, DC: GAO

TABLE 12: ESTIMATED DAMAGES FROM LOUISIANA HURRICANES [21]				
Name	**Date**	**Year**	**Category**	**Damage Estimate**
Flossy	24-Sep	1956	2	$22 M
Audrey	27-Jun	1957	4	$120 M
Ethel	15-Sep	1960	2	<$1 M
Carla	10-Sep	1961	5	$25 M
Hilda	2-Oct	1964	3	$53 M
Betsy	9-Sep	1965	3	$1.4 B
Camille	17-Aug	1969	5	ND
Edith	16-Sep	1971	2	<$1 M
Carmen	7-Sep	1974	3	$150 M
Babe	5-Sep	1977	1	<$1 M
Bob	11-Jul	1979	1	<$1 M
Elena	2-Sep	1985	3	$2.5 B (combined total)
Juan	27-Oct	1985	1	
Danny	16-Aug	1985	1	ND
Bonnie	26-Jun	1986	1	$10 M
Florence	9-Sep	1988	1	$2.50 M
Andrew	26-Aug	1992	3	$1 B
Opal	4-Oct	1995	3	<$1 M
Josephine	5-Oct	1996	1	$5.50 M
Danny	3-Jul	1997	1	$5 M
Lili	3-Oct	2002	1	$415 M
Katrina	29-Aug	2005	4	$16.9 B
Rita	24-Sep	2005	3	$4 B
Gustav	1-Sep	2008	2	$2 B
Ike	13-Sep	2008	2	$9.7 B

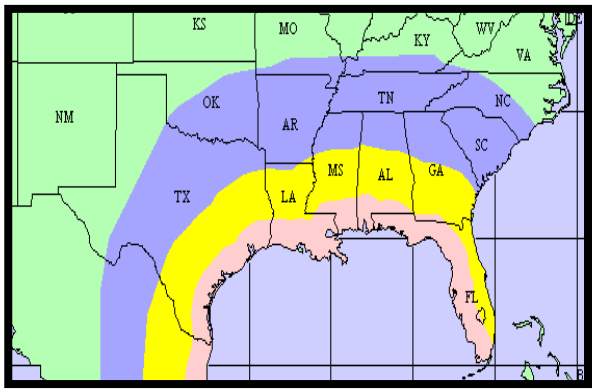
ND = not determined (a reliable estimate was not determined)
M = million dollars
B = billion dollars

Based on these figures, the average cost of a storm since year 2000 is approximately $6.6 billion. Hurricanes are not localized events. Wind impacts from a hurricane not only affect coastal structures, but will have far-reaching effects on inland structures and infrastructure as well. The entire Parish can be affected by a hurricane. The following illustrations show the maximum inland extent of winds associated with Category 1 – 4 hurricanes approaching the Gulf Coast from any direction.

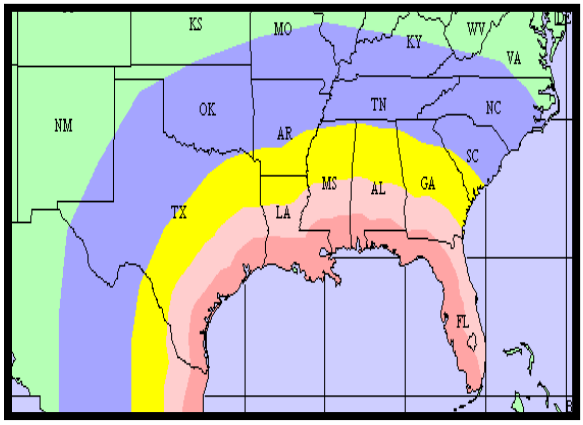
[21] Source: Adapted from NWS Louisiana Hurricane History: Late 20th Century. http://www.srh.noaa.gov/lch/research/lalate20hur1.php and Official Tropical Cyclone Report(s) published by the National Hurricane Center. Reports available online at: http://www.nhc.noaa.gov/pastall.shtml#tcr



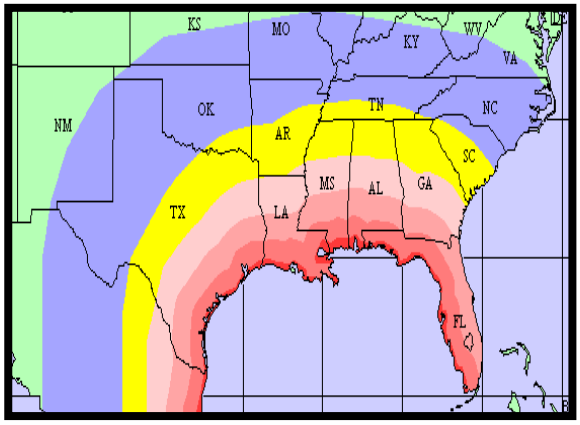
CAT 1 HURRICANE (75 mph)



CAT 2 HURRICANE (98 mph)



CAT 3 HURRICANE (121 mph)



CAT 4 HURRICANE (144 mph)

EXTENT OF INLAND WINDS [22]

>34Kt(39mph) >50Kt(58mph) >64kt(74mph) >80Kt(92mph) >95Kt(109mph) >110kt(127mph)

Consequences – Extent and Previous Occurrences

Half of the most costly hurricanes occurred in the past 25 years. Four recent tropical cyclonic events reveal consequences in densely populated areas of Louisiana: Hurricane Andrew (1992), Hurricane Rita (2005), Hurricane Katrina (2005), and Hurricane Gustav (2008). Hurricanes Andrew, Rita, Katrina, and Gustav resulted in total damages estimated at $40.7, $10.5, $81.2, and $8.5 billion, respectively, along the entire Gulf Coast. The 2005 hurricane season was the busiest recorded hurricane season. The season included 28 named storms, including 15 hurricanes, seven of which were major (Category 3 or higher) and four of which were Category 5 storms. Hurricane Katrina was the single most costly disaster in recent U.S. history. The combination of strong winds, heavy rainfall, and storm surge lead to unprecedented breaks in the levee system that separates New Orleans from Lake Pontchartrain, resulting in flooding of over

[22] Kaplan, J., DeMaria, M., 1995: A Simple Empirical Model for Predicting the Decay of Tropical Cyclone Winds After Landfall. J. App. Meteor., 34, No. 11, 2499-2512. Model online at http://www.nhc.noaa.gov/HAW2/english/wind/risk_areas.shtml

80% of New Orleans, with some portions of the city under 20 feet of water. In addition, storm surge from Mobile Bay led to inundation of Mobile, Alabama as well as Biloxi and Gulfport, Mississippi. The massive flood losses from the 2005 hurricane season, especially Hurricanes Katrina and Rita, proved to be the most costly in NFIP history resulting in over $23 billion in flood insurance claims paid to policy holders.[23]

Besides the catastrophic damage caused by storm surge, wind, and rain, another major problem that arises when a hurricane is predicted to make landfall, as can be seen in some of the events listed below, most notably Hurricane Katrina, is evacuation of residents. If the evacuation routes are not sufficient or if there are not enough routes, this can cause major delays in moving people quickly out of the hazard area and can result in increased injuries and casualties.

As shown in **Table 3**, of the 16 federally declared disasters in St. John the Baptist Parish, 14 were due to hurricanes or tropical storms. Brief summaries of the storm events follow[24.]

In September 1965, Hurricane Betsy made landfall and caused extensive damage to St. John the Baptist Parish. An estimated one million dollars of damage occurred. The winds were measured up to 115 miles per hour. Many people were injured due to the effects from the storm.

In November 1985, Hurricane Juan was a slow moving Category 1 hurricane which spawned rain for five days. Over 69 homes and business flooded. Numerous roads and homes were flooded for approximately two weeks from the rain and storm surge produced from Hurricane Juan.

In June 1989, a hurricane, rain storm, and tornado dropped eight inches of rain in St. John the Baptist Parish. Electrical and phone service was knocked out parish-wide and many roads were covered by water.

In August 1992, Hurricane Andrew hit St. John the Baptist Parish with winds of 75 miles per hour. Virtually every road in the Parish contained debris. About 8,000 customers were without power. Fallen trees, power lines and high water blocked many streets and roads. Tornadoes spawned from Hurricane Andrew damaged residential, commercial, and industrial structures throughout the Parish.

In September 1998, Hurricane Georges forced the residents in the southern portion of the Parish to evacuate. The winds were measured at 30 to 40 miles per hour. Many homes and power lines were damaged from the winds.

In June 2001, Tropical Storm Allison poured more than 20 inches of rain on the Parish. Numerous automobile accidents occurred, and many roads were flooded.

[23] King, R.O (2006): National Flood Insurance Program: Treasury Borrowing in the Aftermath of Hurricane Katrina

[24] Information on individual storm events obtained from the official Tropical Cyclone Report(s) published by the National Hurricane Center. Reports available online at: http://www.nhc.noaa.gov/pastall.shtml#tcr

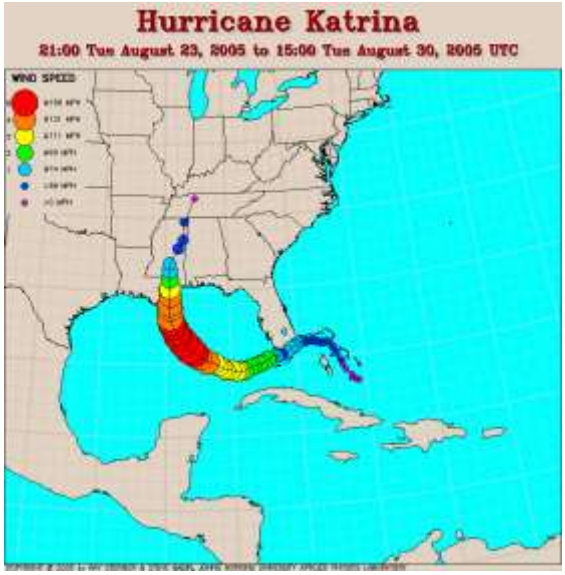
In September 2002, Tropical Storm Isidore moved steadily northward across the central Gulf of Mexico before moving ashore near Grand Isle early in the morning. The tropical storm moved steadily north across southeast Louisiana and by the late afternoon was located in central Mississippi and was downgraded to a tropical depression. Tropical Storm Isidore had a large circulation with tropical storm force winds extending several hundreds of miles from its center. Across Lake Pontchartrain and Lake Maurepas, storm surges of 4 to 5 feet above normal were measured. Low lying areas, roadways and some non-elevated structures in parishes surrounding Lake Pontchartrain and Maurepas were flooded. Numerous homes were flooded in the state from either storm surge, river flooding, or from flooding from heavy rain. Rain bands associated with Tropical Storm Isidore produced heavy rainfall in a wide area prior to and shortly after landfall. Storm total rainfall of 10 to 15 inches was common across southeast Louisiana. Most areas recorded sustained winds of 35 to 45 mph with some gusts to 50 mph in squalls. The Louisiana Office of Emergency Preparedness reported approximately 2500 people sought refuge in approximately 40 shelters in the state. As of late November 2002, the Louisiana State Insurance Department reported that insurance industry has indicated that Tropical Storm Isidore had resulted in $105 million in insured losses. Approximately 166,200 claims had been filed with private insurance companies.

In October 2002, Hurricane Lili made landfall along the west shore of Vermilion Bay in South Central Louisiana as a Category 2 hurricane. During the day, the hurricane made steady progress northward and by 2 pm, Lili was downgraded to a tropical storm. More than 40 roads were closed due to high water in the Parish. About 10,700 customers were without power, and downed trees and power lines were widespread throughout the Parish. During the day, the hurricane made steady progress northward and by 2 pm, Lili was downgraded to a tropical storm. As the storm moved into North Central Louisiana, the storm produced sustained winds of 40 mph with frequent gusts to 55 mph across most of the warned area. The strongest winds were felt near and to the east of the decaying eye wall of the tropical storm which moved through Natchitoches, LaSalle, Winn, Caldwell, Jackson and Ouachita Parishes. Numerous reports of downed trees and power lines were reported throughout these parishes along with a report of a brief tornado touch down in southeast Franklin Parish and LaSalle Parish. While the wind damage was scattered throughout these parishes, very little if any, structural damage was reported.

Near the end of June 2003, Tropical Storm Bill moved into southeast Louisiana. The lowest pressure recorded in southeast Louisiana was 995.4 mb at the Louisiana Universities Marine Consortium (LUMCON) facility near Cocodrie. Storm surge of three to five feet above normal was common along coastal southeast Louisiana. Sustained winds of 35 to 45 mph were common across the area. Storm total rainfall was six to ten inches. River flooding developed during the first five days of July. A tornado spawned from Bill damaged mobile homes and educational facilities and caused several injuries.

In September 2004, Hurricane Ivan grazed southeastern Louisiana. Hurricane Ivan passed within 70 miles (to the east) of the mouth of the Mississippi River, and within 125 miles of the city of New Orleans. Southwest Pass at the mouth of the Mississippi River recorded the highest winds in the state with a peak gust of 89 mph, and sustained winds of 79 mph. In stunning development, Hurricane Ivan, which made landfall on September 16, 2004, took a trip as far north as Pennsylvania. Then a portion of the storm fractured, moved back into the Gulf of Mexico, via Florida, and reformed into a tropical storm off of the Louisiana coast on September 23, 2004. The storm packed winds as high as 60 mph, but weakened some before making landfall near the Louisiana-Texas border. Highly scattered and locally heavy rainfall was prevalent from September 23 to September 25, due the combination of Ivan and an approaching cold front, which stalled in northern Louisiana on September 25, 2004. A one-day maximum rainfall of 6.72 inches was recorded. Several other locations recorded between two and four inches in a day.

In October 2004, Tropical Storm Matthew made landfall near Houma, Louisiana on the morning of October 10, 2004, producing rain from for two days. The region hardest hit was the coastal areas of Terrebonne, Lafourche, Jefferson, and Plaquemines Parishes and around Lake Pontchartrain in the form of gusts. Most of the damage associated from Matthew was the result of a combination of heavy rain and coastal flooding in Terrebonne, Lafourche and St. John the Baptist Parishes. The storm surge was 2 to 4 feet above normal, but locally higher in some locations. Wind damage, in the form of downed trees and power lines was reported.



On August 29, 2005, Hurricane Katrina made landfall near the mouth of the Mississippi River as an extremely large Category 3 hurricane. Katrina was one of the strongest storms to impact the coast of the U.S. during the last 100 years. Although Katrina at its peak strength was comparable to Hurricane Camille's (1969) intensity, it was a significantly larger storm and impacted a broader area of the Gulf Coast. With sustained winds during landfall of 125 mph and minimum central pressure the third lowest on record at landfall (920 mb), Katrina caused widespread devastation along the central Gulf Coast states. In Louisiana, 10-minute average winds of 87 mph with gusts up to 114 mph were reported, although higher winds likely occurred there and elsewhere, but were not recorded because many stations were destroyed, lost power, or lost communications during the storm. Category 5-level storm surge (30 feet) caused catastrophic damage along the coastlines of Louisiana, Mississippi, and Alabama. Levees separating Lake Pontchartrain from New

Orleans, Louisiana were breached by the surge, ultimately flooding about 80% of the city. Thirty-three tornadoes were reported from the storm. The storm is responsible for approximately $81.2 billion in damages, making it the costliest natural disaster in U.S. history. Katrina is the deadliest U.S. hurricane since the 1928 Okeechobee Hurricane, killing at least 1,836 people, placing it as one of the world's deadliest hurricanes in history. Emergency operations were conducted throughout the Parish. Power and communications were downed, emergency traffic was heavy, pump motors at lift stations were flooded, and roadways were blocked by debris. The public water supply was damaged, and the Parish was under a boil order. Approximately $1,938,498 in eligible funds from Public Assistance project worksheets was obligated to St. John the Baptist Parish for projects. Roughly 44 project worksheets described projects for emergency protective measures, debris removal, or repairs to public buildings and facilities.

In September 2005, Hurricane Rita made landfall in Cameron Parish between Sabine Pass and Johnson Bayou as a Category 3 hurricane. Rita produced significant storm surge that devastated coastal communities in southwestern Louisiana, and the effects of its winds, rain, and tornadoes caused damage and fatalities all along the Gulf Coast from eastern Texas to Alabama. Southwest Louisiana saw wind gusts in excess of 180 mph and spawned an estimated 90 tornadoes over the southern U.S. The hurricane caused storm-surge flooding of 10 to 15 feet above normal tide levels along the southwestern coast of Louisiana, caused a notable surge on the inland Lake Livingston, Texas, and inundated portions of the New Orleans area previously flooded by Katrina. Rita produced rainfalls of 5 to 9 inches over large portions of Louisiana, Mississippi, and eastern Texas, with isolated amounts of 10 to 15 inches. Total damage from the storm is estimated at $10.5 billion, ranking Rita as the tenth costliest hurricane.

In September 2008, Hurricane Gustav made landfall in Terrebonne Parish as a Category 2 hurricane. Gustav caused wind damage, flash flooding, and several tornadoes across southwest Louisiana. Storm surges of 12 to 13 feet occurred along the Louisiana coast in the Mississippi Delta southeast of New Orleans, with surges of 9 to 10 feet in other portions of southeastern Louisiana. The rain produced by Gustav caused flooding of many rivers throughout Louisiana and as far inland as Arkansas. Gustav is known to have produced 11 tornadoes in Louisiana, the strongest of which was a Number 2 on the Enhanced Fujita scale (EF2) in Evangeline Parish, Louisiana. Total property damages were estimated near $750 million in southwest Louisiana. Agricultural loses were estimated to be over $225 million. Gustav's force driven winds severely damaged and destroyed trees throughout the Parish. Also, large volumes of debris were deposited throughout the Parish. Approximately $2,150,999 in eligible funds from Public Assistance project worksheets is in the process of being obligated to St. John the Baptist Parish for emergency protective measures, debris removal, or repairs to public buildings and facilities.

In September 2008, Hurricane Ike also made landfall in Louisiana. Hurricane Ike caused wind damage, storm surge flooding, and tornadoes across the entire southwest Louisiana. Loses are estimated to be almost $420 million across

southwest Louisiana. High winds and rain severely damaged vegetation and trees throughout the Parish. Large volumes of debris were deposited on city streets and private property and caused an immediate threat to public health and safety. Approximately $4,930,079 in eligible funds from Public Assistance project worksheets is in the process of being obligated to St. John the Baptist Parish for emergency protective measures and debris removal projects.

Currently, Hurricanes Katrina, Rita, and Gustav, are still open disasters. Therefore, damage estimates and obligated federal funds are incomplete.

Another potential problem that arises when a hurricane is predicted to make landfall, as was seen in some of the above events, is evacuation of residents. If the evacuation routes are not sufficient or if there are not enough routes, this can cause major delays in moving people quickly out of the hazard area.

Of the 16 federally declared disasters addressed in Section 4.1, 14 were from tropical storms or hurricanes.

Mitigation Approaches

Mitigation opportunities for hurricane winds are similar to mitigation measures for other wind hazards. Attention to the type of structure used in hurricane-prone areas may yield benefits, particularly by avoiding highly susceptible manufactured or mobile homes.

The greatest protection is afforded by quality construction and reinforcement of walls, floors, and ceilings. State and local building codes can be designed to reflect communities' hazard risks and can specify more rigorous requirements to address these hazards. Proper anchoring of walls to foundations and roofs to walls is essential for a building to withstand certain wind speeds. Code adoption by local jurisdictions, compliance by builders, and local government inspection of new homes could reduce the risk of destruction in tornado-prone areas. In addition, post-construction reinforcements can be used to increase structural resistance to hurricane damage in hazard-prone areas. This allows existing structures to be made more resistant to natural hazards through retrofitting, or modifying a structure to improve its resistance to hazards. Retrofitting may not bring a structure up to the most recent building code standards, but it will help existing structures better withstand natural hazard events. An example retrofitting technique is adding construction features such as hurricane straps, which provide extra support in connecting the roof to a building, and can help reduce damages during hurricanes. Other retrofitting techniques include installing wind-resistance storm doors and/or storm shutters to protect doors and windows.

Additionally, loss of life and injuries may be reduced if more individuals seek shelter in basements, small interior rooms, or hallways, and avoid rooms and buildings with large roof spans. An interior room or closet has less chance of collapse or failure than other areas. In recent years, mitigation of loss of life from hurricanes has included public awareness campaigns to educate residents about

storm preparedness, and development of evacuation plans and actual evacuation of high-risk areas during emergencies. Additionally, federal, state, and local agencies are taking steps to provide direct assistance to some communities to reduce losses from natural hazards by providing funding to assist in developing and implementing mitigation strategies.

Mitigation of building damage has been most successful where strict building codes for high-wind influence areas and designated special flood hazard areas have been adopted and enforced by local governments, and complied with by builders. Retrofit efforts, as discussed above, are expected to reduce future damage to buildings constructed prior to the adoption of updated building codes. In addition to retrofitting, other post-disaster mitigation efforts encouraged by FEMA include relocation, elevation of structures, improved open-space preservation, and land-use planning within high-risk areas.

Specific mitigation measures recommended by the Steering Committee to address this hazard are provided in **Appendix I**, St. John the Baptist Parish Mitigation Measures.

4.3.1.3 Severe Storms (Thunderstorms, Lightning, and High Winds)

Severe storms are atmospheric disturbances usually characterized by strong winds and frequently combined with rain, snow, sleet, hail, ice, or thunder and lightning.

Hazard Identification

Thunderstorm events are generated by atmospheric imbalance and turbulence due to a combination of conditions[25]:

- Unstable warm air rising rapidly into the atmosphere
- Sufficient moisture to form clouds and rain
- Upward lift of air currents caused by colliding weather fronts (cold and warm), sea breezes, or mountains

Thunderstorms can produce deadly and damaging tornadoes, hailstorms, intense downburst and microburst winds, lightning, and flash floods. Individual thunderstorms affect relatively small geographic areas. The average thunderstorm system is approximately 15 miles in diameter and typically lasts less than 30 minutes at a single location. However, weather-monitoring reports indicate that thunderstorm systems can travel intact for distances in excess of 600 miles.[26]

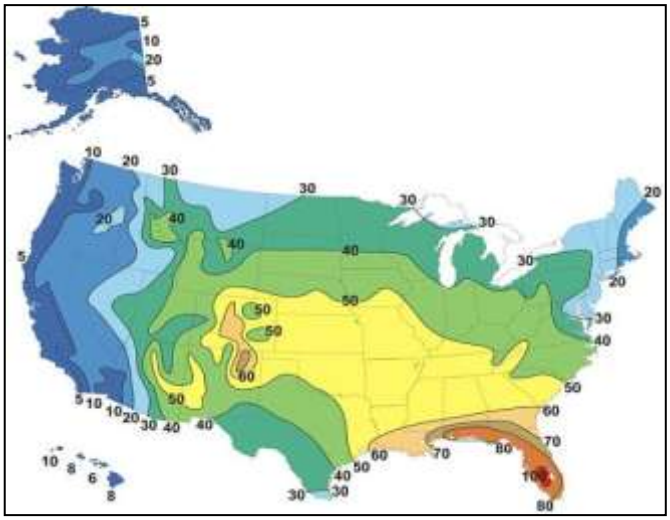
[25] FEMA's Multi-Hazard Identification and Risk Assessment (MHIRA). Chapter 2
[26] Source: NOAA. Online: http://www.nssl.noaa.gov/primer/tstorm/tst_basics.html

The NWS estimates that over 100,000 thunderstorms occur each year on the U.S. mainland. Approximately 10% are classified as "severe."[27] A thunderstorm is classified as severe if its winds reach or exceed 58 mph, it produces a tornado, or it drops surface hail at least 0.75 inches in diameter.[28]

Lightning, which occurs during all thunderstorms, can strike anywhere. Generated by the buildup of charged ions in a thundercloud, a lightning strike occurs when these charged ions are discharged as an electric current through the air. The air in the channel of a lightning strike reaches temperatures higher than 50,000°F.[29] The rapid expansion of gases along the channel of a lightning discharge creates a sound wave recognized as thunder.

High winds can be associated with tropical cyclones, tornadoes, and thunderstorms, so it can be difficult to separate out specific wind components that cause wind damage from other wind-related natural hazards. High winds associated with hurricanes are discussed in Section 4.3.1.2. High winds associated with tornadoes are discussed in Section 4.3.1.4.

In the mainland U.S., the mean annual wind speed is reported to be 8 to 12 mph, with frequent speeds of 50 mph and occasional wind speeds greater than 70 mph.[30] NWS defines high winds as sustained wind speeds of 40 mph or greater lasting for one hour or longer, or winds of 58 mph or greater for any duration.[31] Thunderstorms can produce high velocity rotating winds associated with tornadoes, as well as high velocity winds associated with straight line winds, known as wind downbursts. A downburst wind is defined as a strong downdraft resulting in an outward burst of damaging winds on or along the ground. Downbursts are caused either by the sinking of dense, rain-cooled air, momentum transfer, precipitation drag, or a combination of the any of the three and can be categorized as macrobursts, with wind speeds up to 135 mph, or microbursts, with wind speeds up to 170 mph.[32] Although usually associated with thunderstorms, downbursts can occur with showers too weak to produce thunder. Damaging wind from thunderstorms is much more



[27] National Severe Storms Laboratory, "Severe Weather Primer: Thunderstorms," Online: http://www.nssl.noaa.gov/primer/tstorm/tst_basics.html
[28] NWS, "A Comprehensive Glossary of Weather Terms for Storm Spotters," Online: http://www.srh.noaa.gov/oun/severewx/glossary4.php
[29] Source: NOAA. Online: http://www.srh.noaa.gov/abq/preparedness/SWA/ltgsafety.php
[30] FEMA Muli-Hazard Identification and Risk Assessment (MHIRA). Chapter 4
[31] Source NWS. Online at: http://www.crh.noaa.gov/glossary.php?word=HIGH WIND
[32] Source: NWS. Online at: http://www.srh.noaa.gov/jetstream//tstorms/wind.htm

common than damage from tornadoes. Wind speeds associated with thunderstorms can reach up to 100 mph with a damage path extending many miles.[33]

Risk Assessment

Dangerous and damaging aspects of a severe thunderstorm, other than tornadoes and hailstorms, are lightning strikes, flash flooding, and high winds. The impacts of thunderstorms with lighting and high wind events in St. John the Baptist Parish occur throughout the Parish. The needs of the Parish with respect to this hazard are best addressed by increasing public awareness and education, adopting the International Building Codes, creating new subdivision guidelines, and implementing a public notification system. These issues are addressed in the Parish's Action Plan found in Section 7.0.

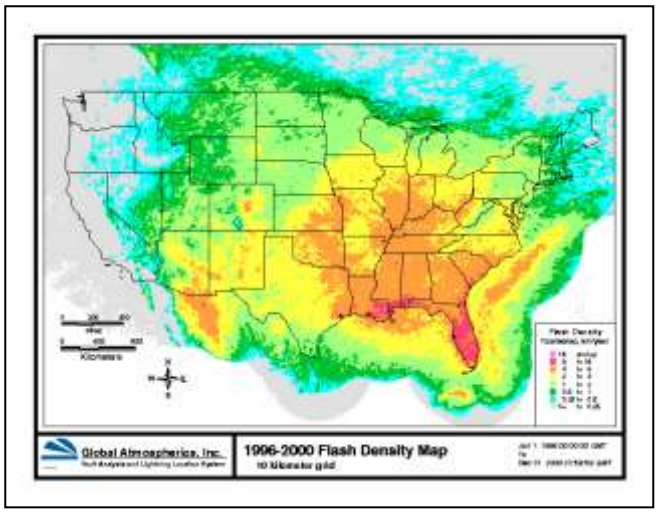
Probability and Frequency

The probability of a severe thunderstorm occurring in a specific region depends on certain atmospheric and climatic conditions. Duration and frequency can be used as indicators of potential severity. The geographic areas with a high density of lightning strikes are at a greater risk for damage or potential loss of life during a thunder event.

The following illustration shows the average number of thunderstorm days each year in each state.[34] As seen in the illustration, South Florida has the greatest number of thunderstorms, and Louisiana has an annual average of 60 to 70. Previous estimates found Florida to have an annual average of 100 to 130 with an average duration of 80 to 100 minutes and Louisiana to have an annual average of 100 to 110 and an average duration of 90 to 100 minutes.[35]

The majority of thunderstorms along the Gulf Coast and southeastern states occur in the afternoon.

The lightning hazard component of thunderstorms is measured as the mean annual ground flash density (flashes per square kilometer). The most recent data is shown below. The central Florida region has 4 to 16+ flashes/km^2, the highest density in the U.S. mainland. Louisiana has from 4 to 12 flashes/km^2.



[33] Source: NWS. Online at: http://www.srh.noaa.gov/jetstream/tstorms/wind.htm
[34] Source: NWS. Online at: http://www.srh.noaa.gov/jetstream/tstorms/tstorms_intro.htm
[35] Changnon, S., et al. 1988. "Thunder events and cloud-to-ground lightning frequencies" Journal of Geophysical Research. 93(8)

As seen on **Table 7**, the probability of severe storms reoccurring each year in St. John the Baptist Parish is highly likely, with a range of 75% to 100%. NCDC's data indicates that there have been 36 severe storms (thunderstorms, lightning, and high winds) events in St. John the Baptist Parish between 1950 and 2009, all of which have occurred since 1960, yielding over a 100% reoccurrence rate. As noted in **Table 7**, the Steering Committee proposed to change the probability severe storms, to "highly likely" based on occurrences that have not been included in the NCDC database.

Exposure - Location

People and property in virtually the entire U.S. are exposed to damage, injury, and loss of life from thunderstorms and related hazards such as lightning, severe windstorms, hailstorms, tornadoes, and flash floods.

Severe storm events affect St. John the Baptist Parish equally and uniformly, and the entire Parish is at risk from thunderstorms, lightning, and high winds.

Consequences – Extent and Previous Occurrences

The National Oceanic and Atmospheric Administration (NOAA) reports that thunderstorms associated high winds were responsible for an average of 18 fatalities and 261 injuries per year throughout the U.S. using data from 2000 to 2008. For the same time period, high wind events were associated with an average of 23 fatalities and 109 injuries annually. The damages from thunderstorm winds amounted to an average of $466.9 million, while high winds caused an average of $671.1 million in damage, annually.

TABLE 13a: ANNUAL THUNDERSTORM WIND SUMMARY [36]

Year	Fatalities	Injuries	Property Damage (million $)	Crop Damage (million $)	Total Damage (million $)
2000	25	296	245.2	58.8	304.0
2001	17	341	317.8	61.0	378.8
2002	17	287	289.8	54.7	344.5
2003	19	226	355.8	66.5	422.3
2004	16	244	167.3	15.6	182.9
2005	16	185	398.7	11.9	410.6
2006	14	249	408.8	31.1	439.1
2007	18	256	238.17	191.42	429.60
2008	28	272	1,261.50	29.66	1,294.16

[36] NOAA Economics. Online: http://www.economics.noaa.gov/?goal=weather&file=events/storm&view=costs

TABLE 13b: ANNUAL HIGH WINDS SUMMARY [37]					
Year	**Fatalities**	**Injuries**	**Property Damage (million $)**	**Crop Damage (million $)**	**Total Damage (million $)**
2000	26	162	48.9	1.2	50.1
2001	14	98	63.8	2.2	66.0
2002	28	129	82.9	33.5	116.4
2003	24	156	166.2	41.0	207.2
2004	26	68	3,312.8	340.5	3,653.3
2005	7	43	58.5	21.9	80.4
2006	26	133	195.0	15.2	210.2
2007	16	76	257.42	1.22	258.64
2008	42	122	1,225.69	172.18	1,397.87

According to the NCDC, 36 thunderstorm, lightning, and high wind events were reported in St. John the Baptist Parish between 1950 and 2009, all of which have occurred since 1960. These events reportedly caused over $466,000 in property damage, no injuries, and one death. Most reports addressed downed power lines and trees as well as damage to mobile homes. Significant events are summarized below.

- March 7, 1998 – Thunderstorm winds estimated at 60 to 65 mph tore roofs off a mobile home, several houses and businesses, toppled trees onto two houses, downed power lines, a traffic signal and six 1000 pound utility poles. Telephone poles were snapped, a party barge was flipped, a church building was pushed about 4 feet. Approximately $200,000 dollars in property damage occurred.
- March 28, 2002 – A ten foot corner section of a house and an adjacent garage were damaged by thunderstorm winds. Shingles were peeled off of several nearby houses. Approximately $20,000 dollars in property damage occurred.
- June 5, 2004 – Thunderstorm winds blew down several trees and large limbs. Several houses were damaged by fallen trees. Approximately $50,000 dollars in property damage occurred.

According to the NCDC, one lightning event was reported in St. John the Baptist Parish between 1950 and 2009. This event occurred in 1998. Although many more lightning events have occurred, they were not reported to the NCDC. The event is summarized below.

- June 23, 1998 – A man working on a barge along the Mississippi River was struck by lightning during a thunderstorm. He died on July 2, 1998 as a result of his lightning strike related injuries.

[37] NOAA Economics. Online: http://www.economics.noaa.gov/?goal=weather&file=events/storm&view=costs

Concurrently, statewide, lightning was responsible for 22 deaths and 100 injuries. Most lightning-related deaths and injuries occurred when people were outdoors during summer afternoons and evenings. Total lightning-related property damage is estimated at $266 million.

Flash flooding from thunderstorms cause more than 140 fatalities nationwide each year and is the primary cause of death from thunderstorm events. Most fatalities occur when people become trapped in automobiles. Flooding is addressed further in Section 4.3.1.1.

Of the 16 federally declared disasters addressed in Section 4.1, three were from severe storms (thunderstorms, lightning, and high winds).

Mitigation Approaches

There is no clearly defined mitigation approaches designed specifically for thunderstorms that are separate from the associated hazard phenomena. Mitigation measures for tornadoes, hailstorms, windstorms, and flash flooding can be expected to achieve a reduction in damage caused by or associated with thunderstorms. Proven techniques are available to reduce lightning damage by grounding techniques for buildings.

Specific mitigation measures recommended by the Steering Committee to address this hazard are provided in **Appendix I**, St. John the Baptist Parish Mitigation Measures.

4.3.1.4 Tornadoes

The U.S. averages approximately 1,200 tornadoes each year.[38] The most recent three-year (2006-2008) average number of tornadoes impacting the U.S. is 1,297.[39] Although most tornadoes remain aloft, those that touch ground are forces of destruction.

Hazard Identification

A tornado is a violently rotating vortex or funnel of air extending groundward, usually pendant to a cumulonimbus cloud. Tornadoes are related to larger vortex formations and therefore are commonly produced in association with severe storms (as discussed in Section 4.3.1.3 of this Plan) or in the small, low-topped supercells within the outer bands, typically the northeast quadrant, of a hurricane.[40]

[38] Source: http://www.spc.noaa.gov/efscale/. Updated 06/09
[39] NOAA Strom Prediction Center. Online at http://www.spc.noaa.gov/climo/online/monthly/newm.html. Updated 11/09
[40] The Online Tornado FAQ. Online at: http://www.spc.noaa.gov/faq/tornado/#Climatology

Tornado wind speeds can range from gale force (< 40 mph) to over 300 mph. Compared to hurricanes (discussed in Section 4.3.1.2), which generally produce wind speeds ranging from 74 to > 155 mph over widespread areas, the maximum winds in tornadoes are greater and have a more localized impact.[41] Additionally, the wind speed of a tornado can vary tremendously over very short distances, even within the funnel itself.

Traditionally, the Fujita-Pearson Tornado Scale (Fujita Scale) was used to classify U.S. tornadoes into six categories based on damage severity.[42] The Fujita Scale estimates wind speeds based on damage and assigns numerical values categorizing tornadoes from 0 to 5. However, to improve wind estimate accuracy, the NWS, with assistance from other experts and researchers, implemented a revised scale, the Enhanced Fujita Scale (EF-Scale), beginning February 1, 2007.[43] See **Table 14** for a comparison of the EF-Scale and the Fujita Scale.

TABLE 14: FUJITA TORNADO SCALE

FUJITA TORNADO SCALE			ENHANCED FUJITA TORNADO SCALE	
Category	**Wind Speed**	**3-Second Gust**	**Category**	**3-Second Gust**
F0	Gale (40-72 mph)	45-78 mph	EF0	65-85 mph
F1	Moderate (73-112 mph)	79-117 mph	EF1	86-110 mph
F2	Significant (113-157 mph)	118-161 mph	EF2	111-135 mph
F3	Severe (158-206 mph)	162-209 mph	EF3	136-165 mph
F4	Devastating (207-260 mph)	210-261 mph	EF4	166-200 mph
F5	Incredible (261-318 mph)	262-317 mph	EF5	Over 200 mph

The extent of wind damages associated with each tornado category is as follows:

F0/EF0: Light damage. Some damage to chimneys; break branches of trees; push over shallow rooted trees; damage to sign boards.

[41] The Enhanced Fujita Tornado Scale. Online at: http://www.ncdc.noaa.gov/oa/satellite/satelliteseye/educational/fujita.html. Updated 11/09
[42] The Online Tornado FAQ. Online at: http://www.spc.noaa.gov/faq/tornado/#Climatology
[43] Source: http://www.ncdc.noaa.gov/oa/satellite/satelliteseye/educational/fujita.html. Updated 11/09

F1/EF1: Moderate damage. Peel surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off roads.

F2/EF2: Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.

F3/EF3: Severe damage. Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; cars lifted off ground and thrown.

F4/EF4: Devastating damage. Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown; large missiles generated.

F5/EF5: Incredible damage. Strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobile sized missiles fly through air in excess of 100 yards; trees debarked; incredible phenomena will occur.

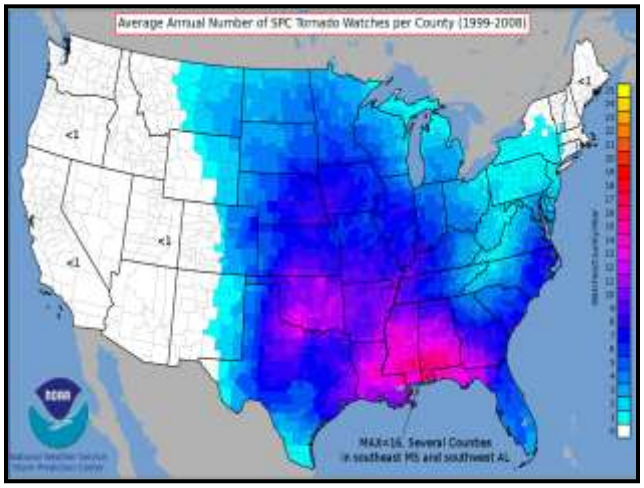
Tornadoes generally produce a narrow path of concentrated destruction. The path of destruction can range from 0.01 mile wide to greater than one mile wide, but generally the path width of a single tornado is less than 0.6 miles. The path length of a single tornado can range from a few hundred feet to several miles. A tornado typically moves at speeds between 30 and 125 mph and can generate internal winds exceeding 300 mph. However, the life span of a tornado rarely is longer than 30 minutes.[44]

High winds are capable of imposing large lateral (horizontal) and uplift (vertical) forces on buildings. Not all tornado damage is from the rotating vortex of the tornado; much of the damage is from straight-line winds rushing toward and being pulled into the tornado itself.[45] Building failures result from wind damage when they are improperly designed and constructed and when wind speeds exceed design levels. However, construction guidelines specifically exclude tornadoes from consideration in basic wind speed distributions because designing an entire building to meet tornado-force (especially EF2 and higher) winds is not economically feasible.[46]

Mitigation opportunities for building protection exist for properties that may be exposed to wind hazards along the periphery of strong and violent tornadoes and in the path of the vortex of weak tornadoes.[47] See **Appendix J** for recommended Stability System Design Tables for wind loads.

[44] FEMA: Multi-Hazard Identification and Risk Assessment (MHIRA), 1997
[45] FEMA: Design and Construction Guidance for Community Safe Rooms, 2008
[46] FEMA: Design and Construction Guidance for Community Safe Rooms, 2008
[47] FEMA: Design and Construction Guidance for Community Safe Rooms, 2008

Risk Assessment



A tornado watch is issued for a specific location when thunderstorms capable of producing tornadoes are recognized and arrival is expected in a few hours. A tornado warning is issued when tornadoes have been sighted or when Doppler radar identifies a distinctive "hook-shaped" area within a local partition of a thunderstorm line that is likely to form a tornado.

The impacts of tornado events in St. John the Baptist Parish occur throughout the Parish. The needs of the Parish with respect to this hazard are best addressed by increasing public awareness and education, adopting the International Building Codes, creating new subdivision guidelines, and implementing a public notification system. These issues are addressed in the Parish's Action Plan found in Section 7.0.

Probability and Frequency

From 1950 to 2009, Texas experienced the highest average annual number of tornadoes with 136, followed by Kansas (64), Oklahoma (58), Florida (51), and Nebraska (44).[48] Louisiana had more than 25 (approximately 30), but less than Nebraska's 44.

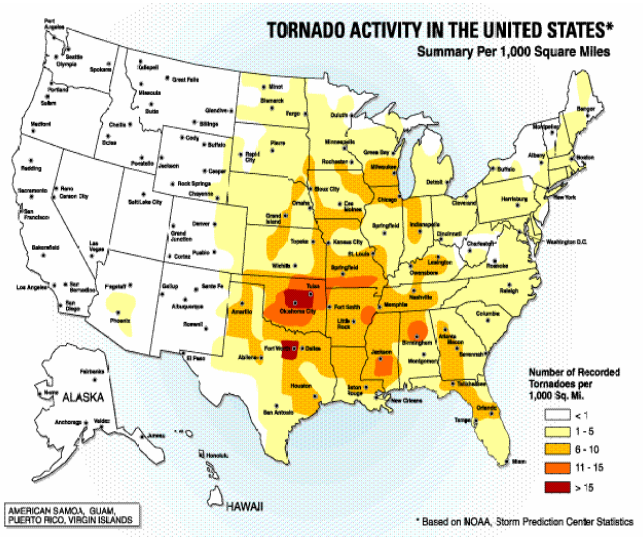
The states along the Atlantic and Gulf coasts have some of the highest occurrence rates of smaller tornadoes (EF0, ER1, and EF2). Based on NOAA tornado data from 1997 to 2006, EF0, EF1, and EF2 tornadoes account for approximately 80 to 95 percent of reported tornadoes in any given year.[49] Peak tornado season in the southern states is from March – May.

As seen on **Table 7**, the probability of tornadoes reoccurring each year in St. John the Baptist Parish is possible, with a range of 10% to 34%. NCDC's data indicates that there have been 13 tornadoes, including waterspouts, in St. John the Baptist Parish since 1950. These events occurred from 1957 to 2010, yielding a 25% reoccurrence rate.

[48] Source: National Climatic Data Center
[49] FEMA: Design and Construction Guidance for Community Safe Rooms, 2008

Exposure – Location

An area covering portions of Texas, Oklahoma, Arkansas, Missouri, and Kansas is known as Tornado Alley, where the average annual number of tornadoes is the highest in the U.S. Most tornadoes in this area occur in the spring. However, the Gulf Coast area is nicknamed Dixie Alley due to the relatively high frequency of tornadoes occurring in the late fall (October through December) in this region.[50]



People living in manufactured or mobile homes are most exposed to damage from tornadoes. Even if anchored, mobile homes do not withstand high wind speeds as well as permanent, site-built structures.

Tornadoes affect St. John the Baptist Parish equally and uniformly, and the entire Parish is at risk from tornadoes.

Consequences – Extent and Previous Occurrences

Tornadoes have been known to lift and move objects weighing more than 300 tons a distance of 30 feet, toss homes more than 300 feet from their foundations, and siphon millions of tons of water from water bodies. Tornadoes generate a tremendous amount of debris, which often becomes airborne shrapnel that causes additional damage, often causing public utilities failure. Tornadoes are almost always accompanied by heavy precipitation.

Between 1953 and 2009, 379 major federal disaster declarations included impacts caused by tornadoes. The states with the greatest number of tornado-related disasters were Oklahoma (28), Texas (26), Mississippi (25), Illinois (23), Arkansas and Alabama (21 each), Kansas (20), Georgia (19), Missouri (18), Ohio and Indiana (14 each), Nebraska and Florida (11 each), Minnesota (10), Iowa (9), and Louisiana (7).[51]

See **Table 15** for Louisiana's ranking nationwide for tornadoes. **Table 15** lists Louisiana's rank in the nation for number of tornadoes, fatalities and injuries caused by tornado events, and accumulated dollar damages. Louisiana ranks within the top 20 states in the nation for all four categories indicating that it has a relatively high probability for occurrences and damages.

[50] NCDC U.S. Tornado Climatology
[51] FEMA. Online at: http://www.fema.gov/femaNews/disasterSearch.do?action=Reset

TABLE 15: LOUISIANA RANKINGS FOR TORNADOES, FATALITIES, INJURIES, AND DAMAGES FROM 1950 - 1995				
	Tornadoes	**Fatalities**	**Injuries**	**Damages**
Overall Rank	11	13	16	15
Rank (per sq. mi.)	5	11	12	10
Total	1137	134	2191	$595,262,464
Average	25	3	48	$12,940,488

St. John the Baptist Parish has had no federally declared disasters due to tornadoes. The NCDC reports 13 tornadoes occurring in St. John the Baptist Parish between 1950 and 2010, all of which have occurred since 1957. Those tornadoes caused 66 injuries, two deaths, and an estimated $52.340 million in property damage.

The tornadoes reported to the NCDC for St. John the Baptist Parish ranged in severity from F0 to F5. Of the 13 tornadoes, six were an F0, four were an F1, one was an F2, one was an F4, and one was an F5. Significant events are detailed as follows.

- November 22, 1961 – An F2 tornado touched down with damage 50 yards wide for two miles with an estimated $25,000 in property damage.
- December 16, 1983 – An F4 tornado knocked down numerous trees and power lines. Several homes received roof damage as a result of the downed trees. Twenty-five people were injured. Damage was 200 yards wide for seven miles with $25 million in damages reported.
- August 25, 1992 – An F5 tornado touched down with damage 150 yards wide for nine miles. Two deaths, 32 injuries, and $25 million in damages were reported.
- June 30, 2003 – An F0 touched down in Reserve as a result of Tropical Storm Bill causing damage to Riverside Academy and adjacent trailer parks and injured four people.
- May 15, 2010 – An F0 tornado touched in Lucy causing minor roof damage to three homes. The tornado path was 100 yards long and 50 feet wide and caused an estimated $10,000 in property damage.

Mitigation Approaches

Mitigation opportunities for tornado winds are similar to mitigation measures for other wind hazards. Attention to the type of structure used in tornado-prone areas may yield benefits, particularly by avoiding highly susceptible manufactured or mobile homes.

The greatest protection is afforded by quality construction and reinforcement of walls, floors, and ceilings. Proper anchoring of walls to foundations and roofs to walls is essential for a building to withstand certain wind speeds. Code adoption

by local jurisdictions, compliance by builders, and local government inspection of new homes could reduce the risk of destruction in tornado-prone areas.

Loss of life and injuries may be reduced if more individuals seek shelter in basements, small interior rooms, or hallways, and avoid rooms and buildings with large roof spans. An interior room or closet has less chance of collapse or failure than other areas.

Specific mitigation measures recommended by the Steering Committee to address this hazard are provided in **Appendix I**, St. John the Baptist Parish Mitigation Measures.

4.3.1.5 Winter Storms

Hazard Identification

Winter storms consisting of extreme cold and heavy concentrations of snow and/or ice affect every single continental state and Alaska, including the southern states[52.] In fact, the impacts of winter storms on southern states may be severe due to the rarity of occurrence and associated lack of preparedness. Winter storms are known to spawn other natural hazards, such as severe thunderstorms, tornadoes, high winds, and coastal flooding and erosion.

Winter storms typically form along a front, generally following the jet stream and originating as a mid-latitude depression or cyclonic weather system. The jet streams that carry storm systems across the U.S. as narrow bands of strong wind in the upper atmosphere that follow the boundaries between hot and cold air masses. These boundaries are most pronounced during the winter months, when the jet streams travel to their southernmost position over the U.S. and surrounding water.[53] Winter storms in the Southern U.S usually originate as a result of cold Canadian fronts from the North and Mid-Western states mixing with weather systems in the Atlantic Ocean and Gulf of Mexico.

Many winter depressions give rise to exceptionally heavy rain and widespread flooding. Conditions worsen as the temperature drops, rain turns to ice, and accumulation of ice begins to occur. Generally, there are far fewer winter storms in the southeast than other areas of the U.S.; however, southeast winter storms have higher precipitation rates than Northeast storms, which can exacerbate the stress placed on tree limbs, power lines, and building structures due to accumulating snow and ice.[54] In addition, El Niño winters tend to be wetter than normal in the southeastern U.S., as well, and contribute to flooding along the Gulf Coast. Winter storms that spin up in the Gulf of Mexico typically track northeast on the southern jet stream, bringing rain as well as ice and even snow to the Gulf

[52] FEMA's Multi-Hazard Identification and Risk Assessment (MHIRA). Chapter 7
[53] The State Climate Office of North Carolina. Online at: http://www.nc-climate.ncsu.edu/climate/winter_wx/Patterns.php
[54] Fuhrrmann, C., et al. "Winter Storms: An Overlooked Source of Death, Destruction, and Inconvenience in the Carolina Piedmont Region" 2009

states. Winter storms in Louisiana typically consist of freezing temperatures and heavy precipitation, usually in the form of rain, freezing rain, sleet, or snow.

Risk Assessment

Probability and Frequency

Freezing temperatures occurring over an extended period of time in Louisiana often result in water pipe breakage, decreases in water pressure, and disruption of water service. The weight of accumulated ice can result in load forces that can cause power lines to break, collapse roofs, and damage to infrastructure. High winds associated with winter storms also lead to extensive damage. Although severe winter storms do not occur on an annual basis, they can produce widespread devastation.

As seen on **Table 7**, the probability of winter storms reoccurring each year in St. John the Baptist Parish is likely, with a range of 35% to 74%. NCDC's data indicates that there have been 22 winter storm events in St. John the Baptist Parish between 1950 and 2009, all of which have occurred since 1993, yielding a 55% reoccurrence rate.

Exposure - Location

Nearly the entire U.S. is considered at risk for severe winter storms. When these storms occur in the South, unprotected pipes are especially vulnerable. Disruption in water service and decreases in water pressure cause a cascading problem for emergency responders. Heavily populated areas are particularly impacted when severe winter storms disrupt communication and power due to downed lines from high winds and icing. Debris associated with heavy icing may impact utility systems and transportation routes.

Because severe winter storms are relatively rare in Louisiana, occurrences tend to be very disruptive to transportation and commerce. Trees, cars, roads, and other surfaces develop a coating or glaze of ice making even small accumulations of ice an extreme hazard to motorists and pedestrians. The most prevalent impacts of heavy accumulations of ice are slippery roads and walkways, collapsed roofs from fallen trees, telephone poles and lines, electrical wires, and communication towers. As a result of severe winter storms, telecommunications and power can be disrupted for days.

The entire Parish is at risk from winter storms. Winter storms affect St. John the Baptist Parish equally and uniformly.

Consequences – Extent and Previous Occurrences

Louisiana has had several severe bouts of winter weather. In February 1994, a severe winter storm spread freezing rain across the northern third of the State. Ice accumulations of two to three inches thick combined with gusty winds

snapped power lines, power poles, and trees. Over 100,000 persons were without electrical power for several days, and more than 256,000 acres of forest were damaged by ice. The State suffered an estimated $13.5 million in damages. Winter storms within a two-week period in December 2000 caused similar damage, resulting in over 250,000 persons to be without power, primarily in north Louisiana. With millions of dollars in damages and one death attributed to the storms, eight parishes within Louisiana received presidential disaster declarations.

According to the NCDC, there were 22 winter storms reported in St. John the Baptist Parish between 1950 and 2009, all of which have occurred since 1993. Major storms are summarized below.

- January 1, 2002 – A mixture of rain and sleet began to fall during the afternoon of January 1st over some areas of southeast Louisiana to the north and west of Lake Pontchartrain before changing to a mix of snow and sleet during the evening hours. In this area one-half to two inches of snow accumulated resulting in automobile accidents on icy roadways and the closing of some bridges.
- December 25, 2004 – A mixture of sleet and snow fell off and on during much of Christmas day resulting in a dusting to one-half inch of accumulation across much of east-central and southeast Louisiana. The heaviest sleet and snow accumulation occurred south of New Orleans where one half to one inch was observed. While amounts were not heavy, accumulation of winter precipitation in extreme southeast Louisiana is very unusual and resulted in considerable transportation problems. Many bridges, overpasses, and other elevated roadways become icy which resulted in some traffic accidents, and many of the elevated roadways were closed due to icing. New Orleans Armstrong International Airport was also closed for several hours due to icing conditions

The last recorded event listed in NCDC occurred on December 25, 2004. The two events listed above are from the original plan. No new data for winter storms was found for this update and the Steering Committee could not recall any new data or events. NCDC does not have previous dates or data for the 22 winter storms mentioned in the original plan and surrounding parish HMPs do not contain many winter storm events either. The previous occurrences above are the only available and recorded data found. Dates and details are provided above for those events recorded in NCDC.

Other sources, such as newspaper archives, were used to determine previous occurrences and extent for winter storms, and the Steering Committee could not provide any additional information about specific winter storm events. There were data limitations and this data was not available. No new information on winter storms was found for this update.

Of the 16 federally declared disasters addressed in Section 4.1, none were from winter storms.

Mitigation Approaches

St. John the Baptist Parish recognizes winter storms as a hazard and currently participates in ongoing efforts to mitigate its effects. The Parish currently implements building codes, maintains generators, utilizes response resources (*i.e.* salt and sand), and coordinates with local utility companies to maintain the tree line along the utility lines. No other mitigation measures were identified by the Steering Committee.

Based on these considerations, it was determined that no additional mitigation actions will be pursued for winter storms at this time. The risk of this hazard to the community will be reassessed during the five year HMP update process.

4.3.1.6 Hailstorms

Hazard Identification

A hailstorm is an outgrowth of a severe thunderstorm in which balls of irregularly shaped lumps of ice greater than 0.75 inches in diameter fall with rain. The size of hailstones is a direct function of the severity and size of the storm.

Risk Assessment

Hailstorms occur more frequently during the late spring and early summer, when the jet stream migrates northward across the Great Plains. This period has extreme temperature changes from the ground surface upward into the jet stream, which produces the strong updraft winds needed for hail formation.

Probability and Frequency

Data on the probability and frequency of occurrence of hailstorms is limited, with little recent research. What data that is available shows that only a localized area along the border of northern Colorado and southern Wyoming experiences hailstorms eight or more days each year. Outside of the coastal regions, most of the U.S. experiences hailstorms at least two or more days each year.

As seen on **Table 7**, the probability of hailstorms reoccurring each year in St. John the Baptist Parish is possible, with a range of 10% to 34%. As noted in the table, the Steering Committee proposed to change the probability from highly likely to possible. NCDC's data indicates that there have been seven separate hailstorms in St. John the Baptist Parish between 1950 and 2009. These events occurred from 1987 to 2003. These events produced hail ranging from 0.75 inches in diameter to 1.75 inches in diameter. See **Table 16** for a summary of the varying size of hail and number of events that St. John the Baptist Parish has experienced.

TABLE 16: HAIL SIZE SUMMARY	
Size of Hail	**Number of Events**
0.75 inches	2
1.00 inches	1
1.75 inches	3

Therefore, the most common size hailstorm event that St. John the Baptist Parish has experienced is over 1.75 inch, with 50% of hailstorm events 1.75 inches in size. The size of the hail is a direct function of the severity and size of the storm. The duration of each storm varies but is rarely longer than a couple of hours.

Exposure - Location

Peak periods for hailstorms, late spring and early summer, coincided with the Midwest's peak agricultural seasons for crops such as wheat, corn, barley, oats, rye, tobacco, and fruit trees. Long-stemmed vegetation is particularly vulnerable to damage by hailstorm impacts and winds. Severe hailstorms also cause considerable damage to buildings and automobiles, but rarely result in loss of life.

The land area affected by individual hailstorm events is not much smaller than that of a parent thunderstorm, an average of 15 miles in diameter around the center of a storm.

Hailstorms affect St. John the Baptist Parish equally and uniformly, and the entire Parish is at risk from hailstorms.

Consequences – Extent and Previous Occurrences

The development of hailstorms from thunderstorm events causes nearly $1 billion in property and crop damage each year throughout the U.S.

Significant hailstorm events reported to the NCDC for St. John the Baptist Parish are summarized below.

- February 11, 1993 – A cluster of thunderstorms moving east 35 to 40 mph produced one-inch hail which damaged the roof of a nursing home.
- October 27, 1995 – Golf ball sized hail produced from Hurricane Opal was reported in southeast Louisiana.
- April 14, 1996 – Dime to quarter sized hail was reported by Civil Defense.
- May 11, 1999 – The St. John Sheriff's Office reported that hail up to the size of quarters fell.
- March 18, 2000 – Hail the size of quarters fell near the intersection of I-10 and I-55.
- March 6, 2003 – Golf ball size hail covered the ground.

No federally declared disasters from hailstorms have occurred in the Parish.

Mitigation Approaches

St. John the Baptist Parish recognizes hailstorms as a hazard and currently participates in ongoing efforts to mitigate their effects. To the extent practicable, early warning notification and building codes are implemented. Mitigation efforts to reduce hailstorm damage generally are similar to those associated with thunderstorm and windstorm hazards: building codes and public awareness/education campaigns. Weather warning system improvements and the modernization and implementation of NWS monitoring systems such as NEXRAD will improve prediction of the severe weather potential associated with thunderstorms and hailstorm development.

Based on these considerations, it was determined that no additional mitigation actions will be pursued for hailstorms at this time. The risk of this hazard to the community will be reassessed during the five year HMP update process.

4.3.1.7 Drought

Drought originates from a deficiency of precipitation over an extended period of time, occurring any time of the year, resulting in a water shortage for some activity, group, or environmental sector. Its impact is far reaching, including potential for forest fires, destruction of agricultural crops, and reduction of surface and subsurface water supplies.

Hazard Identification

Drought should not be viewed as merely a physical phenomenon or natural event. Its impacts on society result from the interplay between a natural event (less precipitation than expected resulting from natural climatic variability) and the demand people place on water supply. Human beings often exacerbate the impact of drought. Recent droughts in both developing and developed countries and the resulting economic and environmental impacts and personal hardships have underscored the vulnerability of all societies to this “natural” hazard.
Drought intensity categories are based on six key indicators and numerous supplementary indicators. The accompanying drought severity classification table shows the ranges for each indicator for each dryness level. Because the ranges of the various indicators often do not coincide, the final drought category tends to be based on what the majority of the indicators show. The analysts producing the map also weight the indices according to how well they perform in various parts of the country and at different times of the year. Also, additional indicators are often needed in the West, where winter snowfall has a strong bearing on water supplies. **Table 17** displays the drought severity classifications.

TABLE 17: DROUGHT SEVERITY CLASSIFICATION [55]							
Category	**Description**	**Possible Impacts**	**Palmer Drought Index**	**CPC Soil Moisture Model (Percentiles)**	**USGS Weekly Streamflow (Percentiles)**	**Standardized Precipitation Index (SPI)**	**Satellite Vegetation Health Index**
D0	Abnormally Dry	Going into drought: short-term dryness slowing planting, growth of crops or pastures; fire risk above average. Coming out of drought: some lingering water deficits; pastures or crops not fully recovered.	-1.0 To -1.9	21-30	21-30	-0.5 To -0.7	36-45
D1	Moderate Drought	Some damage to crops, pastures; fire risk high; streams, reservoirs, or wells low; some water shortages developing or imminent; voluntary water use restrictions requested.	-2.0 To -2.9	11-20	11-20	-0.8 To -1.2	26-35
D2	Severe Drought	Crop or pasture losses likely; fire risk very high; water shortages common; water restrictions imposed.	-3.0 To -3.9	6-10	6-10	-1.3 To -1.5	16-25

USGS: United States Geological Survey
CPC: Climate Prediction Center

[55] Information from: U.S. National Drought Mitigation Center: http://www.unc.edu/~rowlett/units/scales/drought.html

Risk Assessment

Probability and Frequency

The probability of a drought occurring in a specific region depends on certain atmospheric and climatic conditions. Duration and frequency can be used as indicators of potential severity.

As seen on **Table 7**, the probability of a drought event reoccurring each year in St. John the Baptist Parish is highly likely, with a range of 75% to 100%. NCDC recorded four drought events in St. John the Baptist Parish since 1950. These events occurred from 1998 to 2000, yielding over 100% reoccurrence rate. However, the information compiled in NCDC is not a complete dataset and is often changing.

Exposure - Location

Droughts may occur anywhere in the U.S. Effects seen in different regions vary depending on normal meteorological conditions such as precipitation and temperature, as well as geological conditions such as soil type and subsurface water levels.

Drought events affect St. John the Baptist Parish equally and uniformly, and the entire Parish is at risk from drought events.

Consequences – Extent and Consequences

Drought produces a complex web of impacts that spans many sectors of the economy and reaches well beyond the area experiencing physical drought. This complexity exists because water is integral to our ability to produce goods and provide services. Impacts are commonly referred to as direct or indirect. Reduced crop, rangeland, and forest productivity; increased fire hazard; reduced water levels; increased livestock and wildlife mortality rates; and damage to wildlife and fish habitat are a few examples of direct impacts. The consequences of these impacts illustrate indirect impacts. For example, a reduction in crop, rangeland, and forest productivity may result in reduced income for farmers and agribusiness, increased prices for food and timber, unemployment, reduced tax revenues because of reduced expenditures, increased crime, foreclosures on bank loans to farmers and businesses, migration, and disaster relief programs.

From 1998 to 2001, St. John the Baptist Parish experienced severe drought conditions. Drought can cause extensive damage to commercial and residential structures' foundations, framing and walls, agricultural crops, roads, bridges, pipelines, utilities, and railroads.

Three of the four drought events were in 1998. Rainfall totals for the first six months of the year were extremely low. In the spring and summer of 1998, southeast Louisiana experienced severe drought conditions. This region of the

state was rated by the Palmer Drought Index as being in a severe drought. In April, May, and June, total precipitation was only 2.29 inches. Only the fall of 1924 (1.39 inches) and the summer of 1934 (2.09 inches) were drier. Area rivers and lakes fell to well below normal levels with water users urged to conserve. Agriculture and forestry were especially hard hit. Nearly half of the 100 million pine seedlings planted in 1997 were killed. Replanting costs and reforestation were estimated to be in the millions. Row crops were the hardest hit with corn, cotton, soybean, rice, grain and sorghum totaling over half of the total dollar loss. Nearly 75 percent of other crops including pastures, hay, and vegetables were also destroyed. It was estimated that $15 million in property damage occurred during this drought.

The NCDC recorded four drought events in St. John the Baptist Parish from 1998 to 2000. The events are summarized below.

- June 1, 1998 - Unusually hot and dry weather persisted across much of southeast Louisiana during June. Average temperature departures were 3 to 4 degrees above normal across the region. Two daily maximum temperature records were set at New Orleans International Airport, and four were set at New Orleans Audubon Park. Precipitation was below normal across southeast Louisiana, particularly in the area from Baton Rouge to parishes north of Lake Pontchartrain, where average monthly rainfall for the region was 1.84 inches compared to the normal of 4.57 inches. This region of southeast Louisiana was rated by the Palmer Drought Index as being in a severe drought by the beginning of July. The region south of Lake Pontchartrain and near the coast was rated as being in a mild drought.
- July 1, 1998 - Unusually hot and dry weather conditions continued across much of southeast Louisiana during July. Average temperature departures were around 3 degrees above normal across the region. Three daily maximum temperatures records were set at New Orleans International Airport, and five were set or tied at New Orleans Audubon Park. Although increased precipitation across the region during July resulted in some improvement of the dry conditions from the previous two months, drought conditions continued with the Palmer Drought Index placing most of southeast Louisiana in moderate to mild drought at the end of July. However, severe drought conditions persisted in the immediate Baton Rouge area and areas to the west. Below normal precipitation occurred south of Lake Pontchartrain and near the coast, where an average monthly rainfall of 5.73 inches was observed compared to the normal of 6.82 inches. Near normal precipitation fell north of Lake Pontchartrain where an average monthly rainfall of 6.38 inches was measured.
- August 1, 1998 – East-central and southeast Louisiana saw another hot month as average temperatures were 2 to 3 degrees above normal for August. Audubon Park in New Orleans tied or broke 12 previous record daily high temperatures, and New Orleans International Airport tied two previous record highs. In addition, August 1998 was the fourth warmest

month on record at New Orleans International Airport and ranked among the ten warmest Augusts in the century across the state. Southeast Louisiana received near normal precipitation amounts, while east-central Louisiana received a rainfall average of 2.35 inches below the normal amount of 5.74 inches. The Palmer Drought Index remained in the severe drought range for east-central Louisiana and in the moderate to mild drought range for southeast Louisiana. Estimated crop damages reported were $77.5 million.

- December 1, 2000 - Louisiana State University Agricultural Center reported that prolonged drought resulted in agricultural losses, including forestry losses, totaled approximately 80 million dollars in east-central and southeast Louisiana during the year 2000. Record, or near record, annual rainfall totals were recorded at several locations. At Baton Rouge, the driest year on record was established since weather records began in 1887. Only 38.10 inches of rain was recorded during the year, approximately 23 inches below normal. At New Orleans International Airport, 38.88 inches of rain was measured during the year, about 23 inches below normal. This was the second driest year since weather records began at the airport location in 1946. Estimated crop damages reported were $80.9 million.

Additional data found in the NCDC significant storm prediction center (SPC) storm reports are summarized below.

- In the summer of 2006, drought impacted agriculture and water supplies in the southeast. Low streams, reservoirs, and stock ponds and depleted soil moisture ravaged pastures and rangeland, and numerous wildfires prompted several drought disaster declarations in several states. Several short-lived dry episodes occurred in other regions throughout the year. By July 2006, 52 percent of the contiguous U.S. was experiencing moderate to extreme drought.
- In 2007, several southeastern states had record or near-record dryness. Increased evaporation from anomalously warm temperatures combined with the lack of precipitation to exacerbate the drought conditions during the summer months.
- Conditions in the southeast U.S. were especially dry in 2008. By the end of June, more than half the topsoil in several southeastern states was in dry to very dry condition. The percent area of the contiguous U.S. experiencing moderate to extreme drought reached a peak of 31 percent in June and declined to about 21 percent by the end of December.

The last recorded event listed in NCDC occurred on December 1, 2000 and is mentioned in the original plan. No drought event data prior to 1996 or beyond 2000 is given in the original plan. NCDC does not have previous dates or data for the 16 drought events mentioned in the original plan and surrounding parish HMPs do not contain many drought events either. The previous occurrences above are the only available and recorded data found. Dates and details are

provided above for those events recorded in NCDC SPC. The Steering Committee could not recall any new data or events.

No federally declared disasters for drought have occurred in St. John the Baptist Parish.

Mitigation Approaches

St. John the Baptist Parish recognizes drought as a hazard and currently participates in ongoing efforts to mitigate its effects. The Parish conducts public education activities. Other mitigation efforts considered by the Steering Committee included technical assistance and a drought contingency plan. These efforts were evaluated and were found unfeasible for the reasons below.

It was determined by the Steering Committee that technical assistance is already provided by the County Agent and Agricultural Extension Services. Therefore, no additional assistance is deemed necessary at this time.

Because drought predominantly affects agricultural resources, the Steering Committee felt that drought planning is best conducted by agricultural agents and not the Parish.

Based on these considerations, it was determined that no additional mitigation actions will be pursued for drought at this time. The risk of this hazard to the community will be reassessed during the five year HMP update process.

4.3.1.8 Extreme Heat

Extreme heat is characterized by a combination of very high temperatures and exceptionally humid conditions. When persisting over a period of time, it is called a heat wave. Many areas of the U.S. are susceptible to heat waves. Approximately 200 deaths per year are attributable to extreme heat.

Hazard Identification

Generally, heat stress is divided into four categories that include the combined effects of high temperature and humidity. The heat index is a measure of the severity of extreme heat.

The major human risks associated with extreme heat are described below.

- Heatstroke – A substantial rise in the core body temperature, often fatal
- Heat Exhaustion – Fluid and electrolyte imbalance causing weakness or fatigue with a slight body temperature elevation

- Heat Syncope – A circulatory instability response to heat that causes a sudden loss of consciousness
- Heat Cramps – Due to mild fluid and electrolyte imbalances

Risk Assessment

Probability and Frequency

The heat index is a quantitative measure of extreme heat that can be used to characterize the probability and frequency of heat hazards.

As seen on **Table 7**, the probability of extreme heat reoccurring each year in St. John the Baptist Parish is likely, with a range of 35% to 74%. NCDC's data did not indicate any extreme heat events, but because of the Parish's location in south Louisiana, we expect such events to likely reoccur.

Exposure - Location

The areas subject to heat index values in excess of 115°F for the 5-percent-annual-chance event are the Southeastern, Southwestern, and Midwestern States.

Extreme heat poses the greatest danger to outdoor laborers, the elderly, children, people in poor physical health, and people residing in homes without air conditioning.

The entire Parish is at risk from extreme heat events. Extreme heat events affect the Parish equally and uniformly.

Consequences – Extent and Previous Occurrences

The U.S. Department of Commerce reported that the 1995 heat wave caused 670 deaths. Many deaths were among low-income elderly in residential units not equipped with air conditioning. When heat waves are accompanied by drought, agricultural losses can be high. A drought/heat wave during the summer of 1993 affected the southeastern U.S. causing approximately $1 billion in damages and an undetermined number of deaths.

In 2000, heat was the number one killer out of all hazards reported to the NWS, with 158 fatalities. Seniors are most at risk from heat. In 2000, individuals between the ages of 50 and 89 accounted for 73% of the year's fatalities. The NWS reported 12 deaths in Louisiana in 2000. All 12 were reported as occurring in a permanent home without air conditioning or adequate ventilation.

A severe heat wave occurred across much of the central, southeast, and eastern parts of the Southern U.S. throughout much of August 2007. The highest temperature recorded in the Parish, which occurred in July 2007, was 103°F. Another temperature extreme recorded in the Parish was 101°F, which occurred

in August 1981. Nearby at Audubon Park in New Orleans, LA, temperatures reached 103 °F in August 2000. With an average relative humidity of 63% in the Parish, heat indices can easily reach the 130s when temperatures are above 100°F.

Extreme heat can cause damage to roads, bridges, pipelines, utilities, and railroads. High temperatures can be partially responsible for deflection of rails and related railroad accidents.

Mitigation Approaches

St. John the Baptist Parish recognizes extreme heat as a hazard and currently participates in ongoing efforts to mitigate its effects. Alerts advising high-risk people to reduce physical activity and stay in air-conditioned buildings help reduce fatalities and injuries. The Parish also participates in a fan program. The Steering Committee noted that the main problem is the humidity. No other mitigation measures were identified by the Steering Committee.

Based on these considerations, it was determined that no additional mitigation actions will be pursued for extreme heat at this time. The risk of this hazard to the community will be reassessed during the five year HMP update process.

4.3.1.9 Expansive Soils

Soils and soft rock that tend to swell or shrink due to changes in moisture content are commonly known as expansive soils. Changes in soil volume present a hazard primarily to structures built on top of expansive soils. The most extensive damage occurs to highways and streets.

"Clay" is defined as a natural, earthy, fine-grained material that develops plasticity when mixed with a limited amount of water. Swelling clay is clay that is capable of absorbing large quantities of water, thus increasing greatly in volume.

Variations in moisture content and volume changes are greatest in clays found in regions of moderate to high precipitation, where prolonged periods of drought are followed by long periods of rainfall. It is in these regions, which include many of the Southern, Central, and Western States, that swelling of clays resulting from climatic fluctuations cause the most severe engineering problems.

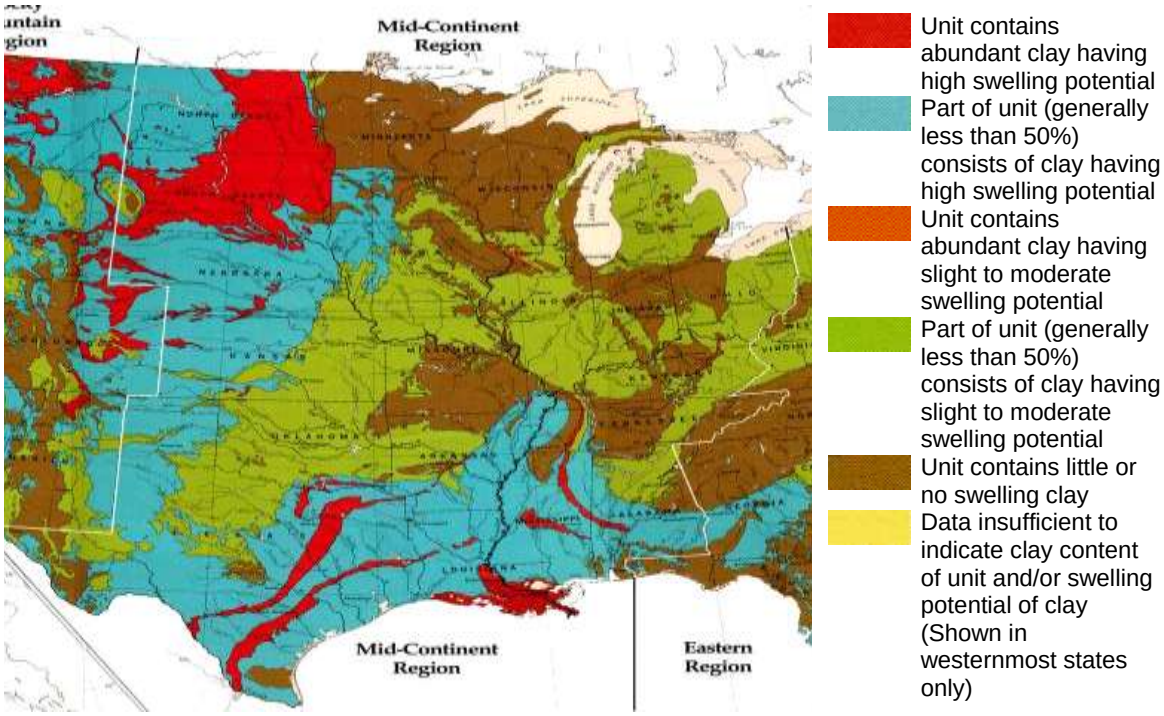
Risk Assessment

Probability and Frequency

The risk associated with expansive soils is related to swelling potential in a qualitative manner: high, moderate to slight, and little to no swelling potential.

As seen on **Table 7**, the probability of expansive soils reoccurring each year in St. John the Baptist Parish is possible, with a range of 10% to 34%. NCDC does not track expansive soils data, but because of the soil types found in St. John the Baptist Parish, we expect expansive soils to likely reoccur. Several of the soil types found in St. John the Baptist Parish contain large amounts of clay.

Based on the map below, "Swelling Clays Map of the Conterminous United States," it is noted that most of the Parish is designated on the legend as "part of the unit (generally less than 50%) consists of clay having high swelling potential." Therefore, one would expect expansive soils to be an ongoing problem within a large portion of the Parish.[56]



Exposure - Location

The availability of data on expansive soils varies greatly. In or near metropolitan centers and at dam sites, abundant information on the amount of clay generally is available. However, for large areas of the U.S., little information is reported other than field observations of the physical characteristics of clay of a particular stratigraphic unit. Therefore, fixed criteria for determining the swelling potential have not been devised. However, one method that was devised in 1989 was based mostly on numerous published descriptions of the physical and mineralogical properties of clays. Using this classification system, one sees that

[56] Source: The U.S. Geological Survey publication "Swelling Clays Map Of The Conterminous United States" by W.W. Olive, A.F. Chleborad, C.W. Frahme, Julius Schlocker, R.R. Schneider, and R.L Shuster; 1989

the southeastern portion of Louisiana, primarily along the Mississippi River from about East Baton Rouge Parish to the mouth of the Mississippi River, is abundant with high swelling potential clays.

Clays in the Quaternary alluvium of the lower Mississippi River valley in Louisiana are reported to be of the "montmorillonite type." Clayey soils of the alluvial valley have high "shrink-swell capacity," and foundation problems in the area are associated with changing water levels and the instability of clayey soils. Foundation failures in alluvial deposits of the Mississippi River valley are common.

In the Mid-continent region, swelling clays that have caused the greatest amount of damage are contained in stratigraphic sequences ranging in age from Cretaceous to Quaternary, and are exposed in an area extending along the Gulf Coast from east-central Texas to Alabama. In this area, clay deposits with high swelling potential are thick, numerous, and extensive, and climatic conditions are conducive to large volume changes.

In St. John the Baptist Parish, expansive soils have caused extensive damage to building foundations, walls, and ceilings in the past. Due to continued heavy rains and then periods of lack of rain, one would expect to see ongoing problems from expansive soils in the future.

In 1989 the U. S. Department of Agriculture Soil Conservation Service compiled a General Soil Map of St. John the Baptist Parish's soil types. St. John the Baptist Parish has three distinct soil types; soils on terrace uplands, soils on stream or marine terraces, and soils on flood plains.

The entire Parish is at risk from expansive soils. Expansive soils affect St. John the Baptist Parish equally and uniformly.

Consequences – Extent and Previous Occurrences

Most engineering problems caused by volume changes in swelling clays result from human activities that modify the local environment. They commonly involve swelling clays beneath areas covered by buildings and slabs or layers of concrete and asphalt, such as those used in construction of highways, canal linings, walkways, and airport runways.

The most obvious manifestations of damage to buildings are sticking doors, uneven floors, and cracked foundations, floors, walls, ceilings, and windows.

In St. John the Baptist Parish, expansive soils have caused damage to building foundations, walls, and ceilings in the past. Due to continued heavy rains and then lack of rain for a long period of time, one would expect to see ongoing problems from expansive soils in the future.

Clay, as a basic soil, consists of mineral soil particles that are less than 0.002

millimeter in diameter. The estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for determination of soil hydrologic qualities and for soil classification. The amount and kind of clay can affect the fertility and physical condition of the soil and the ability of the soil to adsorb and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.
Linear extensibility is used to determine the shrink-swell potential of soils. It refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod and oven dryness. The amount and type of clay minerals in the soil influence volume change. The shrink swell potential is also affected by the size of each clay particle. Shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots.

Expansive soils are an ongoing problem that have occurred for years. Its effects are seen on Highway 51 with visible waviness. Also, the only water line serving the Parish recently broke and may have been caused by expansive soils.

Other sources, such as newspaper archives were used to determine previous occurrences and extent for expansive soils, and the Steering Committee could not provide any additional information about specific expansive soil sites. An attempt was made to retrieve past events information including dates, damage, and location, but due to data limitations this data is not available. No new information on expansive soils was found for this update. This hazard will be pursued further in the next HMP update.

Mitigation Approaches

St. John the Baptist Parish recognizes expansive soils as a hazard and currently participates in ongoing efforts to mitigate its effects. The Parish implements building codes which provide some measure of mitigation for this hazard. Other mitigation efforts considered by the Steering Committee were based on applied engineering practices which consisted of the removal of the soil, application of heavy loads, preventing access to water, presetting, and stabilization. These efforts were evaluated and were found unfeasible for the reasons listed below.

The removal of the expansive soil is not an option in many areas of the Parish due to its extensive nature, significant depth, and widespread location. Such activities would not be economical.

The other engineering principles although may be feasible on a small scale, *i.e.* a new construction site, they are not feasible to apply parish-wide, except through the use of building codes, which are currently being implemented.

Based on these considerations, it was determined that no additional mitigation actions will be pursued for expansive soils at this time. The risk of this hazard to the community will be reassessed during the five year HMP update process.

No other mitigation measures were identified by the Steering Committee.

4.3.1.10 Dam and Levee Failure

Hazard Identification

The failure of a dam or levee can create flood hazards given the purpose of these types of water control structures. Dams are water storage, control, or diversion barriers that impound water upstream in reservoirs. Dam failure is a collapse or breach in the structure. While most dams have storage volumes small enough that failures have little or no repercussions, dams with large storage volumes can cause significant flooding downstream. In Louisiana there are 365 dams included in the U.S. Army Corp of Engineers (USACE) National Inventory of Dams; however, none are located in St. John the Baptist Parish.

Levees are flood control barriers constructed of earth, concrete, or other materials. Generally, levees fail due to overtopping or collapse due to seepage, subsidence, erosion, or any combination thereof. A catastrophic failure resulting from collapse can occur very quickly with relatively little warning. Levee failure usually occurs when the levee is saturated from high flows, discharge becomes great enough to overtop the levees, or there is an inherent defect in the levee which causes it to weaken and fail. Floodwater will flow in a relatively shallow path and collect in low-lying areas. Levee failure is especially destructive to nearby development during flood and hurricane events. The southern half of Louisiana is protected by levees on the Mississippi River and Tributaries Project under the authority of the New Orleans District of the USACE. There is one levee, the Mississippi River Levee, located in St. John the Baptist Parish. The Mississippi River divides St. John the Baptist Parish and flows in a southeasterly direction.

Risk Assessment

Probability and Frequency

Dam and levee failure were previously addressed in the original HMP as a secondary hazard to floods.

Dam failure events are infrequent and usually coincide with the events that may cause them, including earthquakes, landslides, and overtopping due to excessive rainfall and snowmelt. There are no dams located in St. John the Baptist Parish.

Levee failure events result from accidental or unintentional collapse, breach, or other failure of an impoundment structure that results in downstream or area flooding. There is one levee, the Mississippi River Levee, located in St. John the Baptist Parish.

There have been no reports of flooding due to dam or levee failure in St. John the Baptist Parish, although the potential for significant personal injury and property damage does exist.

NCDC's data does not indicate that there have been any dam or levee failures in the Parish; however, levee failure is still a potential threat. There are no dams located in St. John the Baptist Parish. The probability of levee failure is estimated as possible, with a range of 10% to 34%. There are significant data limitations in determining dam or levee failure.

Exposure - Location

The environment would be exposed to a number of risks in the event of dam failure. The inundation could introduce many foreign elements and debris into local waterways. This could result in destruction of downstream habitat and could have detrimental effects on many species of animals, especially endangered species.

Although levee failures can occur at any time, these events are highly correlated with flooding, tropical storms, and hurricanes. Levees provide protection from hurricanes, tropical storms, and flooding. Areas behind levees suffer the greatest damage during an event. Usually, moderate storm surges are withheld by a levee and flows of water into the protected areas are reduced.

The geographical area that would be affected if a levee failure were to occur in the Parish would be dependent on many variables including the height of the Mississippi River at the time of the levee failure, the flow rate of the river, the type of levee failure, and the location of the levee failure. The high volume and velocity of the rushing water alone could cause tremendous damage in the Parish as well as spread to surrounding parishes. According to USGS topography maps, the areas adjacent to the levee are at higher elevations than those areas extended away from the levee. These areas are also in the 500-year floodplain. Although dependent on the above variables as well as others, the area most inundated would be those of lower elevations outward and away from the levees, including those in the 100-year floodplain. See **Figure 10** for location of the levee and elevation contours on a topographical map.

Consequences – Extent and Previous Occurrences

The most significant issue associated with dam failure involves the properties and populations in the inundation zones. Flooding as a result of a failure would significantly impact these areas. Additionally, there is often little or no warning time for dam failure. These events are frequently associated with other natural

hazard events such as earthquakes, landslides and severe weather, which limits their predictability and compounds the hazard.

Dam failure can cause severe downstream flooding depending on the magnitude of the failure. Other potential secondary hazards of dam failure include landslides around the reservoir perimeter, bank erosion on the rivers, and destruction of downstream habitat.

In the past 30 years, there have been over 135 fatalities and more than $ 2.6 billion in property damage in the U.S., resulting from dam failures. However, none were in Louisiana. From 1981 to 2001, a total of 260 dams were registered and entered into Louisiana's Dam Inventory Data File. A high hazard dam is defined as a dam whose failure would cause a loss of life and significant property damage. There are 29 high hazard dams in Louisiana. Currently, there are no reports of significant dam failures in Louisiana by the National Performance of Dams Programs.

Many levees were originally built to protect farmland from flooding. These same levees now protect homes. More than 85% of levees are thought to be locally owned and the rest are overseen by the USACE or other federal or state agencies. FEMA has estimated that levees are located in roughly 22% of the nation's 3,147 counties. Approximately 43% of the U.S. population lives in counties with levees. Levees are located across the nation, but certain states – Arkansas, Louisiana, Missouri, Mississippi, and California – rely more extensively on levees than others.

In 1871, a breach in the Mississippi River levees approximately 15 miles upriver of New Orleans, Louisiana resulted in substantial flooding. This breach was called the Bonnet Carre' Crevasse. The East Bank river levee collapsed and floodwaters spread through most of the East Bank of St. Charles Parish all the way to Lake Pontchartrain. The river water increased the water level in the lake and its outlet into the Gulf of Mexico. Lake Pontchartrain overflowed its banks, with the water spreading into surrounding communities.

On April 15, 1927, approximately 15 inches of rain fell in 18 hours. This rain caused flooding and eventually the Mississippi River broke out of its levee system in 145 places and flooded 27,000 square miles. This water flooded an area 50 miles wide and more than 100 miles long. The area was inundated up to a depth of 30 feet. The flood caused over $400 million in damages and killed 246 people in seven states including Louisiana. By May 1927, the Mississippi River below Memphis, Tennessee, reached a width of 60 miles. As the flood approached New Orleans, Louisiana, about 30 tons of dynamite were set off on the levee at Caernarvon, Louisiana and sent 250,000 cubic feet per second (cfs) of water pouring through. This was intended to prevent New Orleans from experiencing serious damage, but flooded much of St. Bernard Parish and the east bank of Plaquemines Parish.

Following the Great Mississippi Flood of 1927, the Army Corps of Engineers was again charged with taming the Mississippi River. Under the Flood Control Act of 1928, the world's longest system of levees was built. Floodways that diverted excessive flow from the Mississippi River were constructed. The Bonnet Carre' Spillway, located approximately 30 miles above New Orleans, Louisiana, was built in response to the Great Mississippi Flood of 1927. It is 7,200-foot long spillway structure and is governed by 350 intake bays and connects to a 5.7-mile long floodway that empties into Lake Pontchartrain. The flood control system is designed to divert up to 250,000 cfs from the Mississippi River, thereby insuring a peak discharge flow under project flood conditions at New Orleans not to exceed 1,250,000 cfs. It is part of the USACE's multi-state plan, called the Mississippi River and Tributaries Project (MR&T), providing flood protection for the alluvial valley between Cape Girardeau, Missouri and the mouth of the river near Venice, Louisiana. The MR&T Project provides for levees to contain flood flows and floodways such as the Bonnet Carre' to redirect excess flows away from the Mississippi River as well as other aspects.

Two major levee failures have occurred in the last 50 years that have impacted New Orleans. Hurricane Betsy's storm surge overtopped levees on Lake Pontchartrain on September 10, 1965 causing severe damage throughout the city. In August 2005, Hurricane Katrina caused a series of several failures in different areas of New Orleans producing the second and worst levee failure in the city. Within a couple of days, approximately 80% percent of New Orleans flooded due to the more than 50 breaches that occurred in the canal levees. The breaches were caused by the storm surge. The devastation brought by this event has brought levee safety to the forefront of public awareness.

Today, the Mississippi River Levee is approximately 22 feet high in most places in St. John the Baptist Parish. The USACE ensures that maintenance requirements are met through annual inspections of the levees. The Pontchartrain Levee District (PLD) is responsible for the care, custody, and control of the levee on the East Bank in St. John the Baptist Parish. No known weak areas of the levee system have been identified in the Parish or by the PLD.

If a similar levee failure, as the one that occurred in 1927, were to occur today, there could be a huge impact on the areas surrounding the levees. From a nationwide standpoint, major industries could be greatly impacted as most of the industrial plants are located along the levee system. Also, as water rushed in from the levee failure, erosion in the area of the failure could most likely increase possibly rerouting the river. Although dependent on many variables, a levee failure on the East Bank could cause tremendous damage because of the increased growth in the area and the lack of protection for LaPlace and areas around the I-10. Since there are no levees protecting Lake Pontchartrain, diverted floodwaters at a high flow rate could cause water levels in Lake Pontchartrain to increase as well. No modeling data was obtainable, so inundation levels in various areas of the levee failure were not available.

The West Shore Lake Pontchartrain Hurricane Protection Project Feasibility Study includes portions of St. John the Baptist Parish. Its purpose is to evaluate alternatives to provide hurricane protection along Lake Pontchartrain and reduce the storm damage risks associated with hurricane-induced flooding for more than 18,000 homes and businesses located within the study area.

Mitigation Approaches

St. John the Baptist Parish recognizes dam and levee failure as a hazard and currently participates in ongoing efforts to mitigate its effects. Mitigation opportunities for dam and levee failures are similar to mitigation measures for other flood hazards. The Parish should continue to cooperate with federal and local authorities responsible for periodic levee inspections and encourage both Parish employees and citizens alike to report immediately to local officials any conditions on the river levee they observe and believe to be hazardous or threatening to the integrity of the levee. A warning system could also be deployed to broadcast an alarm in the event of such levee failure. Parish officials can also provide information urging homeowners to purchase flood insurance, change zoning ordinances or building codes to limit development in floodplains, develop or refine flood warning systems, emergency evacuation plans, and flood preparedness, and provide technical and/or financial assistance to property owners to protect against flooding.

It was determined that no additional mitigation actions will be pursued for dam and levee failure at this time. Dam and levee failure is hereby discounted from further planning, and will not be carried forward because it did not meet the criteria as listed in **Table 8**. Dam and levee failure is not discussed in further detail in this plan and will be reassessed during the plan evaluation process for the five year HMP update.

4.3.2 Vulnerability of Structures and Critical Facilities within the Parish

In order to inventory assets in the Parish, the Steering Committee used the method described in FEMA's How to Guide entitled, "Understanding Your Risks; Identifying Hazards and Estimating Losses." This method calls for using HAZUS-MH software to determine the total number and value of buildings in both the entire Parish and in the hazard area. This information was compiled and is found in the Parish-Wide Asset Inventory Worksheet(s) located in **Appendix K**.

Table 18 provides an estimate of the percent of the Parish that could be impacted by a hazard at any one time.

TABLE 18: ESTIMATED PERCENT OF PARISH THAT COULD BE IMPACTED BY HAZARDS AT ANY ONE TIME	
Floods	90%
Hurricanes	90%
Severe Storms (Thunderstorms/Lightning/High Winds)	50%
Tornadoes	90%
Winter Storms	40%
Hailstorms	25%
Drought	20%
Extreme Heat	5%
Expansive Soils	20%

Table 19 below is a summary of **Appendix K**. The structure count and dollar worth of structures, parish-wide, were taken from HAZUS-MH. Then, based off the percentage of potential damage from **Table 18**, a dollar amount of damage parish–wide was determined. See **Table 19** for the potential dollar losses to the Parish from each hazard. The potential losses include residential properties, commercial, industrial, agricultural, religious/non-profit, government, and educational facilities. It is unlikely that a hazard would occur that would adversely affect all of them at the same time, but the potential for this level of damage exists.

TABLE 19: POTENTIAL DOLLAR LOSSES TO THE COMMUNITY							
Hazards	**Residential**	**Commercial**	**Industrial**	**Agricultural**	**Religious/ Non-Profit**	**Government**	**Education**
Floods	$279,040,000	$36,138,000	$11,792,000	$335,000	$3,529,000	$371,000	$8,649,000
Hurricanes	$2,081,687,400	$283,787,100	$63,272,700	$3,289,500	$35,769,600	$16,330,500	$30,183,300
Severe Storms	$1,156,493,000	$157,659,500	$35,151,500	$1,827,500	$19,872,000	$9,072,500	$16,768,500
Tornadoes	$2,081,687,400	$283,787,100	$63,272,700	$3,289,500	$35,769,600	$16,330,500	$30,183,300
Winter Storms	$925,194,400	$126,127,600	$28,121,200	$1,462,000	$15,897,600	$7,258,000	$13,414,800
Hailstorms	$578,246,500	$78,829,750	$17,575,750	$913,750	$9,936,000	$4,536,250	$8,384,250
Drought	$462,597,200	$63,063,800	$14,060,600	$731,000	$7,948,800	$3,629,000	$6,707,400
Extreme Heat	$115,649,300	$15,765,950	$3,515,150	$182,750	$1,987,200	$907,250	$1,676,850
Expansive Soils	$462,597,200	$63,063,800	$14,060,600	$731,000	$7,948,800	$3,629,000	$6,707,400

4.3.3 Critical Facilities

After completing the parish-wide assessment of vulnerable assets, focus was brought to an analysis on those facilities that were determined to be “critical.” A critical facility is defined as a facility in either the public or private sector that provides essential products and services to the general public, is otherwise

necessary to preserve the welfare and quality of life in the Parish, or fulfills important public safety, emergency response, and/or disaster recovery functions. The critical facilities in the Parish include law enforcement facilities, fire stations, health care facilities, schools, relocation centers, municipal buildings, airports, and public utilities.

See **Appendix L** for a detailed complete list of critical facilities. The critical facilities listed in **Appendix L** are all of the facilities that could be identified by the community after intensive surveying of community representatives. With the exception of public utilities, pumping stations, and communication systems, the critical facilities are indicated on **Figures 4-9**. Public utilities, pumping stations, and communication systems were not mapped because of homeland security issues.

4.3.4 Vulnerable Priority Critical Facilities

The Steering Committee identified "priority" critical facilities as those critical facilities that are vulnerable to a hazard, if they could benefit from some type of mitigation measure, and if the loss of the facility would significantly impact the community's ability to recover from a hazard event. The focus of priority critical facilities was primarily on vulnerability to a hazard.

To map the Parish's critical facilities and to determine which are the most likely to be affected by hazards, the Parish contractors used GIS software. The primary hazards of concern to the Parish are floods, hurricanes, severe storms (thunderstorms, lightning, and high winds, and tornadoes. See **Figures 4-9** for maps of floodplains and critical facilities. See **Appendix L** for a list of the critical facilities.

4.3.5 Population

Much of the Parish growth is situated near LaPlace which is within the 100-year floodplain. In 2000, St. John the Baptist Parish had 14,286 households, an increase of nearly 1,600 households, or about 12.4% more than in 1990.[57] See **Table 1** for St. John the Baptist Parish's population.

As seen on **Table 1**, St. John the Baptist Parish's population has increased since 1980. There has been a total gain of 15,162 people since the 1980 census, including all of the towns. Based on the population data, one would expect to see infrastructure growth in St. John the Baptist Parish. Between 1990 and 2000, LaPlace and Reserve have seen their population increase, while populations in Garyville and Edgard have decreased. If there are any new structures constructed, vulnerability would be reduced because these new structures would follow the established building codes and floodplain ordinances.

[57] Source: St. John the Baptist Parish Comprehensive Planning Project Phase III

In summary, the majority of residential development on the Eastbank has occurred in LaPlace and Reserve. Residential development is concentrated in two clusters stemming from the river. Post-Katrina, there was a rush by many to find available housing. With relatively little damage from Katrina to the housing stock, many of the vacant units were quickly occupied. Commercial development is concentrated along the Airline Highway corridor, with the majority of this use located in LaPlace. Significant commercial development exists along the I-10 exit road to Airline Highway and patchy commercial uses along River Road. Limited commercial development exists outside of the LaPlace area. Development on the Westbank is confined between the Mississippi River and LA 3127. The Westbank is primarily agricultural land or is undeveloped. There are some residential and commercial developments found mostly along the river and along roads stemming from the river.[58] See **Appendix K**, for the Parish-Wide Asset Inventory Worksheet, which determined the total number and value of buildings.

4.4 Assessing Vulnerability: Estimating Potential Losses

Requirement 201.6(c)(2)(ii)(B):
[The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph I(2)(i)(A) of this section and a description of the methodology used to prepare the estimate…

In order to estimate the potential dollar losses to vulnerable structures, the Steering Committee used the process outlined in the FEMA How-To Guide entitled, "Understanding Your Risks; Identifying Hazards and Estimating Losses." This process calls for completing two worksheets: the Vulnerable Asset Inventory Worksheet and the Loss Estimate Worksheet.

In the asset inventory, vulnerable critical facilities were identified. Loss estimate worksheets were completed for each hazard and included the vulnerable critical facilities that might be affected by that hazard. The purpose of providing the vulnerable critical facilities was to generate a list of the most needed projects for retrofitting critical facilities, which is a state priority. This exercise was an attempt to perform a preliminary cost-benefit analysis to determine mitigation projects that would be cost beneficial. It was not the intent of the Steering Committee to make gross assumptions to estimate total losses. Gross losses are based on the parish-wide asset inventory.

Vulnerable Asset Inventory Worksheet – To complete this worksheet, information is collected on each facility that was identified as vulnerable. This information will be used to calculate the estimated losses on the next worksheet. See **Appendix M** for Assets Inventory. A description of each data element on the spreadsheet and its source follows.

Size of Building – Squared footage is gained from a site visit or was provided by a representative of the building

[58] Source: St. John the Baptist Parish Comprehensive Planning Project Phase III

Replacement Value – Expressed in cost per square foot and reflects the present day cost of labor and materials to construct a similar building

Contents Value – Based on the type of facility and then multiplying it by the replacement value

Function Use or Value – Represents the value of a building's use or function that would be lost if it were damaged or closed; if available, the Annual Operating Budget of the priority critical facility is used for this element

Displacement Cost – Average time in days that the building's occupants typically must operate from a temporary location while repairs are made to the original building due to a hazard event

Loss Estimate Worksheet – After obtaining the above information for each vulnerable priority facility, an estimated loss for each hazard event is calculated to arrive at a total loss (in dollars) to the community for each type of hazard. In order to arrive at a total loss, the following four components are examined:

Structure Loss – Determined by taking the structure's replacement value and multiplying it by the percent damage

Contents Loss – Determined by taking the contents loss and multiplying it by the percent damage

Structure Use Loss – Daily average operating cost multiplied by the functional downtime, which is the average time in days during which a business or service is unable to provide its services due to a hazard event

Function Loss – Daily average operating cost multiplied by the displacement time, which is the average time in days that the building's occupants typically must operate from a temporary location while repairs are made to the original building due to a hazard event

The four categories of loss are then summed to arrive at the total loss for the hazard examined.

The total potential loss for all structures in St. John the Baptist Parish is approximately $9.838 billion, as seen in **Appendix K**. The potential loss includes residential properties, commercial, industrial, agricultural, religious/non-profit, government, and educational facilities. It is unlikely that a hazard would occur that would adversely affect all of them at the same time, but the potential for damage exists.

The loss estimation was performed for each hazard, taking into account the possibility that a vulnerable critical facility may be affected by a hazard and the estimated percentage of damage due to that hazard. As indicated on the Loss

Estimation worksheets found in **Appendix N**, the following are the total estimated losses for the vulnerable priority critical facilities and for each hazard:

- Floods - $28,114,520
- Hurricanes - $28,114,520
- Severe Storms - $3,539,807
- Tornadoes - $4,889,535
- Winter Storms - $1,915,461
- Hailstorms - $1,187,274
- Drought - $1,187,274
- Extreme Heat - $657,023
- Expansive Soils - $1,122,493

Each hazard has a unique set of characteristics that can produce different effects and impact the community differently depending on the magnitude, duration, and intensity. Furthermore, the same hazard events will affect different parts of the parish in different ways, based on geography, development, population distribution, and age of buildings.

Existing disaster data are limited for use in predicting potential losses. Although the FEMA How-to-Guide provides guidance on estimating potential losses for floods, no guidance is given for the other hazards. To complete the loss estimate worksheets, the vulnerable critical facilities that the Steering Committee identified were used to complete a potential dollar loss per hazard event based on educated assumptions.

4.5 Assessing Vulnerability: Analyzing Development Trends

Requirement 201.6(c)(2) (ii)(c):
[The plan should describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

St. John the Baptist Parish topography is relatively flat. In the southern portion of the Parish, the land is 10 – 15 feet above sea level along the riverbanks, sloping gradually down to five feet away from the river. This sloping resulted from natural levees formed by the Mississippi River.

St. John the Baptist Parish is located between Baton Rouge and New Orleans along the Mississippi River and is largely rural. The land uses within the Parish consist of industrial and commercial areas, located along the Mississippi River corridor; residential areas, along the Mississippi River and in the northeast portion of the Parish; agricultural land, woodlands, and wetlands comprise the rest of the Parish's acreage.

Excluding the Mississippi River, the total acreage of land is about 212,910 acres. However, much of that land is swamp or marsh. The area south of I-10 and north

of LA 3127 is where the major developable land lies in the Parish. The land outside of this area is almost all marsh and swamp, and will likely never be suitable for development because of the tremendous cost required to make it and keep it developable. This marsh and swampland also provides a layer of protection from storm hurricane storm surges.

Undeveloped land and agricultural uses represent the vast majority of the overall land use in the Parish. Clearly, this indicates that the Parish is still relatively rural in nature. In total, the land generally considered available for development represents only 23% of the total land area of the Parish.[59] Residential, commercial, and other land uses make up only a small part of the remaining acreage.

The land use is devoted to manufacturing and wholesale trade.[60] This is likely due to the large industrial sites along the river. There is little commercial land use in St. John the Baptist Parish, with more land devoted to both recreational and public use than commercial development. **Figure 3** identifies the zoning classifications in the Parish. These include batture zones (B-1 and B-2), commercial zones (C-1, C-2, and C-3), industrial zones (I-1, I-2, and I-3), mobile home districts (MHD), mobile home parks (MHP), planned unit developments (PUD), and rural zones (R-1, R-2, R-3, and R-4).

The Parish's patterns of land use distribution are clearly defined or influenced by the geography of the Parish, most notably the Mississippi River and the marshes and swamps to the north and south. All of the major urban development is located on the Eastbank between I-10 and the Mississippi River; while on the Westbank development is concentrated between the river and LA 3127. Many of the major transportation corridors generally follow along and close to the river, since this is traditionally the "high ground." One of the long-term keys to economic development in St. John the Baptist Parish is access to the Westbank. A new Mississippi River bridge crossing has opened on the western edge of the Parish connecting LA 3127 to the Eastbank and I-10. This could have long-term growth impacts linking land on the Westbank of the Parish to the growing suburban areas east of Baton Rouge.

Due to St. John the Baptist Parish's location in south Louisiana, it is susceptible to floods and hurricanes. According to **Table 3** in Section 4.1, St. John the Baptist Parish has experienced at least 14 major hurricanes and tropical storms and four flooding events. Each hurricane, tropical storm and flooding event caused significant damage to electrical power lines, water pipes, roads, and bridges.

Approximately 80% of the total land area of St. John the Baptist Parish is located within FEMA's 100-year floodplain. The majority of the floodplain is found between Interstate I-10 and the Parish's northern boundary and is south of LA

[59] Source: St. John the Baptist Parish Comprehensive Planning Project Phase III
[60] Source: St. John the Baptist Parish Comprehensive Planning Project Phase III

3127 to the Parish boundary. The majority of Parish growth is expected to take place in LaPlace. Fifty percent of LaPlace is located within the 100-year floodplain. As a result, the potential for experiencing flooding is high. Of the 72 structures in St. John the Baptist Parish, 65% are located in LaPlace. The floodplain is illustrated on **Figure 2**, Repetitive Loss Structures, and a list of the repetitive losses is found in **Appendix H**.

In summary, the Parish is growing at a slow pace. See **Appendix L**, for a list of critical facilities in the Parish. See **Appendix K**, for the Parish-Wide Asset Inventory Worksheets, which determined the total number and value of buildings. In 2007, St. John the Baptist Parish adopted a 20-Year Land Use Plan as the blue-print for the subsequent development of a parish-wide Comprehensive Plan. The plan establishes a 20-year path for how future development should be encouraged and evaluated. Based on the population decrease, one would not expect to see infrastructure growth in St. John the Baptist Parish. However, for any new structures constructed, the vulnerability would be reduced because these new structures would follow the established building codes and floodplain ordinances.

4.6 Multi – Jurisdictional Risk Assessment

Requirement 201.6(c)(2) (iii):
For multi – jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

There are no incorporated municipalities within St. John the Baptist Parish.

St. John the Baptist Parish
Hazard Mitigation Plan Update
Overview of Section 5.0 Revisions

Section 5.0 of the St. John the Baptist Parish Hazard Mitigation Plan (HMP) Update is the Mitigation Strategy Section. This section discusses local hazard mitigation goals, mitigation measures, and multi – jurisdictional mitigation strategy. The STAPLEE Method is also discussed is this section. A summary of the revisions that were made to this section are addressed below.

This section the Steering Committee has chosen to develop goals and mitigation strategies to address the following hazards: Floods; Hurricanes; Tornadoes; and Severe Storms. The criteria used by the Steering Committee to select these hazards for priority are shown in Table 8 in section 4.3.1. Based on these criteria, five hazards were eliminated from consideration in the mitigation goals and strategies. These hazards are Drought, Expansive Soils, Extreme Heat, Hailstorms, and Winter Storms.

5.0 MITIGATION STRATEGY

The State awarded St. John the Baptist Parish a grant to update the HMP in November 2009, to create a plan to assess priority projects and approaches to disaster damage reduction and preparation, and incorporate lessons learned from disasters.

The Hazard Mitigation Steering Committee (see **Appendix E**) met on numerous occasions to discuss possible mitigative measures that could reduce the effects from disasters. Because floods, hurricanes, severe storms (thunderstorms, lightning, and high winds), and tornadoes are hazards of concern in the Parish, they were the focus of the discussions. From these discussions, an Action Plan (Section 7.0) was prepared which identifies specific actions to achieve identified goals, an appropriate lead person for each action, a schedule for accomplishment, an estimate of cost, and suggested funding sources.

5.1 Local Hazard Mitigation Goals

Requirement 201.6(c)(3) (i):
[The hazard mitigation strategy shall include: a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

The Hazard Mitigation Steering Committee met on May 11, 2010 to analyze the results of the risk assessment. The risk assessment consisted of identifying the hazards that affect the Parish and the critical facilities that are vulnerable to the hazards. Based on the risk assessment, the Steering Committee voted to keep the goals established in the original HMP because the goals were consistent with the most common hazards identified in the Parish. The goals are related to the risk assessment in that they address ways to reduce the impact of the identified hazards on the identified critical facilities. The four goals listed were determined to be those that would have the greatest benefit in hazard reduction to the Parish considering the predominate hazards profiled in Sections 4.3.1.1 – 4.3.1.9. The major hazards are addressed in the Action Plan. All of these action items and goals established will help St. John the Baptist Parish.

Goals identified by the Steering Committee include:

- Identify and pursue preventative measures that will reduce future damages from hazards
- Enhance public awareness and understanding of disaster preparedness
- Reduce repetitive flood losses in the Parish
- Facilitate sound development in the Parish so as to reduce or eliminate the potential impact of hazards

Many of the action items hinge on funding becoming available; therefore, these activities will be accomplished with outside funding. The details of the Action Plan serve to deal with changing priorities, administration transitions, and unpredictable funding and still allow for adoption of the plan by the Parish.

5.2 Identification and Analysis of Mitigation Measures

Requirement 201.6(c)(3) (ii):
[The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

During the Maps and Goals meeting, the Steering Committee began to identify potential hazard mitigation projects within the Parish that would benefit the Parish and help protect the lives and property of its citizens. This process included input from representatives from governmental organizations, businesses, and citizens.

At the Mitigation Strategy meeting, the Steering Committee discussed potential projects. These projects included traditional HMGP projects such as retrofits for high wind loads, hardening and retrofitting critical facilities or infrastructure, and drainage improvements. These are addressed in detail below and summarized on the Mitigation Measures Table in **Appendix I**. As seen in **Appendix I**, many of the mitigation measure projects described below are applicable to more than one of the hazards the Parish faces.

5.2.1 Retrofitting of Structures

The retrofitting of structures prone to periodic flooding is an effective mitigation technique to reduce the flood loss of property. Retrofitting techniques include the elevation of both slab-on-grade and pier-on-beam structures, dry flood proofing, wet flood proofing, and installation of generators and hurricane shutters.

Almost any type and size of structure can be elevated so that the lowest floor is to or above the Base Flood Elevation (BFE).

Dry flood proofing techniques include the building of floodwalls adjacent to existing walls, the installation of special doors to seal out floodwaters, and special backflow valves for water and sewer lines. The Parish is in the process of implementing a cross connection control and backflow prevention program. Part of the mandate establishes who is required to install a backflow preventer for the protection of the potable water supply system. Wet flood proofing includes low cost mitigation measures such as raising air conditioners, heat pumps, and hot water heaters on platforms above the BFE.

Elevating and flood proofing structures can eliminate many problems experienced from floods.

Another cost effective retrofitting technique includes the installation of generators. By preserving power with generators during and after severe storms, many critical facilities may continue to provide necessary services to the

community. The installation of generators serves to assist the communities with problems experienced from floods, hurricanes, and severe storms (thunderstorms, lightning, high winds, and winter storms).

By installing hurricane shutters, the exterior integrity is maintained by protecting the interior of the structure. Hardening and installing hurricane shutters serves mainly to assist with problems experienced from severe storms (thunderstorms, lightning, high winds, and winter storms), tornadoes, and hurricanes. This Steering Committee approves of wind retrofits/hardening of critical facilities in the Parish.

Another retrofitting technique would be to bury electric power lines to avoid tree limbs falling on them or from wind damage resulting in a break in service to the consumer. Potential projects could include encouraging electrical providers and new subdivision developments to consider installing underground utilities. Burying electric power lines serves to assist the communities with problems experienced from hurricanes, floods, thunderstorms with lightning and high winds, and tornadoes.

5.2.2 Acquisition of Structures

The acquisition or "buyout" option is the most effective mitigation technique to reduce the loss of property due to flooding. The owners of repetitive flood loss structures sell their structure to the community on a cost share basis for the fair market value of the structure prior to the last flood event. The structure is removed/demolished, and a deed restriction is placed on the property for perpetuity, thus eliminating the structure from future flood damage. This approach is most effective when flood prone structures located within the same vicinity are grouped together and acquired. The remaining property can be converted into usable recreational space with minor structure restrictions. Acquiring structures that have repetitively flooded serve mainly to assist with problems experienced from hurricanes and floods.

5.2.3 Drainage

Improving the drainage capacity around roads and low-lying areas is a time-tested technique to mitigate flood damage. Maintenance of drainage canals and laterals is essential to maximize their efficiency and continued long term effectiveness.

St. John the Baptist Parish is subject to heavy flooding due to Lake Pontchartrain, Lake Maurepas, and Lac Des Allemands and the associated wetlands. During high water levels, the area on the east side of the Mississippi River is susceptible to backwater flow through the wetlands. This prevents proper drainage of the land.

All major canals that extend north of U.S. Highway 61 (Airline Highway) are subject to tidal influence. This tidal impact has serious detrimental effects on volume of the canals. Tidal backwater into canals severely restricts drainage by using the available capacity of the canals. The outfall culverts at U.S. Highway 61 are in need of check valves to prevent the back flow of tidal water.

Another problem contributing to flooding in the area is the high water level in the woodlands and wetlands between the UPRR and LA 3127 which prevents the flow of drainage from north of the railroad tracks during heavy rainfall. The culvert inverts and grades are inconsistent which leads to inefficient movement of stormwater out of the residential areas. Canals are in need of rehabilitation.[61]

According to the Master Plan for Drainage Improvements, prepared by Shread-Kuyrkendall & Associates, Inc., January 2002, for the Parish, populated areas that have been identified as high potential flooding zones are in the community of Mt. Airy, the Crevasse area, and McReine Subdivision. McReine Subdivision is in the Crevasse area and is bowl shaped with Airline Highway and the CNRR and KCS being manmade impediments to drainage in the area. A new pump station was constructed north of Airline Highway in order to draw floodwater away from McReine Subdivision. Rehabilitating canals and upgrading culverts will allow the stormwater to reach the new pump station. Downstream from the new pump station should be kept cleaned of brush and silt.[62]

In Mt. Airy, the developed areas of Plantation Oaks Subdivision, the neighborhoods along South Apple and South Church Streets, and just south of the CNRR are particularly vulnerable to flooding. Previous drainage improvements have not kept up with land development projects. The canals that previously served sparsely populated communities and farmland now must drain developed urban areas and subdivisions. Many of canals and ditches are overgrown with vegetation which impedes drainage flow. The canals and culverts are undersized to carry the runoff from severe storm events. Roadside ditches draining urban areas are inadequate to carry the runoff from severe storms. As a result, the area retains water during severe storms. Several culverts have reversed slopes and constrictions under the CNRR and KCS tracks and at US 61 Airline Highway. Another factor that aggravates these problems is some subdivisions have been built on relatively low lying ground. Installing a new pump station on Hope Canal just north of Airline Highway along with improvements to the drainage ditches and canals would assist with the flooding problems.[63]

Actions in general to reduce the effects of flooding are widening and deepening the earthen canals, cleaning of existing ditches, replacing existing culverts, upgrading pumps, and installing check valves and inverts in certain culverts. Maintaining and improving drainage serves to assist the communities with problems experienced from flooding, winter storms, hurricanes, and thunderstorms/lightning.

[61] Source: Master Plan for Drainage Improvements, January 2002. St. John the Baptist Parish
[62] Source: Master Plan for Drainage Improvements, January 2002. St. John the Baptist Parish
[63] Source: Master Plan for Drainage Improvements, January 2002. St. John the Baptist Parish

5.2.4 Public Awareness

Insurance industry and emergency management research has demonstrated that awareness of hazards is not enough. People must know how to prepare for, respond to, and take preventive measures against threats from natural hazards. This research has also shown that a properly run local information program is more effective than national advertising or public campaigns.

Although concerted local and statewide efforts to inform the public exist, lives and property continue to be threatened when segments of the population remain uninformed or chose to ignore the information available. Educating the public of these life and property saving techniques must remain a high priority item at the local, state, and federal level.

Public education serves to assist the communities with problems experienced from floods, hurricanes, severe storms (thunderstorms, lightning, high winds, and winter storms), and tornadoes.

Through the NFIP, the CRS is a program that parishes and municipalities can elect to join. Once a Parish has joined, they will receive a discount on their flood insurance. As a result of being part of the CRS, the Parish would have to be actively pursuing public outreach programs. The Parish joined the CRS on October 1, 1994. The Parish is currently a Class 8 within the CRS and receives a 10% discount on their flood insurance if located within a special flood hazard area and a 5% discount if they are not located within a special flood hazard area. One of the requirements of CRS is an annual outreach project, such as a Repetitive Loss Outreach Program. This program would focus on repetitive loss areas within the Parish and would consist of three main components. The first is to advise the homeowners that they live in a repetitive loss area and could be subject to flooding. The second is to give the homeowner appropriate property protection measure guidelines. The third is to make the homeowner aware of the basic facts about flood insurance.

5.2.5 Floodplain Management and Building Codes

Improved floodplain management, including land use planning, zoning, and enforcement at the local level can reduce flood related damages. The use of the NFIP is critical to the reduction of future flood damage costs to the taxpayer. The Louisiana Department of Transportation and Development (LDOTD) is the primary agency responsible for the administration of the NFIP for the State of Louisiana.

St. John the Baptist Parish joined the NFIP on July 16, 1980. The Parish developed Chapter 30, Flood Damage Prevention, as part of their Parish regulations, which addresses methods and practices to minimize flood damage to new and substantial home improvement projects. The Parish has also developed zoning and subdivision regulations. The Parish has adopted and implements the 2006 International Building Code with its referenced standards.

Within floodplain management as a whole, the education process plays an important role. An effective education program should be implemented to show citizens the importance of building codes and ordinances and how cost effective they could be in reducing future damages.

Floodplain management and building codes serve to assist the communities with problems experienced from floods, hurricanes, severe storms (thunderstorms, lightning, and high winds), and tornadoes

5.2.6 Early Warning

With sufficient warning of a flood, a community and its residents can take protective measures such as moving personal property, cars, and people out of harm's way. When a flood threat recognition system is combined with an emergency response plan that addresses the community's flood problems, considerable flood damage can be prevented. This system must be coupled to warning the general public, carrying out appropriate tasks, and coordinating the flood response plan with operators of critical facilities. A comprehensive education and outreach program is critical to the success of early warning systems so that the general public, operators of critical facilities, and emergency response personnel will know what actions to take when warning is disseminated.

Within St. John the Baptist Parish's Emergency Operations Plan, a Public Alert System is detailed. The activation of this system and timely release of emergency information to the public by all available media is vitally important.

Early warning systems serve to assist the communities with problems experienced from floods, hurricanes, severe storms (thunderstorms, lightning, high winds, and winter storms), and tornadoes.

5.3 Implementation of Mitigation Measures

Requirement 201.6(c)(3)(iii):
[The mitigation strategy section shall include] an action plan describing how the actions identified in section (c)(3) (ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

An Action Plan (Section 7.0) was prepared which identifies specific actions to achieve identified goals, an appropriate lead person for each action, a schedule for accomplishment, and suggested funding sources. The inclusion of any specific action item in this document does not commit the Parish to implementation. Each item will be considered in terms of the available staff and funding resources. Certain items may require regulatory changes or other decisions that must be implemented through standard processes, such as changing regulations. The goals were established by asking the Steering

Committee members what they wanted to make a priority in their plan. The risk assessment consisted of identifying the hazards that affect the parish and the critical facilities that are vulnerable to the hazards. This plan is intended to offer priorities based on an examination of hazards. The goals are related to the risk assessment in that they address ways to reduce the impact of the identified hazards on the identified critical facilities. The four major hazards in Section 4.1, **Table 8**, are addressed in the Action Plan. All of these action items and goals established will help St. John the Baptist Parish. See Section 7.0 of this plan.

Benefit-cost analysis (BCA) compares the benefits of mitigation measures to the costs, and is a technique used for evaluating the cost-effectiveness of mitigation measures. FEMA requires a BCA for all mitigation projects that receive FEMA funding.

The Steering Committee discussed the potential costs associated with each type of mitigation measure identified in **Appendix I**, and decided that any project could be cost effective if its scope were properly tailored to the situation. For example, one of the most effective mitigation measures identified for repetitively flooded structures is elevation. It may not be cost effective to elevate every single repetitively flooded structure in the Parish, but it certainly would be cost effective to elevate those that cause the largest drain to the NFIP.

The Steering Committee reviewed the mitigation measures in the HMP and updated the action items. An estimated cost to implement the action item is provided in the Action Plan in Section 7.0. The process of identifying the priority ratings as High, Medium, or Low for each action item was determined informally by voting.

The method that the Steering Committee chose to help them consider potential action items in a systematic way was the **S**ocial, **T**echnical, **A**dministrative, **P**olitical, **L**egal, **E**conomic, and **E**nvironmental (STAPLEE) Method. This method helps the Steering Committee to weigh the pros and cons of different alternative actions for each of the identified actions and objectives. See **Table 20** for the STAPLEE Methodology.

TABLE 20: STAPLEE METHODOLOGY	
STAPLEE	**Criteria Explanation**
S – Social	Mitigation actions are acceptable to the community if they do not adversely affect a particular segment of the population, do not cause relocation of lower income people, and if they are compatible with the community's social and cultural values.
T – Technical	Mitigation actions are technically most effective if they provide long- term reduction of losses and have minimal secondary adverse impacts.
A – Administrative	Mitigation actions are easier to implement if the jurisdiction has the necessary staffing and funding.
P – Political	Mitigation actions can truly be successful if all stakeholders have been offered an opportunity to participate in the planning process and if there is public support for the action.
L – Legal	It is critical that the jurisdiction or implementing agency have the legal authority to implement and enforce a mitigation action.
E – Economic	Budget constraints can significantly deter the implementation of mitigation actions. Hence, it is important to evaluate whether an action is cost-effective, as determined by a cost benefit review, and possible to fund.
E - Environmental	Sustainable mitigation actions that do not have an adverse effect on the environment, that comply with Federal, State, and local environmental regulations, and that are consistent with the community's environmental goals, have mitigation benefits while being environmentally sound.

The Steering Committee members prioritized the actions using the STAPLEE criteria, a planning tool used to evaluate alternative actions.

The process of identifying the priority ratings was an informal process and whether or not the project will be cost effective was the driving factor. The action plan found in Section 7.0 is current as of submission of the HMP but upon actual project initiation each aspect will have to be reevaluated based on the STAPLEE criteria to be sure that it is still an effective project.

5.4 Multi-Jurisdictional Mitigation Strategy

Requirement 201.6(c)(3) (iv):
For multi – jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Within St. John the Baptist Parish, there are several towns; however, they are not individually incorporated. Parish-wide strategies for hazard mitigation within St. John the Baptist Parish and the towns were identified to reduce damage to vulnerable areas. The Steering Committee identified goals and action items which are addressed in the Action Plan in Section 7.0.

St. John the Baptist Parish
Hazard Mitigation Plan Update
Overview of Section 6.0 Revisions

Section 6.0 of the St. John the Baptist Parish Hazard Mitigation Plan (HMP) Update is the Plan Maintenance Procedures Section. This section discusses monitoring, evaluating, and updating, implementation through existing programs, and continued public involvement. A summary of the revisions that were made to this section are addressed below.

A discussion of how the HMP was taken into account in other planning activities/documents is addressed in this section. Text changes that occurred are designed to better clarify the procedures to be followed in maintaining the Plan and tracking and reporting its progress. Text changes regarding the continued public involvement are designed to clarify the procedures used to create opportunities to inform the general public and solicit its involvement in the continuing process.

6.0 PLAN MAINTENANCE PROCEDURES

The Steering Committee will be involved in the process of monitoring, evaluating, and documenting the plan's progress. 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 action items of the plan.

6.1 Monitoring, Evaluating, and Updating the Plan

Requirement 201.6(c)(4) (i):
[The plan maintenance process shall include a section describing the] method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

St. John the Baptist Parish has developed a method to ensure that a regular review and update of the HMP 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.

Review and revision of the HMP will be directed by the Director of the St. John the Baptist Parish OEP, who is listed on the Edits and Revisions page.

Although the people filling the positions may change from year to year, all towns will be invited to have a representative 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 Director of the St. John the Baptist Parish OEP, to be assigned as deemed appropriate.

Progress on the mitigation action items will be monitored and evaluated by the Director of the St. John the Baptist Parish OEP. The Lead Manager for each action item will complete an annual Progress Report and submit them to the Director of the St. John the Baptist Parish OEP for review. See **Appendix O** for a blank copy of the Annual Progress Report. This Progress Report is designed to monitor the state of the projects and evaluate the success of each mitigation item. The report lists each action item and answers several very important questions, such as: Has the project begun? If not, why not? The status of project- is it complete? If so, did it eliminate the problem? Are there changes needed to better implement the mitigation actions? and so on. These questions serve to address the progress being made on each of the mitigation actions items.

Completed reports will also be kept in this appendix of the plan. The Director of the St. John the Baptist Parish OEP will consult with the Lead Manager for details involving each mitigation item.

If during this process of reviewing the Annual Progress Report, the Director of the St. John the Baptist Parish OEP determines that the Steering Committee should be reconvened for discussion, he has the option of doing so. He will use the following criteria to determine if a meeting needs to be held:

- Are there any changes in mitigation plan requirements for funding programs?
- Are any changes or revision required to the Mitigation Action Items? (*i.e.* Have any action items been completed? Are there any new specific mitigation action items? Are there any changes to the mitigation plan requirements? Have any new specific mitigation action items been identified?)
- Does a review of the Progress Reports indicate any changes are necessary?
- Are there any changes within the Steering Committee membership?

Although not required, FEMA recommends an annual meeting of the Steering Committee. If the Director of the St. John the Baptist Parish OEP determines that this annual meeting needs to be conducted, he is responsible for contacting committee members, organizing the meeting, and providing public noticing for the meeting to solicit public input. During the fourth quarter of each year, the Steering Committee will meet annually to monitor and evaluate the HMP by reviewing the action plan, updating events, and filling out the annual progress report, **Appendix O**.

In addition to monitoring the progress of plan projects, the plan is required to be evaluated, then revised or updated at least once every five years from the date of FEMA approval. If a disaster occurs or as action items are completed, the plan will be reviewed, revised, and updated sooner than the required five years, using the process outlined in this section.

The Steering Committee will be reconvened approximately one year before the five-year deadline and begin evaluating the HMP. The above criteria and the following key topics and questions below will be addressed at the meeting.

- ID Hazard – Are there new hazards that affect your community? Has a disaster occurred?
- Profile Hazard Events – Are additional maps or new hazard studies available? Have chances of future events changed? Have recent and future development in the community been checked for their effect on hazard areas?
- Inventory Assets – Have inventories of existing structures in hazard areas been updated? Are there any new special high risk populations? Is future land development accounted for in the inventories?
- Estimate Losses – Have losses been updated to account for recent changes?

If the answer to any of the above questions is a "yes," then the HMP will be updated accordingly.

The HMP review and update will be accomplished by reviewing each goal and action item to determine their relevance to changing situations in the Parish, as well as changes to state or federal policy, and to ensure that they are addressing current and expected conditions. The Steering Committee will also review the risk assessment portion and determine if this information should be updated or modified. If no changes are necessary, the State Hazard Mitigation Officer will be given a justification for this determination.

The Steering Committee will work together as a team, with each member sharing responsibility for completing the evaluation and updates. Each member of the Steering Committee is an equal member of the process. It will be the responsibility of the representative from each community to ensure that their section of this plan is updated to meet the required deadline.

The Director of the St. John the Baptist Parish OEP is responsible for including all changes into the HMP after the Steering Committee has met and decided on the changes. All necessary revisions will be completed at least three months prior to the end of the five year period to allow the Steering Committee time to review the updated plan. During the revision process, the Director of the St. John the Baptist Parish OEP will send a status report (meeting minutes) to the Parish Council after each Steering Committee meeting. Any required revisions will be implemented into existing plans, as applicable, within six months following the review process. This process will be repeated for each five year review of the plan.

After the plan update is completed, the final plan will be submitted to the GOHSEP's Hazard Mitigation Officer for review and then on to FEMA for review and approval to remain eligible for continued HMGP funding.

FEMA, LDOTD, and GOHSEP have the authority to evaluate the progress of existing mitigation plans to determine if the plan is fulfilling program requirements.

6.2 Implementation through Existing Programs

Requirement 201.6 (c)(4) (ii):
[The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate…

The project requirements from the HMP shall be incorporated into other planning mechanisms, as applicable, during the routine re-evaluation and update of the Parish plans. The Flood Control Ordinance – Ordinance No. 10-30 and any requirements from this plan will be incorporated into the ordinance as applicable. The ordinance was updated and adopted on September 28, 2010. Emergency

Operations Plans are continually reviewed and updated. No other plans have been re-evaluated since the 2006 Hazard Mitigation Plan Update; therefore, information from this Hazard Mitigation Plan has not been able to be incorporated into other plans. Any changes or updates to the flood plain ordinances, Emergency Operations Plan, or the FIRMs will be reflected in this HMP during its update.

The Parish is a member of the NFIP and has Floodplain Management Ordinances. When the Parish updates their Floodplain Ordinances, the requirements from this HMP will be included in the newly revised Floodplain Ordinance. This HMP will be made available to each committee leader responsible for revising their Floodplain Ordinance.

The Parish OEP has jurisdiction over the towns during disaster events; therefore, the towns follow the recommended guidelines in the Parish Emergency Operations Plan (EOP).

The St. John the Baptist Parish Council governs the Parish and has the final decision on what projects are worked on and how and when they will be accomplished. The action items in the Parish Action Plan fall under their jurisdiction and they will delegate the tasks of the action items. Therefore, the Council will coordinate with the Director of the St. John the Baptist Parish OEP and Lead Manager of each mitigation item to accomplish the goals and action items. The Lead Manager will follow any current procedures the Parish has while completing the action items. The Annual Progress Report (**Appendix O**) and status reports (meeting minutes) will be submitted to the Parish Council, which will reflect progress on each item and on the HMP.

The action items found in Section 7.0 will be implemented through the defined political process of the Parish. The annual budget, as required by law, is the driving factor in determining the projects that are accomplished. Often, a certified public accountant generates the annual budget for the local governments. The Lead Manager for each action item will submit the corresponding project for consideration to the Council members. Then each Council member submits projects for consideration in the annual budget. They will use this HMP as a guide to help them determine the projects that will be submitted into the annual budget for completion. Outlined within each budget are projects that the Parish would like to complete. The Council then will hold budget hearings to determine the projects in the budget that will and can be funded. All other projects are then removed and must be resubmitted during the following year's budget hearings.

6.3 Continued Public Involvement

Requirement 201.6(c)(4) (iii):
[The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.

St. John the Baptist Parish is dedicated to involving the public directly in the reshaping and updating of the HMP. The Steering Committee members are involved in the process of the review and update of the plan, which is to be conducted at least every five years. Although they represent the public to some extent, the public will be able to directly comment on and provide feedback about the plan and its updates. Before the Steering Committee is reconvened for any meeting, a public notice will be issued for anyone in the general population who would like to participate in the process of HMP review and update. A public notice will be displayed in prominent locations within the main governmental buildings in St. John the Baptist Parish. Those who opt to participate in this process will have an opportunity to express their concerns, opinions, or ideas about the plan.

One copy of the plan will be catalogued and kept on hand at the St. John the Baptist Parish Central Library. The existence and location of this copy will be publicized in the Parish's official journal, the *L'Observateur* in LaPlace.

The Director of the St. John the Baptist Parish OEP will be responsible for keeping track of public comments on the plan. All public comments will be reviewed and incorporated in the HMP at the five year HMP update if appropriate. If an annual meeting of the Steering Committee is held, than the public comments will be reviewed and incorporated at that time, if appropriate. See the Edits and Revisions page at the beginning of this document for who to contact with recommendations, edits, and changes to this plan. The review, changes, and update that is made during the review, every five years, will also be publicized in the Parish's official journal, the *L'Observateur* in LaPlace.

St. John the Baptist Parish
Hazard Mitigation Plan Update
Overview of Section 7.0 Revisions

Section 7.0 of the St. John the Baptist Parish Hazard Mitigation Plan (HMP) Update is the Action Plan Section. This section is comprised of 1) a narrative that explains the changes to the Action Plan since the original plan and 2) the Action Plan Table that has all of the projects listed, a brief description, the priority, estimated cost, schedule, the hazard, and funding. The table illustrates the newly proposed action items.

The Parish Action Plan in Section 7.0 reflects the four mitigation goals the Parish wishes to pursue, included updated costs and time frames for completion. Changes that were made to the action plans are documented in this section.

7.0 ACTION PLAN

The Hazard Mitigation Steering Committee established an Action Plan, which identifies specific actions to achieve identified goals, an appropriate lead person for each action, an estimated cost, a schedule for accomplishment, and suggested funding. The Action Plan encapsulates the items St. John the Baptist Parish plans to implement in order to build a more disaster resilient Parish.

During the 2010 update, it was decided to keep the existing goals set by the Parish. For this update, in 2010, the Steering Committee re-evaluated the merits of each action item that was previous included in the Action Plan and made a decision on whether or not to keep the action item in the plan or update it. No action items were deleted from the previous plan. Some action items were added or existing actions were revised and are addressed below.

The original plan included four goals and 11 action items. Four action items were added under Goal 1 to address wind retrofitting, back-up power supply, continuity of operations, and implementing new initiatives and a public notification system. One action item under Goal 3 was modified to address reconstruction projects. Another action item, under Goal 4, was modified to address ordinances and new development in the Parish. Another action item was added to continue improvement of building regulations of structures.

St. John the Baptist Parish
Hazard Mitigation Plan
Action Plan

Goal No. 1: Identify and Pursue Preventive Measures That Will Reduce Future Damages from Hazards										
No.	**Priority***	**Task Description**	**Action Items Carried Over from 2006 HMP**	**Newly Proposed Action Item**	**Project Status**	**Lead Manager**	**Estimated Cost**	**Schedule**	**Hazard**	**Funding**
1	H	Improve drainage ways including, but not limited to, by enlarging any inferior culverts, upgrading pumps and flapper valves, and installing retention ponds. **Benefits: To ensure water flows freely within the drainage system, which will protect the surrounding area from flooding.**	✓			Parish Engineer/Public Works Director	$12,000,000	2011-2013	Floods/Hurricanes/Thunderstorms, Lightning, and High Winds	Parish Budget/Grant Funding
2	H	Update the master drainage plan which will evaluate drainage projects at major drainage laterals to determine best method of increasing drainage capacity. Implement recommended projects resulting from drainage plan. **Benefits: Reduces the number of flooded structures by increasing the volume of water the pumps can handle at the final outfall.**	✓			Parish Engineer	$100,000	2011-2013	Floods/Hurricanes	Parish Budget/Grant Funding
3	H	Expand the drainage districts to cover the entire parish. Currently, the parish has 3 drainage districts that cover select areas on the east bank. **Benefits: By improving drainage in the flood prone areas, homeowners will suffer less flooded structures and therefore, suffer less mental and physical anguish, displacement days, and flood damage. In addition, the drain on the NFIP is reduced by a decrease in flood claims.**	✓			Parish Department of Public Works	$20,000	2011-2013	Floods/Hurricanes	Parish Budget/Grant Funding
4	M	Harden critical facilities including, but not limited to, utilizing applicable floodproofing techniques, adding roof tie-downs and additional storm protecting features such as storm shutters or impact resistant glass, and add back up power supply/generators at these locations. **Benefits: Provide safety and a source of power during power outages to continue essential operations. Creates a more disaster resistant structure, which will prevent interruption of services in times of emergencies.**		✓		Parish Emergency Manager	$2,500,000	2011-2013	Floods/Hurricanes/Thunderstorms, Lightning, and High Winds/Tornadoes	Parish Budget/Grant Funding
5	M	Continue day-to-day operations and handle increased surge capacity of critical facilities and services in the event of a hazard or disaster. **Benefits: Maintains essential operations before, during, or after a hazard event.**		✓		Parish Emergency Manager	$1,000,000	2011-2013	Floods/Hurricanes/Thunderstorms, Lightning, and High Winds/Tornadoes	Staff Time/Local Funding/Grant Funding
6	M	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. **Benefits: Provides support with federal and state partners by updating policies and coordinating preparedness.**		✓		Parish Emergency Manager	$500,000	2011-2013	Floods/Hurricanes/Thunderstorms, Lightning, and High Winds/Tornadoes	Staff Time/Grant Funding
7	M	Improve coverage of the public notification system by upgrading the technology including, but not limited to, sirens and a call down system with a backup communication. **Benefits: An informed public is better able to respond and protect themselves in times of hazards.**		✓		Parish Emergency Manager	$100,000	2011-2013	Floods/Hurricanes/Thunderstorms, Lightning, and High Winds/Tornadoes	Parish Budget/Grant Funding
8	M	Pursue monitoring opportunities including, but not limited to, gauges and remote sensing devices, to timely relay weather conditions to emergency personnel for adequate response time. **Benefits: Provides safety and continuity of operations before, during, or after a hazard event.**		✓		Parish Emergency Manager, USGS, NOAA, USACE, LADOTD, LSU Remote Sending Unit Lab	$500,000	2011-2013	Floods/Hurricanes/Thunderstorms, Lightning, and High Winds	Staff Time/Local Funding/Grant Funding

St. John the Baptist Parish
Hazard Mitigation Plan
Action Plan

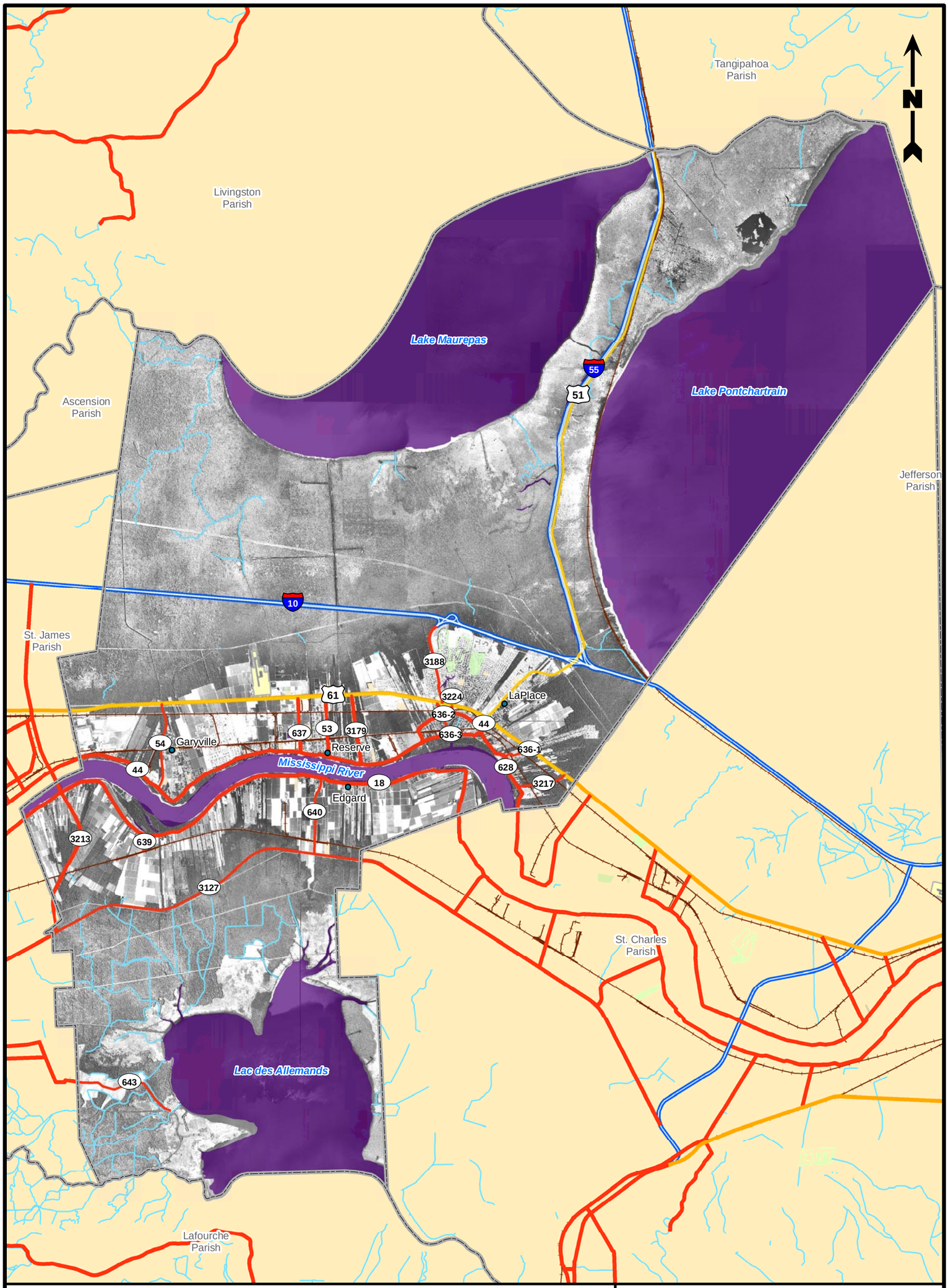
Goal No. 2: Enhance Public Awareness and Understanding of Disaster Preparedness										
No.	**Priority***	**Task Description**	**Action Items Carried Over from 2006 HMP**	**Newly Proposed Action Item**	**Project Status**	**Lead Manager**	**Estimated Cost**	**Schedule**	**Hazard**	**Funding**
9	H	Continue to promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP). **Benefits: Enables homeowners to financially recover from the devastating effects of flooding as rapidly as possible. Serves to educate area residents that any homeowner, regardless of location, can purchase flood insurance.**	✓			Parish Emergency Manager	$25,000	2011-2013	Floods/Hurricanes	Parish Budget
10	H	Continue to increase public awareness of hazards and hazardous areas. Distribute public awareness information regarding flood hazards, SFHA's, and potential mitigation measures using the local newspaper, utility bill inserts, inserts in the phone book, and parish hazards awareness website, and an educational program for school age children or "how to" classes in retrofitting by local merchants. Integrate "Disaster Resistance Education" into the public school curriculum. Provide public education on the importance of maintaining the ditches. **Benefits: An informed public is better able to respond and protect themselves in times of hazards.**	✓			Parish School Board and Parish Emergency Manager	$25,000	2011-2013	Floods/Hurricanes/Thunderstorms, Lightning, and High Winds/Tornadoes	Parish Budget/Grant Funding
11	H	Continue to sponsor a "Multi-Hazard Awareness Activities", to educate the public on hurricane and tornadoes (sheltering in place, evacuation, emergency preparedness, and structural retrofitting), flooding (evacuation, emergency preparedness, retrofitting, and flood insurance), and thunderstorms and lightning (emergency preparedness). **Benefits: To reduce the loss of life and property by having an educated citizenry.**	✓			Parish Emergency Manager	$35,000	2011-2013	Floods/Hurricanes/Thunderstorms, Lightning, and High Winds/Tornadoes	Parish Budget/Business and Industry
Goal No. 3: Reduce Repetitive Flood Losses in the Parish										
No.	**Priority***	**Task Description**	**Action Items Carried Over from 2006 HMP**	**Newly Proposed Action Item**	**Project Status**	**Lead Manager**	**Estimated Cost**	**Schedule**	**Hazard**	**Funding**
12	M	Investigate and implement localized interior drainage projects, including, but not limited to, culvert upgrades, berms, and retention ponds, in order to reduce flood potential where necessary. **Benefits: By improving drainage in the flood prone areas, homeowners will suffer less flooded structures and therefore, suffer less mental and physical anguish, displacement days, and flood damage. In addition, the drain on the NFIP is reduced by a decrease in flood claims.**	✓			Parish Floodplain Manager/Public Works Director	$300,000	2011-2013	Floods/Hurricanes/Thunderstorms, Lightning, and High Winds	Community Development Block Grant (CDBG), Flood Mitigation Assistance (FMA) Project Funds, Hazard Mitigation Grant Program (HMGP) Funds, Small Business Administration (SBA), U.S. Army Corps of Engineers - Section 205, and State Capital Outlay, Local Drainage Funds
13	H	Pursue elevation/ acquisition/ floodproofing/reconstruction projects and structural solutions to flooding using available grant funding for repetitive loss structures and severe repetitive loss structures. Annually review and correct the Repetitive Loss list by submitting correction worksheets to FEMA. **Benefits: By removing structures from the floodplain, homeowners suffer less mental and physical anguish, displacement days, and flood damage. In addition, the drain on the NFIP is reduced by a decrease in flood claims.**	✓			Building Permit Director/Emergency Manager	$3,000,000	2011-2013	Floods/Hurricanes/Thunderstorms, Lightning, and High Winds	Parish Budget

St. John the Baptist Parish
Hazard Mitigation Plan
Action Plan

Goal No. 4: Facilitate Sound Development in the Parish so as to Reduce or Eliminate the Potential Impact of Disaster										
No.	**Priority***	**Task Description**	**Action Items Carried Over from 2006 HMP**	**Newly Proposed Action Item**	**Project Status**	**Lead Manager**	**Estimated Cost**	**Schedule**	**Hazard**	**Funding**
14	M	Continue to participate in the Community Rating System (CRS). Review the existing floodplain ordinance and evaluate ways to improve the Parish's rating to reduce the flood insurance premium. Choose from the variety of methods and projects available that can be implemented to improve the CRS rating. **Benefits: Reduce flood insurance premiums and thereby encourage more people to purchase flood insurance, which would potentially result in lower cost and a more timely recovery**.	✓			Parish Floodplain Manager	$35,000	2011-2013	Floods/Hurricanes/Thunderstorms, Lightning, and High Winds	Parish Budget
15	L	Review and update ordinances to help regulate new development in the Parish, that would help reduce flooding, such as, but not limited to, requiring proper drainage with adequate sloping; stormwater retention ponds; dikes; berms; levees and floodwalls if appropriate, and requiring freeboard above the Base Flood Elevation (BFE) in flood prone areas. **Benefits: Reduce the localized flooding problems that would occur with new development. Reduce potential of power outages.**	✓			Parish Floodplain Manager/Inspection and Code Planning Department/Parish Department of Public Works	$50,000	2011-2013	Floods/Hurricanes/Thunderstorms, Lightning, and High Winds/Tornadoes	Parish Budget
16	M	Continue to review and evaluate improved building regulations of industrial, commercial, and residential structures, and future or new structures. **Benefits: Results in additional techniques to harden structures and thereby withstand impacts of hazards.**		✓		Parish Floodplain Manager/Inspection and Code Planning Department/Parish Department of Public Works	$10,000	2011-2013	Floods/Hurricanes/Thunderstorms, Lightning, and High Winds/Tornadoes	Parish Budget
Completed Projects										
17	L	Adopt additional commercial building regulations. **Benefits: Results in additional techniques to harden structures and thereby withstand the impacts of hazards.**			Complete	Parish Floodplain Manager and Planning Director	$5,000	2011-2013	Floods/Hurricanes/Thunderstorms, Lightning, and High Winds/Tornadoes	Parish Budget

*** H = High (Urgent)**
M = Medium
L = Low (Not Urgent)

FIGURES



Legend

- Parish Boundary
- Waterbody
- Stream
- Interstate/Evacuation Route
- LA Highway/Evacuation Route
- US Highway/Evacuation Route
- Towns/Cities

Reference

Base map comprised of 2007 aerial photograph. The Q3 2010 Flood Data obtained from the Flood Insurance Rate Maps (FIRMS) published by the Federal Emergency Management Agency (FEMA).

2.5 1.25 0 2.5 Miles

Base Map

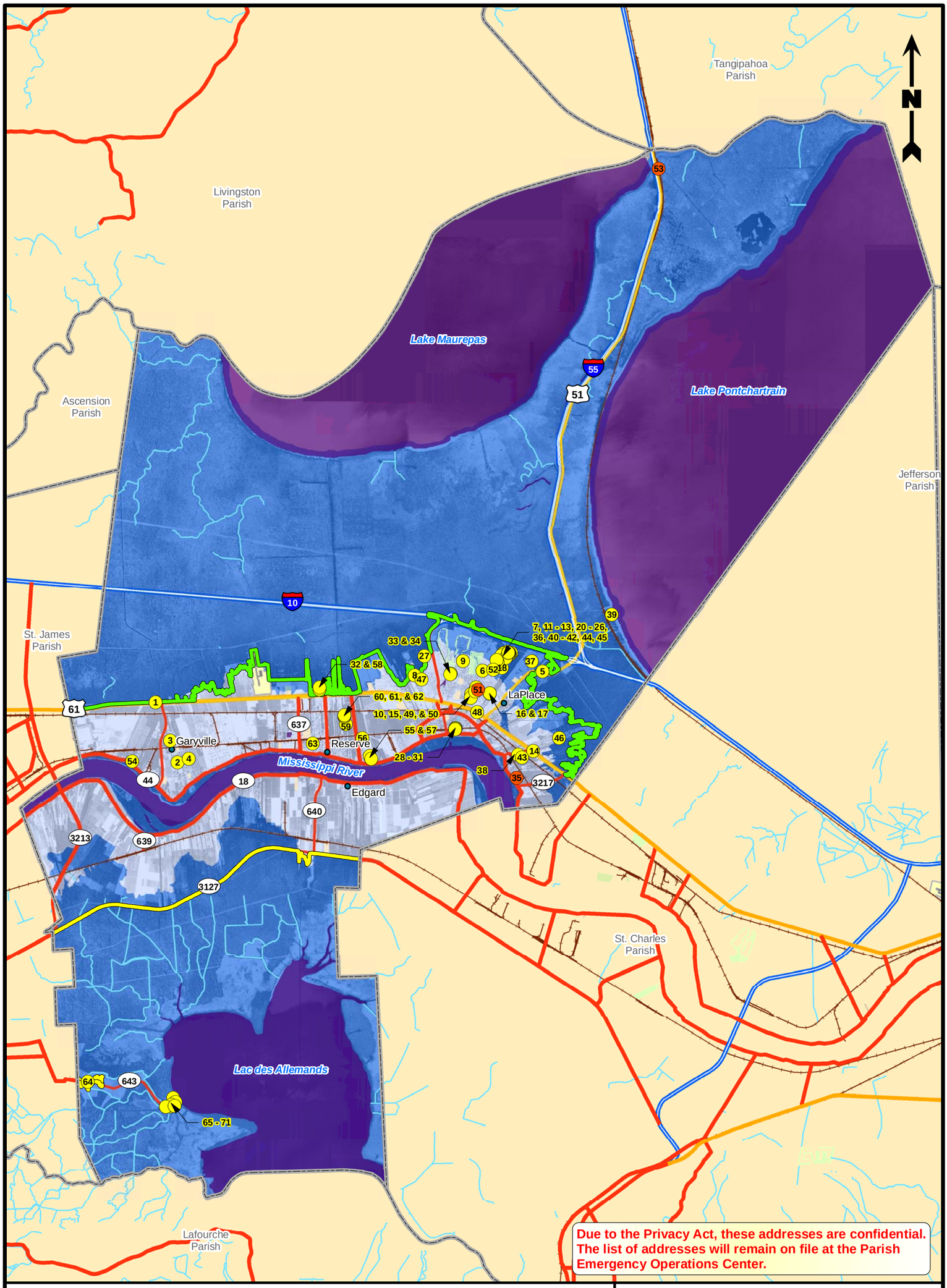
Hazard Mitigation Plan Update
St. John the Baptist Parish, Louisiana

St. John the Baptist Parish
LaPlace, Louisiana

PROVIDENCE

Drawn By	DRA	07/14/10
Checked By	JS	07/14/10
Approved By	MCM	11/29/10
Project Number 623-001		
Drawing Number 623-001-B001		

1
Figure



Due to the Privacy Act, these addresses are confidential. The list of addresses will remain on file at the Parish Emergency Operations Center.

Legend

- Parish Boundary
- 100-Year Floodplain
- 500-Year Floodplain
- Waterbody
- Storm Surge Limits (Hurricane Katrina)
- Storm Surge Limits (Hurricane Rita)
- Interstate/Evacuation Route
- LA Highway/Evacuation Route
- US Highway/Evacuation Route
- Stream
- Repetitive Loss
- Severe Repetitive Loss
- Towns/Cities

Reference

Base map comprised of 2007 aerial photograph. The Q3 2010 Flood Data obtained from the Flood Insurance Rate Maps (FIRMS) published by the Federal Emergency Management Agency (FEMA).

2.5 1.25 0 2.5 Miles

Repetitive Loss Structures

Hazard Mitigation Plan Update
St. John the Baptist Parish, Louisiana

St. John the Baptist Parish
LaPlace, Louisiana

PROVIDENCE

Drawn By	DRA	07/14/10
Checked By	JS	07/14/10
Approved By	MCM	11/29/10
Project Number	623-001	
Drawing Number	623-001-B002	

2
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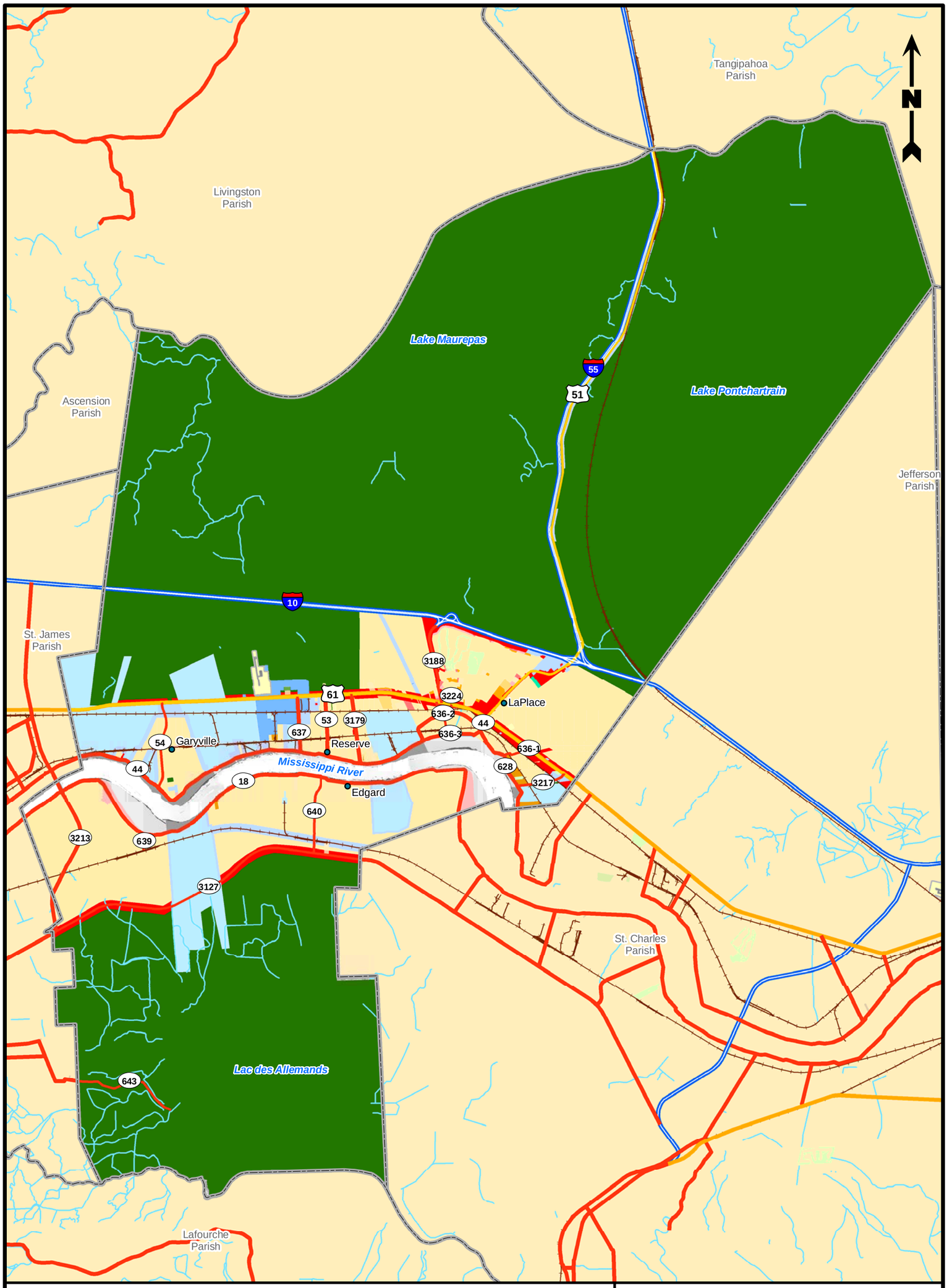

Legend

Parish Boundary	**Zoning Classification**	I-1	R-1
Interstate/Evacuation Route	B-1	I-2	R-2
LA Highway/Evacuation Route	B-2	I-3	R-3
US Highway/Evacuation Route	C-1	MHD	R-4
Stream	C-2	MHP	Rural
Towns/Cities	C-3	PUD	

Reference

Zoning data obtained from St. John the Baptist Parish, 2020.

2.5 1.25 0 2.5 Miles

Zoning

Hazard Mitigation Plan Update
St. John the Baptist Parish, Louisiana

St. John the Baptist Parish
LaPlace, Louisiana

PROVIDENCE

Drawn By	DRA	07/14/10
Checked By	JS	07/14/10
Approved By	MCM	11/29/10

Project Number 623-001

Drawing Number 623-001-B010

3
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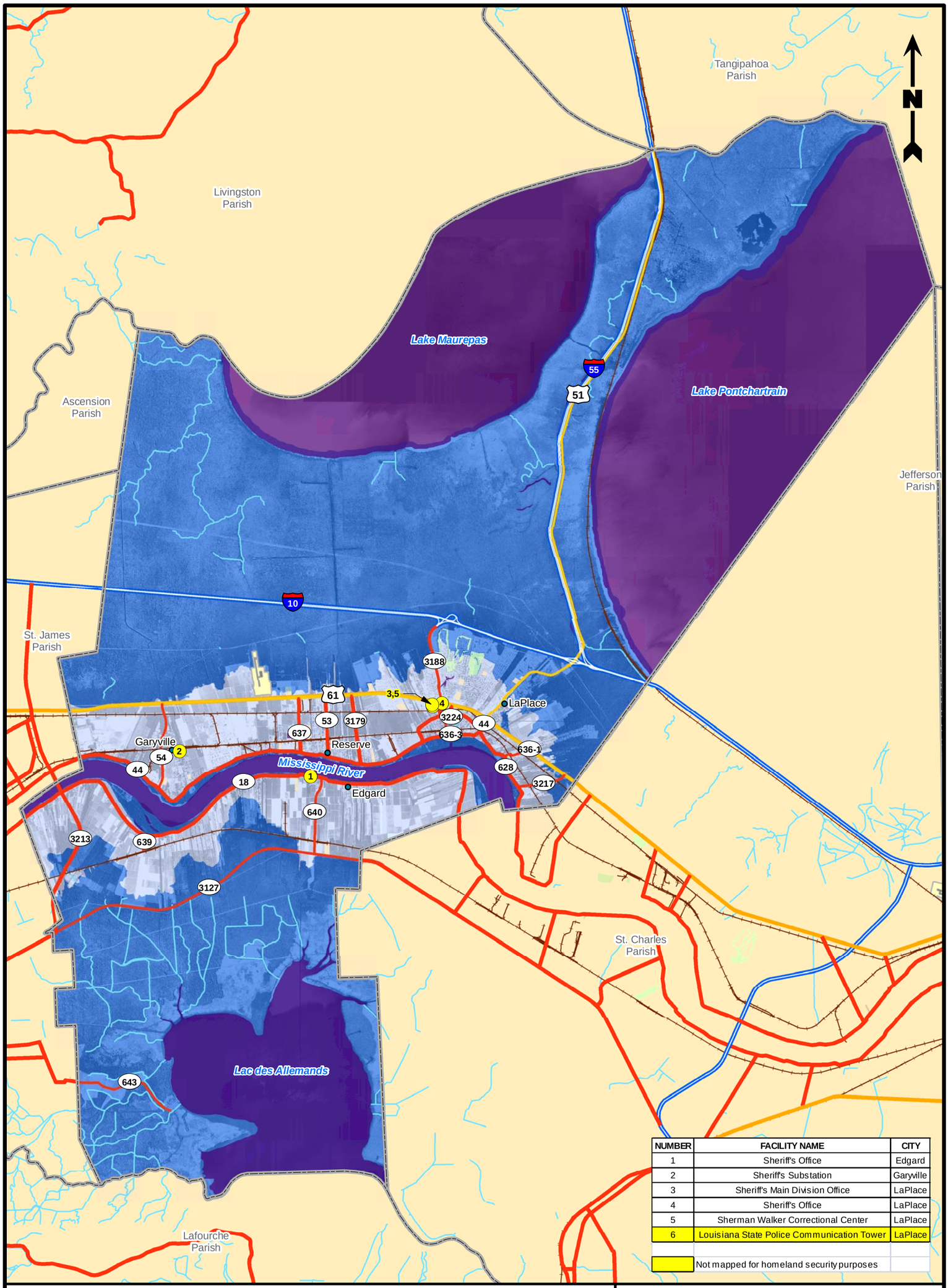

NUMBER	FACILITY NAME	CITY
1	Sheriff's Office	Edgard
2	Sheriff's Substation	Garyville
3	Sheriff's Main Division Office	LaPlace
4	Sheriff's Office	LaPlace
5	Sherman Walker Correctional Center	LaPlace
6	Louisiana State Police Communication Tower	LaPlace
	Not mapped for homeland security purposes	

Legend

- Parish Boundary
- 100-Year Floodplain
- 500-Year Floodplain
- Waterbody
- Interstate/Evacuation Route
- LA Highway/Evacuation Route
- US Highway/Evacuation Route
- Stream
- Law Enforcement
- Towns/Cities

Reference

Base map comprised of 2007 aerial photograph. The Q3 2010 Flood Data obtained from the Flood Insurance Rate Maps (FIRMS) published by the Federal Emergency Management Agency (FEMA).

2.5 1.25 0 2.5 Miles

Law Enforcement

Hazard Mitigation Plan Update
St. John the Baptist Parish, Louisiana

St. John the Baptist Parish
LaPlace, Louisiana

PROVIDENCE

Drawn By	DRA	07/14/10
Checked By	JS	07/14/10
Approved By	MCM	11/29/10
Project Number 623-001		
Drawing Number 623-001-B004		

4
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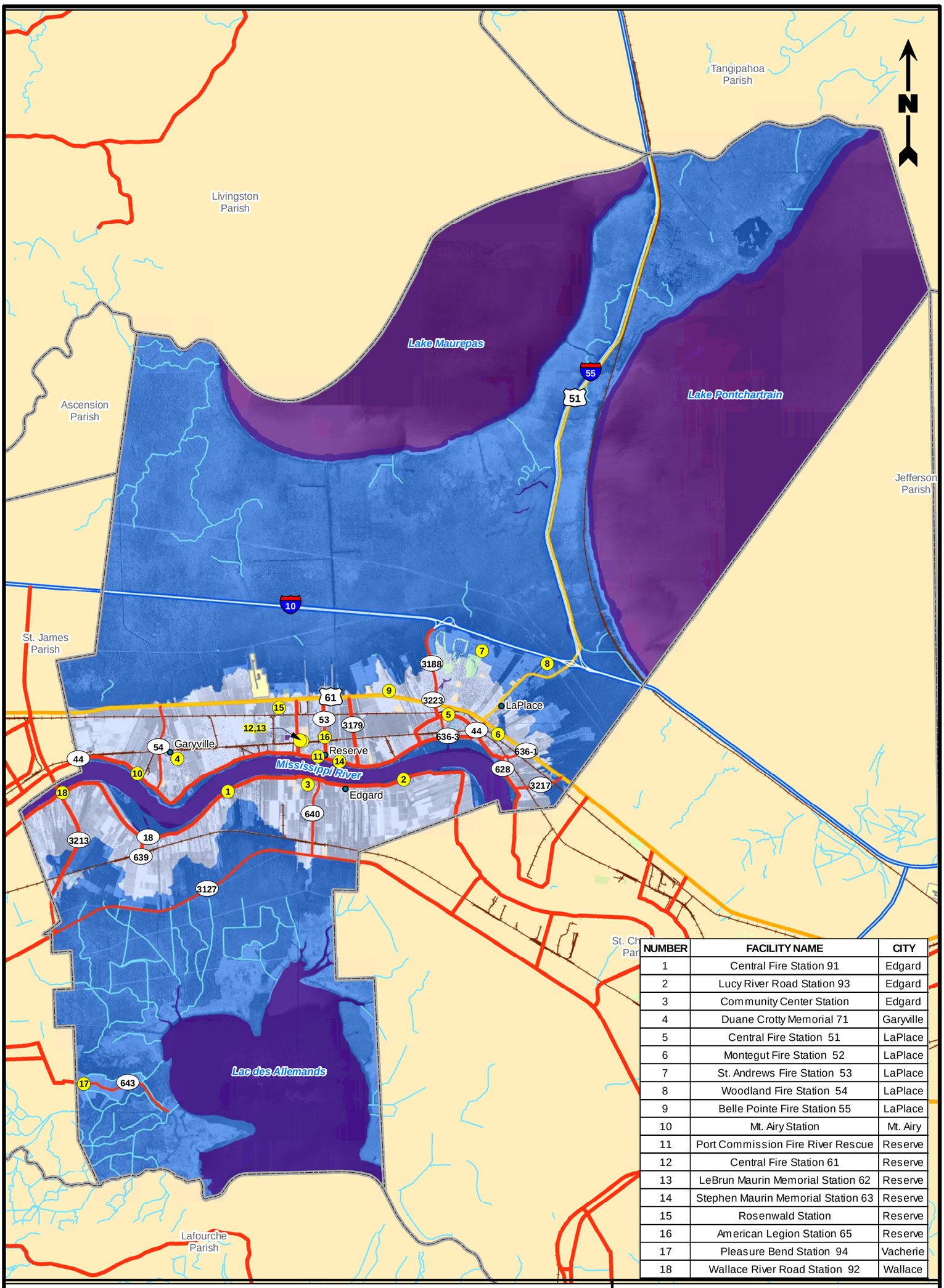


NUMBER	FACILITY NAME	CITY
1	Central Fire Station 91	Edgard
2	Lucy River Road Station 93	Edgard
3	Community Center Station	Edgard
4	Duane Crotty Memorial 71	Garyville
5	Central Fire Station 51	LaPlace
6	Montegut Fire Station 52	LaPlace
7	St. Andrews Fire Station 53	LaPlace
8	Woodland Fire Station 54	LaPlace
9	Belle Pointe Fire Station 55	LaPlace
10	Mt. Airy Station	Mt. Airy
11	Port Commission Fire River Rescue	Reserve
12	Central Fire Station 61	Reserve
13	LeBrun Maurin Memorial Station 62	Reserve
14	Stephen Maurin Memorial Station 63	Reserve
15	Rosenwald Station	Reserve
16	American Legion Station 65	Reserve
17	Pleasure Bend Station 94	Vacherie
18	Wallace River Road Station 92	Wallace

Legend

- Parish Boundary
- 100-Year Floodplain
- 500-Year Floodplain
- Waterbody
- Interstate/Evacuation Route
- LA Highway/Evacuation Route
- US Highway/Evacuation Route
- Stream
- Fire Station
- Towns/Cities

Reference

Base map comprised of 2007 aerial photograph. The Q3 2010 Flood Data obtained from the Flood Insurance Rate Maps (FIRMS) published by the Federal Emergency Management Agency (FEMA).

2.5 1.25 0 2.5 Miles

Fire Stations

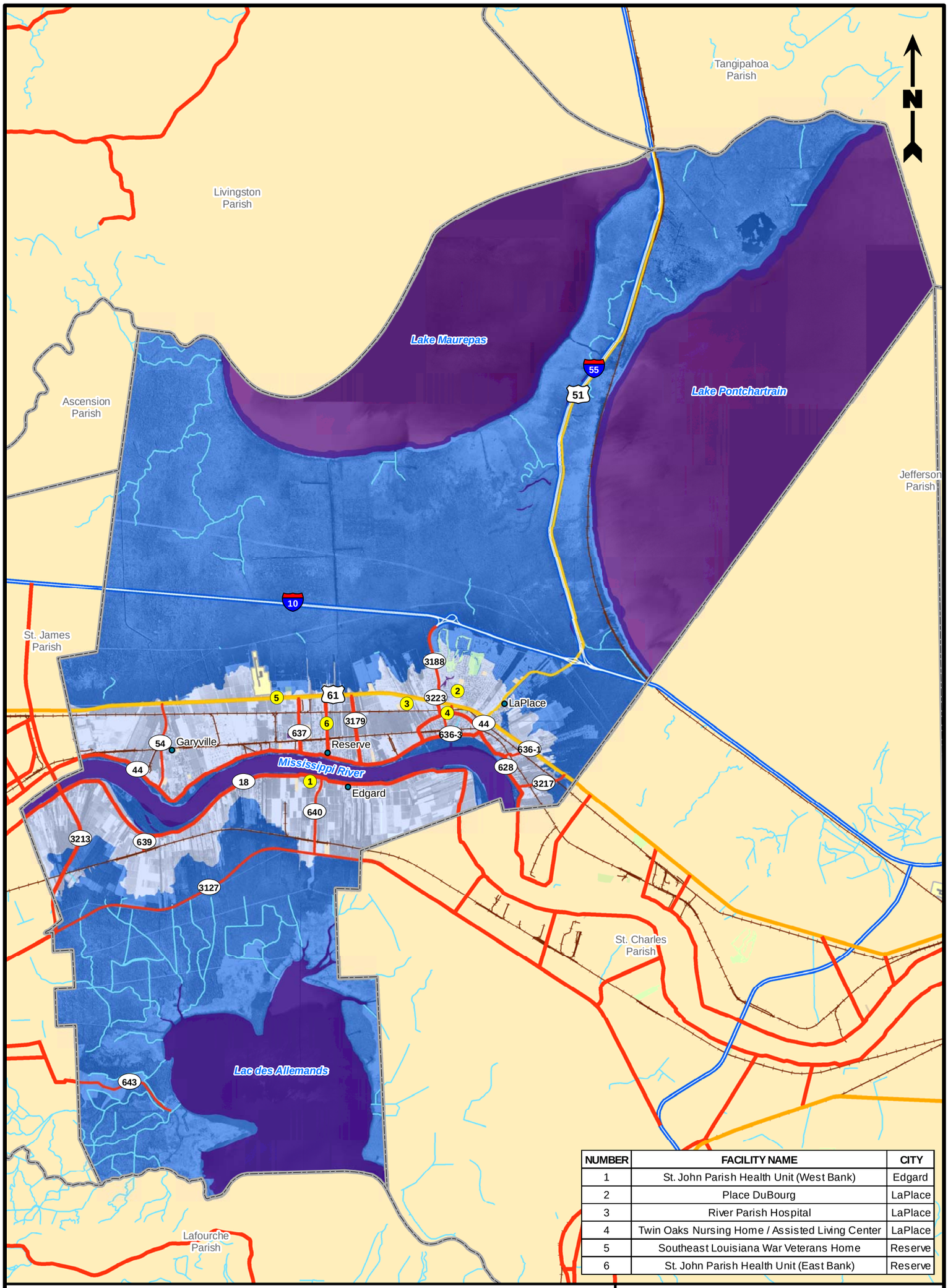
Hazard Mitigation Plan Update
St. John the Baptist Parish, Louisiana

St. John the Baptist Parish
LaPlace, Louisiana

PROVIDENCE

Drawn By	DRA	07/14/10
Checked By	JS	07/14/10
Approved By	MCM	11/29/10
Project Number	623-001	
Drawing Number	623-001-B005	

5
Figure



NUMBER	FACILITY NAME	CITY
1	St. John Parish Health Unit (West Bank)	Edgard
2	Place DuBourg	LaPlace
3	River Parish Hospital	LaPlace
4	Twin Oaks Nursing Home / Assisted Living Center	LaPlace
5	Southeast Louisiana War Veterans Home	Reserve
6	St. John Parish Health Unit (East Bank)	Reserve

Legend

- Parish Boundary
- 100-Year Floodplain
- 500-Year Floodplain
- Waterbody
- Interstate/Evacuation Route
- LA Highway/Evacuation Route
- US Highway/Evacuation Route
- Stream
- Health Care Facility
- Towns/Cities

Reference

Base map comprised of 2007 aerial photograph. The Q3 2010 Flood Data obtained from the Flood Insurance Rate Maps (FIRMS) published by the Federal Emergency Management Agency (FEMA).

2.5 1.25 0 2.5 Miles

Health Care Facilities

Hazard Mitigation Plan Update
St. John the Baptist Parish, Louisiana

St. John the Baptist Parish
LaPlace, Louisiana

PROVIDENCE

Drawn By	DRA	07/14/10
Checked By	JS	07/14/10
Approved By	MCM	11/29/10

Project Number 623-001

Drawing Number 623-001-B006

6
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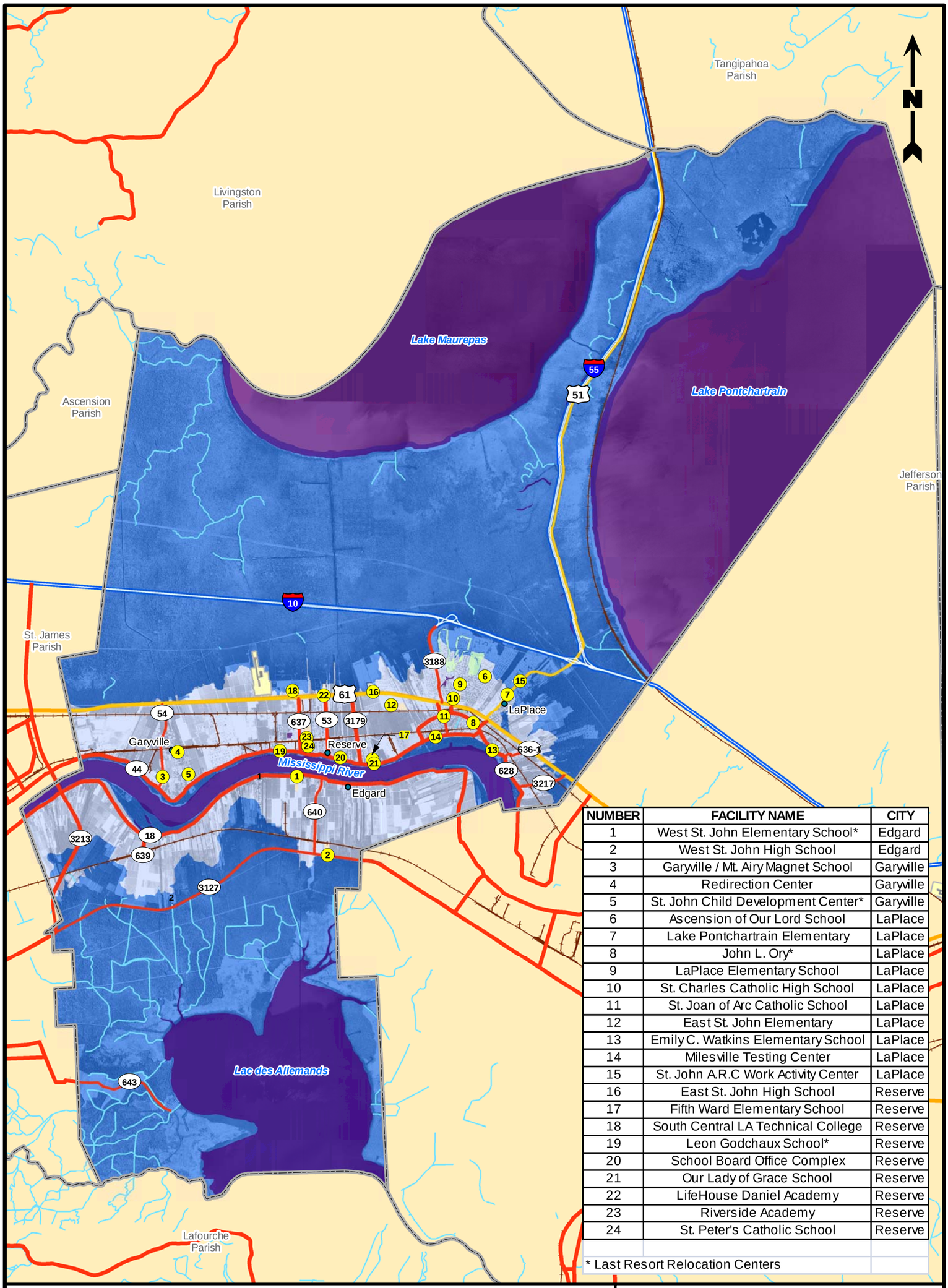


NUMBER	FACILITY NAME	CITY
1	West St. John Elementary School*	Edgard
2	West St. John High School	Edgard
3	Garyville / Mt. Airy Magnet School	Garyville
4	Redirection Center	Garyville
5	St. John Child Development Center*	Garyville
6	Ascension of Our Lord School	LaPlace
7	Lake Pontchartrain Elementary	LaPlace
8	John L. Ory*	LaPlace
9	LaPlace Elementary School	LaPlace
10	St. Charles Catholic High School	LaPlace
11	St. Joan of Arc Catholic School	LaPlace
12	East St. John Elementary	LaPlace
13	Emily C. Watkins Elementary School	LaPlace
14	Milesville Testing Center	LaPlace
15	St. John A.R.C Work Activity Center	LaPlace
16	East St. John High School	Reserve
17	Fifth Ward Elementary School	Reserve
18	South Central LA Technical College	Reserve
19	Leon Godchaux School*	Reserve
20	School Board Office Complex	Reserve
21	Our Lady of Grace School	Reserve
22	LifeHouse Daniel Academy	Reserve
23	Riverside Academy	Reserve
24	St. Peter's Catholic School	Reserve

* Last Resort Relocation Centers

Legend

- Parish Boundary
- 100-Year Floodplain
- 500-Year Floodplain
- Waterbody
- Interstate/Evacuation Route
- LA Highway/Evacuation Route
- US Highway/Evacuation Route
- Stream
- School
- Towns/Cities

Reference

Base map comprised of 2007 aerial photograph. The Q3 2010 Flood Data obtained from the Flood Insurance Rate Maps (FIRMS) published by the Federal Emergency Management Agency (FEMA).

2.5 1.25 0 2.5 Miles

Schools

Hazard Mitigation Plan Update
St. John the Baptist Parish, Louisiana

St. John the Baptist Parish
LaPlace, Louisiana

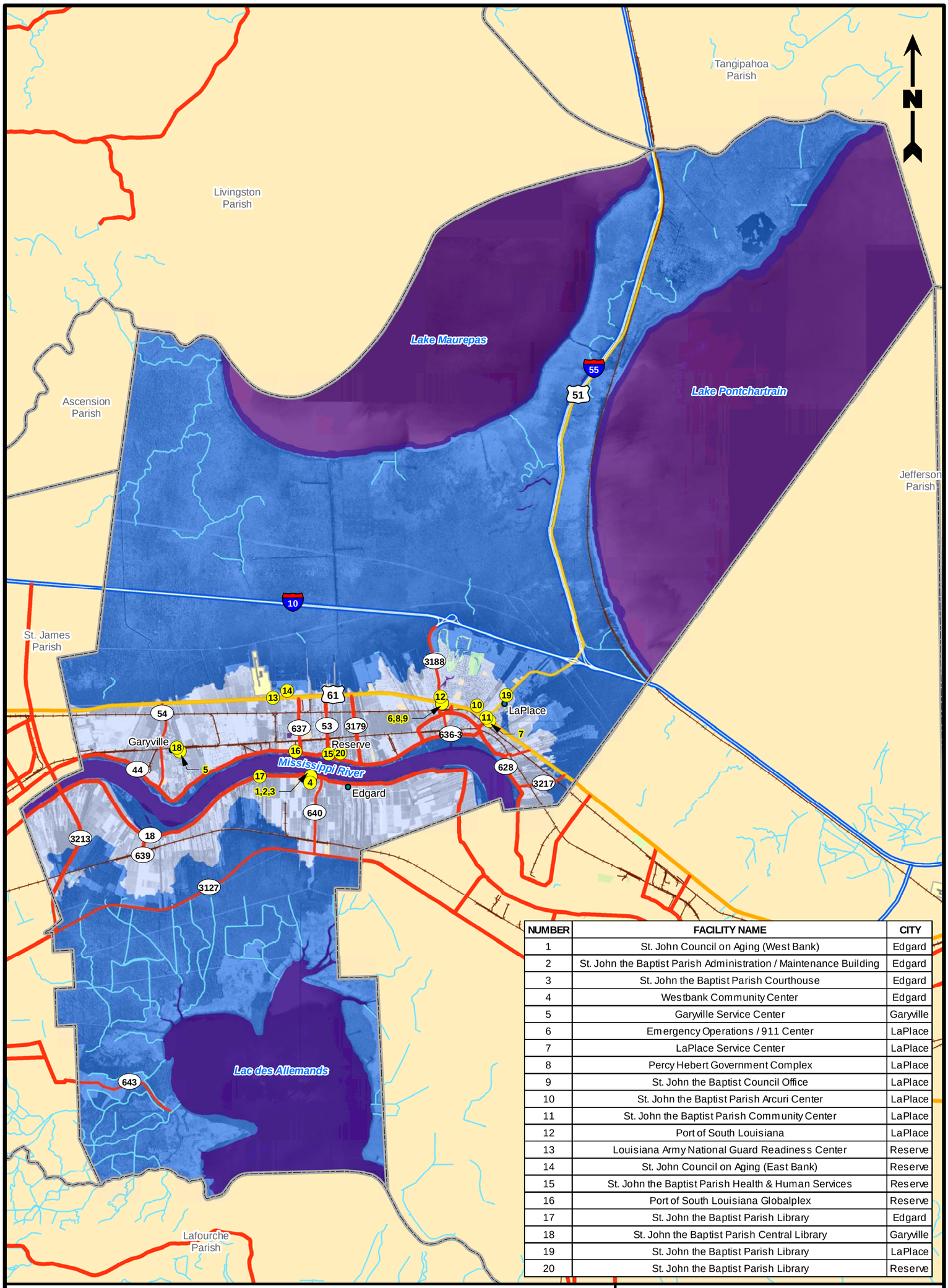
PROVIDENCE

Drawn By	DRA	07/14/10
Checked By	JS	07/14/10
Approved By	MCM	11/29/10

Project Number 623-001

Drawing Number 623-001-B007

7
Figure



NUMBER	FACILITY NAME	CITY
1	St. John Council on Aging (West Bank)	Edgard
2	St. John the Baptist Parish Administration / Maintenance Building	Edgard
3	St. John the Baptist Parish Courthouse	Edgard
4	Westbank Community Center	Edgard
5	Garyville Service Center	Garyville
6	Emergency Operations / 911 Center	LaPlace
7	LaPlace Service Center	LaPlace
8	Percy Hebert Government Complex	LaPlace
9	St. John the Baptist Council Office	LaPlace
10	St. John the Baptist Parish Arcuri Center	LaPlace
11	St. John the Baptist Parish Community Center	LaPlace
12	Port of South Louisiana	LaPlace
13	Louisiana Army National Guard Readiness Center	Reserve
14	St. John Council on Aging (East Bank)	Reserve
15	St. John the Baptist Parish Health & Human Services	Reserve
16	Port of South Louisiana Globalplex	Reserve
17	St. John the Baptist Parish Library	Edgard
18	St. John the Baptist Parish Central Library	Garyville
19	St. John the Baptist Parish Library	LaPlace
20	St. John the Baptist Parish Library	Reserve

Legend

- Parish Boundary
- 100-Year Floodplain
- 500-Year Floodplain
- Waterbody
- Interstate/Evacuation Route
- LA Highway/Evacuation Route
- US Highway/Evacuation Route
- Stream
- Municipal Building
- Towns/Cities

Reference

Base map comprised of 2007 aerial photograph. The Q3 2010 Flood Data obtained from the Flood Insurance Rate Maps (FIRMS) published by the Federal Emergency Management Agency (FEMA).

2.5 1.25 0 2.5 Miles

Municipal Buildings

Hazard Mitigation Plan Update
St. John the Baptist Parish, Louisiana

St. John the Baptist Parish
LaPlace, Louisiana

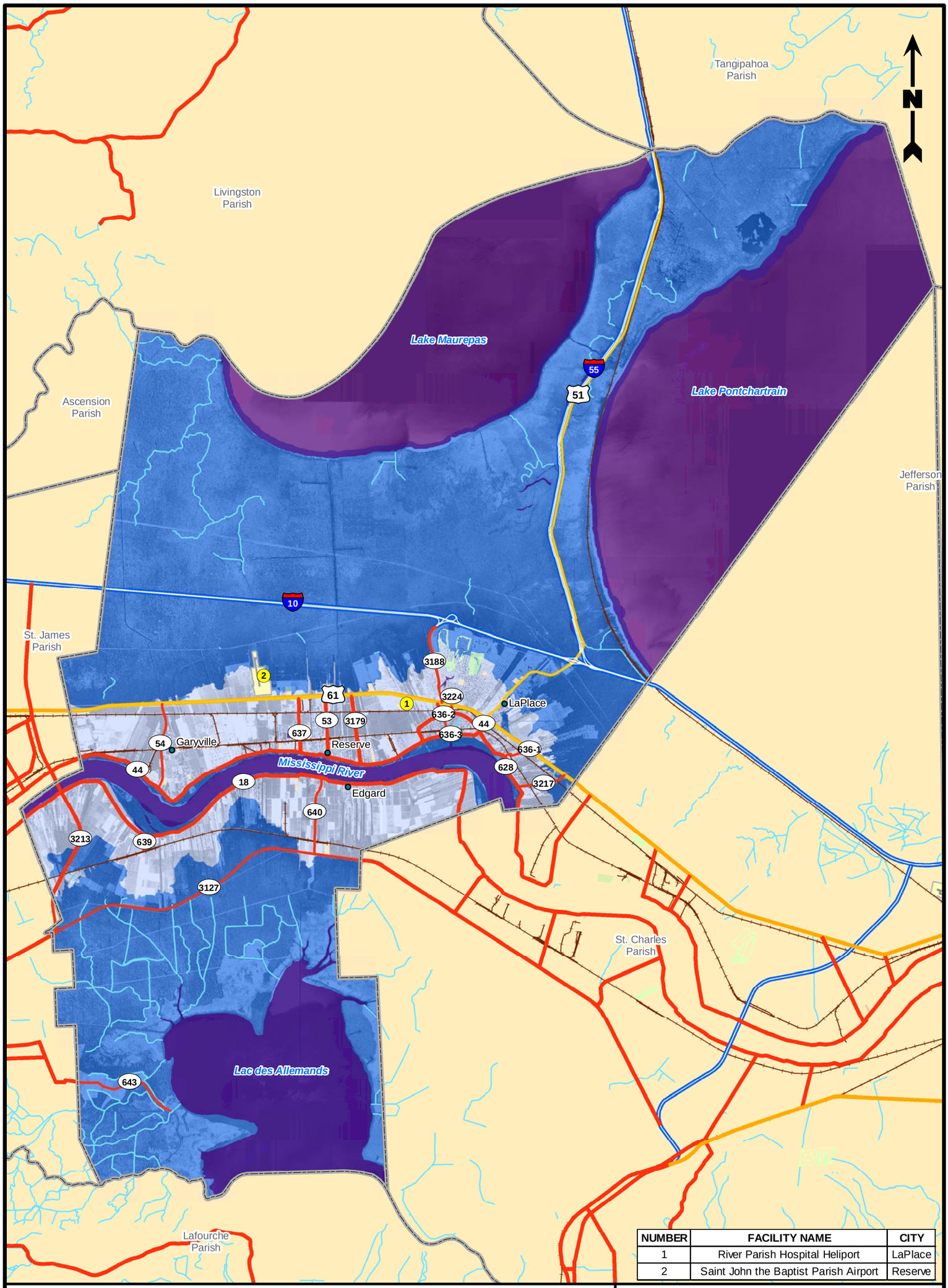
PROVIDENCE

Drawn By	DRA	07/14/10
Checked By	JS	07/14/10
Approved By	MCM	11/29/10

Project Number 623-001

Drawing Number 623-001-B008

8
Figure



NUMBER	FACILITY NAME	CITY
1	River Parish Hospital Heliport	LaPlace
2	Saint John the Baptist Parish Airport	Reserve

Legend

- Parish Boundary
- 100-Year Floodplain
- 500-Year Floodplain
- Waterbody
- Interstate/Evacuation Route
- LA Highway/Evacuation Route
- US Highway/Evacuation Route
- Stream
- Airport
- Towns/Cities

Reference

Base map comprised of 2007 aerial photograph. The Q3 2010 Flood Data obtained from the Flood Insurance Rate Maps (FIRMS) published by the Federal Emergency Management Agency (FEMA).

2.5 1.25 0 2.5 Miles

Airports

Hazard Mitigation Plan Update
St. John the Baptist Parish, Louisiana

St. John the Baptist Parish
LaPlace, Louisiana

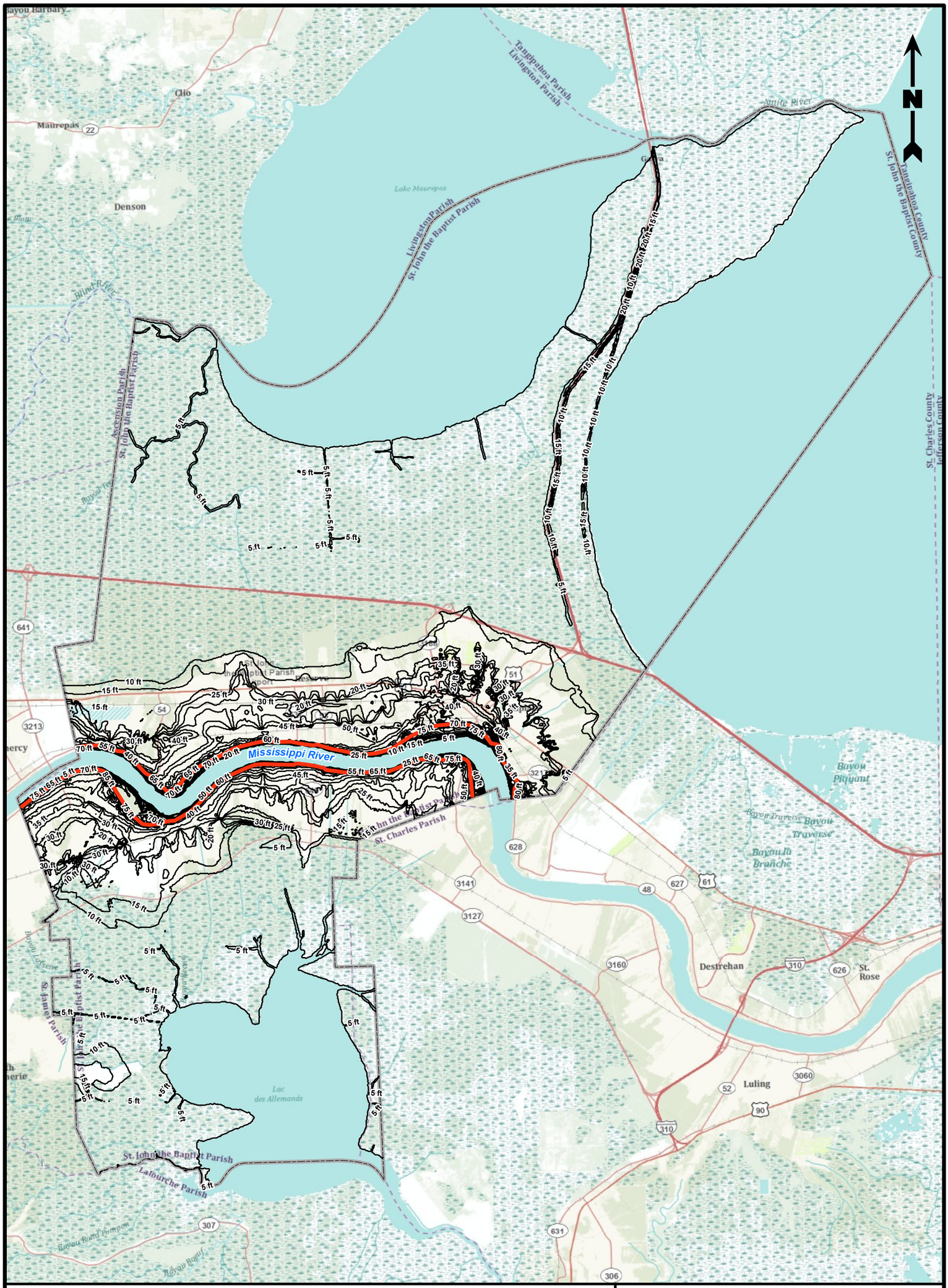
PROVIDENCE

Drawn By	DRA	07/14/10
Checked By	JS	07/14/10
Approved By	MCM	11/29/10

Project Number 623-001

Drawing Number 623-001-B009

9
Figure



Legend

- St. John the Baptist Parish Boundary
- Mississippi River Levee
- 5-foot Elevation Contours

Reference

Base map comprised of World Topographic Map from USGS, FAO, NPS, EPA, ESRI, DeLorme, TANA, other suppliers.

2.5 1.25 0 2.5 Miles

Levee Map

Hazard Mitigation Plan Update
St. John the Baptist Parish, Louisiana

St. John the Baptist Parish
LaPlace, Louisiana

PROVIDENCE

Drawn By	DRA	02/21/11
Checked By	JS	02/21/11
Approved By	MCM	02/21/11
Project Number 623-001		
Drawing Number 623-001-B011		

10
Figure

APPENDIX A

ST. JOHN THE BAPTIST PARISH SIGN IN SHEETS

St. John the Baptist Parish
Hazard Mitgation
Project Initiation Meeting
May 5, 2010

SIGNATURE	TITLE	LAST NAME	FIRST NAME	ORGANIZATION	ADDRESS	CITY	STATE	ZIP	PHONE	FAX	EMAIL
	Mr.	Alexander	Reed	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	504-457-1219	985-651-7731	r.alexander@sjbparish.com
	Mr.	Bailey	Clifford	St. John Parish Public Works	1801 W Airline Highway	LaPlace	LA	70068	504-415-1114	985-652-7524	c.bailey@sjbparish.com
	Mr.	Bernard	Neil	Faith Based	1929 W Airline Highway	LaPlace	LA	70068	985-653-0008	985-653-0009	neiljbernard@yahoo.com
	Mr.	Berniard	Casey	Marathon	4663 W. Airline Highway ~~P.O. Box AG~~	Garyville	LA	70051	985-212-0068	985-535-7235	cpberniard@marathon.oil.com
	Mr.	Boe	Buddy	Chief Admin Officer	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-5005	b.boe@sjbparish.com
	Mr.	Braisington	Doug	Fire Department	1801 W Airline Highway	LaPlace	LA	70068	504-329-0358		djb1@sprint.blackberry.net
	Mr.	Buhler	Ken	LTC	181 Regala Parish Road	Reserve	LA	70084	985-536-4418 ext. 2	985-536-7697	kbuhler@ltc.edu
	Ms.	Butler	Sheila	Entergy ~~Operations~~ LA	4317 W Airline Hwy ~~P.O. Drawer Q~~	Reserve	LA	70084	985 479-2025	985 479 2018	sbutler@entergy.com
	Mr.	Carl	Desselle	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	504-416-6077	985-651-7781	CJDesselle@SJBPARISH CJDesselle@yahoo.com
	~~Mr.~~ Ms.	Cornman	~~Bill~~ PAYI	St. John Parish Planning & Zoning	1801 W AIRLINE HIGHWAY	LAPLACE	LA	70068	985-651-5565	985-653-9808	f.cornman@sjbparish.com
	Capt.	Cox	Anna	St. John Parish Sheriff's Office	P.O. Box 1600	LaPlace	LA	70069	504-416-5104	985-652-6157	acox@stjohnsheriff.org
	Ms.	Falterman	Rebecca	St. John Parish EOC	1801 W AIRLINE HIGHWAY	LAPLACE	LA	70068	985-652-2222	985-652-2183	r.falterman@sjbparish.com
	Mr.	Flynn, Jr	Harold	Belle Terre Land, LLC ~~Land Developer~~	669 Belle Terre Blvd ~~113 Idaho Court~~	LaPlace	LA	70068	985-651-9090	985-651-9010	btlandc@bellsouth.net
	Ms.	Gilmore	Kathy	St. John Parish OHSEP	1801 W Airline Highway	LaPlace	LA	70068	985-652-2222	985-652-2183	k.gilmoer@sjbparish.com
	Mr.	Kindrick	Verdell	St. John Public Works	1801 W AIRLINE HIGHWAY	LAPLACE	LA	70068	504-442-1321	985-652-7527	V.KINDRICK ~~o.lassara~~@sjbparish.com
	Mr.	Kippes	Kerry	River Parish Hospital	500 Rue De Sante	LaPlace	LA	70068			
	Ms.	Lou	Vaughn	Planning & Zoning	1801 W Airline Highway	LaPalce	LA	70068	985-651-5565	985-653-9808	l.vaughn@sjbparish.com
	Mr.	Manuel	Errol	St. John Parish Recreation	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-1008	E.MANUEL@sjbparish.com
	Mr.	Miles	Troy	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	985-651-2065	985-359-0825	t.miles@sjbparish.com
	Mr.	Oncale	Paul	St. John Parish OHSEP	1801 W Airline Highway	LaPlace	LA	70068	985-652-2222	985-652-2183	p.oncale@sjbparish.com
	Mr.	Oubre	Elton	St. John Parish School Board	118 W 10th Street	Reserve	LA	70084	985-536-1106 ext. ~~2~~ 2226	985-479-1708	eoubre@stjohn.k.12.la.us
	Ms.	Pannu	Rajender	Belle Terre Civic Assoc Homeowners Association	2169 Augusta Dr.	LaPlace	LA	70068	504-417-3282	985-652-4480	rajpannu@aol.com

St. John the Baptist Parish
Hazard Mitgation
Project Initiation Meeting
May 5, 2010

SIGNATURE	TITLE	LAST NAME	FIRST NAME	ORGANIZATION	ADDRESS	CITY	STATE	ZIP	PHONE	FAX	EMAIL
	~~Ms.~~	~~Phyl~~	~~Comman~~	~~St. John Parish Planning & Zoning~~	~~1801 W Airline Highway~~	~~LaPlace~~	~~LA~~	~~70068~~			
	Ms.	Poskey	Cindy	River Parish Technical College	181 Regala Park Road	Reserve	LA	70084			
Julia Remondet	Ms.	Remondet	Julia	Economic Development	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-5005	j.remondet@sjbparish.com
Henry Sullivan	Mr.	hsullivan@portsl.com Sullivan	Henry	Port of South Louisiana	P. O. Box 909	LaPlace	LA	70069	985-536-8300	985-536-6144	hsullivan@portsl.com
	~~Mr.~~	~~Vaughn~~	~~Lou~~	~~St. John Parish Planning & Zoning~~					985-651-5565	985-653-9808	l.voughn@sjbparish.com
Verdell Kendrick	~~Mr.~~	~~Verdell~~	~~Kendrick~~	~~St. John Parish Public Works~~	~~1801 W Airline Highway~~	~~LaPlace~~	~~LA~~	~~70068~~			
Clayton A. King	Mr	King	Clayton	FEMA	1 Seine Ct	New Orleans	LA	70114	504 762 2288		clayton.king@dhs.gov
Carrie Robinette	Ms	Robinette	Carrie	GOHSEP	415 Nth 15th St.	Baton Rouge	LA	70809	225-267-2558		carrie.robinette@la.gov
JOEY GENNARO	MR	GENNARO	JOEY	SJP PUBLIC WORKS	1801 W AIRLINE HWY	LAPLACE	LA	70068	985-233-6514	985-652-7527	
Elaine Tassara	Ms	Tassara	Elaine	SJP Public WORKS	1801 W Airline Hwy	LaPlace	LA	70068	985-652-4815	985-652-7527	e.tassara@sjbparish.com
Iraida Villa	Ms.	Villa	Iraida	SJP Public WORKS	1801 W. Airline Hwy	Laplace	LA	70068	985-652-4815	985-652 7527	I.villa@sjbparish.com
~~Enid Blanchard~~	~~MRS~~	~~MANUEL~~	~~EARLY~~	~~SJP PARKS + RECREATION~~	~~1801 W AIRLINE HWY~~	~~LAPLACE~~	~~LA~~	~~70068~~	~~985-652-9562~~	~~(985) 359-1478~~	~~EMANUEL@SJBPARISH.COM~~

St. John the Baptist Parish
Hazard Mitigation
Risk Assessment Meeting
June 9, 2010

SIGNATURE	TITLE	LAST NAME	FIRST NAME	ORGANIZATION	ADDRESS	CITY	STATE	ZIP	PHONE	FAX	EMAIL
	Mr.	Alexander	Reed	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	504-457-1219	985-651-7731	r.alexander@sjbparish.com
	Mr.	Bailey	Clifford	St. John Parish Public Works	1801 W Airline Highway	LaPlace	LA	70068	504-415-1114	985-652-7524	c.bailey@sjbparish.com
	Mr.	Bernard	Neil	Faith Based	1929 W Airline Highway	LaPlace	LA	70068	985-653-0008	985-653-0009	neiljbernard@yahoo.com
	Mr.	Berniard	Casey	Marathon	4663 W. Airline Highway	Garyville	LA	70051	985-212-0068	985-535-7235	cpberniard@marathonoil.com
	Mr.	Boe	Buddy	Chief Admin Officer	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-5005	b.boe@sjbparish.com
	Mr.	Braisington	Doug	Fire Department	1801 W Airline Highway	LaPlace	LA	70068	504-329-0358		djb1@sprint.blackberry.net
	Mr.	Buhler	Ken	LTC	181 Regala Parish Road	Reserve	LA	70084	985-536-4418 ext. 2	985-536-7697	kbuhler@ltc.edu
	Ms.	Butler	Sheila	Entergy LA	4317 W. Airline Hwy	Reserve	LA	70084	985-479-2025	985-479-2018	sbutler@entergy.com
	Mr.	Carl	Desselle	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	504-416-6077	985-651-7731	c.desselle@sjbparish.com cjdessell@yahoo.com
	Ms.	Cornman	Phyl	St. John Parish Planning & Zoning	1801 W. Airline Highway	LaPlace	LA	70068	985-651-5565	985-653-9808	f.cornman@sjbparish.com
	Capt.	Cox	Anna	St. John Parish Sheriff's Office	P.O. Box 1600	LaPlace	LA	70069	504-416-5104	985-652-6157	acox@stjohnsheriff.org
	Ms.	Falterman	Rebecca	St. John Parish EOC					985-652-2222	985-652-2183	r.falterman@sjbparish.com
	Mr.	Flynn, Jr	Harold	Belle Terre Land, LLC	669 Belle Terre Blvd.	LaPlace	LA	70068	985-651-9090	985-651-9010	btland@bellsouth.net
	Mr.	Gennaro	Joey	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-233-6514	985-652-7227	
	Ms.	Gilmore	Kathy	St. John Parish OHSEP	1801 W Airline Highway	LaPlace	LA	70068	985-652-2222	985-652-2183	k.gilmore@sjbparish.com
	Mr.	Kindrick	Verdell	St. John Public Works	1801 W Airline Highway	LaPlace	LA	70068	504-442-1321	985-652-7527	v.kindrick@sjbparish.com
	Mr.	King	Clayton	FEMA	1 Seine Ct.	New Orleans	LA	70114	504-762-2288		clayton.king@dhs.gov
	Mr.	Kippes	Kerry	River Parish Hospital	500 Rue De Sante	LaPlace	LA	70068			
	Mr.	Manuel	Errol	St. John Parish Recreation	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-1008	e.manuel@sjbparish.com
	Mr.	Miles	Troy	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	985-651-2065	985-359-0825	t.miles@sjbparish.com
	Mr.	Oncale	Paul	St. John Parish OHSEP	1801 W Airline Highway	LaPlace	LA	70068	985-652-2222	985-652-2183	p.oncale@sjbparish.com
	Mr.	Oubre	Elton	St. John Parish School Board	118 W 10th Street	Reserve	LA	70084	985-536-1106 ext. 2226	985-479-1708	eoubre@stjohn.k.12.la.us

St. John the Baptist Parish
Hazard Mitigation
Risk Assessment Meeting
June 9, 2010

SIGNATURE	TITLE	LAST NAME	FIRST NAME	ORGANIZATION	ADDRESS	CITY	STATE	ZIP	PHONE	FAX	EMAIL
	Ms.	Pannu	Rajender	Belle Terre Civic Association	2169 Augusta Dr.	LaPlace	LA	70068	504-417-3282	985-652-4480	rajpannu@aol.com
	Ms.	Poskey	Cindy	River Parish Technical College	181 Regala Park Road	Reserve	LA	70084			
	Ms.	Remondet	Julia	Economic Development	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-5005	j.remondet@sjbparish.com
	Ms.	Robinette	Carrie	GOHSEP	415 North 15th St.	Baton Rouge	LA	70809	225-267-2558		carrie.robinette@la.gov
	Mr.	Sullivan	Henry	Port of South Louisiana	P. O. Box 909	LaPlace	LA	70069	985-536-8300	985-536-6144	hsullivan@portsl.com
	Ms.	Tassara	Elaine	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-652-4815	985-652-7227	e.tassara@sjbparish.com
	Ms.	Vaughn	Lou	Planning & Zoning	1801 W Airline Highway	LaPlace	LA	70068	985-651-5565	985-653-9808	l.vaughn@sjbparish.com
	Ms.	Villa	Iraida	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-652-4815	985-652-7227	i.villa@sjbparish.com
		LaCour	Jeffrey	FEMA - Mitigation					504-762-2307		JEFFREY. LACOUR@DHS.GOV
		Gardner	Stephanie	Laplace Dialysis	2700 Airline Hwy W	Laplace	La	70068	9855367860	9855368350	Laplace@metropolitankidney.com
	Ms	Abadie	Terri Ann	Economic Development	1801 West Airline Hwy	LaPlace	LA	70068	985-652-9569	985-652-4131	t.abadie@sjbparish.com

St. John the Baptist Parish
Hazard Mitigation
Map Review and Goal Seeting Meeting
July 21, 2010

SIGNATURE	TITLE	LAST NAME	FIRST NAME	ORGANIZATION	ADDRESS	CITY	STATE	ZIP	PHONE	FAX	EMAIL
	Ms.	Abadie	Terri Ann	Economic Development	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-652-4131	t.abadie@sjbparish.com
	Mr.	Alexander	Reed	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	504-457-1219	985-651-7731	r.alexander@sjbparish.com
	Mr.	Bailey	Clifford	St. John Parish Public Works	1801 W Airline Highway	LaPlace	LA	70068	504-415-1114	985-652-7524	c.bailey@sjbparish.com
	Mr.	Bernard	Neil	Faith Based	1929 W Airline Highway	LaPlace	LA	70068	985-653-0008	985-653-0009	neiljbernard@yahoo.com
	Mr.	Berniard	Casey	Marathon	4663 W. Airline Highway	Garyville	LA	70051	985-212-0068	985-535-7235	cpberniard@marathonoil.com
	Mr.	Boe	Buddy	Chief Admin Officer	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-5005	b.boe@sjbparish.com
	Mr.	Braisington	Doug	Fire Department	1801 W Airline Highway	LaPlace	LA	70068	504-329-0358		djb1@sprint.blackberry.net
	Mr.	Buhler	Ken	LTC	181 Regala Parish Road	Reserve	LA	70084	985-536-4418 ext. 2	985-536-7697	kbuhler@ltc.edu
	Ms.	Butler	Sheila	Entergy LA	4317 W. Airline Hwy	Reserve	LA	70084	985-479-2025	985-479-2018	sbutler@entergy.com
	Mr.	Carl	Desselle	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	504-416-6077	985-651-7731	c.desselle@sjbparish.com cjdessell@yahoo.com
	Ms.	Cornman	Phyl	St. John Parish Planning & Zoning	1801 W. Airline Highway	LaPlace	LA	70068	985-651-5565	985-653-9808	f.cornman@sjbparish.com
	Capt.	Cox	Anna	St. John Parish Sheriff's Office	P.O. Box 1600	LaPlace	LA	70069	504-416-5104	985-652-6157	acox@stjohnsheriff.org
	Ms.	Falterman	Rebecca	St. John Parish EOC					985-652-2222	985-652-2183	r.falterman@sjbparish.com
	Mr.	Flynn, Jr	Harold	Belle Terre Land, LLC	669 Belle Terre Blvd.	LaPlace	LA	70068	985-651-9090	985-651-9010	btland@bellsouth.net
	Ms.	Gardner	Stephanie	Laplace Dialysis	2700 Airline Hwy. W	LaPlace	LA	70068	985-536-7860	985-536-8350	laplace@metropolitankidney.com
	Mr.	Gennaro	Joey	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-233-6514	985-652-7227	
	Ms.	Gilmore	Kathy	St. John Parish OHSEP	1801 W Airline Highway	LaPlace	LA	70068	985-652-2222	985-652-2183	k.gilmore@sjbparish.com
	Mr.	Kindrick	Verdell	St. John Public Works	1801 W Airline Highway	LaPlace	LA	70068	504-442-1321	985-652-7527	v.kindrick@sjbparish.com
	Mr.	King	Clayton	FEMA	1 Seine Ct.	New Orleans	LA	70114	504-762-2288		clayton.king@dhs.gov
	Mr.	Kippes	Kerry	River Parish Hospital	500 Rue De Sante	LaPlace	LA	70068			
	Mr.	LaCour	Jeffrey	FEMA					504-762-2307		jeffrey.lacour@dhs.gov
	Mr.	Manuel	Errol	St. John Parish Recreation	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-1008	e.manuel@sjbparish.com

St. John the Baptist Parish
Hazard Mitigation
Map Review and Goal Seeting Meeting
July 21, 2010

SIGNATURE	TITLE	LAST NAME	FIRST NAME	ORGANIZATION	ADDRESS	CITY	STATE	ZIP	PHONE	FAX	EMAIL
T. Miles, Jr	Mr.	Miles	Troy	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	985-651-2065	985-359-0825	t.miles@sjbparish.com
Paul J. Oncale	Mr.	Oncale	Paul	St. John Parish OHSEP	1801 W Airline Highway	LaPlace	LA	70068	985-652-2222	985-652-2183	p.oncale@sjbparish.com
	Mr.	Oubre	Elton	St. John Parish School Board	118 W 10th Street	Reserve	LA	70084	985-536-1106 ext. 2226	985-479-1708	eoubre@stjohn.k.12.la.us
	Ms.	Pannu	Rajender	Belle Terre Civic Association	2169 Augusta Dr.	LaPlace	LA	70068	504-417-3282	985-652-4480	rajpannu@aol.com
	Ms.	Poskey	Cindy	River Parish Technical College	181 Regala Park Road	Reserve	LA	70084			
Julia Remondet	Ms.	Remondet	Julia	Economic Development	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-5005	j.remondet@sjbparish.com
Carrie Robinette	Ms.	Robinette	Carrie	GOHSEP	415 North 15th St.	Baton Rouge	LA	70809	225-267-2558		carrie.robinette@la.gov
Ron Johnson	Mr.	Johnson ~~Sullivan~~	Ron ~~Henry~~	Port of South Louisiana	P. O. Box 909	LaPlace	LA	70069	985-536-8300	985-536-6144	hsullivan@portsl.com
Elaine Tassara	Ms.	Tassara	Elaine	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-652-4815	985-652-7227	e.tassara@sjbparish.com
Lou Vaughn	Ms.	Vaughn	Lou	Planning & Zoning	102 E ~~1801 W~~ Airline Highway	LaPlace	LA	70068	985-651-5565	985-653-9808	l.vaughn@sjbparish.com
	Ms.	Villa	Iraida	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-652-4815	985-652-7227	i.villa@sjbparish.com

St. John the Baptist Parish
Hazard Mitigation
Mitigation Strategy Meeting
August 25, 2010

SIGNATURE	TITLE	LAST NAME	FIRST NAME	ORGANIZATION	ADDRESS	CITY	STATE	ZIP	PHONE	FAX	EMAIL
	Ms.	Abadie	Terri Ann	Economic Development	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-652-4131	t.abadie@sjbparish.com
	Mr.	Alexander	Reed	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	504-457-1219	985-651-7731	r.alexander@sjbparish.com
	Mr.	Bailey	Clifford	St. John Parish Public Works	1801 W Airline Highway	LaPlace	LA	70068	504-415-1114	985-652-7524	c.bailey@sjbparish.com
	Mr.	Bernard	Neil	Faith Based	1929 W Airline Highway	LaPlace	LA	70068	985-653-0008	985-653-0009	neiljbernard@yahoo.com
	Mr.	Berniard	Casey	Marathon	4663 W. Airline Highway	Garyville	LA	70051	985-212-0068	985-535-7235	cpberniard@marathonoil.com
	Mr.	Boe	Buddy	Chief Admin Officer	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-5005	b.boe@sjbparish.com
	Mr.	Brasington	Doug	Fire Department	1801 W Airline Highway	LaPlace	LA	70068	504-329-0358		djb1@sprint.blackberry.net
	Mr.	Buhler	Ken	LTC	181 Regala Parish Road	Reserve	LA	70084	985-536-4418 ext. 2	985-536-7697	kbuhler@ltc.edu
	Ms.	Butler	Sheila	Entergy LA	4317 W. Airline Hwy	Reserve	LA	70084	985-479-2025	985-479-2018	sbutler@entergy.com
	Mr.	Carl	Desselle	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	504-416-6077	985-651-7731	c.desselle@sjbparish.com cjdessell@yahoo.com
	Ms.	Cornman	Phyl	St. John Parish Planning & Zoning	1801 W. Airline Highway	LaPlace	LA	70068	985-651-5565	985-653-9808	f.cornman@sjbparish.com
	Capt.	Cox	Anna	St. John Parish Sheriff's Office	P.O. Box 1600	LaPlace	LA	70069	504-416-5104	985-652-6157	acox@stjohnsheriff.org
	Ms.	Falterman	Rebecca	St. John Parish EOC					985-652-2222	985-652-2183	r.falterman@sjbparish.com
	Mr.	Flynn, Jr	Harold	Belle Terre Land, LLC	669 Belle Terre Blvd.	LaPlace	LA	70068	985-651-9090	985-651-9010	btland@bellsouth.net
	Ms.	Gardner	Stephanie	Laplace Dialysis	2700 Airline Hwy. W	LaPlace	LA	70068	985-536-7860	985-536-8350	laplace@metropolitankidney.com
	Mr.	Gennaro	Joey	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-233-6514	985-652-7227	
	Ms.	Gilmore	Kathy	St. John Parish OHSEP	1801 W Airline Highway	LaPlace	LA	70068	985-652-2222	985-652-2183	k.gilmore@sjbparish.com
	Mr.	Johnson	Ron	Port of South Louisiana	P. O. Box 909	LaPlace	LA	70069	985-536-8300	985-536-6144	
	Mr.	Kindrick	Verdell	St. John Public Works	1801 W Airline Highway	LaPlace	LA	70068	504-442-1321	985-652-7527	v.kindrick@sjbparish.com
	Mr.	King	Clayton	FEMA	1 Seine Ct.	New Orleans	LA	70114	504-762-2288		clayton.king@dhs.gov
	Mr.	Kippes	Kerry	River Parish Hospital	500 Rue De Sante	LaPlace	LA	70068			
	Mr.	LaCour	Jeffrey	FEMA					504-762-2307		jeffrey.lacour@dhs.gov

St. John the Baptist Parish
Hazard Mitigation
Mitigation Strategy Meeting
August 25, 2010

SIGNATURE	TITLE	LAST NAME	FIRST NAME	ORGANIZATION	ADDRESS	CITY	STATE	ZIP	PHONE	FAX	EMAIL
	Mr.	Manuel	Errol	St. John Parish Recreation	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-1008	e.manuel@sjbparish.com
	Mr.	Miles	Troy	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	985-651-2065	985-359-0825	t.miles@sjbparish.com
Paul Oncale	Mr.	Oncale	Paul	St. John Parish OHSEP	1801 W Airline Highway	LaPlace	LA	70068	985-652-2222	985-652-2183	p.oncale@sjbparish.com
	Mr.	Oubre	Elton	St. John Parish School Board	118 W 10th Street	Reserve	LA	70084	985-536-1106 ext. 2226	985-479-1708	eoubre@stjohn.k.12.la.us
	Ms.	Pannu	Rajender	Belle Terre Civic Association	2169 Augusta Dr.	LaPlace	LA	70068	504-417-3282	985-652-4480	rajpannu@aol.com
	Ms.	Poskey	Cindy	River Parish Technical College	181 Regala Park Road	Reserve	LA	70084			
	Ms.	Remondet	Julia	Economic Development	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-5005	j.remondet@sjbparish.com
	Ms.	Robinette	Carrie	GOHSEP	415 North 15th St.	Baton Rouge	LA	70809	225-267-2558		carrie.robinette@la.gov
	Mr.	Sullivan	Henry	Port of South Louisiana	P. O. Box 909	LaPlace	LA	70069	985-536-8300	985-536-6144	hsullivan@portsl.com
	Ms.	Tassara	Elaine	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-652-4815	985-652-7227	e.tassara@sjbparish.com
Lou Vaughn	Ms.	Vaughn	Lou	Planning & Zoning	102 E Airline Highway	LaPlace	LA	70068	985-651-5565	985-653-9808	l.vaughn@sjbparish.com
	Ms.	Villa	Iraida	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-652-4815	985-652-7227	i.villa@sjbparish.com

St. John the Baptist Parish
Hazard Mitigation
Draft Plan Review Meeting
October 6, 2010

SIGNATURE	TITLE	LAST NAME	FIRST NAME	ORGANIZATION	ADDRESS	CITY	STATE	ZIP	PHONE	FAX	EMAIL
	Ms.	Abadie	Terri Ann	Economic Development	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-652-4131	t.abadie@sjbparish.com
	Mr.	Alexander	Reed	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	504-457-1219	985-651-7731	r.alexander@sjbparish.com
	Mr.	Bailey	Clifford	St. John Parish Public Works	1801 W Airline Highway	LaPlace	LA	70068	504-415-1114	985-652-7524	c.bailey@sjbparish.com
	Mr.	Bernard	Neil	Faith Based	1929 W Airline Highway	LaPlace	LA	70068	985-653-0008	985-653-0009	neiljbernard@yahoo.com
	Mr.	Bittel	Heath	Marathon	4663 W. Airline Highway	Garyville	LA	70051	985-212-0609 ~~985-212-0068~~	985-535-7235	habittel@marathonoil.com
	Mr.	Boe	Buddy	Chief Admin Officer	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-5005	b.boe@sjbparish.com
	Mr.	Brasington	Doug	Fire Department	1801 W Airline Highway	LaPlace	LA	70068	504-329-0358		djb1@sprint.blackberry.net
	Mr.	Buhler	Ken	LTC	181 Regala Parish Road	Reserve	LA	70084	985-536-4418 ext. 2	985-536-7697	kbuhler@ltc.edu
	Ms.	Butler	Sheila	Entergy LA	4317 W. Airline Hwy	Reserve	LA	70084	985-479-2025	985-479-2018	sbutler@entergy.com
	Mr.	Carl	Desselle	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	504-416-6077	985-651-7731	c.desselle@sjbparish.com cjdessell@yahoo.com
	Ms.	Cornman	Phyl	St. John Parish Planning & Zoning	1801 W. Airline Highway	LaPlace	LA	70068	985-651-5565	985-653-9808	f.cornman@sjbparish.com
	Capt.	Cox	Anna	St. John Parish Sheriff's Office	P.O. Box 1600	LaPlace	LA	70069	504-416-5104	985-652-6157	acox@stjohnsheriff.org
	Ms.	Falterman	Rebecca	St. John Parish EOC					985-652-2222	985-652-2183	r.falterman@sjbparish.com
	Mr.	Flynn, Jr	Harold	Belle Terre Land, LLC	669 Belle Terre Blvd.	LaPlace	LA	70068	985-651-9090	985-651-9010	btland@bellsouth.net
	Ms.	Gardner	Stephanie	Laplace Dialysis	2700 Airline Hwy. W	LaPlace	LA	70068	985-536-7860	985-536-8350	laplace@metropolitankidney.com
	Mr.	Gennaro	Joey	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-233-6514	985-652-7227	
	Ms.	Gilmore	Kathy	St. John Parish OHSEP	1801 W Airline Highway	LaPlace	LA	70068	985-652-2222	985-652-2183	k.gilmore@sjbparish.com
	Mr.	Johnson	Ron	Port of South Louisiana	P. O. Box 909	LaPlace	LA	70069	985-536-8300	985-536-6144	
	Mr.	Kindrick	Verdell	St. John Public Works	1801 W Airline Highway	LaPlace	LA	70068	504-442-1321	985-652-7527	v.kindrick@sjbparish.com
	Mr.	King	Clayton	FEMA	1 Seine Ct.	New Orleans	LA	70114	504-762-2288		clayton.king@dhs.gov
	Mr.	Kippes	Kerry	River Parish Hospital	500 Rue De Sante	LaPlace	LA	70068			
	Mr.	LaCour	Jeffrey	FEMA					504-762-2307		jeffrey.lacour@dhs.gov

St. John the Baptist Parish
Hazard Mitigation
Draft Plan Review Meeting
October 6, 2010

SIGNATURE	TITLE	LAST NAME	FIRST NAME	ORGANIZATION	ADDRESS	CITY	STATE	ZIP	PHONE	FAX	EMAIL
	Mr.	Manuel	Errol	St. John Parish Recreation	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-1008	e.manuel@sjbparish.com
	Mr.	Miles	Troy	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	985-651-2065	985-359-0825	t.miles@sjbparish.com
Paul Oncale	Mr.	Oncale	Paul	St. John Parish OHSEP	1801 W Airline Highway	LaPlace	LA	70068	985-652-2222	985-652-2183	p.oncale@sjbparish.com
	Mr.	Oubre	Elton	St. John Parish School Board	118 W 10th Street	Reserve	LA	70084	985-536-1106 ext. 2226	985-479-1708	eoubre@stjohn.k.12.la.us
	Ms.	Pannu	Rajender	Belle Terre Civic Association	2169 Augusta Dr.	LaPlace	LA	70068	504-417-3282	985-652-4480	rajpannu@aol.com
	Ms.	Poskey	Cindy	River Parish Technical College	181 Regala Park Road	Reserve	LA	70084			
Julia Remondet	Ms.	Remondet	Julia	Economic Development	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-5005	j.remondet@sjbparish.com
	Ms.	Robinette	Carrie	GOHSEP	415 North 15th St.	Baton Rouge	LA	70809	225-267-2558		carrie.robinette@la.gov
Henry Sullivan	Mr.	Sullivan	Henry	Port of South Louisiana	P. O. Box 909	LaPlace	LA	70069	985-536-8300	985-536-6144	hsullivan@portsl.com
Elaine Tassara	Ms.	Tassara	Elaine	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-652-4815	985-652-7227	e.tassara@sjbparish.com
Lou E. Vaughn	Ms.	Vaughn	Lou	Planning & Zoning	102 E Airline Highway	LaPlace	LA	70068	985-651-5565	985-653-9808	l.vaughn@sjbparish.com
	Ms.	Villa	Iraida	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-652-4815	985-652-7227	i.villa@sjbparish.com

APPENDIX B

ST. JOHN THE BAPTIST PARISH RESOLUTION

ST. JOHN THE BAPTIST PARISH COUNCIL
STATE OF LOUISIANA

RESOLUTION R11-13

Mrs. Millet proposed and Mr. Julien seconded the following resolution:

THE ST. JOHN THE BAPTIST PARISH COUNCIL HEREBY RESOLVES:

A Resolution for the adoption of the Parish-wide Hazard Mitigation Plan.

WHEREAS, St. John the Baptist Parish's original hazard mitigation plan was adopted in 2006 and that this plan is an update to the original hazard mitigation plan, and;

WHEREAS, the updated hazard mitigation plan will remain Supplement 1 to the Parish's Emergency Operations Plan, and;

WHEREAS, St. John the Baptist Parish has received grant funds from the Federal Emergency Management Agency, through the Governor's Office of Homeland Security and Emergency Preparedness, for the update of its 2006 hazard mitigation plan, and;

WHEREAS, our community has participated in the process to update a DMA compliant Hazard Mitigation Plan based on the FEMA guidance available in the How-to-Guides, and;

WHEREAS, St. John the Baptist Parish and local representatives and governments have participated in the mitigation planning process, and;

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

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

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 St. John the Baptist Parish Council does hereby adopts the St. John the Baptist Parish Hazard Mitigation Plan Update as supplement one (1) to the St. John the Baptist Parish's all Hazard Emergency Operations Plan.

The above resolution having been submitted to a vote; the vote thereon was as follows:

YEAS: Morris, Lewis, Millet, Julien, Smith, Hotard, Usry, Millet, Lee

NAYS: None **ABSENT:** None **ABSTAINING:** None

The result of the vote on the resolution was 9 **YEAS**, 0 **NAYS**, 0 **ABSENT**, 0 **ABSTAINING** and this resolution was declared adopted on the 22nd day of March, 2011.

COUNCIL CHAIR	SECRETARY	PARISH PRESIDENT
3/24/11	3/23/11	3/23/11
Date signed	Date signed	Date signed

CERTIFIED, to be a true and correct copy of a resolution adopted by the St. John the Baptist Parish Council on the 22 day of March, 2011.

SECRETARY

APPENDIX C

ST. JOHN THE BAPTIST PARISH INVITEES TO PROJECT INITIATION MEETING

St. John the Baptist Parish
Hazard Mitigation
Meeting Invitees List

TITLE	LAST NAME	FIRST NAME	ORGANIZATION	ADDRESS	CITY	STATE	ZIP	PHONE	FAX	EMAIL
Mr.	Alexander	Reed	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	504-457-1219	985-651-7731	r.alexander@sjbparish.com
Mr.	Bailey	Clifford	St. John Parish Public Works	1801 W Airline Highway	LaPlace	LA	70068	504-415-1114	985-652-7524	c.bailey@sjbparish.com
Mr.	Bernard	Neil	Faith Based	1929 W Airline Highway	LaPlace	LA	70068	985-653-0008	985-653-0009	neiljbernard@yahoo.com
Mr.	Berniard	Casey	Marathon	4663 W. Airline Highway	Garyville	LA	70051	985-212-0068	985-535-7235	cpberniard@marathonoil.com
Mr.	Boe	Buddy	Chief Admin Officer	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-5005	b.boe@sjbparish.com
Mr.	Braisington	Doug	Fire Department	1801 W Airline Highway	LaPlace	LA	70068	504-329-0358		djb1@sprint.blackberry.net
Mr.	Buhler	Ken	LTC	181 Regala Parish Road	Reserve	LA	70084	985-536-4418 ext. 2	985-536-7697	kbuhler@ltc.edu
Ms.	Butler	Sheila	Entergy LA	4317 W. Airline Hwy	Reserve	LA	70084	985-479-2025	985-479-2018	sbutler@entergy.com
Mr.	Carl	Desselle	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	504-416-6077	985-651-7731	c.desselle@sjbparish.com cjdessell@yahoo.com
Ms.	Cornman	Phyl	St. John Parish Planning & Zoning	1801 W. Airline Highway	LaPlace	LA	70068	985-651-5565	985-653-9808	f.cornman@sjbparish.com
Capt.	Cox	Anna	St. John Parish Sheriff's Office	P.O. Box 1600	LaPlace	LA	70069	504-416-5104	985-652-6157	acox@stjohnsheriff.org
Ms.	Falterman	Rebecca	St. John Parish EOC					985-652-2222	985-652-2183	r.falterman@sjbparish.com
Mr.	Flynn, Jr	Harold	Belle Terre Land, LLC	669 Belle Terre Blvd.	LaPlace	LA	70068	985-651-9090	985-651-9010	btland@bellsouth.net
Mr.	Gennaeo	Joey	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-233-6514	985-652-7227	
Ms.	Gilmore	Kathy	St. John Parish OHSEP	1801 W Airline Highway	LaPlace	LA	70068	985-652-2222	985-652-2183	k.gilmore@sjbparish.com
Mr.	Kindrick	Verdell	St. John Public Works	1801 W Airline Highway	LaPlace	LA	70068	504-442-1321	985-652-7527	v.kindrick@sjbparish.com
Mr.	King	Clayton	FEMA	1 Seine Ct.	New Orleans	LA	70114	504-762-2288		clayton.king@dhs.gov
Mr.	Kippes	Kerry	River Parish Hospital	500 Rue De Sante	LaPlace	LA	70068			
Mr.	Manuel	Errol	St. John Parish Recreation	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-1008	e.manuel@sjbparish.com
Mr.	Miles	Troy	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	985-651-2065	985-359-0825	t.miles@sjbparish.com
Mr.	Oncale	Paul	St. John Parish OHSEP	1801 W Airline Highway	LaPlace	LA	70068	985-652-2222	985-652-2183	p.oncale@sjbparish.com
Mr.	Oubre	Elton	St. John Parish School Board	118 W 10th Street	Reserve	LA	70084	985-536-1106 ext. 2226	985-479-1708	eoubre@stjohn.k.12.la.us

St. John the Baptist Parish
Hazard Mitigation
Meeting Invitees List

TITLE	LAST NAME	FIRST NAME	ORGANIZATION	ADDRESS	CITY	STATE	ZIP	PHONE	FAX	EMAIL
Ms.	Pannu	Rajender	Belle Terre Civic Association	2169 Augusta Dr.	LaPlace	LA	70068	504-417-3282	985-652-4480	rajpannu@aol.com
Ms.	Poskey	Cindy	River Parish Technical College	181 Regala Park Road	Reserve	LA	70084			
Ms.	Remondet	Julia	Economic Development	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-5005	j.remondet@sjbparish.com
Ms.	Robinette	Carrie	GOHSEP	415 North 15th St.	Baton Rouge	LA	70809	225-267-2558		carrie.robinette@la.gov
Mr.	Sullivan	Henry	Port of South Louisiana	P. O. Box 909	LaPlace	LA	70069	985-536-8300	985-536-6144	hsullivan@portsl.com
Ms.	Tassara	Elaine	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-652-4815	985-652-7227	e.tassara@sjbparish.com
Ms.	Vaughn	Lou	Planning & Zoning	1801 W Airline Highway	LaPlace	LA	70068	985-651-5565	985-653-9808	l.vaughn@sjbparish.com
Ms.	Villa	Iraida	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-652-4815	985-652-7227	i.villa@sjbparish.com

APPENDIX D

ST. JOHN THE BAPTIST PARISH PRESS RELEASES AND PUBLIC NOTICE

departments

- Home
- About St. John
- Meet The Parish President
- Parish Government
- SJBP Official Proceedings
- Economic Development
- Emergency Operations
- Health and Human Services
- Planning & Zoning

More New Releases

March of Dimes Walk Saturday, October 9, 2010

Rising Star Baptist Church Holds Town Hall Meeting

State Fire Marshall Issues Cease and Desist Order for Outdoor Burning

Parish President Natalie Robottom will discuss the recommendations

Backflow Prevention Program Public Hearing

Orange Loop Boil Water Advisory Lifted

St. John Parish Annual Andouille Pageants

Walnut Fire Station Unveils Its Newly Renovated Facility

Instructions on How to Disinfect Water During Boil Water Advisory

St. John Parish Holds Commencement Ceremony For Computer Class Graduates

more

Home | Recent Press Releases

Department of Public Safety updates Hazard Mitigation Plan

Update is being done with FEMA funding

ST. JOHN - St. John the Baptist Parish held a public meeting on Wednesday, May 5, 2010 with representatives from the Parish to discuss a grant that was recently awarded to the Parish. Mr. Paul Oncale, Director of the Office of Emergency Preparedness, initiated the meeting by introducing Ms. Monica Martin with Providence, the Parish's mitigation consultant.

Ms. Martin explained that the grant was to be used to update the Parish's Hazard Mitigation Plan (HMP) and to identify mitigation projects that would be beneficial to the Parish. She explained that this grant will allow the Parish to be prepared at the next funding opportunity to submit Hazard Mitigation Grant Program (HMGP) applications to receive funds for these mitigation projects. Funding for the grant is being provided by the Federal Emergency Management Agency (FEMA) and administered by the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) and FEMA.

The meeting was well attended as pointed out by Ms. Martin, who explained the importance of both parish and community representation. She encouraged meeting attendees to provide input and recommended that they share the message from this meeting with their respective departments, and then gather "lessons learned" from recent hurricanes and other post storm data to be incorporated into the planning process for this project.

"This update is important to the safety of our citizens. Through this process we will ensure that we plan for the 'knowns' so we can better handle the 'unknowns'," said Acting Parish President Pat McTopy.

Anyone wanting more information on this project or to be kept informed on meeting dates can call Ms. Martin at (225) 766-7400. The update to the Parish's HMP will be addressed during four additional public meetings. The topic of the next meeting will be the Risk Assessment for the Parish. Public input is invited throughout the planning process.

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Placed on website 5-10-2010

PRESS RELEASE

Release Date: ?

St. John the Baptist Parish held a public meeting on Wednesday, June 09, 2010, with representatives from the Parish to discuss a grant that was recently awarded to the Parish. Ms. Monica Martin from Providence, the Parish's mitigation consultant, led the meeting.

Ms. Martin explained that the grant was to be used to update the Parish's Hazard Mitigation Plan (HMP) which outlines the Parish's strategy to help lessen the effects of hazards on people and property. The Plan examines hazards the might affect the Parish and focuses on those hazards that are most prevalent, estimates the location and extent of possible losses to life and property from different hazards, identifies and prioritizes mitigation strategies, and plans ways of implementing these strategies.

This meeting included reviewing hazard risks and hazard histories. The Steering Committee also discussed the extent, previous occurrences and probability of future events. The potential impacts from floods, hurricanes, thunderstorms, lightning, and high winds, tornadoes, winter storms, hailstorms, drought, extreme heat, and expansive soils were examined.

The meeting was well attended as pointed out by Ms. Martin, who explained the importance of both parish and community representation. She encouraged meeting attendees to provide input to be incorporated into the planning process for this project.

Anyone wanting more information on this project or to be kept informed on meeting dates can call Ms. Martin at (225) 766-7400. The update to the Parish's HMP will be addressed during three additional public meetings. The topic of the next meeting will be the Mapping Review and Goal Setting for the Parish. Public input is invited throughout the planning process.

PRESS RELEASE

Release Date: ?

St. John the Baptist Parish held a public meeting on Wednesday, July 21, 2010, with representatives from the Parish to discuss a grant that was recently awarded to the Parish. Ms. Jamie Schexnayder from Providence, the Parish's mitigation consultant, led the meeting.

The Parish had been awarded a grant funded by the Federal Emergency Management Agency (FEMA) and administered by the State which consists of updating the Parish's Hazard Mitigation Plan (HMP). Ms. Schexnayder explained that the purpose of this meeting was to review and make revisions to the maps that will be included in the updated HMP, to review and update the goals listed in the original HMP, and to review the Action Plan of the original HMP.

Ms. Schexnayder reviewed the maps of the Parish that illustrated the locations of all critical facilities. All steering committee members were given an opportunity to review the maps and make any changes to the locations of the critical facilities. Next, Ms. Schexnayder discussed the purpose of goal setting and reviewed the existing goals of the HMP. She also facilitated a discussion with the steering committee on the Action Plan for the HMP. The Action Plan identifies the mitigation projects that the Parish wants to pursue to protect lives, critical facilities, and infrastructure in the parish. Some of the projects discussed included retrofitting critical facilities to protect them from high winds and improving drainage areas in the parish to help decrease flooding during major rain events. She suggested that members come to the next meeting with any revisions and/or additions that they would like to see incorporated into the listed goals and the Action Plan.

Anyone wanting more information on this project or to be kept informed on meeting dates can call Ms. Schexnayder at (225) 766-7400. The update to the Parish's HMP will be addressed during two additional public meetings. The topic of the next meeting will be the mitigation strategy for the Parish. Public input is invited throughout the planning process.

PRESS RELEASE

Release Date: ?

St. John the Baptist Parish held a public meeting on Wednesday, August 25, 2010, with representatives from the Parish to discuss a grant that was recently awarded to the Parish. Ms. Jamie Schexnayder from Providence, the Parish's mitigation consultant, led the meeting.

The Parish has been awarded a grant funded by the Federal Emergency Management Agency (FEMA) and administered by the State which consists of updating the Parish's Hazard Mitigation Plan (HMP). Ms. Schexnayder explained that the purpose of this meeting was to identify, discuss, and review current goals and specific actions to achieve identified goals. In addition, the meeting addressed ways to implement those actions through various tasks in the action plan.

Issues of concern gathered from the steering committee included flooding and drainage issues. These concerns, among many others discussed, were considered in identifying specific actions needed in the Parish to build a more disaster resilient Parish.

Some of the action items that were included in the action plan that would reduce future damages from hazards were wind retrofitting, improving drainage ways, and adding generators at critical facilities.

Anyone wanting more information on this project or to be kept informed on meeting dates can call Ms. Schexnayder at (225) 766-7400. The update to the Parish's HMP will be addressed in one additional public meeting. The review of the draft plan will be addressed in next public meeting. Public input is invited throughout the planning process.

Final Meeting of the Parish's Hazard Mitigation Plan

St. John the Baptist Parish held a public meeting on Wednesday, October 6, 2010, with representatives from the Parish to discuss a grant that was recently awarded to the Parish. Ms. Monica Martin and Ms. Jamie Schexnayder from Providence, the Parish's mitigation consultant, led the meeting.

Ms. Martin explained that the Parish has been awarded a grant funded by the Federal Emergency Management Agency (FEMA) and administered by the State which consists of updating the Parish's Hazard Mitigation Plan (HMP). She explained that the purpose of this meeting, the Review of the Draft Plan, was to give the steering committee and general public an opportunity to submit any edits/revisions to the draft plan and ask any questions about the plan before the parish submits the plan to the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) and FEMA.

This meeting was the final meeting concerning the update of the Parish's hazard mitigation plan. Ms. Schexnayder reviewed the preliminary draft with Steering Committee. Recommendations and comments were received and will be incorporated into the plan. Some comments included adding the HMP as a supplement to the Parish Emergency Operations Plan, revising parts of the Parish and hazard profiles, revising the color scheme on the zoning map, and updating Flood Insurance Rate Map (FIRM) terminology.

The draft plan will be reviewed by the GOHSEP followed by a review from FEMA. Once the HMP is approved by GOHSEP and FEMA, it will be presented to the Parish governing body for adoption.

Anyone wanting more information on this project can call Ms. Schexnayder at 225-766-7400 or send an email to jamieschexnayder@providenceeng.com.

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Placed on website on 10-11-2010

PUBLIC NOTICE

Saturday, November 6, 2010

PUBLIC NOTICE
St. John the Baptist Parish has updated its Hazard Mitigation Plan (HMP) for the Parish. A copy is at the St. John the Baptist Parish Office of Emergency Preparedness, 1801 W. Airline Hwy., LaPlace, LA and is available for public review. Comments will be accepted for thirty days from the date of this notice.

L-7764, 2T, 11-6, 11-10

APPENDIX E

ST. JOHN THE BAPTIST PARISH SUMMARY OF MEETING ATTENDEES

St. John the Baptist Parish
Hazard Mitigation
Summary of Meeting Attendees

Meeting #1 5/5/10	Meeting #2 6/9/10	Meeting #3 7/21/10	Meeting #4 8/25/10	Meeting #5 10/6/10	TITLE	LAST NAME	FIRST NAME	ORGANIZATION	ADDRESS	CITY	STATE	ZIP	PHONE	FAX	EMAIL
	X		X		Ms.	Abadie	Terri Ann	Economic Development	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-652-4131	t.abadie@sjbparish.com
X	X				Mr.	Alexander	Reed	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	504-457-1219	985-651-7731	r.alexander@sjbparish.com
X					Mr.	Bernard	Neil	Faith Based	1929 W Airline Highway	LaPlace	LA	70068	985-653-0008	985-653-0009	neiljbernard@yahoo.com
X	X				Mr.	Berniard	Casey	Marathon	4663 W. Airline Highway	Garyville	LA	70051	985-212-0068	985-535-5005	cpberniard@marathonoil.com
				X	Mr.	Bittel	Heath	Marathon	4663 W. Airline Highway	Garyville	LA	70051	985-212-0068	985-535-5005	habittel@martahonoil.com
X	X	X	X	X	Mr.	Brasington	Doug	Fire Department	1801 W Airline Highway	LaPlace	LA	70068	504-329-0358		djb1@sprint.blackberry.net
X	X	X	X	X	Mr.	Buhler	Ken	LTC	181 Regala Parish Road	Reserve	LA	70084	985-536-4418 ext. 223	985-536-7697	kbuhler@ltc.edu
X					Ms.	Butler	Sheila	Entergy LA	4317 W. Airline Hwy	Reserve	LA	70084	985-479-2025	985-479-2018	sbutler@entergy.com
X					Mr.	Carl	Desselle	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	504-416-6077	985-651-7731	c.desselle@sjbparish.com cjdessell@yahoo.com
X	X	X	X	X	Ms.	Cornman	Phyl	St. John Parish Planning & Zoning	1801 W. Airline Highway	LaPlace	LA	70068	985-651-5565	985-653-9808	f.cornman@sjbparish.com
	X	X	X		Ms.	Falterman	Rebecca	St. John Parish EOC					985-652-2222	985-652-2183	r.falterman@sjbparish.com
X	X	X	X	X	Mr.	Flynn, Jr	Harold	Belle Terre Land, LLC	669 Belle Terre Blvd.	LaPlace	LA	70068	985-651-9090	985-651-9010	btland@bellsouth.net
	X				Ms.	Gardner	Stephanie	Laplace Dialysis	2700 Airline Hwy. W	LaPlace	LA	70068	985-536-7860	985-536-8350	laplace@metropolitankidney.com
X	X	X			Mr.	Gennaro	Joey	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-233-6514	985-652-7227	
X	X	X		X	Ms.	Gilmore	Kathy	St. John Parish OHSEP	1801 W Airline Highway	LaPlace	LA	70068	985-652-2222	985-652-2183	k.gilmore@sjbparish.com
		X	X		Mr.	Johnson	Ron	Port of South Louisiana	P. O. Box 909	LaPlace	LA	70069	985-536-8300	985-536-6144	
X	X	X		X	Mr.	Kindrick	Verdell	St. John Public Works	1801 W Airline Highway	LaPlace	LA	70068	504-442-1321	985-652-7527	v.kindrick@sjbparish.com
X		X			Mr.	King	Clayton	FEMA	1 Seine Ct.	New Orleans	LA	70114	504-762-2288		clayton.king@dhs.gov
	X				Mr.	LaCour	Jeffrey	FEMA					504-762-2307		jeffrey.lacour@dhs.gov
X	X	X			Mr.	Manuel	Errol	St. John Parish Recreation	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-1008	e.manuel@sjbparish.com
X		X			Mr.	Miles	Troy	St. John Parish Utilities	1801 W Airline Highway	LaPlace	LA	70068	985-651-2065	985-359-0825	t.miles@sjbparish.com
X	X	X	X	X	Mr.	Oncale	Paul	St. John Parish OHSEP	1801 W Airline Highway	LaPlace	LA	70068	985-652-2222	985-652-2183	p.oncale@sjbparish.com
X	X	X			Mr.	Oubre	Elton	St. John Parish School Board	118 W 10th Street	Reserve	LA	70084	985-536-1106 ext. 2226	985-479-1708	EOubre@k12.la.us
X	X				Ms.	Pannu	Rajender	Belle Terre Civic Association	2169 Augusta Dr.	LaPlace	LA	70068	504-417-3282	985-652-4480	rajpannu@aol.com
X		X		X	Ms.	Remondet	Julia	Economic Development	1801 W Airline Highway	LaPlace	LA	70068	985-652-9569	985-359-5005	j.remondet@sjbparish.com
X	X	X			Ms.	Robinette	Carrie	GOHSEP	415 North 15th St.	Baton Rouge	LA	70809	225-267-2558		carrie.robinette@la.gov
X	X			X	Mr.	Sullivan	Henry	Port of South Louisiana	P. O. Box 909	LaPlace	LA	70069	985-536-8300	985-536-6144	hsullivan@portsl.com
X	X	X		X	Ms.	Tassara	Elaine	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-652-4815	985-652-7227	e.tassara@sjbparish.com
X	X	X	X	X	Ms.	Vaughn	Lou	Planning & Zoning	102 E Airline Highway	LaPlace	LA	70068	985-651-5565	985-653-9808	l.vaughn@sjbparish.com
X	X				Ms.	Villa	Iraida	SJP Public Works	1801 W. Airline Highway	LaPlace	LA	70068	985-652-4815	985-652-7227	i.villa@sjbparish.com

APPENDIX F

ST. JOHN THE BAPTIST PARISH MILESTONE SCHEDULE

ST. JOHN THE BAPTIST PARISH
Hazard Mitigation Plan Update
Tentative Milestone Schedule

Task/ Subtask	Brief Description	Months	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September
1.0	Project Initiation (Contract Signing, Etc.)																			
2.0	Planning Process																			
	Meeting 1																			
3.0	Risk Assessment																			
	Meeting 2																			
4.0	Mitigation Strategy																			
	Meeting 3																			
5.0	Plan Maintenance																			
	Meeting 4																			
6.0	Draft Plan Update																			
	Meeting 5																			
7.0	Final Plan Update																			
8.0	GOHSEP/FEMA Review																			
9.0	Revisions																			
10.0	GOHSEP/FEMA Review																			
11.0	Plan Adoption																			
12.0	Project Close Out																			

Providence

GOHSEP/FEMA

Meeting

APPENDIX G

ST. JOHN THE BAPTIST PARISH MEETING MINUTES

MEMO

To: **Paul Oncale, St. John the Baptist Parish**

From: **Jamie Schexnayder, Providence**

CC: **Attendance List – Attached**

Date: **May 7, 2010**

Re: **Project Initiation Meeting – Hazard Mitigation Plan Update**

This memo documents the meeting held on Wednesday, May 5, 2010, regarding the Hazard Mitigation Plan (HMP) Update which was attended by representatives from St. John the Baptist Parish.

Introductions
Mr. Paul Oncale, Director of the Office of Emergency Preparedness, initiated the meeting by welcoming the attendees and introduced Monica Martin, project manager, from Providence, the consulting firm which is assisting with the HMP Update. All other attendees introduced themselves.

Project Overview and Schedule
The purpose of this meeting was to discuss updating the Parish's Hazard Mitigation Plan (HMP) that was finalized on March 30, 2006. Ms. Martin explained that the Parish had been awarded a grant funded by the Federal Emergency Management Agency (FEMA) and administered by the State which consists of updating the Parish's HMP, based on lessons learned by Hurricanes Katrina/Rita, and Gustav/Ike, and identifying mitigation projects that would be beneficial to the community.

Ms. Martin reviewed the scope of work (Handout #1) and explained that Providence's role was to facilitate this process. She explained that the scope of work describes the details of each of the upcoming meetings and explains what deliverables would be submitted to GOHSEP and FEMA. She also emphasized the need for input from parish and community representatives. She then discussed the milestone schedule of this project (Handout #2), and explained that there are many steps that are taken to ensure that a Hazard Mitigation Plan is updated accurately.

Planned Meetings
Ms. Martin informed the attendees that today's meeting was considered the project initiation meeting (Meeting #1 of 5), and its purpose was to initiate the project and begin the planning process. Issues discussed in the planning process meeting included discussing any changes that need to be made to the committee, assuring opportunities for public participation, and updating past hazards and critical facilities.

The Risk Assessment will be discussed in the next meeting (Meeting #2). The risk assessment will include verifying hazard risks, hazard profiles, potential impacts of existing or future structures, and loss estimates.

The Mapping Review will be discussed in Meeting #3 which will include reviewing maps of critical structures and critical services throughout the Parish.

The Mitigation Strategy will be discussed in Meeting #4. Included in this meeting will be lessons learned in the aftermath of recent hurricanes (i.e. Katrina, Rita, Gustav, and Ike), a comparison of current mitigation goals to the updated risk assessment, an assessment of local capabilities, an update of action items and projects, and development of an implementation strategy. Plan Maintenance will also be an important part of the planning process.

Ms. Martin stated that the focus of Meeting #5 will be reviewing the draft plan and receiving comments back from the committee. The HMP adoption process will also be explained in this meeting.

Steering Committee Role

Ms. Martin emphasized how important participation is at these meetings. The meeting attendees were encouraged to provide their input on this project. It was mentioned that community involvement is very important, and that members of the community can give a broader input into the lessons learned that will play an important role in the risk assessment part of the process.

Data Sources

Ms. Jamie Schexnayder, Mitigation Specialist with Providence, discussed what data sources would benefit this project. Among them were Post Katrina/Rita and Gustav/Ike loss data, project worksheets, damage assessments, photos of storm damage, and narrative descriptions of storm damage. Ms. Schexnayder explained that it would be useful during the planning process if representatives would generate a few paragraphs on lessons learned from the storms. Ms. Schexnayder requested that the committee start gathering this type of information and submitting it to her to be used in updating the plan.

Review of Past Hazards

Past hazards were reviewed that occurred in St. John the Baptist Parish. Ms. Schexnayder explained that the plan update would allow these hazards to be prioritized. After some discussion on each hazard, the audience unanimously voted to keep floods, hurricanes (including tropical storms), thunderstorms, lightning, high winds, and tornadoes as high priority hazards. The audience agreed that winter storms, hailstorms, drought, extreme heat, and expansive soils should remain medium priority hazards. Ms. Schexnayder then asked the committee if there were any hazards that were not addressed that the committee would like to include in the plan. Windblown sea salt was mentioned; however, no mitigation measures for it were discussed.

Review of Past and Potential Critical Facilities

Ms. Schexnayder reviewed the lists of critical facilities in the existing HMP (Handout #3). She requested that each member of the steering committee make any changes in order to update the list. The audience pointed out that there was some information on the lists that needed to be updated. Kathy Gilmore with the Parish OHSEP has updated the lists and will meet with Ms. Schexnayder to review them.

Ms. Schexnayder reminded the audience to gather any specific data about damages or effects of the hazards and fax or email it to her at (225) 766 - 7400 or jamieschexnayder@providenceeng.com .

Ms. Martin concluded that she was pleased with the diversity of attendees and would appreciate any input concerning this project. She explained that the next meeting, the risk assessment meeting, will be tentatively set for Wednesday, June 9, 2010, at 9:30 a.m. in the Emergency Operations Center. A meeting notice will be mailed to everyone prior to the next meeting.

MEMO

To: **Paul Oncale, St. John the Baptist Parish**

From: **Jamie Schexnayder, Providence**

CC: **Attendance List – Attached**

Date: **June 15, 2010**

Re: **Risk Assessment Meeting – Hazard Mitigation Plan Update**

This memo documents the meeting held on Wednesday, June 9, 2010, regarding the Hazard Mitigation Plan (HMP) Update which was attended by representatives from St. John the Baptist Parish.

Introductions

Mr. Paul Oncale, Director of the Office of Emergency Preparedness, initiated the meeting by welcoming the attendees and introducing Monica Martin, project manager, from Providence, the consulting firm which is assisting with the Hazard Mitigation Plan (HMP) Update. All other attendees introduced themselves.

Project Overview and Planned Meetings

The purpose of this meeting was to discuss the risk assessment for the HMP Update for St. John the Baptist Parish. Ms. Martin explained that today's meeting was considered the risk assessment meeting (Meeting #2 of 5). Risk assessment is the process of measuring the potential loss to a community resulting from a hazard event.

Identifying Hazards

Ms. Jamie Schexnayder, mitigation specialist with Providence, discussed the federally declared disasters in St. John the Baptist Parish (Handout #2) which included sixteen disasters dating back to 1965. Next, she reviewed the hazard identification table (Handout #3) which included the nine hazards that will be discussed in the HMP, how and why they were identified, and their priority. These hazards included: floods, hurricanes, thunderstorms & lightning & high winds, tornadoes, winter storms, hailstorms, drought, extreme heat, and expansive soils. Ms. Schexnayder explained that these hazards will be profiled in the HMP. She stated that these hazards were selected based on an assessment of the overall impact (geographic extent, magnitude, probability, and mitigating conditions) affecting St. John the Baptist Parish. Ms. Schexnayder reviewed the St. John the Baptist Parish Hazard History (Handout #4), which included details about the federally declared disasters and their impact on the Parish. Ms. Schexnayder asked for more specific details regarding the more recent storms that have affected the Parish. The Steering Committee stated that there was water in homes during a rain event after Hurricane Katrina, a death occurred due to a freeze in December 2009, and a death occurred in May 2010 due to heat. Details were discussed on the impacts of other past event already included in the plan. It was noted that tornadoes spawned from Hurricane Andrew and destroyed the LA Technical College and Hurricane Juan flooded homes and streets for two weeks due to rain and storm surge.

Ms. Martin explained that there is a great deal of data on a regional and state-wide basis for these hazards; however, more specific data is needed for the parish. She stated that specific data would help to support future mitigation projects, and provide more insight into which areas are most vulnerable to hazards. The Steering Committee recalled some hazard events and how some facilities were affected. Members will submit additional events and details by email to Ms. Schexnayder.

Hazard Profile Review

Ms. Schexnayder continued the meeting by discussing the hazard profiles. She explained that each of the hazards would be profiled in the plan. A hazard profile consists of the following sections: hazard identification, risk assessment, probability and frequency, exposure and location, and extent and previous occurrences.

Ms. Schexnayder reviewed Handout #5, Estimated Dollar Losses Per Year for St. John the Baptist Parish. These losses totaled $98.485 million in projected yearly losses for all the hazards. Hurricanes, drought, and winter storms are the major contributors to the high dollar loss in the Parish. Ms. Schexnayder reminded the Steering Committee that these estimated damages come from the National Climatic Data Center (NCDC), which archives storm data from the National Weather Service (NWS). She stated that NCDC is not a complete listing of all the disasters that have befallen a particular community. The NCDC damage amounts are received from a variety of sources, including parish, state and federal emergency management officials, NWS damage surveys, as well as many other sources and should be considered as a broad estimate. She also explained for hazard events that affect multiple parishes such as events like Hurricanes Katrina and Rita, the estimated dollar losses are a combination of losses from multiple parishes and are not specific to St. John the Baptist Parish. The Steering Committee stated that although the statistics show higher estimated losses for other hazards, floods have accumulated the most losses.

Ms. Schexnayder reviewed Handout #6, Probability of Future Events. She explained that the data was based on data taken from NCDC and that the probabilities (highly likely, likely, possible, or unlikely) were determined by the total number of events that occurred for each hazard over the period of time that the event occurred. The Steering Committee acknowledged that although statistics show a probability based on only what has been reported to NCDC, some hazards are more likely to occur than others, but the events are not recorded in the database. Therefore, the Steering Committee proposed to change the probability of floods, hurricanes, thunderstorms, lightning, and high winds to “highly likely” based on occurrences that have not been included in the NCDC database. It was also noted that the probability of hailstorms should be changed to “possible”.

Handout #7, Hazard Summaries, listed each hazard and event details for each of the hazards. Ms. Schexnayder explained that some of the events details were general details that discussed the events of multiple parishes and the state. She requested that the Steering Committee provide more specific details that are related to the parish.

Critical Facilities

Ms. Schexnayder went on to explain that Handout #8, Critical Facilities, was updated based on the information that was received from the Steering Committee after Meeting #1 and meeting with Ms. Kathy Gilmore from the St. John the Baptist Parish Office of Homeland Security and Emergency Preparedness (OHSEP). These facilities and addresses will be used to generate critical facility maps. These maps will show the location of all of the critical facilities throughout the Parish. Ms. Schexnayder asked that any final changes to the facilities to be brought up in the meeting or sent to her after as these facilities will be mapped for the next meeting. Some changes were made to the list of facilities.

Summary of the steering committee assignments:

1) Review the Hazard Identification Table (Handout #3) and add any additional details pertaining to why this hazard was identified (i.e. For Flooding- numerous flooding events have caused damage to multiple areas within the parish)
2) Review the St. John the Baptist Parish Hazard History (Handout #4) and add any additional parish-specific descriptions to the events listed, and/or add any significant events that are not currently listed. More specific details are needed for Hurricanes Ivan, Katrina, Rita, Gustav, and Ike. Any damage to agriculture would also be helpful.
3) Review Estimated Dollar Losses Per Year (Handout #5) and provide any dollar damages that the parish, communities within the parish, or agencies within the parish may have incurred.
4) Review Hazard Summaries (Handout #7) and update the event details with any parish, community, or agency specific data.
5) Review the list of critical facilities (Handout #8) and update the list with any new or closed facilities and any address changes.

Ms. Schexnayder requested that any edits to the tables be emailed to her at jamieschexnayder@providenceeng.com as soon as possible.

Ms. Martin concluded that the next meeting, Mapping Review and Goal Setting, will be tentatively set for Wednesday, July 21, 2010, at 9:30 a.m. in the Emergency Operations Center. A meeting notice will be mailed to everyone prior to the next meeting. Anyone wanting more information on this project or to be kept informed on meeting dates can call Ms. Martin at 225-766-7400.

MEMO

To: **Paul Oncale, St. John the Baptist Parish**

From: **Jamie Schexnayder, Providence**

CC: **Attendance List – Attached**

Date: **July 21, 2010**

Re: **Maps and Goals Meeting**

This memo documents the public meeting held on Wednesday, July 21, 2010, attended by representatives from St. John the Baptist Parish regarding the Hazard Mitigation Plan Update.

Introductions
Mr. Paul Oncale, Director of the Office of Emergency Preparedness, initiated the meeting by welcoming the attendees. Ms. Jamie Schexnayder, mitigation specialist from Providence, led the meeting. All other attendees introduced themselves.

Project Overview and Planned Meetings
Ms. Schexnayder explained that the purpose of this meeting, the Maps and Goals Meeting, was to review and make revisions to the maps that will be included in the HMP, to review and update the goals listed in the HMP, and to review the Action Plan of the original HMP. Additional meetings will focus on adding action items to the action plan and reviewing the draft HMP.

Review of Maps
Ms. Schexnayder explained the purpose of providing accurate maps in the updated HMP. She explained that the maps illustrate the locations of the critical facilities and allow the Parish to see what critical facilities are most vulnerable to floods.

Maps were given to the steering committee to review. Ms. Schexnayder reviewed the maps with the steering committee and gave everyone the opportunity to review the location of all of the Parish's critical facilities. Many members verified locations of the critical facilities and provided other details to be added to the maps. Some of the revisions are noted below:

1) Add additional highways/markers that were not shown on the map (i.e. Highways 3122, 3213, 3217, 3179, 54, 51, and 18).
2) Omit non-major highways off the map.
3) Add the west bank evacuation route and extension portion of the bridge.
4) Add DFIRM data to maps and exclude ABFE layer.
5) Possibly add a zoning map with LIDAR data.
6) Law Enforcement map will be revised to reflect the addition of a communication tower.

7) Locations of critical facilities will be geo-coded where necessary to show correct locations of the facilities.
8) Fire station names will be verified.
9) LA Technical College renamed to South Central LA Technical College.
10) Libraries will be added the municipal buildings map. List and locations of libraries is needed.

Review of Goals

Ms. Schexnayder then explained the purpose of setting goals for the HMP. She explained that the goals should demonstrate what the Parish would like to see happen on a larger scale. She read through the goals that were set in the original HMP and asked that the committee review these goals and bring back any changes, additions, or suggestions that they may have to the next HMP meeting. The current goals (Handout #2) listed in the HMP include:

1) Identify and pursue preventative measures that will reduce future damages from hazards.
2) Enhance public awareness and understanding of disaster preparedness.
3) Reduce repetitive flood losses in the Parish.
4) Facilitate sound development in the Parish so as to reduce or eliminate the potential impact of hazards.

Action Plan

Ms. Monica Martin, project director from Providence, explained the purpose of the action plan (Handout #3). She explained that the action plan is developed in order for the Parish to have an organized list of actions that follow the goals of the HMP. She explained that some actions in the action plan reference very specific projects. She went on to explain that we needed to change these actions so that they were more generic in nature. The reason for this was to comply with recent FEMA guideline changes and to preclude the inadvertent omission of a specific named project, more easily included if the action item were to be stated more generically. The Steering Committee readily understood this concept and did not have a problem with describing action items in such terms. Ms. Schexnayder reviewed the Parish Action Plan.

It was noted that the Parish currently participates in the Community Rating System (CRS). It was suggested that action item #9 under goal #4 be revised to state “Continue to participate in the CRS”. It was also suggested that an action item addressing wind retrofitting and backup power be added as well as the below two action items:

1) Continue day-to-day operations in the event of a hazard or disaster.
2) Implement new initiatives developed by State and FEMA.

Ms. Martin asked if anyone had any other types of projects that they would like to see happen in the future that were not already addressed in the general action items. Ms. Martin explained that the steering committee should think about what they would like done to protect facilities in the community. Ms. Martin stated that a good source of information and ideas for possible mitigation activities is www.fema.gov/mitigation. There was a general discussion about this issue as well as other possible types of projects, their eligibility for funding and how to include them in the Action Plan in a

generic manner. Ms. Carrie Robinette (GOHSEP) contributed helpful insights and suggestions to the discussion.

Summary of the Steering Committee Assignments:

1) Review the goals that were set in the original HMP (Handout # 2) and make any additions or revisions that you would like to see addressed. These changes will be discussed in the next meeting.
2) Review the current Action Plan (Handout #3) and make any additions or revisions to the action items listed. A good source of ideas for updated the Action Plan is www.fema.gov/mitigation. These changes will also be discussed in the next meeting.

During the next meeting, Mitigation Strategy, we will discuss any updates to the HMP goals that need to be addressed and review changes to the action plan. Please bring all revisions to the next meeting. The meeting will be held in approximately 4 weeks. Meeting invitation letters will be sent out prior to the meeting. Anyone wanting more information on this project or to be kept informed of meeting dates can call Ms. Martin at 225-766-7400 or send an email to monicamartin@providenceeng.com.

MEMO

To: **Paul Oncale, St. John the Baptist Parish**

From: **Jamie Schexnayder, Providence**

CC: **Attendance List – Attached**

Date: **August 31, 2010**

Re: **Mitigation Strategy Meeting**

This memo documents the public meeting held on Wednesday, August 25, 2010, attended by representatives from St. John the Baptist Parish regarding the Hazard Mitigation Plan Update.

Introductions
Ms. Jamie Schexnayder, mitigation specialist from Providence, led the meeting by welcoming the meeting attendees and introducing Providence, the consulting firm which is assisting with the Hazard Mitigation Plan (HMP) Update. All other attendees introduced themselves.

Project Overview and Planned Meetings
Ms. Schexnayder explained that the purpose of this meeting, the Mitigation Strategy, was to identify specific actions to achieve identified goals and implement actions to build a more disaster resilient Parish. Current goals and action items were updated according to the updated risk assessment and will be reflected in the action plan. The final meeting will focus on the draft HMP. Ms. Schexnayder explained to any newcomers the three parts of the HMP: identify the hazards, identify what is at risk to these hazards, and identify ways to mitigate against these hazards.

Review of Parish Goals and Action Items
Ms. Schexnayder reviewed the goals and action items of the Parish action plan (Handout #2). The action plan identifies specific actions to achieve identified goals and implements actions to make the Parish more disaster resilient. Specific hazard mitigation actions and/or tasks are listed in the action plan. The plan serves as a plan of action for the Parish. For each action, a priority level is given, as is a scheduled timeframe for which an action is planned. Many of the mitigation activities listed are ongoing activities that continually need to be worked on in order to implement the action. Each task has a lead manager, estimated cost, and lists the potential funding capability.

Some revisions made by the Steering Committee on the Parish's action plan included:

- Modifying the task description and/or revising the estimated cost of action items 1-3, 5-12, and 15

- Assigning a “medium” priority to action items 4-7
- Adding a new action item under Goal No. 1 to address monitoring opportunities
- Adding a new action item under Goal No. 4 to address improved building regulations of structures
- Revising the priority of action item 14 to “low” since it has been completed

Summary of the Steering Committee Assignments:
If you have any new action items or tasks not already addressed, submit a one-paragraph description of your specific projects to be included in the updated HMP to Ms. Schexnayder (jamieschexnayder@providenceeng.com). Include the location of the project, estimated cost, and a description of why the project is needed. Please submit this information within one week of receiving these meeting minutes.

Next Meeting
During the next meeting, a draft of the HMP will be presented. Prior to this meeting, Ms. Schexnayder will send an email to all Steering Committee members. In this e-mail will be a link that will provide access to a copy of the draft plan that can be read on line or downloaded and printed. If you do not have access to a computer or need a hardcopy, you may request one from Ms. Schexnayder. Meeting invitation letters will be sent out prior to the next meeting. Meeting #5 if tentatively scheduled for Wednesday, October 6, 2010 at 9:30 a.m. Anyone wanting more information on this project or to be kept informed of meeting dates can call Ms. Schexnayder at 225-766-7400 or send an email to jamieschexnayder@providenceeng.com.

MEMO

To: **Paul Oncale, St. John the Baptist Parish**

From: **Jamie Schexnayder, Providence**

CC: **Attendance List – Attached**

Date: **October 11, 2010**

Re: **Review of Draft Plan Meeting**

This memo documents the public meeting held on Wednesday, October 6, 2010, attended by representatives from St. John the Baptist Parish regarding the Hazard Mitigation Plan Update.

Introductions
Mr. Paul Oncale, Director of the Office of Emergency Preparedness, initiated the meeting by welcoming the attendees and introduced Monica Martin, project manager, and Jamie Schexnayder, mitigation consultant, from Providence, the consulting firm which is assisting with the Hazard Mitigation Plan (HMP) Update.

Project Overview and Planned Meetings
Ms. Martin explained that the update to the HMP required five public meetings to be held. She explained that the initiation of the project was discussed at the first meeting followed by a second meeting on risk assessment, a third meeting on maps and goals, and a fourth meeting on the mitigation strategy. Ms. Schexnayder explained that the purpose of this meeting, the Review of the Draft Plan, was to give the steering committee and general public an opportunity to submit any edits/revisions to the draft plan and ask any questions about the plan before the parish submits the plan to the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP).

Review of Draft Plan
Drafts of the plan were e-mailed to the Steering Committee prior to the meeting. Ms. Schexnayder reviewed the draft plan with the Steering Committee at this meeting. Recommendations and comments were received and will be incorporated into the HMP. Some comments included adding the HMP as a supplement to the Parish Emergency Operations Plan, revising parts of the Parish and hazard profiles, revising the color scheme on the zoning map, and updating Flood Insurance Rate Map (FIRM) terminology.

The final draft of the HMP will be submitted to GOHSEP and the Federal Emergency Management Agency (FEMA) for approval. Once the HMP is approved by GOHSEP and FEMA, it will be presented to the Parish governing body for adoption.

Anyone wanting more information on this project can call Ms. Schexnayder at 225-766-7400 or send an email to jamieschexnayder@providenceeng.com.

APPENDIX H

ST. JOHN THE BAPTIST PARISH REPETITIVE LOSS STRUCTURES

ST. JOHN THE BAPTIST PARISH
REPETITIVE LOSS STRUCTURES

St. John the Baptist Parish has 72 repetitive loss structures; of those, three are listed as severe repetitive loss structures. A copy of this list is on file at the St. John the Baptist Parish Office of Emergency Preparedness.

Office of Emergency Preparedness
Located at:
1801 W. Airline Highway, LaPlace, LA 70068

Phone: 985-652-2222
Fax: 985-652-2183

APPENDIX I

ST. JOHN THE BAPTIST PARISH MITIGATION MEASURES

St. John the Baptist Parish
Hazard Mitigation Plan
Mitigation Measures

Mitigation Measures	NATURAL HAZARDS									
	Floods	Hurricanes	Severe Storms	Tornadoes	Winter Storms	Hailstorms	Drought	Extreme Heat	Expansive Soils	PRIORITY
Acquisition										
Residential	X	X	X							**H**
Commercial	X	X	X							**H**
Elevation										
Residential	X	X	X							**H**
Commercial	X	X	X							**H**
Critical Facility										
Generators	X	X	X	X	X					**M**
Wind Retrofit		X	X	X						**M**
Flood Proofing	X	X	X							**H**
Minor Drainage Projects	X	X	X							**H**
Public Education & Awareness	X	X	X	X	X	X	X	X	X	**H**
Improved Building Codes & Regulations	X	X	X	X	X	X				**M**
Warning Systems	X	X	X	X	X	X	X	X		**M**
Buried Electric Lines		X	X	X	X					**M**
Emergency Preparedness & Response	X	X	X	X	X	X	X	X		**H**
Enforcement of Ordinances & Programs	X	X	X	X	X		X			**M**

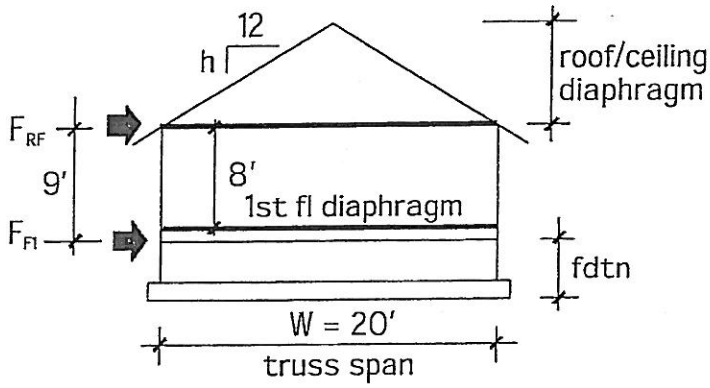
H = High
M = Medium
L = Low

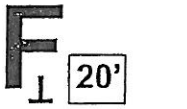
APPENDIX J

STABILITY SYSTEM DESIGN TABLE FOR WIND LOADS

The source for Appendix C, Stability System Design Tables for Wind Loads, is "The Companion Manual to the Windstorm Mitigation Manual for Light Frame Construction", December 1999.

Stability System Design Tables





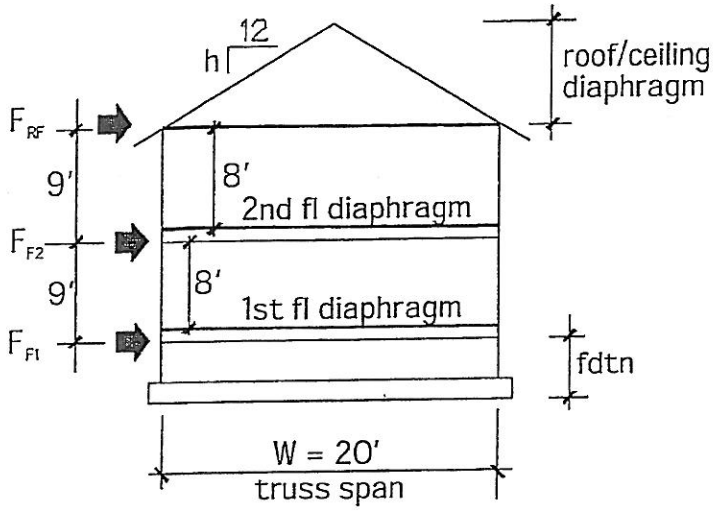
1 STORY

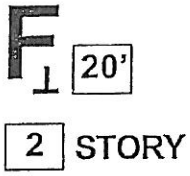
Wind Perpendicular to Roof Ridge

Roof Slope	Lateral Wind Load to Diaphragms LB/FT of Length							
	Fastest Mile Wind Speed (MPH)							
	80		90		100		110	
h	F_{RF}	F_{F1}	F_{RF}	F_{F1}	F_{RF}	F_{F1}	F_{RF}	F_{F1}
3	79	191	109	261	124	299	151	364
4	83	195	105	248	130	305	157	370
5	98	210	124	266	152	328	185	398
6	122	234	155	297	190	366	231	444
7	151	263	192	334	237	413	287	500
8	184	296	233	376	288	463	348	561
9	222	334	281	424	347	523	421	634
10	261	373	331	474	407	583	494	707
12	318	430	403	546	497	672	602	815

1. Wind loads are based on ASCE:7-93 for "Main Wind Force Resistance System (MWFRS)."
2. For 10" floor to ceiling height, multiply above values by 1.25.
3. See Figure 1 in Chapter 5 for method of calculation.

Stability System Design Tables





Wind Perpendicular to Roof Ridge

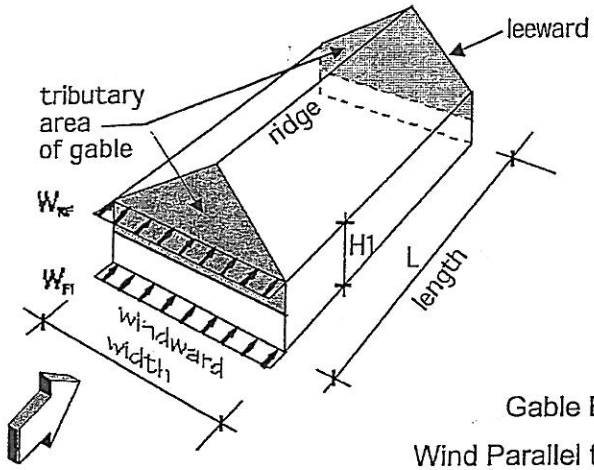
Roof Slope	Lateral Wind Load to Diaphragms LB/FT of Length											
	Fastest Mile Wind Speed (MPH)											
	80			90			100			110		
h	F_{RF}	F_{F2}	F_{F1}	F_{RF}	F_{F2}	F_{F1}	F_{RF}	F_{F2}	F_{F1}	F_{RF}	F_{F2}	F_{F1}
3	95	304	418	120	384	528	148	474	652	179	573	788
4	98	306	419	124	387	530	153	479	657	185	578	793
5	113	321	435	144	407	550	178	503	681	214	607	822
6	141	349	463	177	441	585	219	545	723	266	661	877
7	172	381	495	217	481	625	268	594	773	326	721	937
8	189	399	514	239	505	650	296	624	803	358	754	971
9	227	436	551	287	552	697	354	682	862	428	825	1042
10	268	476	590	340	605	750	418	744	923	507	903	1119
12	357	565	679	396	661	806	487	813	992	590	986	1202

1. Wind loads are based on ASCE:7-93 for "Main Wind Force Resistance System (MWFRS)."
2. For 10" floor to ceiling height, multiply above values by 1.25.

Stability System Design Tables

F II 20'

1 STORY



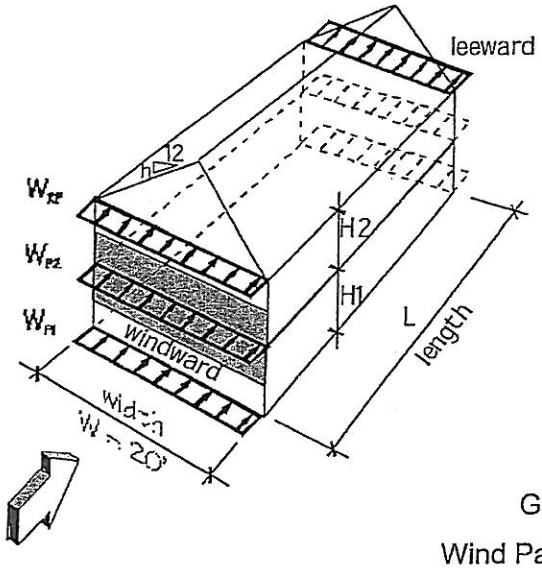
Gable End Wall

Wind Parallel to Ridge of Roof

Roof Slope	Lateral Wind Load to Diaphragms LB/FT of Length							
	Fastest Mile Wind Speed (MPH)							
	80		90		100		110	
h	W_{RF}	W_{F1}	W_{RF}	W_{F1}	W_{RF}	W_{F1}	W_{RF}	W_{F1}
3	95	186	121	236	149	291	181	353
4	103	193	130	245	161	303	195	367
5	110	201	140	255	173	315	209	367
6	118	208	150	265	185	327	224	396
7	125	216	160	274	196	338	238	410
8	133	223	169	284	208	350	252	424
9	140	231	178	293	220	362	267	439
10	148	239	188	303	232	374	281	453
12	164	254	208	323	257	399	311	483

1. Table based on ASCE:7-93 wind requirements for MWFRS.
2. H1 = 9FT based on 8FT floor to ceiling weight. If 10FT floor to ceiling height, multiply Table values by 1.25.
3. L = 60 FT was used for Tabled values.

Stability System Design Tables



F II 20

2 STORY

Gable End Wall

Wind Parallel to Roof Ridge

Roof Slope	Lateral Wind Load to Diaphragms LB/FT of Length											
	Fastest Mile Wind Speed (MPH)											
	80			90			100			110		
h	W_{RF}	W_{F2}	W_{FDTN}	W_{RF}	W_{F2}	W_{FDTN}	W_{RF}	W_{F2}	W_{FDTN}	W_{RF}	W_{F2}	W_{FDTN}
3	100	264	355	126	334	450	156	413	555	189	498	670
4	109	271	362	137	343	457	169	426	568	205	513	685
5	117	280	370	1147	353	468	182	439	581	220	529	700
6	125	288	379	159	366	481	196	453	595	238	548	720
7	133	296	387	169	376	491	209	465	608	253	563	735
8	144	307	398	182	390	505	224	482	625	271	582	754
9	152	316	407	193	400	516	237	495	638	287	597	770
10	161	325	416	204	412	527	252	509	652	304	613	785
12	178	342	433	226	433	549	279	536	679	337	645	817

1. Table based on ASCE:7-93 wind requirements for MWFRS.
2. H1 = H2 = 9FT based on 8FT floor to ceiling height. If 10FT floor to ceiling height, multiply Table values by 1.25.
3. L = 60 FT was used for Tabled values.

Recommended Shear (pounds per foot) for Horizontal APA Panel Diaphragms for Wind or Seismic Loading

Panel Grade	Minimum Nominal Panel Thickness (inch)	Common Nail Size	Minimum Nail Penetration in Framing (inches)	Minimum Nominal Width of Framing Members (inches)	Framing Species: Specific Gravity ≥ 0.49 joists, rafters, truss top chords — Southern Pine, Larch, Douglas Fir-Larch, Microflanges of "I" Joists (factor = 1.0)					Framing Species: Specific Gravity 0.49>G ≥ 0.42 joists, rafters, truss top chords — S-P-F, HEM - FIR (factor = 0.82)				
					Blocked Diaphragms				Unblocked Diaphragms	Blocked Diaphragms				Unblocked Diaphragms
					Nail Spacing @ Panel Edges [b]				All Configurations	Nail Spacing @ Panel Edges [b]				All Configurations
					6"	4" [a]	2-1/2" [a] [c]	2" [a] [c]	6" [b]	6"	4" [a]	2-1/2" [a] [c]	2" [a] [c]	6" [b]
APA RATED SHEATHING APA RATED STURDI-I-FLOOR and other APA grades except Species Group 5	3/8"	6d [e]	1-1/4	2	185	250	375	420	125	150	205	310	345	105
				3	210	280	420	475	140	175	230	345	390	115
		8d	1-1/2	2	240	320	480	545	160	200	265	395	450	135
				3	270	360	540	610	180	225	295	445	500	150
	7/16"	8d	1-1/2	2	255	340	505	575	170	210	280	415	475	140
				3	285	380	570	645	190	235	315	470	530	160
	15/32"	8d	1-1/2	2	270	360	530	600	180	225	295	435	495	150
				3	300	400	600	675	200	250	330	495	555	165
		10d [d]	1-5/8	2	290	385	575	655	190	240	320	475	540	160
				3	325	430	650	735	215	270	355	535	605	180
	19/32"	10d [d]	1-5/8	2	320	425	640	730	215	265	350	525	600	180
				3	360	480	720	820	240	295	395	595	675	200
APA STRUCTURAL I grades	3/8"	8d	1-1/2	2	270	360	530	600	180	225	295	435	495	150
				3	300	400	600	675	200	250	330	495	555	165
	15/32"	10d [d]	1-5/8	2	320	425	640	730	215	265	350	525	600	180
				3	360	480	720	820	240	295	395	595	675	200

(a) Species specific gravity = G

(b) Space nails maximum 12 in. o.c. along intermediate framing members (6 in. o.c. when supports are spaced 48 in. o.c.).

(c) Framing at adjoining panel edges shall be 3-in. nominal or wider, and nails shall be staggered where nails are spaced 2 inches o.c. or 2-1/2 inches o.c.

(d) Framing at adjoining panel edges shall be 3-in. nominal or wider, and nails shall be staggered where 10d nails having penetration into framing of more than 1-5/8 inches are spaced 3 inches o.c.

(e) 8d is recommended minimum for roofs due to negative pressures of high winds.

(f) Table modified by author. Taken from *APA Design/Construction Guide - Diaphragms*, 1991, pg. 6.

(g) Nail spacing at edges other than diaphragm boundries (all cases) and continuous panel edges parallel to load (cases 3 & 4) shall be permitted to use 6", 4", and 3" instead of 4", 2" & 2-1/2" respectively.

Notes: Design for diaphragm stresses depends on direction of continuous panel joints with reference to load, not on direction of long dimension of sheet. Continuous framing may be in either direction for blocked diaphragms.

APPENDIX K

ST. JOHN THE BAPTIST PARISH PARISH-WIDE ASSET INVENTORY WORKSHEETS

Inventory Assets - St. John the Baptist Parish

Date: 8/23/2010 What will be affected by the hazard event?

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are located in hazard areas.

Hazard: Flood

Type of Structure (Occupancy Class)	Number of Structures (1)			Value of Structures (1)			Number of People (3)		
	# in Community	# in Hazard Area	% in Hazard Area (2)	$ in Community	$ in Hazard Area	% in Hazard Area (2)	# in Community	# in Hazard Area (4)	% in Hazard Area (2)
Residential	15,274	1,498	9.8%	$2,312,986,000	$279,040,000	12.1%	43,044	12,975	30.1%
Commercial	638	63	9.9%	$315,319,000	$36,138,000	11.5%	7,113 (5)	2,497	35.1%
Industrial	161	13	8.1%	$70,303,000	$11,792,000	16.8%	3,066 (5)	865	28.2%
Agricultural	25	5	20.0%	$3,655,000	$335,000	9.2%	N/A	N/A	N/A
Religious / Non-Profit	57	4	7.0%	$39,744,000	$3,529,000	8.9%	N/A	N/A	N/A
Government	29	1	3.4%	$18,145,000	$371,000	2.0%	N/A	N/A	N/A
Education	26	5	19.2%	$33,537,000	$8,649,000	25.8%	N/A	N/A	N/A
Utilities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	16,210	1,589	9.8%	$2,793,689,000	$339,854,000	12.2%	53,223	16,337	30.7%

1) Number and value of structures data was taken from HAZUS-MH software.

2) The percent in hazard area is calculated by the amount in hazard area divided by total in community.

3) Population in community was taken from Census 2000 Block Group data.

4) Number of people in hazard area was determined from a visual estimate of the percent of the census tract located in the hazard area.

5) HAZUS-MH software did not provide commercial & industrial population in community. Values were taken from HAZUS99 data.

N/A = FEMA's HAZUS Software database was not able to provide this data (Not Available).

Inventory Assets - St. John the Baptist Parish

Date: 8/23/2010 What will be affected by the hazard event?

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are located in hazard areas.

Hazard: Hurricanes

Type of Structure (Occupancy Class)	Number of Structures (1)			Value of Structures (1)			Number of People (3)		
	# in Community	# in Hazard Area	% in Hazard Area (2)	$ in Community	$ in Hazard Area	% in Hazard Area (2)	# in Community	# in Hazard Area (4)	% in Hazard Area (2)
Residential	15,274	13,747	90.0%	$2,312,986,000	$2,081,687,400	90.0%	43,044	38,740	90.0%
Commercial	638	574	90.0%	$315,319,000	$283,787,100	90.0%	7,113 (5)	6,402	90.0%
Industrial	161	145	90.0%	$70,303,000	$63,272,700	90.0%	3,066 (5)	2,759	90.0%
Agricultural	25	23	90.0%	$3,655,000	$3,289,500	90.0%	N/A	N/A	N/A
Religious / Non-Profit	57	51	90.0%	$39,744,000	$35,769,600	90.0%	N/A	N/A	N/A
Government	29	26	90.0%	$18,145,000	$16,330,500	90.0%	N/A	N/A	N/A
Education	26	23	90.0%	$33,537,000	$30,183,300	90.0%	N/A	N/A	N/A
Utilities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	16,210	14,589	90.0%	$2,793,689,000	$2,514,320,100	90.0%	53,223	47,901	90.0%

1) Number and value of structures data was taken from HAZUS-MH software.

2) The percent in hazard area is calculated by the amount in hazard area divided by total in community.

3) Population in community was taken from Census 2000 Block Group data.

4) Number of people in hazard area was determined from a visual estimate of the percent of the census tract located in the hazard area.

5) HAZUS-MH software did no provide commercial & industrial population in community. Values were taken from HAZUS99 data.

N/A = FEMA's HAZUS Software database does not provide this data (Not Available).

Inventory Assets - St. John the Baptist Parish

Date: 8/23/2010 What will be affected by the hazard event?

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are located in hazard areas.

Hazard: Severe Storms (Thunderstorms / Lightning / High Winds)

Type of Structure (Occupancy Class)	Number of Structures (1)			Value of Structures (1)			Number of People (3)		
	# in Community	# in Hazard Area	% in Hazard Area (2)	$ in Community	# in Hazard Area	% in Hazard Area (2)	# in Community	# in Hazard Area (4)	% in Hazard Area (2)
Residential	15,274	7,637	50.0%	$2,312,986,000	$1,156,493,000	50.0%	43,044	21,522	50.0%
Commercial	638	319	50.0%	$315,319,000	$157,659,500	50.0%	7,113 (5)	3,557	50.0%
Industrial	161	81	50.0%	$70,303,000	$35,151,500	50.0%	3,066 (5)	1,533	50.0%
Agricultural	25	13	50.0%	$3,655,000	$1,827,500	50.0%	N/A	N/A	N/A
Religious / Non-Profit	57	29	50.0%	$39,744,000	$19,872,000	50.0%	N/A	N/A	N/A
Government	29	15	50.0%	$18,145,000	$9,072,500	50.0%	N/A	N/A	N/A
Education	26	13	50.0%	$33,537,000	$16,768,500	50.0%	N/A	N/A	N/A
Utilities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	16,210	8,105	50.0%	$2,793,689,000	$1,396,844,500	50.0%	53,223	26,612	50.0%

1) Number and value of structures data was taken from HAZUS-MH software.

2) The percent in hazard area is calculated by the amount in hazard area divided by total in community.

3) Population in community was taken from Census 2000 Block Group data.

4) Number of people in hazard area was determined from a visual estimate of the percent of the census tract located in the hazard area.

5) HAZUS-MH software did no provide commercial & industrial population in community. Values were taken from HAZUS99 data.

N/A = FEMA's HAZUS Software database does not provide this data (Not Available).

Inventory Assets - St. John the Baptist Parish

Date: 8/23/2010 What will be affected by the hazard event?

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are located in hazard areas.

Hazard: Tornadoes

Type of Structure (Occupancy Class)	Number of Structures [1]			Value of Structures [1]			Number of People [3]		
	# in Community	# in Hazard Area	% in Hazard Area [2]	$ in Community	# in Hazard Area	% in Hazard Area [2]	# in Community	# in Hazard Area [4]	% in Hazard Area [2]
Residential	15,274	13,747	90.0%	$2,312,986,000	$2,081,687,400	90.0%	43,044	38,740	90.0%
Commercial	638	574	90.0%	$315,319,000	$283,787,100	90.0%	7,113 [5]	6,402	90.0%
Industrial	161	145	90.0%	$70,303,000	$63,272,700	90.0%	3,066 [5]	2,759	90.0%
Agricultural	25	23	90.0%	$3,655,000	$3,289,500	90.0%	N/A	N/A	N/A
Religious / Non-Profit	57	51	90.0%	$39,744,000	$35,769,600	90.0%	N/A	N/A	N/A
Government	29	26	90.0%	$18,145,000	$16,330,500	90.0%	N/A	N/A	N/A
Education	26	23	90.0%	$33,537,000	$30,183,300	90.0%	N/A	N/A	N/A
Utilities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	16,210	14,589	90.0%	$2,793,689,000	$2,514,320,100	90.0%	53,223	47,901	90.0%

1) Number and value of structures data was taken from HAZUS-MH software.

2) The percent in hazard area is calculated by the amount in hazard area divided by total in community.

3) Population in community was taken from Census 2000 Block Group data.

4) Number of people in hazard area was determined from a visual estimate of the percent of the census tract located in the hazard area.

5) HAZUS-MH software did not provide commercial & industrial population in community. Values were taken from HAZUS99 data.

N/A = FEMA's HAZUS Software database does not provide this data (Not Available).

Inventory Assets - St. John the Baptist Parish

Date: 8/23/2010 What will be affected by the hazard event?

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are located in hazard areas.

Hazard: Winter Storms

Type of Structure (Occupancy Class)	Number of Structures [1]			Value of Structures [1]			Number of People [3]		
	# in Community	# in Hazard Area	% in Hazard Area [2]	$ in Community	# in Hazard Area	% in Hazard Area [2]	# in Community	# in Hazard Area [4]	% in Hazard Area [2]
Residential	15,274	6,110	40.0%	$2,312,986,000	$925,194,400	40.0%	43,044	17,218	40.0%
Commercial	638	255	40.0%	$315,319,000	$126,127,600	40.0%	7,113 [5]	2,845	40.0%
Industrial	161	64	40.0%	$70,303,000	$28,121,200	40.0%	3,066 [5]	1,226	40.0%
Agricultural	25	10	40.0%	$3,655,000	$1,462,000	40.0%	N/A	N/A	N/A
Religious / Non-Profit	57	23	40.0%	$39,744,000	$15,897,600	40.0%	N/A	N/A	N/A
Government	29	12	40.0%	$18,145,000	$7,258,000	40.0%	N/A	N/A	N/A
Education	26	10	40.0%	$33,537,000	$13,414,800	40.0%	N/A	N/A	N/A
Utilities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	16,210	6,484	40.0%	$2,793,689,000	$1,117,475,600	40.0%	53,223	21,289	40.0%

1) Number and value of structures data was taken from HAZUS-MH software.

2) The percent in hazard area is calculated by the amount in hazard area divided by total in community.

3) Population in community was taken from Census 2000 Block Group data.

4) Number of people in hazard area was determined from a visual estimate of the percent of the census tract located in the hazard area.

5) HAZUS-MH software did not provide commercial & industrial population in community. Values were taken from HAUS99 data.

N/A = FEMA's HAZUS Software database does not provide this data (Not Available)

Inventory Assets - St. John the Baptist Parish

Date: 8/23/2010 What will be affected by the hazard event?

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are located in hazard areas.

Hazard: Hailstorms

Type of Structure (Occupancy Class)	Number of Structures [1]			Value of Structures [1]			Number of People [3]		
	# in Community	# in Hazard Area	% in Hazard Area [2]	$ in Community	# in Hazard Area	% in Hazard Area [2]	# in Community	# in Hazard Area [4]	% in Hazard Area [2]
Residential	15,274	3,819	25.0%	$2,312,986,000	$578,246,500	25.0%	43,044	10,761	25.0%
Commercial	638	160	25.0%	$315,319,000	$78,829,750	25.0%	7,113 [5]	1,778	25.0%
Industrial	161	40	25.0%	$70,303,000	$17,575,750	25.0%	3,066 [5]	767	25.0%
Agricultural	25	6	25.0%	$3,655,000	$913,750	25.0%	N/A	N/A	N/A
Religious / Non-Profit	57	14	25.0%	$39,744,000	$9,936,000	25.0%	N/A	N/A	N/A
Government	29	7	25.0%	$18,145,000	$4,536,250	25.0%	N/A	N/A	N/A
Education	26	7	25.0%	$33,537,000	$8,384,250	25.0%	N/A	N/A	N/A
Utilities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	16,210	4,053	25.0%	$2,793,689,000	$698,422,250	25.0%	53,223	13,306	25.0%

1) Number and value of structures data was taken from HAZUS-MH software.

2) The percent in hazard area is calculated by the amount in hazard area divided by total in community.

3) Population in community was taken from Census 2000 Block Group data.

4) Number of people in hazard area was determined from a visual estimate of the percent of the census tract located in the hazard area.

5) HAZUS-MH software did not provide commerical & industrial population in community. Values were taken from HAZUS99 data.

N/A = FEMA's HAZUS Software database does not provide this data (Not Available)

Inventory Assets - St. John the Baptist Parish

Date: 8/23/2010 What will be affected by the hazard event?

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are located in hazard areas.

Hazard: Drought

Type of Structure (Occupancy Class)	Number of Structures (1)			Value of Structures (1)			Number of People (3)		
	# in Community	# in Hazard Area	% in Hazard Area (2)	$ in Community	# in Hazard Area	% in Hazard Area (2)	# in Community	# in Hazard Area (4)	% in Hazard Area (2)
Residential	15,274	3,055	20.0%	$2,312,986,000	$462,597,200	20.0%	43,044	8,609	20.0%
Commercial	638	128	20.0%	$315,319,000	$63,063,800	20.0%	7,113 (5)	1,423	20.0%
Industrial	161	32	20.0%	$70,303,000	$14,060,600	20.0%	3,066 (5)	613	20.0%
Agricultural	25	5	20.0%	$3,655,000	$731,000	20.0%	N/A	N/A	N/A
Religious / Non-Profit	57	11	20.0%	$39,744,000	$7,948,800	20.0%	N/A	N/A	N/A
Government	29	6	20.0%	$18,145,000	$3,629,000	20.0%	N/A	N/A	N/A
Education	26	5	20.0%	$33,537,000	$6,707,400	20.0%	N/A	N/A	N/A
Utilities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	16,210	3,242	20.0%	$2,793,689,000	$558,737,800	20.0%	53,223	10,645	20.0%

1) Number and value of structures data was taken from HAZUS-MH software.

2) The percent in hazard area is calculated by the amount in hazard area divided by total in community.

3) Population in community was taken from Census 2000 Block Group data.

4) Number of people in hazard area was determined from a visual estimate of the percent of the census tract located in the hazard area.

5) HAZUS-MH software did not provide commercial & industrial population in community. Values taken from HAZUS99 data.

N/A = FEMA's HAZUS Software database does not provide this data (Not Available)

Inventory Assets - St. John the Baptist Parish

Date: 8/23/2010 What will be affected by the hazard event?

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are located in hazard areas.

Hazard: Extreme Heat

Type of Structure (Occupancy Class)	Number of Structures (1)			Value of Structures (1)			Number of People (3)		
	# in Community	# in Hazard Area	% in Hazard Area (2)	$ in Community	# in Hazard Area	% in Hazard Area (2)	# in Community	# in Hazard Area (4)	% in Hazard Area (2)
Residential	15,274	764	5.0%	$2,312,986,000	$115,649,300	5.0%	43,044	2,152	5.0%
Commercial	638	32	5.0%	$315,319,000	$15,765,950	5.0%	7,113 (5)	356	5.0%
Industrial	161	8	5.0%	$70,303,000	$3,515,150	5.0%	3,066 (5)	153	5.0%
Agricultural	25	1	5.0%	$3,655,000	$182,750	5.0%	N/A	N/A	N/A
Religious / Non-Profit	57	3	5.0%	$39,744,000	$1,987,200	5.0%	N/A	N/A	N/A
Government	29	1	5.0%	$18,145,000	$907,250	5.0%	N/A	N/A	N/A
Education	26	1	5.0%	$33,537,000	$1,676,850	5.0%	N/A	N/A	N/A
Utilities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	16,210	811	5.0%	$2,793,689,000	$139,684,450	5.0%	53,223	2,661	5.0%

1) Number and value of structures data was taken from HAZUS-MH software.

2) The percent in hazard area is calculated by the amount in hazard area divided by total in community.

3) Population in community was taken from Census 2000 Block Group data.

4) Number of people in hazard area was determined from a visual estimate of the percent of the census tract located in the hazard areas.

5) HAZUS-MH software did not provide commercial & industrial population in community. Values were taken from HAZUS99 data.

N/A = FEMA's HAZUS Software database does not provide this data (Not Available)

Inventory Assets - St. John the Baptist Parish

Date: 8/23/2010 What will be affected by the hazard event?

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are located in hazard areas.

Hazard: Expansive Soils

Type of Structure (Occupancy Class)	Number of Structures (1)			Value of Structures (1)			Number of People (3)		
	# in Community	# in Hazard Area	% in Hazard Area (2)	$ in Community	# in Hazard Area	% in Hazard Area (2)	# in Community	# in Hazard Area (4)	% in Hazard Area (2)
Residential	15,274	3,055	20.0%	$2,312,986,000	$462,597,200	20.0%	43,044	8,609	20.0%
Commercial	638	128	20.0%	$315,319,000	$63,063,800	20.0%	7,113 (5)	1,423	20.0%
Industrial	161	32	20.0%	$70,303,000	$14,060,600	20.0%	3,066 (5)	613	20.0%
Agricultural	25	5	20.0%	$3,655,000	$731,000	20.0%	N/A	N/A	N/A
Religious / Non-Profit	57	11	20.0%	$39,744,000	$7,948,800	20.0%	N/A	N/A	N/A
Government	29	6	20.0%	$18,145,000	$3,629,000	20.0%	N/A	N/A	N/A
Education	26	5	20.0%	$33,537,000	$6,707,400	20.0%	N/A	N/A	N/A
Utilities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	16,210	3,242	20.0%	$2,793,689,000	$558,737,800	20.0%	53,223	10,645	20.0%

1) Number and value of structures data was taken from HAZUS-MH software.

2) The percent in hazard area is calculated by the amount in hazard area divided by total in community.

3) Population in community was taken from Census 2000 Block Group data.

4) Number of people in hazard area was determined from a visual estimate of the percent of the census tract located in the hazard area.

5) HAZUS-MH software did no provide commercial & industrial population in community. Values were taken from HAZUS99 data.

N/A = FEMA's HAZUS Software database does not provide this data (Not Available)

APPENDIX L

ST. JOHN THE BAPTIST PARISH CRITICAL FACILITIES

St. John the Baptist Parish
Critical Facilities: Law Enforcement
Source: St. John the Baptist Parish Office of Emergency Preparedness

NO.	FACILITY NAME	FACILITY TYPE	ADDRESS	CITY	STATE	ZIP
1	Sheriff's Office (at Courthouse)	Substation	2393 Highway 18	Edgard	LA	70049
2	Sheriff's Substation	Substation	492 Historic Main Street	Garyville	LA	70051
3	Sheriff's Main Division Office	Law Enforcement	100 Deputy Barton Granier Drive	LaPlace	LA	70068
4	Sheriff's Office (at Percy Hebert Government Complex)	Law Enforcement	1801 West Airline Highway	LaPlace	LA	70068
5	Sherman Walker Correctional Center	Prison	122 Deputy Barton Granier Drive	LaPlace	LA	70068
6	Louisiana State Police Communication Tower	Tower	N/A	LaPlace	LA	70068

Not mapped for homeland security purposes

St. John the Baptist Parish
Critical Facilities: Fire Stations
Source: St. John the Baptist Parish Office of Emergency Preparedness

NO.	STATION	FACILITY NAME	ADDRESS	CITY	STATE	ZIP
1	Station 91	Central Fire Station	3347 Highway 18	Edgard	LA	70049
2	Station 93	Lucy River Road Station	1283 Highway 18	Edgard	LA	70049
3	Station 95	Community Center Station	173 E. 3rd Street	Edgard	LA	70049
4	Station 71	Duane Crotty Memorial	418 Historic West Street	Garyville	LA	70051
5	Station 51	Central Fire Station	521 Hemlock Street	LaPlace	LA	70068
6	Station 52	Montegut Fire Station	801 Walnut Street	LaPlace	LA	70068
7	Station 53	St. Andrews Fire Station	1703 St. Andrews Boulevard	LaPlace	LA	70068
8	Station 54	Woodland Fire Station	220 Woodland Drive	LaPlace	LA	70068
9	Station 55	Belle Pointe Fire Station	1401 Belle Pointe Boulevard	LaPlace	LA	70068
10	Station 72	Mt. Airy Station	3772 La Highway 44	Mt. Airy	LA	70051
11	NA	Port Commission Fire River Rescue	1403 Highway 44	Reserve	LA	70084
12	Station 61	Central Fire Station	105 Firehouse Lane	Reserve	LA	70084
13	Station 62	LeBrun Maurin Memorial	378 Railroad Avenue	Reserve	LA	70084
14	Station 63	Stephen Maurin Memorial	1152 Highway 44	Reserve	LA	70084
15	Station 64	Rosenwald Station	394 Rosenwald Drive	Reserve	LA	70084
16	Station 65	American Legion Station	337 Central Avenue	Reserve	LA	70084
17	Station 94	Pleasure Bend Station	1200 Highway 643	Vacherie	LA	70090
18	Station 92	Wallace River Road Station	5733 Highway 18	Wallace	LA	70049

St. John the Baptist Parish
Critical Facilities: Health Care
Source: St. John the Baptist Parish Office of Emergency Preparedness

NO.	FACILITY NAME	FACILITY TYPE	ADDRESS	CITY	STATE	ZIP
1	St. John Parish Health Unit (West Bank)	Health Unit	159 E. 3rd Street	Edgard	LA	70049
2	Place Dubourg	Senior Living Apartment Complex	201 Rue DeBourg	LaPlace	LA	70068
3	River Parish Hospital	Hospital	500 Rue de Sante'	LaPlace	LA	70068
4	Twin Oaks Nursing Home / Assisted Living Center	Nursing Home	506 W. 5th Street	LaPlace	LA	70068
5	Southeast Louisiana War Veterans Home	Nursing Home	4080 W. Airline Highway	Reserve	LA	70084
6	St. John Parish Health Unit (East Bank)	Health Unit	473 Central Avenue	Reserve	LA	70084

St. John the Baptist Parish
Critical Facilities: Schools
Source: St. John the Baptist Parish Office of Emergency Preparedness

NO.	FACILITY NAME	ADDRESS	CITY	STATE	ZIP
1	West St. John Elementary School*	2555 Highway 18	Edgard	LA	70049
2	West St. John High School	480 Highway 3127	Edgard	LA	70049
3	Garyville / Mt. Airy Magnet School	240 Highway 54	Garyville	LA	70015
4	Redirection Center	152 Anthony F. Monica Drive	Garyville	LA	70015
5	St. John Child Development Center*	117 Stebbins Street	Garyville	LA	70015
6	Ascension of Our Lord School	1809 Greenwood	LaPlace	LA	70068
7	Lake Pontchartrain Elementary	3328 Highway 51	LaPlace	LA	70068
8	John L. Ory*	182 W. 5th Street	LaPlace	LA	70068
9	LaPlace Elementary School	393 Greenwood Drive	LaPlace	LA	70068
10	St. Charles Catholic High School	100 Dominican Drive	LaPlace	LA	70068
11	St. Joan of Arc Catholic School	412 Fir Street	LaPlace	LA	70068
12	East St. John Elementary	400 Ory Drive	LaPlace	LA	70068
13	Emily C. Watkins Elementary School	944 Highway 628	LaPlace	LA	70068
14	Milesville Testing Center	538 W. 2nd Street	LaPlace	LA	70068
15	St. John A.R.C Work Activity Center	101 Bamboo Road	LaPlace	LA	70068
16	East St. John High School	1 Wildcat Drive	Reserve	LA	70084
17	Fifth Ward Elementary School	158 Panther Drive	Reserve	LA	70084
18	South Central LA Technical College	151 Regala Park	Reserve	LA	70084
19	Leon Godchaux School*	1880 Highway 44	Reserve	LA	70084
20	School Board Office Complex	118 W. 10th Street	Reserve	LA	70084
21	Our Lady of Grace School	780 Highway 44	Reserve	LA	70084
22	LifeHouse Daniel Academy	3556 Airline Highway	Reserve	LA	70084
23	Riverside Academy	332 Railroad Ave	Reserve	LA	70084
24	St. Peter's Catholic School	188 W. 7th Street	Reserve	LA	70084

* Last resort relocation center

St. John the Baptist Parish
Critical Facilities: Municipal Buildings
Source: St. John the Baptist Parish Office of Emergency Preparedness

NO.	FACILITY NAME	FACILITY TYPE	ADDRESS	CITY	STATE	ZIP
1	St. John Council on Aging (West Bank)	Municipal	155 E. 3rd Street	Edgard	LA	70049
2	St. John the Baptist Parish Administration / Maintenance Building	Municipal	149 E. 3rd Street	Edgard	LA	70049
3	St. John the Baptist Parish Courthouse	Municipal	2393 Highway 18	Edgard	LA	70049
4	Westbank Community Center	Municipal	173 E. 3rd Street	Edgard	LA	70049
5	Garyville Service Center	Municipal	492 Historic Main Street	Garyville	LA	70051
6	Emergency Operations / 911 Center	Municipal	1801 W. Airline Highway	LaPlace	LA	70068
7	LaPlace Service Center	Municipal	102 E. Airline Highway	LaPlace	LA	70068
8	Percy Hebert Government Complex	Municipal	1801 W. Airline Highway	LaPlace	LA	70068
9	St. John the Baptist Council Office	Municipal	1805 W. Airline Highway	LaPlace	LA	70068
10	St. John the Baptist Parish Arcuri Center	Municipal	1020 Cambridge Drive	LaPlace	LA	70068
11	St. John the Baptist Parish Community Center	Municipal	2900 Highway 51	LaPlace	LA	70068
12	Port of South Louisiana	Municipal	171 Belle Terre Boulevard	LaPlace	LA	70068
13	Louisiana Army National Guard Readiness Center	Municipal	4120 W. Airline Highway	Reserve	LA	70084
14	St. John Council on Aging (East Bank)	Municipal	214 Regala Park Drive	Reserve	LA	70084
15	St. John the Baptist Parish Health & Human Services	Municipal	128 Central Avenue	Reserve	LA	70084
16	Port of South Louisiana Globalplex	Municipal	1692 Highway 44	Reserve	LA	70084
17	St. John the Baptist Parish Library (Edgard Branch)	Library	2979 Highway 18	Edgard	LA	70049
18	St. John the Baptist Parish Library (Garyville Branch)	Library	111 Historic Front Street	Garyville	LA	70051
19	St. John the Baptist Parish Central Library	Library	2920 Highway 51	LaPlace	LA	70068
20	St. John the Baptist Parish Library (Reserve Branch)	Library	170 West 10th Street	Reserve	LA	70084

St. John the Baptist Parish
Critical Facilities: Airports
Source: St. John the Baptist Parish Office of Emergency Preparedness

NO.	FACILITY NAME	ADDRESS	CITY	STATE	ZIP
1	River Parish Hospital Heliport	500 Rue de Sante'	LaPlace	LA	70068
2	Saint John the Baptist Parish Airport	355 Airport Road	Reserve	LA	70084

APPENDIX M

ST. JOHN THE BAPTIST PARISH ASSET INVENTORY

ST. JOHN THE BAPTIST PARISH
HAZARD MITIGATION PLAN
ASSET INVENTORY

Name or Description of Asset	Sources of Information	Critical Facility	Vulnerable Populations	Economic Assets	Special Considerations	Historic / Other Considerations	Size of Building (sq. ft.)	Replacement Value ($)[1]	Contents Value ($)[2]	Function Use or Value ($)[3]	Displacement Cost ($ per day)[4]
Fire Station 91	Parish Information	X					6,580	$855,400	$1,283,100	$197,400	$541
St. John Council on Aging - Westbank	Parish Information	X					1,800	$158,400	$158,400	$54,000	$148
St. John Parish Admin. & Maint. Bldg. - Westbank	Parish Information	X					1,440	$126,720	$126,720	$43,200	$118
St. John the Baptist Parish Courthouse	Parish Information	X					22,680	$2,948,400	$4,422,600	$680,400	$1,864
West St. John Elementary School	Parish Information	X					78,140	$7,110,740	$7,110,740	$2,344,200	$6,422
West St. John High School	Parish Information	X					97,260	$8,850,660	$8,850,660	$2,917,800	$7,994
St. John Community Center - Westbank	Parish Information	X					7,180	$631,840	$631,840	$215,400	$590
Fire Station 71	Parish Information	X					9,374	$1,218,620	$1,827,930	$281,220	$770
St. John Service Center & Sheriff's Substation - Garyville	Parish Information	X					3,013	$391,690	$587,535	$90,390	$248
Fire Station 51	Parish Information	X					9,408	$1,223,040	$1,834,560	$282,240	$773
East St. John Elementary School	Parish Information	X					93,956	$8,549,996	$8,549,996	$2,818,680	$7,722
Emergency Operations/911 Center	Parish Information	X					7,000	$910,000	$1,365,000	$210,000	$575
Lake Pontchartrain Elementary School	Parish Information	X					160,151	$14,573,741	$14,573,741	$4,804,530	$13,163
St. John Service Center - LaPlace	Parish Information	X					4,168	$366,784	$366,784	$125,040	$343
Percy D. Hebert Building	Parish Information	X					25,800	$3,354,000	$5,031,000	$774,000	$2,121
Port of South Louisiana - Admin Office - LaPlace	Parish Information	X					3,799	$334,312	$334,312	$113,970	$312
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	Parish Information	X					62,600	$8,138,000	$12,207,000	$1,878,000	$5,145
Fire Station 53	Parish Information	X					7,043	$915,590	$1,373,385	$211,290	$579
St. John the Baptist Council Office	Parish Information	X					2,800	$246,400	$246,400	$84,000	$230
St. John the Baptist Parish Arcuri Center	Parish Information	X					5,146	$452,848	$452,848	$154,380	$423
St. John the Baptist Parish Community Center - Eastbank	Parish Information	X					46,000	$4,048,000	$4,048,000	$1,380,000	$3,781
Fire Station 65	Parish Information	X					6,564	$853,320	$1,279,980	$196,920	$540
Fire Station 61	Parish Information	X					3,892	$505,960	$758,940	$116,760	$320
Louisiana Army National Guard Readiness Center	Parish Information	X					33,340	$4,334,200	$6,501,300	$1,000,200	$2,740
Saint John the Baptist Parish Airport	Parish Information	X					1,693	$148,984	$148,984	$50,790	$139
South Central LA Technical College	Parish Information	X					79,683	$9,163,545	$13,745,318	$2,390,490	$6,549
St. John Council on Aging - Eastbank	Parish Information	X					10,572	$930,336	$930,336	$317,160	$869

[1] Replacement value of the structure derived from either FEMA How-to-Guide 386-2, p. 3-10 or RS Means 2008 Square Foot Costs (29th Edition)
[2] Contents value as percentage of building replacement value per FEMA How-to-Guide 386-2, p. 3-11 or FEMA default of 30%
[3] Annual operating budget
[4] Annual operating budget divided by 365 days

APPENDIX N

ST. JOHN THE BAPTIST PARISH LOSS ESTIMATION WORKSHEETS

St. John the Baptist Parish
Hazard Mitigation Plan
Loss Estimation
Floods

Structure Loss						Contents Loss				
Name/Description of Structure	Structure Replacement Value ($)[1]	X	Percent Damage (%)[2]	=	Loss to Structure ($)	Replacement Value of Contents ($)[3]	X	Percent Damage (%)[2]	=	Loss to Contents ($)
Fire Station 91	$855,400	X	27%	=	$230,958	$1,283,100	X	75%	=	$962,325
St. John Council on Aging - Westbank	$158,400	X	27%	=	$42,768	$158,400	X	75%	=	$118,800
St. John Parish Admin. & Maint. Bldg. - Westbank	$126,720	X	27%	=	$34,214	$126,720	X	75%	=	$95,040
St. John the Baptist Parish Courthouse	$2,948,400	X	27%	=	$796,068	$4,422,600	X	75%	=	$3,316,950
West St. John Elementary School	$7,110,740	X	27%	=	$1,919,900	$7,110,740	X	75%	=	$5,333,055
West St. John High School	$8,850,660	X	27%	=	$2,389,678	$8,850,660	X	75%	=	$6,637,995
St. John Community Center - Westbank	$631,840	X	27%	=	$170,597	$631,840	X	75%	=	$473,880
Fire Station 71	$1,218,620	X	27%	=	$329,027	$1,827,930	X	75%	=	$1,370,948
St. John Service Center & Sheriff's Substation - Garyville	$391,690	X	27%	=	$105,756	$587,535	X	75%	=	$440,651
Fire Station 51	$1,223,040	X	27%	=	$330,221	$1,834,560	X	75%	=	$1,375,920
East St. John Elementary School	$8,549,996	X	27%	=	$2,308,499	$8,549,996	X	75%	=	$6,412,497
Emergency Operations/911 Center	$910,000	X	27%	=	$245,700	$1,365,000	X	75%	=	$1,023,750
Lake Pontchartrain Elementary School	$14,573,741	X	27%	=	$3,934,910	$14,573,741	X	75%	=	$10,930,306
St. John Service Center - LaPlace	$366,784	X	27%	=	$99,032	$366,784	X	75%	=	$275,088
Percy D. Hebert Building	$3,354,000	X	27%	=	$905,580	$5,031,000	X	75%	=	$3,773,250
Port of South Louisiana - Admin Office - LaPlace	$334,312	X	27%	=	$90,264	$334,312	X	75%	=	$250,734
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$8,138,000	X	27%	=	$2,197,260	$12,207,000	X	75%	=	$9,155,250
Fire Station 53	$915,590	X	27%	=	$247,209	$1,373,385	X	75%	=	$1,030,039
St. John the Baptist Council Office	$246,400	X	27%	=	$66,528	$246,400	X	75%	=	$184,800
St. John the Baptist Parish Arcuri Center	$452,848	X	27%	=	$122,269	$452,848	X	75%	=	$339,636
St. John the Baptist Parish Community Center - Eastbank	$4,048,000	X	27%	=	$1,092,960	$4,048,000	X	75%	=	$3,036,000
Fire Station 65	$853,320	X	27%	=	$230,396	$1,279,980	X	75%	=	$959,985
Fire Station 61	$505,960	X	27%	=	$136,609	$758,940	X	75%	=	$569,205
Louisiana Army National Guard Readiness Center	$4,334,200	X	27%	=	$1,170,234	$6,501,300	X	75%	=	$4,875,975
Saint John the Baptist Parish Airport	$148,984	X	27%	=	$40,226	$148,984	X	75%	=	$111,738
South Central LA Technical College	$9,163,545	X	27%	=	$2,474,157	$13,745,318	X	75%	=	$10,308,988
St. John Council on Aging - Eastbank	$930,336	X	27%	=	$251,191	$930,336	X	75%	=	$697,752
			Total Loss to Structures		$5,682,253			**Total Loss to Contents**		$17,346,668

1. Replacement Value of the Structure from Appendix W
2. Estimated damage from event per FEMA How-to Guide 386-2, p. 4-13
3. Replacement value of the Structure's Contents from Appendix W

St. John the Baptist Parish
Hazard Mitigation Plan
Loss Estimation
Floods

Structure Use and Function Loss										Structure Loss + Contents Loss + Function Loss ($)
Name/ Description of Structure	**Average Daily Operating Budget ($)[4]**	**X**	**Functional Downtime (Days)[5]**	**+**	**Displacement Cost per Day ($)**		**Displacement Time (Days)[6]**	**=**	**Structure Use & Function Loss ($)**	
Fire Station 91	$541	X	45	+	$541	X	166	=	$114,151	$1,307,434
St. John Council on Aging - Westbank	$148	X	45	+	$148	X	166	=	$31,228	$192,796
St. John Parish Admin. & Maint. Bldg. - Westbank	$118	X	45	+	$118	X	166	=	$24,898	$154,152
St. John the Baptist Parish Courthouse	$1,864	X	45	+	$1,864	X	166	=	$393,304	$4,506,322
West St. John Elementary School	$6,422	X	45	+	$6,422	X	166	=	$1,355,042	$8,607,997
West St. John High School	$7,994	X	45	+	$7,994	X	166	=	$1,686,734	$10,714,407
St. John Community Center - Westbank	$590	X	45	+	$590	X	166	=	$124,490	$768,967
Fire Station 71	$770	X	45	+	$770	X	166	=	$162,470	$1,862,445
St. John Service Center & Sheriff's Substation - Garyville	$248	X	45	+	$248	X	166	=	$52,328	$598,736
Fire Station 51	$773	X	45	+	$773	X	166	=	$163,103	$1,869,244
East St. John Elementary School	$7,722	X	45	+	$7,722	X	166	=	$1,629,342	$10,350,338
Emergency Operations/911 Center	$575	X	45	+	$575	X	166	=	$121,325	$1,390,775
Lake Pontchartrain Elementary School	$13,163	X	45	+	$13,163	X	166	=	$2,777,393	$17,642,609
St. John Service Center - LaPlace	$343	X	45	+	$343	X	166	=	$72,373	$446,493
Percy D. Hebert Building	$2,121	X	45	+	$2,121	X	166	=	$447,531	$5,126,361
Port of South Louisiana - Admin Office - LaPlace	$312	X	45	+	$312	X	166	=	$65,832	$406,830
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$5,145	X	45	+	$5,145	X	166	=	$1,085,595	$12,438,105
Fire Station 53	$579	X	45	+	$579	X	166	=	$122,169	$1,399,417
St. John the Baptist Council Office	$230	X	45	+	$230	X	166	=	$48,530	$299,858
St. John the Baptist Parish Arcuri Center	$423	X	45	+	$423	X	166	=	$89,253	$551,158
St. John the Baptist Parish Community Center - Eastbank	$3,781	X	45	+	$3,781	X	166	=	$797,791	$4,926,751
Fire Station 65	$540	X	45	+	$540	X	166	=	$113,940	$1,304,321
Fire Station 61	$320	X	45	+	$320	X	166	=	$67,520	$773,334
Louisiana Army National Guard Readiness Center	$2,740	X	45	+	$2,740	X	166	=	$578,140	$6,624,349
Saint John the Baptist Parish Airport	$139	X	45	+	$139	X	166	=	$29,329	$181,293
South Central LA Technical College	$6,549	X	45	+	$6,549	X	166	=	$1,381,839	$14,164,984
St. John Council on Aging - Eastbank	$869	X	45	+	$869	X	166	=	$183,359	$1,132,302
								Total Loss to Structure Use & Function	$3,892,317	**$28,114,520**
										Total Loss for Hazard Event

4. Annual Operating Budget divided by 365 days
5. Estimated Days nonfunctional per FEMA How-to Guide 386-2, p. 4-14
6. Estimated Days operating somewhere else per FEMA How-to Guide 386-2, p. 4-15

St. John the Baptist Parish
Hazard Mitigation Plan
Loss Estimation
Hurricanes

Structure Loss						Contents Loss				
Name/Description of Structure	Structure Replacement Value ($)[1]	X	Percent Damage (%)[2]	=	Loss to Structure ($)	Replacement Value of Contents ($)[3]	X	Percent Damage (%)[2]	=	Loss to Contents ($)
Fire Station 91	$855,400	X	27%	=	$230,958	$1,283,100	X	75%	=	$962,325
St. John Council on Aging - Westbank	$158,400	X	27%	=	$42,768	$158,400	X	75%	=	$118,800
St. John Parish Admin. & Maint. Bldg. - Westbank	$126,720	X	27%	=	$34,214	$126,720	X	75%	=	$95,040
St. John the Baptist Parish Courthouse	$2,948,400	X	27%	=	$796,068	$4,422,600	X	75%	=	$3,316,950
West St. John Elementary School	$7,110,740	X	27%	=	$1,919,900	$7,110,740	X	75%	=	$5,333,055
West St. John High School	$8,850,660	X	27%	=	$2,389,678	$8,850,660	X	75%	=	$6,637,995
St. John Community Center - Westbank	$631,840	X	27%	=	$170,597	$631,840	X	75%	=	$473,880
Fire Station 71	$1,218,620	X	27%	=	$329,027	$1,827,930	X	75%	=	$1,370,948
St. John Service Center & Sheriff's Substation - Garyville	$391,690	X	27%	=	$105,756	$587,535	X	75%	=	$440,651
Fire Station 51	$1,223,040	X	27%	=	$330,221	$1,834,560	X	75%	=	$1,375,920
East St. John Elementary School	$8,549,996	X	27%	=	$2,308,499	$8,549,996	X	75%	=	$6,412,497
Emergency Operations/911 Center	$910,000	X	27%	=	$245,700	$1,365,000	X	75%	=	$1,023,750
Lake Pontchartrain Elementary School	$14,573,741	X	27%	=	$3,934,910	$14,573,741	X	75%	=	$10,930,306
St. John Service Center - LaPlace	$366,784	X	27%	=	$99,032	$366,784	X	75%	=	$275,088
Percy D. Hebert Building	$3,354,000	X	27%	=	$905,580	$5,031,000	X	75%	=	$3,773,250
Port of South Louisiana - Admin Office - LaPlace	$334,312	X	27%	=	$90,264	$334,312	X	75%	=	$250,734
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$8,138,000	X	27%	=	$2,197,260	$12,207,000	X	75%	=	$9,155,250
Fire Station 53	$915,590	X	27%	=	$247,209	$1,373,385	X	75%	=	$1,030,039
St. John the Baptist Council Office	$246,400	X	27%	=	$66,528	$246,400	X	75%	=	$184,800
St. John the Baptist Parish Arcuri Center	$452,848	X	27%	=	$122,269	$452,848	X	75%	=	$339,636
St. John the Baptist Parish Community Center - Eastbank	$4,048,000	X	27%	=	$1,092,960	$4,048,000	X	75%	=	$3,036,000
Fire Station 65	$853,320	X	27%	=	$230,396	$1,279,980	X	75%	=	$959,985
Fire Station 61	$505,960	X	27%	=	$136,609	$758,940	X	75%	=	$569,205
Louisiana Army National Guard Readiness Center	$4,334,200	X	27%	=	$1,170,234	$6,501,300	X	75%	=	$4,875,975
Saint John the Baptist Parish Airport	$148,984	X	27%	=	$40,226	$148,984	X	75%	=	$111,738
South Central LA Technical College	$9,163,545	X	27%	=	$2,474,157	$13,745,318	X	75%	=	$10,308,988
St. John Council on Aging - Eastbank	$930,336	X	27%	=	$251,191	$930,336	X	75%	=	$697,752
			Total Loss to Structures		$5,682,253			**Total Loss to Contents**		$17,346,668

1. Replacement Value of the Structure from Appendix W
2. Estimated damage from event per FEMA How-to Guide 386-2, p. 4-13
3. Replacement value of the Structure's Contents from Appendix W
N/A = Not Applicable

St. John the Baptist Parish
Hazard Mitigation Plan
Loss Estimation
Hurricanes

Structure Use and Function Loss										
Name/Description of Structure	**Average Daily Operating Budget ($)[4]**	**x**	**Functional Downtime (Days)[5]**	**+**	**Displacement Cost per Day ($)**		**Displacement Time (Days)[6]**	**=**	**Structure Use & Function Loss ($)**	**Structure Loss + Contents Loss + Function Loss ($)**
Fire Station 91	$541	X	45	+	$541	X	166	=	$114,151	$1,307,434
St. John Council on Aging - Westbank	$148	X	45	+	$148	X	166	=	$31,228	$192,796
St. John Parish Admin. & Maint. Bldg. - Westbank	$118	X	45	+	$118	X	166	=	$24,898	$154,152
St. John the Baptist Parish Courthouse	$1,864	X	45	+	$1,864	X	166	=	$393,304	$4,506,322
West St. John Elementary School	$6,422	X	45	+	$6,422	X	166	=	$1,355,042	$8,607,997
West St. John High School	$7,994	X	45	+	$7,994	X	166	=	$1,686,734	$10,714,407
St. John Community Center - Westbank	$590	X	45	+	$590	X	166	=	$124,490	$768,967
Fire Station 71	$770	X	45	+	$770	X	166	=	$162,470	$1,862,445
St. John Service Center & Sheriff's Substation - Garyville	$248	X	45	+	$248	X	166	=	$52,328	$598,736
Fire Station 51	$773	X	45	+	$773	X	166	=	$163,103	$1,869,244
East St. John Elementary School	$7,722	X	45	+	$7,722	X	166	=	$1,629,342	$10,350,338
Emergency Operations/911 Center	$575	X	45	+	$575	X	166	=	$121,325	$1,390,775
Lake Pontchartrain Elementary School	$13,163	X	45	+	$13,163	X	166	=	$2,777,393	$17,642,609
St. John Service Center - LaPlace	$343	X	45	+	$343	X	166	=	$72,373	$446,493
Percy D. Hebert Building	$2,121	X	45	+	$2,121	X	166	=	$447,531	$5,126,361
Port of South Louisiana - Admin Office - LaPlace	$312	X	45	+	$312	X	166	=	$65,832	$406,830
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$5,145	X	45	+	$5,145	X	166	=	$1,085,595	$12,438,105
Fire Station 53	$579	X	45	+	$579	X	166	=	$122,169	$1,399,417
St. John the Baptist Council Office	$230	X	45	+	$230	X	166	=	$48,530	$299,858
St. John the Baptist Parish Arcuri Center	$423	X	45	+	$423	X	166	=	$89,253	$551,158
St. John the Baptist Parish Community Center - Eastbank	$3,781	X	45	+	$3,781	X	166	=	$797,791	$4,926,751
Fire Station 65	$540	X	45	+	$540	X	166	=	$113,940	$1,304,321
Fire Station 61	$320	X	45	+	$320	X	166	=	$67,520	$773,334
Louisiana Army National Guard Readiness Center	$2,740	X	45	+	$2,740	X	166	=	$578,140	$6,624,349
Saint John the Baptist Parish Airport	$139	X	45	+	$139	X	166	=	$29,329	$181,293
South Central LA Technical College	$6,549	X	45	+	$6,549	X	166	=	$1,381,839	$14,164,984
St. John Council on Aging - Eastbank	$869	X	45	+	$869	X	166	=	$183,359	$1,132,302
								Total Loss to Structure Use & Function	$3,892,317	**$28,114,520**
										Total Loss for Hazard Event

4. Annual Operating Budget divided by 365 days
5. Estimated Days nonfunctional per FEMA How-to Guide 386-2, p. 4-14
6. Estimated Days operating somewhere else per FEMA How-to Guide 386-2, p. 4-15

St. John the Baptist Parish
Hazard Mitigation Plan
Loss Estimation
Thunderstorms/Lightning/High Winds

Structure Loss							Contents Loss				
Name/Description of Structure	Structure Replacement Value ($)[1]	X	Percent Damage (%)[2]	=	Loss to Structure ($)		Replacement Value of Contents ($)[3]	X	Percent Damage (%)[2]	=	Loss to Contents ($)
Fire Station 91	$855,400	X	10%	=	$85,540		$1,283,100	X	5%	=	$64,155
St. John Council on Aging - Westbank	$158,400	X	10%	=	$15,840		$158,400	X	5%	=	$7,920
St. John Parish Admin. & Maint. Bldg. - Westbank	$126,720	X	10%	=	$12,672		$126,720	X	5%	=	$6,336
St. John the Baptist Parish Courthouse	$2,948,400	X	10%	=	$294,840		$4,422,600	X	5%	=	$221,130
West St. John Elementary School	$7,110,740	X	10%	=	$711,074		$7,110,740	X	5%	=	$355,537
West St. John High School	$8,850,660	X	10%	=	$885,066		$8,850,660	X	5%	=	$442,533
St. John Community Center - Westbank	$631,840	X	10%	=	$63,184		$631,840	X	5%	=	$31,592
Fire Station 71	$1,218,620	X	10%	=	$121,862		$1,827,930	X	5%	=	$91,397
St. John Service Center & Sheriff's Substation - Garyville	$391,690	X	10%	=	$39,169		$587,535	X	5%	=	$29,377
Fire Station 51	$1,223,040	X	10%	=	$122,304		$1,834,560	X	5%	=	$91,728
East St. John Elementary School	$8,549,996	X	10%	=	$855,000		$8,549,996	X	5%	=	$427,500
Emergency Operations/911 Center	$910,000	X	10%	=	$91,000		$1,365,000	X	5%	=	$68,250
Lake Pontchartrain Elementary School	$14,573,741	X	10%	=	$1,457,374		$14,573,741	X	5%	=	$728,687
St. John Service Center - LaPlace	$366,784	X	10%	=	$36,678		$366,784	X	5%	=	$18,339
Percy D. Hebert Building	$3,354,000	X	10%	=	$335,400		$5,031,000	X	5%	=	$251,550
Port of South Louisiana - Admin Office - LaPlace	$334,312	X	10%	=	$33,431		$334,312	X	5%	=	$16,716
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$8,138,000	X	10%	=	$813,800		$12,207,000	X	5%	=	$610,350
Fire Station 53	$915,590	X	10%	=	$91,559		$1,373,385	X	5%	=	$68,669
St. John the Baptist Council Office	$246,400	X	10%	=	$24,640		$246,400	X	5%	=	$12,320
St. John the Baptist Parish Arcuri Center	$452,848	X	10%	=	$45,285		$452,848	X	5%	=	$22,642
St. John the Baptist Parish Community Center - Eastbank	$4,048,000	X	10%	=	$404,800		$4,048,000	X	5%	=	$202,400
Fire Station 65	$853,320	X	10%	=	$85,332		$1,279,980	X	5%	=	$63,999
Fire Station 61	$505,960	X	10%	=	$50,596		$758,940	X	5%	=	$37,947
Louisiana Army National Guard Readiness Center	$4,334,200	X	10%	=	$433,420		$6,501,300	X	5%	=	$325,065
Saint John the Baptist Parish Airport	$148,984	X	10%	=	$14,898		$148,984	X	5%	=	$7,449
South Central LA Technical College	$9,163,545	X	10%	=	$916,355		$13,745,318	X	5%	=	$687,266
St. John Council on Aging - Eastbank	$930,336	X	10%	=	$93,034		$930,336	X	5%	=	$46,517
			Total Loss to Structures		$2,104,538				**Total Loss to Contents**		$1,156,445

1. Replacement Value of the Structure from Appendix W
2. Estimated damage from event per FEMA How-to Guide 386-2, p. 4-13
3. Replacement value of the Structure's Contents from Appendix W
N/A = Not Applicable

St. John the Baptist Parish
Hazard Mitigation Plan
Loss Estimation
Thunderstorms/Lightning/High Winds

Structure Use and Function Loss										
Name/Description of Structure	**Average Daily Operating Budget ($)[4]**	**X**	**Functional Downtime (Days)[5]**	**+**	**Displacement Cost per Day ($)**		**Displacement Time (Days)[6]**	**=**	**Structure Use & Function Loss ($)**	**Structure Loss + Contents Loss + Function Loss ($)**
Fire Station 91	$541	X	7	+	$541	X	0	=	$3,787	$153,482
St. John Council on Aging - Westbank	$148	X	7	+	$148	X	0	=	$1,036	$24,796
St. John Parish Admin. & Maint. Bldg. - Westbank	$118	X	7	+	$118	X	0	=	$826	$19,834
St. John the Baptist Parish Courthouse	$1,864	X	7	+	$1,864	X	0	=	$13,048	$529,018
West St. John Elementary School	$6,422	X	7	+	$6,422	X	0	=	$44,954	$1,111,565
West St. John High School	$7,994	X	7	+	$7,994	X	0	=	$55,958	$1,383,557
St. John Community Center - Westbank	$590	X	7	+	$590	X	0	=	$4,130	$98,906
Fire Station 71	$770	X	7	+	$770	X	0	=	$5,390	$218,649
St. John Service Center & Sheriff's Substation - Garyville	$248	X	7	+	$248	X	0	=	$1,736	$70,282
Fire Station 51	$773	X	7	+	$773	X	0	=	$5,411	$219,443
East St. John Elementary School	$7,722	X	7	+	$7,722	X	0	=	$54,054	$1,336,553
Emergency Operations/911 Center	$575	X	7	+	$575	X	0	=	$4,025	$163,275
Lake Pontchartrain Elementary School	$13,163	X	7	+	$13,163	X	0	=	$92,141	$2,278,202
St. John Service Center - LaPlace	$343	X	7	+	$343	X	0	=	$2,401	$57,419
Percy D. Hebert Building	$2,121	X	7	+	$2,121	X	0	=	$14,847	$601,797
Port of South Louisiana - Admin Office - LaPlace	$312	X	7	+	$312	X	0	=	$2,184	$52,331
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$5,145	X	7	+	$5,145	X	0	=	$36,015	$1,460,165
Fire Station 53	$579	X	7	+	$579	X	0	=	$4,053	$164,281
St. John the Baptist Council Office	$230	X	7	+	$230	X	0	=	$1,610	$38,570
St. John the Baptist Parish Arcuri Center	$423	X	7	+	$423	X	0	=	$2,961	$70,888
St. John the Baptist Parish Community Center - Eastbank	$3,781	X	7	+	$3,781	X	0	=	$26,467	$633,667
Fire Station 65	$540	X	7	+	$540	X	0	=	$3,780	$153,111
Fire Station 61	$320	X	7	+	$320	X	0	=	$2,240	$90,783
Louisiana Army National Guard Readiness Center	$2,740	X	7	+	$2,740	X	0	=	$19,180	$777,665
Saint John the Baptist Parish Airport	$139	X	7	+	$139	X	0	=	$973	$23,321
South Central LA Technical College	$6,549	X	7	+	$6,549	X	0	=	$45,843	$1,649,463
St. John Council on Aging - Eastbank	$869	X	7	+	$869	X	0	=	$6,083	$145,633
								Total Loss to Structure Use & Function	$129,129	**$3,539,807**
										Total Loss for Hazard Event

4. Annual Operating Budget divided by 365 days
5. Estimated Days nonfunctional per FEMA How-to Guide 386-2, p. 4-14
6. Estimated Days operating somewhere else per FEMA How-to Guide 386-2, p. 4-15

St. John the Baptist Parish
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Structure Loss						Contents Loss				
Name/Description of Structure	Structure Replacement Value ($)[1]	X	Percent Damage (%)[2]	=	Loss to Structure ($)	Replacement Value of Contents ($)[3]	X	Percent Damage (%)[2]	=	Loss to Contents ($)
Fire Station 91	$855,400	X	10%	=	$85,540	$1,283,100	X	10%	=	$128,310
St. John Council on Aging - Westbank	$158,400	X	10%	=	$15,840	$158,400	X	10%	=	$15,840
St. John Parish Admin. & Maint. Bldg. - Westbank	$126,720	X	10%	=	$12,672	$126,720	X	10%	=	$12,672
St. John the Baptist Parish Courthouse	$2,948,400	X	10%	=	$294,840	$4,422,600	X	10%	=	$442,260
West St. John Elementary School	$7,110,740	X	10%	=	$711,074	$7,110,740	X	10%	=	$711,074
West St. John High School	$8,850,660	X	10%	=	$885,066	$8,850,660	X	10%	=	$885,066
St. John Community Center - Westbank	$631,840	X	10%	=	$63,184	$631,840	X	10%	=	$63,184
Fire Station 71	$1,218,620	X	10%	=	$121,862	$1,827,930	X	10%	=	$182,793
St. John Service Center & Sheriff's Substation - Garyville	$391,690	X	10%	=	$39,169	$587,535	X	10%	=	$58,754
Fire Station 51	$1,223,040	X	10%	=	$122,304	$1,834,560	X	10%	=	$183,456
East St. John Elementary School	$8,549,996	X	10%	=	$855,000	$8,549,996	X	10%	=	$855,000
Emergency Operations/911 Center	$910,000	X	10%	=	$91,000	$1,365,000	X	10%	=	$136,500
Lake Pontchartrain Elementary School	$14,573,741	X	10%	=	$1,457,374	$14,573,741	X	10%	=	$1,457,374
St. John Service Center - LaPlace	$366,784	X	10%	=	$36,678	$366,784	X	10%	=	$36,678
Percy D. Hebert Building	$3,354,000	X	10%	=	$335,400	$5,031,000	X	10%	=	$503,100
Port of South Louisiana - Admin Office - LaPlace	$334,312	X	10%	=	$33,431	$334,312	X	10%	=	$33,431
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$8,138,000	X	10%	=	$813,800	$12,207,000	X	10%	=	$1,220,700
Fire Station 53	$915,590	X	10%	=	$91,559	$1,373,385	X	10%	=	$137,339
St. John the Baptist Council Office	$246,400	X	10%	=	$24,640	$246,400	X	10%	=	$24,640
St. John the Baptist Parish Arcuri Center	$452,848	X	10%	=	$45,285	$452,848	X	10%	=	$45,285
St. John the Baptist Parish Community Center - Eastbank	$4,048,000	X	10%	=	$404,800	$4,048,000	X	10%	=	$404,800
Fire Station 65	$853,320	X	10%	=	$85,332	$1,279,980	X	10%	=	$127,998
Fire Station 61	$505,960	X	10%	=	$50,596	$758,940	X	10%	=	$75,894
Louisiana Army National Guard Readiness Center	$4,334,200	X	10%	=	$433,420	$6,501,300	X	10%	=	$650,130
Saint John the Baptist Parish Airport	$148,984	X	10%	=	$14,898	$148,984	X	10%	=	$14,898
South Central LA Technical College	$9,163,545	X	10%	=	$916,355	$13,745,318	X	10%	=	$1,374,532
St. John Council on Aging - Eastbank	$930,336	X	10%	=	$93,034	$930,336	X	10%	=	$93,034
			Total Loss to Structures		$2,104,538			**Total Loss to Contents**		$2,312,889

1. Replacement Value of the Structure from Appendix W
2. Estimated damage from event per FEMA How-to Guide 386-2, p. 4-13
3. Replacement value of the Structure's Contents from Appendix W
N/A = Not Applicable

St. John the Baptist Parish
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Structure Use and Function Loss										
Name/Description of Structure	**Average Daily Operating Budget ($)[4]**	**X**	**Functional Downtime (Days)[5]**	**+**	**Displacement Cost per Day ($)**		**Displacement Time (Days)[6]**	**=**	**Structure Use & Function Loss ($)**	**Structure Loss + Contents Loss + Function Loss ($)**
Fire Station 91	$541	X	14	+	$541	X	0	=	$7,574	$221,424
St. John Council on Aging - Westbank	$148	X	14	+	$148	X	0	=	$2,072	$33,752
St. John Parish Admin. & Maint. Bldg. - Westbank	$118	X	14	+	$118	X	0	=	$1,652	$26,996
St. John the Baptist Parish Courthouse	$1,864	X	14	+	$1,864	X	0	=	$26,096	$763,196
West St. John Elementary School	$6,422	X	14	+	$6,422	X	0	=	$89,908	$1,512,056
West St. John High School	$7,994	X	14	+	$7,994	X	0	=	$111,916	$1,882,048
St. John Community Center - Westbank	$590	X	14	+	$590	X	0	=	$8,260	$134,628
Fire Station 71	$770	X	14	+	$770	X	0	=	$10,780	$315,435
St. John Service Center & Sheriff's Substation - Garyville	$248	X	14	+	$248	X	0	=	$3,472	$101,395
Fire Station 51	$773	X	14	+	$773	X	0	=	$10,822	$316,582
East St. John Elementary School	$7,722	X	14	+	$7,722	X	0	=	$108,108	$1,818,107
Emergency Operations/911 Center	$575	X	14	+	$575	X	0	=	$8,050	$235,550
Lake Pontchartrain Elementary School	$13,163	X	14	+	$13,163	X	0	=	$184,282	$3,099,030
St. John Service Center - LaPlace	$343	X	14	+	$343	X	0	=	$4,802	$78,159
Percy D. Hebert Building	$2,121	X	14	+	$2,121	X	0	=	$29,694	$868,194
Port of South Louisiana - Admin Office - LaPlace	$312	X	14	+	$312	X	0	=	$4,368	$71,230
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$5,145	X	14	+	$5,145	X	0	=	$72,030	$2,106,530
Fire Station 53	$579	X	14	+	$579	X	0	=	$8,106	$237,004
St. John the Baptist Council Office	$230	X	14	+	$230	X	0	=	$3,220	$52,500
St. John the Baptist Parish Arcuri Center	$423	X	14	+	$423	X	0	=	$5,922	$96,492
St. John the Baptist Parish Community Center - Eastbank	$3,781	X	14	+	$3,781	X	0	=	$52,934	$862,534
Fire Station 65	$540	X	14	+	$540	X	0	=	$7,560	$220,890
Fire Station 61	$320	X	14	+	$320	X	0	=	$4,480	$130,970
Louisiana Army National Guard Readiness Center	$2,740	X	14	+	$2,740	X	0	=	$38,360	$1,121,910
Saint John the Baptist Parish Airport	$139	X	14	+	$139	X	0	=	$1,946	$31,743
South Central LA Technical College	$6,549	X	14	+	$6,549	X	0	=	$91,686	$2,382,572
St. John Council on Aging - Eastbank	$869	X	14	+	$869	X	0	=	$12,166	$198,233
								Total Loss to Structure Use & Function	$258,258	**$4,889,535**
										Total Loss for Hazard Event

4. Annual Operating Budget divided by 365 days
5. Estimated Days nonfunctional per FEMA How-to Guide 386-2, p. 4-14
6. Estimated Days operating somewhere else per FEMA How-to Guide 386-2, p. 4-15

St. John the Baptist Parish
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Structure Loss						Contents Loss				
Name/Description of Structure	Structure Replacement Value ($)[1]	X	Percent Damage (%)[2]	=	Loss to Structure ($)	Replacement Value of Contents ($)[3]	X	Percent Damage (%)[2]	=	Loss to Contents ($)
Fire Station 91	$855,400	X	3%	=	$25,662	$1,283,100	X	5%	=	$64,155
St. John Council on Aging - Westbank	$158,400	X	3%	=	$4,752	$158,400	X	5%	=	$7,920
St. John Parish Admin. & Maint. Bldg. - Westbank	$126,720	X	3%	=	$3,802	$126,720	X	5%	=	$6,336
St. John the Baptist Parish Courthouse	$2,948,400	X	3%	=	$88,452	$4,422,600	X	5%	=	$221,130
West St. John Elementary School	$7,110,740	X	3%	=	$213,322	$7,110,740	X	5%	=	$355,537
West St. John High School	$8,850,660	X	3%	=	$265,520	$8,850,660	X	5%	=	$442,533
St. John Community Center - Westbank	$631,840	X	3%		$18,955	$631,840	X	5%		$31,592
Fire Station 71	$1,218,620	X	3%	=	$36,559	$1,827,930	X	5%	=	$91,397
St. John Service Center & Sheriff's Substation - Garyville	$391,690	X	3%	=	$11,751	$587,535	X	5%	=	$29,377
Fire Station 51	$1,223,040	X	3%	=	$36,691	$1,834,560	X	5%	=	$91,728
East St. John Elementary School	$8,549,996	X	3%	=	$256,500	$8,549,996	X	5%	=	$427,500
Emergency Operations/911 Center	$910,000	X	3%	=	$27,300	$1,365,000	X	5%	=	$68,250
Lake Pontchartrain Elementary School	$14,573,741	X	3%	=	$437,212	$14,573,741	X	5%	=	$728,687
St. John Service Center - LaPlace	$366,784	X	3%	=	$11,004	$366,784	X	5%	=	$18,339
Percy D. Hebert Building	$3,354,000	X	3%		$100,620	$5,031,000	X	5%		$251,550
Port of South Louisiana - Admin Office - LaPlace	$334,312	X	3%	=	$10,029	$334,312	X	5%	=	$16,716
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$8,138,000	X	3%	=	$244,140	$12,207,000	X	5%	=	$610,350
Fire Station 53	$915,590	X	3%		$27,468	$1,373,385	X	5%		$68,669
St. John the Baptist Council Office	$246,400	X	3%	=	$7,392	$246,400	X	5%	=	$12,320
St. John the Baptist Parish Arcuri Center	$452,848	X	3%	=	$13,585	$452,848	X	5%	=	$22,642
St. John the Baptist Parish Community Center - Eastbank	$4,048,000	X	3%	=	$121,440	$4,048,000	X	5%	=	$202,400
Fire Station 65	$853,320	X	3%	=	$25,600	$1,279,980	X	5%	=	$63,999
Fire Station 61	$505,960	X	3%	=	$15,179	$758,940	X	5%	=	$37,947
Louisiana Army National Guard Readiness Center	$4,334,200	X	3%	=	$130,026	$6,501,300	X	5%	=	$325,065
Saint John the Baptist Parish Airport	$148,984	X	3%	=	$4,470	$148,984	X	5%	=	$7,449
South Central LA Technical College	$9,163,545	X	3%		$274,906	$13,745,318	X	5%		$687,266
St. John Council on Aging - Eastbank	$930,336	X	3%	=	$27,910	$930,336	X	5%	=	$46,517
			Total Loss to Structures		$631,361			**Total Loss to Contents**		$1,156,445

1. Replacement Value of the Structure from Appendix W
2. Estimated damage from event per FEMA How-to Guide 386-2, p. 4-13
3. Replacement value of the Structure's Contents from Appendix W
N/A = Not Applicable

St. John the Baptist Parish
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Structure Use and Function Loss										
Name/Description of Structure	**Average Daily Operating Budget ($)[4]**	**X**	**Functional Downtime (Days)[5]**	**+**	**Displacement Cost per Day ($)**		**Displacement Time (Days)[6]**	**=**	**Structure Use & Function Loss ($)**	**Structure Loss + Contents Loss + Function Loss ($)**
Fire Station 91	$541	X	5	+	$541	X	0	=	$2,705	$92,522
St. John Council on Aging - Westbank	$148	X	5	+	$148	X	0	=	$740	$13,412
St. John Parish Admin. & Maint. Bldg. - Westbank	$118	X	5	+	$118	X	0	=	$590	$10,728
St. John the Baptist Parish Courthouse	$1,864	X	5	+	$1,864	X	0	=	$9,320	$318,902
West St. John Elementary School	$6,422	X	5	+	$6,422	X	0	=	$32,110	$600,969
West St. John High School	$7,994	X	5	+	$7,994	X	0	=	$39,970	$748,023
St. John Community Center - Westbank	$590	X	5	+	$590	X	0	=	$2,950	$130,905
Fire Station 71	$770	X	5	+	$770	X	0	=	$3,850	$44,977
St. John Service Center & Sheriff's Substation - Garyville	$248	X	5	+	$248	X	0	=	$1,240	$42,367
Fire Station 51	$773	X	5	+	$773	X	0	=	$3,865	$132,284
East St. John Elementary School	$7,722	X	5	+	$7,722	X	0	=	$38,610	$722,610
Emergency Operations/911 Center	$575	X	5	+	$575	X	0	=	$2,875	$98,425
Lake Pontchartrain Elementary School	$13,163	X	5	+	$13,163	X	0	=	$65,815	$1,231,714
St. John Service Center - LaPlace	$343	X	5	+	$343	X	0	=	$1,715	$31,058
Percy D. Hebert Building	$2,121	X	5	+	$2,121	X	0	=	$10,605	$37,350
Port of South Louisiana - Admin Office - LaPlace	$312	X	5	+	$312	X	0	=	$1,560	$856,050
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$5,145	X	5	+	$5,145	X	0	=	$25,725	$880,215
Fire Station 53	$579	X	5	+	$579	X	0	=	$2,895	$22,607
St. John the Baptist Council Office	$230	X	5	+	$230	X	0	=	$1,150	$37,378
St. John the Baptist Parish Arcuri Center	$423	X	5	+	$423	X	0	=	$2,115	$38,343
St. John the Baptist Parish Community Center - Eastbank	$3,781	X	5	+	$3,781	X	0	=	$18,905	$342,745
Fire Station 65	$540	X	5	+	$540	X	0	=	$2,700	$92,299
Fire Station 61	$320	X	5	+	$320	X	0	=	$1,600	$54,726
Louisiana Army National Guard Readiness Center	$2,740	X	5	+	$2,740	X	0	=	$13,700	$468,791
Saint John the Baptist Parish Airport	$139	X	5	+	$139	X	0	=	$695	$12,614
South Central LA Technical College	$6,549	X	5	+	$6,549	X	0	=	$32,745	$107,172
St. John Council on Aging - Eastbank	$869	X	5	+	$869	X	0	=	$4,345	$1,792,151
								Total Loss to Structure Use & Function	$88,385	**$1,915,461**
										Total Loss for Hazard Event

4. Annual Operating Budget divided by 365 days
5. Estimated Days nonfunctional per FEMA How-to Guide 386-2, p. 4-14
6. Estimated Days operating somewhere else per FEMA How-to Guide 386-2, p. 4-15

St. John the Baptist Parish
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Structure Loss						Contents Loss				
Name/Description of Structure	Structure Replacement Value ($)[1]	X	Percent Damage (%)[2]	=	Loss to Structure ($)	Replacement Value of Contents ($)[3]	X	Percent Damage (%)[2]	=	Loss to Contents ($)
Fire Station 91	$855,400	X	5%	=	$42,770	$1,283,100	X	0%	=	$0
St. John Council on Aging - Westbank	$158,400	X	5%	=	$7,920	$158,400	X	0%	=	$0
St. John Parish Admin. & Maint. Bldg. - Westbank	$126,720	X	5%	=	$6,336	$126,720	X	0%	=	$0
St. John the Baptist Parish Courthouse	$2,948,400	X	5%	=	$147,420	$4,422,600	X	0%	=	$0
West St. John Elementary School	$7,110,740	X	5%	=	$355,537	$7,110,740	X	0%	=	$0
West St. John High School	$8,850,660	X	5%	=	$442,533	$8,850,660	X	0%	=	$0
St. John Community Center - Westbank	$631,840	X	5%	=	$31,592	$631,840	X	0%	=	$0
Fire Station 71	$1,218,620	X	5%	=	$60,931	$1,827,930	X	0%	=	$0
St. John Service Center & Sheriff's Substation - Garyville	$391,690	X	5%	=	$19,585	$587,535	X	0%	=	$0
Fire Station 51	$1,223,040	X	5%	=	$61,152	$1,834,560	X	0%	=	$0
East St. John Elementary School	$8,549,996	X	5%	=	$427,500	$8,549,996	X	0%	=	$0
Emergency Operations/911 Center	$910,000	X	5%	=	$45,500	$1,365,000	X	0%	=	$0
Lake Pontchartrain Elementary School	$14,573,741	X	5%	=	$728,687	$14,573,741	X	0%	=	$0
St. John Service Center - LaPlace	$366,784	X	5%	=	$18,339	$366,784	X	0%	=	$0
Percy D. Hebert Building	$3,354,000	X	5%	=	$167,700	$5,031,000	X	0%	=	$0
Port of South Louisiana - Admin Office - LaPlace	$334,312	X	5%	=	$16,716	$334,312	X	0%	=	$0
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$8,138,000	X	5%	=	$406,900	$12,207,000	X	0%	=	$0
Fire Station 53	$915,590	X	5%	=	$45,780	$1,373,385	X	0%	=	$0
St. John the Baptist Council Office	$246,400	X	5%	=	$12,320	$246,400	X	0%	=	$0
St. John the Baptist Parish Arcuri Center	$452,848	X	5%	=	$22,642	$452,848	X	0%	=	$0
St. John the Baptist Parish Community Center - Eastbank	$4,048,000	X	5%	=	$202,400	$4,048,000	X	0%	=	$0
Fire Station 65	$853,320	X	5%	=	$42,666	$1,279,980	X	0%	=	$0
Fire Station 61	$505,960	X	5%	=	$25,298	$758,940	X	0%	=	$0
Louisiana Army National Guard Readiness Center	$4,334,200	X	5%	=	$216,710	$6,501,300	X	0%	=	$0
Saint John the Baptist Parish Airport	$148,984	X	5%	=	$7,449	$148,984	X	0%	=	$0
South Central LA Technical College	$9,163,545	X	5%	=	$458,177	$13,745,318	X	0%	=	$0
St. John Council on Aging - Eastbank	$930,336	X	5%	=	$46,517	$930,336	X	0%	=	$0
			Total Loss to Structures		$1,052,269			**Total Loss to Contents**		$0

1. Replacement Value of the Structure from Appendix W
2. Estimated damage from event per FEMA How-to Guide 386-2, p. 4-13
3. Replacement value of the Structure's Contents from Appendix W
N/A = Not Applicable

St. John the Baptist Parish
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Structure Use and Function Loss										Structure Loss + Contents Loss + Function Loss ($)
Name/Description of Structure	**Average Daily Operating Budget ($)[4]**	**X**	**Functional Downtime (Days)[5]**	**+**	**Displacement Cost per Day ($)**		**Displacement Time (Days)[6]**	**=**	**Structure Use & Function Loss ($)**	
Fire Station 91	$541	X	5	+	$541	X	0	=	$2,705	$45,475
St. John Council on Aging - Westbank	$148	X	5	+	$148	X	0	=	$740	$8,660
St. John Parish Admin. & Maint. Bldg. - Westbank	$118	X	5	+	$118	X	0	=	$590	$6,926
St. John the Baptist Parish Courthouse	$1,864	X	5	+	$1,864	X	0	=	$9,320	$156,740
West St. John Elementary School	$6,422	X	5	+	$6,422	X	0	=	$32,110	$387,647
West St. John High School	$7,994	X	5	+	$7,994	X	0	=	$39,970	$482,503
St. John Community Center - Westbank	$590	X	5	+	$590	X	0	=	$2,950	$34,542
Fire Station 71	$770	X	5	+	$770	X	0	=	$3,850	$64,781
St. John Service Center & Sheriff's Substation - Garyville	$248	X	5	+	$248	X	0	=	$1,240	$20,825
Fire Station 51	$773	X	5	+	$773	X	0	=	$3,865	$65,017
East St. John Elementary School	$7,722	X	5	+	$7,722	X	0	=	$38,610	$466,110
Emergency Operations/911 Center	$575	X	5	+	$575	X	0	=	$2,875	$48,375
Lake Pontchartrain Elementary School	$13,163	X	5	+	$13,163	X	0	=	$65,815	$794,502
St. John Service Center - LaPlace	$343	X	5	+	$343	X	0	=	$1,715	$20,054
Percy D. Hebert Building	$2,121	X	5	+	$2,121	X	0	=	$10,605	$178,305
Port of South Louisiana - Admin Office - LaPlace	$312	X	5	+	$312	X	0	=	$1,560	$18,276
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$5,145	X	5	+	$5,145	X	0	=	$25,725	$432,625
Fire Station 53	$579	X	5	+	$579	X	0	=	$2,895	$48,675
St. John the Baptist Council Office	$230	X	5	+	$230	X	0	=	$1,150	$13,470
St. John the Baptist Parish Arcuri Center	$423	X	5	+	$423	X	0	=	$2,115	$24,757
St. John the Baptist Parish Community Center - Eastbank	$3,781	X	5	+	$3,781	X	0	=	$18,905	$221,305
Fire Station 65	$540	X	5	+	$540	X	0	=	$2,700	$45,366
Fire Station 61	$320	X	5	+	$320	X	0	=	$1,600	$26,898
Louisiana Army National Guard Readiness Center	$2,740	X	5	+	$2,740	X	0	=	$13,700	$230,410
Saint John the Baptist Parish Airport	$139	X	5	+	$139	X	0	=	$695	$8,144
South Central LA Technical College	$6,549	X	5	+	$6,549	X	0	=	$32,745	$490,922
St. John Council on Aging - Eastbank	$869	X	5	+	$869	X	0	=	$4,345	$50,862
								Total Loss to Structure Use & Function	$92,235	**$1,187,274**
										Total Loss for Hazard Event

4. Annual Operating Budget divided by 365 days
5. Estimated Days nonfunctional per FEMA How-to Guide 386-2, p. 4-14
6. Estimated Days operating somewhere else per FEMA How-to Guide 386-2, p. 4-15

St. John the Baptist Parish
Hazard Mitigation Plan
Loss Estimation
Drought

Structure Loss						Contents Loss				
Name/Description of Structure	Structure Replacement Value ($)[1]	X	Percent Damage (%)[2]	=	Loss to Structure ($)	Replacement Value of Contents ($)[3]	X	Percent Damage (%)[2]	=	Loss to Contents ($)
Fire Station 91	$855,400	X	5%	=	$42,770	$1,283,100	X	0%	=	$0
St. John Council on Aging - Westbank	$158,400	X	5%	=	$7,920	$158,400	X	0%	=	$0
St. John Parish Admin. & Maint. Bldg. - Westbank	$126,720	X	5%	=	$6,336	$126,720	X	0%	=	$0
St. John the Baptist Parish Courthouse	$2,948,400	X	5%	=	$147,420	$4,422,600	X	0%	=	$0
West St. John Elementary School	$7,110,740	X	5%	=	$355,537	$7,110,740	X	0%	=	$0
West St. John High School	$8,850,660	X	5%	=	$442,533	$8,850,660	X	0%	=	$0
St. John Community Center - Westbank	$631,840	X	5%	=	$31,592	$631,840	X	0%	=	$0
Fire Station 71	$1,218,620	X	5%	=	$60,931	$1,827,930	X	0%	=	$0
St. John Service Center & Sheriff's Substation - Garyville	$391,690	X	5%	=	$19,585	$587,535	X	0%	=	$0
Fire Station 51	$1,223,040	X	5%	=	$61,152	$1,834,560	X	0%	=	$0
East St. John Elementary School	$8,549,996	X	5%	=	$427,500	$8,549,996	X	0%	=	$0
Emergency Operations/911 Center	$910,000	X	5%	=	$45,500	$1,365,000	X	0%	=	$0
Lake Pontchartrain Elementary School	$14,573,741	X	5%	=	$728,687	$14,573,741	X	0%	=	$0
St. John Service Center - LaPlace	$366,784	X	5%	=	$18,339	$366,784	X	0%	=	$0
Percy D. Hebert Building	$3,354,000	X	5%	=	$167,700	$5,031,000	X	0%	=	$0
Port of South Louisiana - Admin Office - LaPlace	$334,312	X	5%	=	$16,716	$334,312	X	0%	=	$0
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$8,138,000	X	5%	=	$406,900	$12,207,000	X	0%	=	$0
Fire Station 53	$915,590	X	5%	=	$45,780	$1,373,385	X	0%	=	$0
St. John the Baptist Council Office	$246,400	X	5%	=	$12,320	$246,400	X	0%	=	$0
St. John the Baptist Parish Arcuri Center	$452,848	X	5%	=	$22,642	$452,848	X	0%	=	$0
St. John the Baptist Parish Community Center - Eastbank	$4,048,000	X	5%	=	$202,400	$4,048,000	X	0%	=	$0
Fire Station 65	$853,320	X	5%	=	$42,666	$1,279,980	X	0%	=	$0
Fire Station 61	$505,960	X	5%	=	$25,298	$758,940	X	0%	=	$0
Louisiana Army National Guard Readiness Center	$4,334,200	X	5%	=	$216,710	$6,501,300	X	0%	=	$0
Saint John the Baptist Parish Airport	$148,984	X	5%	=	$7,449	$148,984	X	0%	=	$0
South Central LA Technical College	$9,163,545	X	5%	=	$458,177	$13,745,318	X	0%	=	$0
St. John Council on Aging - Eastbank	$930,336	X	5%	=	$46,517	$930,336	X	0%	=	$0
				Total Loss to Structures	$1,052,269				**Total Loss to Contents**	$0

1. Replacement Value of the Structure from Appendix W
2. Estimated damage from event per FEMA How-to Guide 386-2, p. 4-13
3. Replacement value of the Structures Content's from Appendix W
N/A = Not Applicable

St. John the Baptist Parish
Hazard Mitigation Plan
Loss Estimation
Drought

Structure Use and Function Loss										Structure Loss + Contents Loss + Function Loss ($)
Name/Description of Structure	**Average Daily Operating Budget ($)[4]**	**X**	**Functional Downtime (Days)[5]**	**+**	**Displacement Cost per Day ($)**		**Displacement Time (Days)[6]**	**=**	**Structure Use & Function Loss ($)**	
Fire Station 91	$541	X	5	+	$541	X	0	=	$2,705	$45,475
St. John Council on Aging - Westbank	$148	X	5	+	$148	X	0	=	$740	$8,660
St. John Parish Admin. & Maint. Bldg. - Westbank	$118	X	5	+	$118	X	0	=	$590	$6,926
St. John the Baptist Parish Courthouse	$1,864	X	5	+	$1,864	X	0	=	$9,320	$156,740
West St. John Elementary School	$6,422	X	5	+	$6,422	X	0	=	$32,110	$387,647
West St. John High School	$7,994	X	5	+	$7,994	X	0	=	$39,970	$482,503
St. John Community Center - Westbank	$590	X	5	+	$590	X	0	=	$2,950	$34,542
Fire Station 71	$770	X	5	+	$770	X	0	=	$3,850	$64,781
St. John Service Center & Sheriff's Substation - Garyville	$248	X	5	+	$248	X	0	=	$1,240	$20,825
Fire Station 51	$773	X	5	+	$773	X	0	=	$3,865	$65,017
East St. John Elementary School	$7,722	X	5	+	$7,722	X	0	=	$38,610	$466,110
Emergency Operations/911 Center	$575	X	5	+	$575	X	0	=	$2,875	$48,375
Lake Pontchartrain Elementary School	$13,163	X	5	+	$13,163	X	0	=	$65,815	$794,502
St. John Service Center - LaPlace	$343	X	5	+	$343	X	0	=	$1,715	$20,054
Percy D. Hebert Building	$2,121	X	5	+	$2,121	X	0	=	$10,605	$178,305
Port of South Louisiana - Admin Office - LaPlace	$312	X	5	+	$312	X	0	=	$1,560	$18,276
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$5,145	X	5	+	$5,145	X	0	=	$25,725	$432,625
Fire Station 53	$579	X	5	+	$579	X	0	=	$2,895	$48,675
St. John the Baptist Council Office	$230	X	5	+	$230	X	0	=	$1,150	$13,470
St. John the Baptist Parish Arcuri Center	$423	X	5	+	$423	X	0	=	$2,115	$24,757
St. John the Baptist Parish Community Center - Eastbank	$3,781	X	5	+	$3,781	X	0	=	$18,905	$221,305
Fire Station 65	$540	X	5	+	$540	X	0	=	$2,700	$45,366
Fire Station 61	$320	X	5	+	$320	X	0	=	$1,600	$26,898
Louisiana Army National Guard Readiness Center	$2,740	X	5	+	$2,740	X	0	=	$13,700	$230,410
Saint John the Baptist Parish Airport	$139	X	5	+	$139	X	0	=	$695	$8,144
South Central LA Technical College	$6,549	X	5	+	$6,549	X	0	=	$32,745	$490,922
St. John Council on Aging - Eastbank	$869	X	5	+	$869	X	0	=	$4,345	$50,862
								Total Loss to Structure Use & Function	$92,235	**$1,187,274**
										Total Loss for Hazard Event

4. Annual Operating Budget divided by 365 days
5. Estimated Days nonfunctional per FEMA How-to Guide 386-2, p. 4-14
6. Estimated Days operating somewhere else per FEMA How-to Guide 386-2, p. 4-15

St. John the Baptist Parish
Hazard Mitigation Plan
Loss Estimation
Extreme Heat

Structure Loss						Contents Loss				
Name/Description of Structure	Structure Replacement Value ($)[1]	X	Percent Damage (%)[2]	=	Loss to Structure ($)	Replacement Value of Contents ($)[3]	X	Percent Damage (%)[2]	=	Loss to Contents ($)
Fire Station 91	$855,400	X	3%	=	$25,662	$1,283,100	X	0%	=	$0
St. John Council on Aging - Westbank	$158,400	X	3%	=	$4,752	$158,400	X	0%	=	$0
St. John Parish Admin. & Maint. Bldg. - Westbank	$126,720	X	3%	=	$3,802	$126,720	X	0%	=	$0
St. John the Baptist Parish Courthouse	$2,948,400	X	3%	=	$88,452	$4,422,600	X	0%	=	$0
West St. John Elementary School	$7,110,740	X	3%	=	$213,322	$7,110,740	X	0%	=	$0
West St. John High School	$8,850,660	X	3%	=	$265,520	$8,850,660	X	0%	=	$0
St. John Community Center - Westbank	$631,840	X	3%	=	$18,955	$631,840	X	0%	=	$0
Fire Station 71	$1,218,620	X	3%	=	$36,559	$1,827,930	X	0%	=	$0
St. John Service Center & Sheriff's Substation - Garyville	$391,690	X	3%	=	$11,751	$587,535	X	0%	=	$0
Fire Station 51	$1,223,040	X	3%	=	$36,691	$1,834,560	X	0%	=	$0
East St. John Elementary School	$8,549,996	X	3%	=	$256,500	$8,549,996	X	0%	=	$0
Emergency Operations/911 Center	$910,000	X	3%	=	$27,300	$1,365,000	X	0%	=	$0
Lake Pontchartrain Elementary School	$14,573,741	X	3%	=	$437,212	$14,573,741	X	0%	=	$0
St. John Service Center - LaPlace	$366,784	X	3%	=	$11,004	$366,784	X	0%	=	$0
Percy D. Hebert Building	$3,354,000	X	3%	=	$100,620	$5,031,000	X	0%	=	$0
Port of South Louisiana - Admin Office - LaPlace	$334,312	X	3%	=	$10,029	$334,312	X	0%	=	$0
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$8,138,000	X	3%	=	$244,140	$12,207,000	X	0%	=	$0
Fire Station 53	$915,590	X	3%	=	$27,468	$1,373,385	X	0%	=	$0
St. John the Baptist Council Office	$246,400	X	3%	=	$7,392	$246,400	X	0%	=	$0
St. John the Baptist Parish Arcuri Center	$452,848	X	3%	=	$13,585	$452,848	X	0%	=	$0
St. John the Baptist Parish Community Center - Eastbank	$4,048,000	X	3%	=	$121,440	$4,048,000	X	0%	=	$0
Fire Station 65	$853,320	X	3%	=	$25,600	$1,279,980	X	0%	=	$0
Fire Station 61	$505,960	X	3%	=	$15,179	$758,940	X	0%	=	$0
Louisiana Army National Guard Readiness Center	$4,334,200	X	3%	=	$130,026	$6,501,300	X	0%	=	$0
Saint John the Baptist Parish Airport	$148,984	X	3%	=	$4,470	$148,984	X	0%	=	$0
South Central LA Technical College	$9,163,545	X	3%	=	$274,906	$13,745,318	X	0%	=	$0
St. John Council on Aging - Eastbank	$930,336	X	3%	=	$27,910	$930,336	X	0%	=	$0
				Total Loss to Structures	$631,361				**Total Loss to Contents**	$0

1. Replacement Value of the Structure from Appendix W
2. Estimated damage from event per FEMA How-to Guide 386-2, p. 4-13
3. Replacement value of the Structure's Contents from Appendix W
N/A = Not Applicable

St. John the Baptist Parish
Hazard Mitigation Plan
Loss Estimation
Extreme Heat

Structure Use and Function Loss										
Name/Description of Structure	**Average Daily Operating Budget ($)[4]**	**x**	**Functional Downtime (Days)[5]**	**+**	**Displacement Cost per Day ($)**		**Displacement Time (Days)[6]**	**=**	**Structure Use & Function Loss ($)**	**Structure Loss + Contents Loss + Function Loss ($)**
Fire Station 91	$541	X	0	+	$541	X	0	=	$0	$25,662
St. John Council on Aging - Westbank	$148	X	0	+	$148	X	0	=	$0	$4,752
St. John Parish Admin. & Maint. Bldg. - Westbank	$118	X	0	+	$118	X	0	=	$0	$3,802
St. John the Baptist Parish Courthouse	$1,864	X	0	+	$1,864	X	0	=	$0	$88,452
West St. John Elementary School	$6,422	X	0	+	$6,422	X	0	=	$0	$213,322
West St. John High School	$7,994	X	0	+	$7,994	X	0	=	$0	$265,520
St. John Community Center - Westbank	$590	X	0	+	$590	X	0	=	$0	$18,955
Fire Station 71	$770	X	0	+	$770	X	0	=	$0	$36,559
St. John Service Center & Sheriff's Substation - Garyville	$248	X	0	+	$248	X	0	=	$0	$11,751
Fire Station 51	$773	X	0	+	$773	X	0	=	$0	$36,691
East St. John Elementary School	$7,722	X	0	+	$7,722	X	0	=	$0	$256,500
Emergency Operations/911 Center	$575	X	0	+	$575	X	0	=	$0	$27,300
Lake Pontchartrain Elementary School	$13,163	X	0	+	$13,163	X	0	=	$0	$437,212
St. John Service Center - LaPlace	$343	X	0	+	$343	X	0	=	$0	$11,004
Percy D. Hebert Building	$2,121	X	0	+	$2,121	X	0	=	$0	$100,620
Port of South Louisiana - Admin Office - LaPlace	$312	X	0	+	$312	X	0	=	$0	$10,029
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$5,145	X	0	+	$5,145	X	0	=	$0	$244,140
Fire Station 53	$579	X	0	+	$579	X	0	=	$0	$27,468
St. John the Baptist Council Office	$230	X	0	+	$230	X	0	=	$0	$7,392
St. John the Baptist Parish Arcuri Center	$423	X	0	+	$423	X	0	=	$0	$13,585
St. John the Baptist Parish Community Center - Eastbank	$3,781	X	0	+	$3,781	X	0	=	$0	$121,440
Fire Station 65	$540	X	0	+	$540	X	0	=	$0	$25,600
Fire Station 61	$320	X	0	+	$320	X	0	=	$0	$15,179
Louisiana Army National Guard Readiness Center	$2,740	X	0	+	$2,740	X	0	=	$0	$130,026
Saint John the Baptist Parish Airport	$139	X	0	+	$139	X	0	=	$0	$4,470
South Central LA Technical College	$6,549	X	0	+	$6,549	X	0	=	$0	$274,906
St. John Council on Aging - Eastbank	$869	X	0	+	$869	X	0	=	$0	$27,910
								Total Loss to Structure Use & Function	$0	**$657,023**
										Total Loss for Hazard Event

4. Annual Operating Budget divided by 365 days
5. Estimated Days nonfunctional per FEMA How-to Guide 386-2, p. 4-14
6. Estimated Days operating somewhere else per FEMA How-to Guide 386-2, p. 4-15

St. John the Baptist Parish
Hazard Mitigation Plan
Loss Estimation
Expansive Soils

Structure Loss						Contents Loss				
Name/Description of Structure	Structure Replacement Value ($)[1]	X	Percent Damage (%)[2]	=	Loss to Structure ($)	Replacement Value of Contents ($)[3]	X	Percent Damage (%)[2]	=	Loss to Contents ($)
Fire Station 91	$855,400	X	5%	=	$42,770	$1,283,100	X	0%	=	$0
St. John Council on Aging - Westbank	$158,400	X	5%	=	$7,920	$158,400	X	0%	=	$0
St. John Parish Admin. & Maint. Bldg. - Westbank	$126,720	X	5%	=	$6,336	$126,720	X	0%	=	$0
St. John the Baptist Parish Courthouse	$2,948,400	X	5%	=	$147,420	$4,422,600	X	0%	=	$0
West St. John Elementary School	$7,110,740	X	5%	=	$355,537	$7,110,740	X	0%	=	$0
West St. John High School	$8,850,660	X	5%	=	$442,533	$8,850,660	X	0%	=	$0
St. John Community Center - Westbank	$631,840	X	5%	=	$31,592	$631,840	X	0%	=	$0
Fire Station 71	$1,218,620	X	5%	=	$60,931	$1,827,930	X	0%	=	$0
St. John Service Center & Sheriff's Substation - Garyville	$391,690	X	5%	=	$19,585	$587,535	X	0%	=	$0
Fire Station 51	$1,223,040	X	5%	=	$61,152	$1,834,560	X	0%	=	$0
East St. John Elementary School	$8,549,996	X	5%	=	$427,500	$8,549,996	X	0%	=	$0
Emergency Operations/911 Center	$910,000	X	5%	=	$45,500	$1,365,000	X	0%	=	$0
Lake Pontchartrain Elementary School	$14,573,741	X	5%	=	$728,687	$14,573,741	X	0%	=	$0
St. John Service Center - LaPlace	$366,784	X	5%	=	$18,339	$366,784	X	0%	=	$0
Percy D. Hebert Building	$3,354,000	X	5%	=	$167,700	$5,031,000	X	0%	=	$0
Port of South Louisiana - Admin Office - LaPlace	$334,312	X	5%	=	$16,716	$334,312	X	0%	=	$0
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$8,138,000	X	5%	=	$406,900	$12,207,000	X	0%	=	$0
Fire Station 53	$915,590	X	5%	=	$45,780	$1,373,385	X	0%	=	$0
St. John the Baptist Council Office	$246,400	X	5%	=	$12,320	$246,400	X	0%	=	$0
St. John the Baptist Parish Arcuri Center	$452,848	X	5%	=	$22,642	$452,848	X	0%	=	$0
St. John the Baptist Parish Community Center - Eastbank	$4,048,000	X	5%	=	$202,400	$4,048,000	X	0%	=	$0
Fire Station 65	$853,320	X	5%	=	$42,666	$1,279,980	X	0%	=	$0
Fire Station 61	$505,960	X	5%	=	$25,298	$758,940	X	0%	=	$0
Louisiana Army National Guard Readiness Center	$4,334,200	X	5%	=	$216,710	$6,501,300	X	0%	=	$0
Saint John the Baptist Parish Airport	$148,984	X	5%	=	$7,449	$148,984	X	0%	=	$0
South Central LA Technical College	$9,163,545	X	5%	=	$458,177	$13,745,318	X	0%	=	$0
St. John Council on Aging - Eastbank	$930,336	X	5%	=	$46,517	$930,336	X	0%	=	$0
			Total Loss to Structures		$991,338			**Total Loss to Contents**		$0

1. Replacement Value of the Structure from Appendix W
2. Estimated damage from event per FEMA How-to Guide 386-2, p. 4-13
3. Replacement value of the Structure's Contents from Appendix W
N/A = Not Applicable

St. John the Baptist Parish
Hazard Mitigation Plan
Loss Estimation
Expansive Soils

Structure Use and Function Loss										Structure Loss + Contents Loss + Function Loss ($)
Name/Description of Structure	**Average Daily Operating Budget ($)[4]**	**X**	**Functional Downtime (Days)[5]**	**+**	**Displacement Cost per Day ($)**		**Displacement Time (Days)[6]**	**=**	**Structure Use & Function Loss ($)**	
Fire Station 91	$541	X	5	+	$541	X	0	=	$2,705	$45,475
St. John Council on Aging - Westbank	$148	X	5	+	$148	X	0	=	$740	$8,660
St. John Parish Admin. & Maint. Bldg. - Westbank	$118	X	5	+	$118	X	0	=	$590	$6,926
St. John the Baptist Parish Courthouse	$1,864	X	5	+	$1,864	X	0	=	$9,320	$156,740
West St. John Elementary School	$6,422	X	5	+	$6,422	X	0	=	$32,110	$387,647
West St. John High School	$7,994	X	5	+	$7,994	X	0	=	$39,970	$482,503
St. John Community Center - Westbank	$590	X	5	+	$590	X	0	=	$2,950	$34,542
Fire Station 71	$770	X	5	+	$770	X	0	=	$3,850	$64,781
St. John Service Center & Sheriff's Substation - Garyville	$248	X	5	+	$248	X	0	=	$1,240	$20,825
Fire Station 51	$773	X	5	+	$773	X	0	=	$3,865	$65,017
East St. John Elementary School	$7,722	X	5	+	$7,722	X	0	=	$38,610	$466,110
Emergency Operations/911 Center	$575	X	5	+	$575	X	0	=	$2,875	$48,375
Lake Pontchartrain Elementary School	$13,163	X	5	+	$13,163	X	0	=	$65,815	$794,502
St. John Service Center - LaPlace	$343	X	5	+	$343	X	0	=	$1,715	$20,054
Percy D. Hebert Building	$2,121	X	5	+	$2,121	X	0	=	$10,605	$178,305
Port of South Louisiana - Admin Office - LaPlace	$312	X	5	+	$312	X	0	=	$1,560	$18,276
Sheriff's Office Division HQ & Sherman Walker Correctional Facility	$5,145	X	5	+	$5,145	X	0	=	$25,725	$432,625
Fire Station 53	$579	X	5	+	$579	X	0	=	$2,895	$48,675
St. John the Baptist Council Office	$230	X	5	+	$230	X	0	=	$1,150	$13,470
St. John the Baptist Parish Arcuri Center	$423	X	5	+	$423	X	0	=	$2,115	$24,757
St. John the Baptist Parish Community Center - Eastbank	$3,781	X	5	+	$3,781	X	0	=	$18,905	$221,305
Fire Station 65	$540	X	5	+	$540	X	0	=	$2,700	$45,366
Fire Station 61	$320	X	5	+	$320	X	0	=	$1,600	$26,898
Louisiana Army National Guard Readiness Center	$2,740	X	5	+	$2,740	X	0	=	$13,700	$230,410
Saint John the Baptist Parish Airport	$139	X	5	+	$139	X	0	=	$695	$8,144
South Central LA Technical College	$6,549	X	5	+	$6,549	X	0	=	$32,745	$490,922
St. John Council on Aging - Eastbank	$869	X	5	+	$869	X	0	=	$4,345	$50,862
								Total Loss to Structure Use & Function	$88,385	**$1,122,493**
										Total Loss for Hazard Event

4. Annual Operating Budget divided by 365 days
5. Estimated Days nonfunctional per FEMA How-to Guide 386-2, p. 4-14
6. Estimated Days operating somewhere else per FEMA How-to Guide 386-2, p. 4-15

APPENDIX O

ST. JOHN THE BAPTIST PARISH ANNUAL PROGRESS REPORT

St. John the Baptist Parish
Annual Progress Report for
Monitoring and Evaluating the HMP

Monitoring Period:_____

		Monitoring of Plan					Evaluation of Plan		
No.	**Action Item**	**Has project begun?**	**If no, why not**	**If yes, status**	**Has the project been completed?**	**If so, did it eliminate the problem?**	**Have there been changes to personnel or funding that needs to be updated?**	**Are changes necessary to better implement these mitigation action items?**	**Are there processes that can make the project more efficient?**
1	Improve drainage ways including, but not limited to, by enlarging any inferior culverts, upgrading pumps and flapper valves, and installing retention ponds. **Benefits: To ensure water flows freely within the drainage system, which will protect the surrounding area from flooding.**								
2	Update the master drainage plan which will evaluate drainage projects at major drainage laterals to determine best method of increasing drainage capacity. Implement recommended projects resulting from drainage plan. **Benefits: Reduces the number of flooded structures by increasing the volume of water the pumps can handle at the final outfall.**								
3	Expand the drainage districts to cover the entire parish. Currently, the parish has 3 drainage districts that cover select areas on the east bank. **Benefits: By improving drainage in the flood prone areas, homeowners will suffer less flooded structures and therefore, suffer less mental and physical anguish, displacement days, and flood damage. In addition, the drain on the NFIP is reduced by a decrease in flood claims.**								
4	Harden critical facilities including, but not limited to, utilizing applicable floodproofing techniques, adding roof tie-downs and additional storm protecting features such as storm shutters or impact resistant glass, and add back up power supply/generators at these locations. **Benefits: Provide safety and a source of power during power outages to continue essential operations. Creates a more disaster resistant structure, which will prevent interruption of services in times of emergencies.**								
5	Continue day-to-day operations and handle increased surge capacity of critical facilities and services in the event of a hazard or disaster. **Benefits: Maintains essential operations before, during, or after a hazard event.**								
6	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. **Benefits: Provides support with federal and state partners by updating policies and coordinating preparedness.**								
7	Improve coverage of the public notification system by upgrading the technology including, but not limited to, sirens and a call down system with a backup communication. **Benefits: An informed public is better able to respond and protect themselves in times of hazards.**								
8	Pursue monitoring opportunities including, but not limited to, gauges and remote sensing devices, to timely relay weather conditions to emergency personnel for adequate response time. **Benefits: Provides safety and continuity of operations before, during, or after a hazard event.**								
9	Continue to promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP). **Benefits: Enables homeowners to financially recover from the devastating effects of flooding as rapidly as possible. Serves to educate area residents that any homeowner, regardless of location, can purchase flood insurance.**								
10	Continue to increase public awareness of hazards and hazardous areas. Distribute public awareness information regarding flood hazards, SFHA's, and potential mitigation measures using the local newspaper, utility bill inserts, inserts in the phone book, and parish hazards awareness website, and an educational program for school age children or "how to" classes in retrofitting by local merchants. Integrate "Disaster Resistance Education" into the public school curriculum. Provide public education on the importance of maintaining the ditches. **Benefits: An informed public is better able to respond and protect themselves in times of hazards.**								

St. John the Baptist Parish
Annual Progress Report for
Monitoring and Evaluating the HMP

Monitoring Period:_____

		Monitoring of Plan					Evaluation of Plan		
No.	**Action Item**	**Has project begun?**	**If no, why not**	**If yes, status**	**Has the project been completed?**	**If so, did it eliminate the problem?**	**Have there been changes to personnel or funding that needs to be updated?**	**Are changes necessary to better implement these mitigation action items?**	**Are there processes that can make the project more efficient?**
11	Continue to sponsor a "Multi-Hazard Awareness Activities", to educate the public on hurricane and tornadoes (sheltering in place, evacuation, emergency preparedness, and structural retrofitting), flooding (evacuation, emergency preparedness, retrofitting, and flood insurance), and thunderstorms and lightning (emergency preparedness). **Benefits: To reduce the loss of life and property by having an educated citizenry.**								
12	Investigate and implement localized interior drainage projects, including, but not limited to, culvert upgrades, berms, and retention ponds, in order to reduce flood potential where necessary. **Benefits: By improving drainage in the flood prone areas, homeowners will suffer less flooded structures and therefore, suffer less mental and physical anguish, displacement days, and flood damage. In addition, the drain on the NFIP is reduced by a decrease in flood claims.**								
13	Pursue elevation/ acquisition/ floodproofing/reconstruction projects and structural solutions to flooding using available grant funding for repetitive loss structures and severe repetitive loss structures. Annually review and correct the Repetitive Loss list by submitting correction worksheets to FEMA. **Benefits: By removing structures from the floodplain, homeowners suffer less mental and physical anguish, displacement days, and flood damage. In addition, the drain on the NFIP is reduced by a decrease in flood claims.**								
14	Continue to participate in the Community Rating System (CRS). Review the existing floodplain ordinance and evaluate ways to improve the Parish's rating to reduce the flood insurance premium. Choose from the variety of methods and projects available that can be implemented to improve the CRS rating. **Benefits: Reduce flood insurance premiums and thereby encourage more people to purchase flood insurance, which would potentially result in lower cost and a more timely recovery**.								
15	Review and update ordinances to help regulate new development in the Parish, that would help reduce flooding, such as, but not limited to, requiring proper drainage with adequate sloping; stormwater retention ponds; dikes; berms; levees and floodwalls if appropriate, and requiring freeboard above the Base Flood Elevation (BFE) in flood prone areas. **Benefits: Reduce the localized flooding problems that would occur with new development. Reduce potential of power outages.**								
16	Continue to review and evaluate improved building regulations of industrial, commercial, and residential structures. **Benefits: Results in additional techniques to harden structures and thereby withstand impacts of hazards.**								
17	Adopt additional commercial building regulations. **Benefits: Results in additional techniques to harden structures and thereby withstand the impacts of hazards.**								

Note: The Steering Committee will meet semi-annually to review the action plan, update events, and fill out the annual progress report.

PUBLIC NOTICE: Grants Office-Staff Available to Meet with Housing Program Applicants

If you have any questions regarding your CDBG Hurricane Isaac Application please call the *SJBP Call Center at* **985-359-0555** to schedule a one-on-one consultation with a grants staff member.

For more information please visit the Parish website at sjbparish.com, the Government Access Channel and Parish Facebook Page.

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