ST. TAMMANY PARISH COUNCIL

RESOLUTION

RESOLUTION COUNCIL SERIES NO: C-4744

COUNCIL SPONSOR: STEFANCIK/BRISTER PROVIDED BY: PUBLIC INFORMATION

RESOLUTION IN SUPPORT OF A FLOOD PREVENTION OUTREACH PROGRAM FOR PUBLIC INFORMATION

WHEREAS, the United States Department of Homeland Security's Federal Emergency Management Agency (FEMA) is responsible for the National Flood Insurance Program (NFIP); and

WHEREAS, the NFIP oversees a program to incentivize Parishes for exceeding the minimum requirements set forth by FEMA for risk and flood prevention, called the Community Rating System (CRS); and

WHEREAS, St. Tammany Parish is a participant in the NFIP's Community Rating System, where the Parish is currently rated as a CRS Class 7 community; and

WHEREAS, the Class 7 rating equates to a 15% discount for St. Tammany Parish citizens who have flood insurance through the NFIP, saving citizens $ 2,022,274.00 per year; and

WHEREAS, a category in the CRS which provides one of the most points in CRS scoring is flood loss prevention outreach and public information; and

WHEREAS, the NFIP CRS program allows communities to participate in Program for Public Information (PPI) which provides additional CRS points if neighboring communities conduct flood prevention outreach and public information together in a coordinated manner; and

WHEREAS, St. Tammany Parish Government is a member of the Flood Loss Outreach & Awareness Taskforce (FLOAT), a PPI group and a FEMA-acknowledged CRS Users Group; and

WHEREAS, St. Tammany Parish Government and partner FLOAT agencies including Terrebonne, Tangipahoa, Orleans, and St. John the Baptist Parishes and the Cities of Slidell, Houma and Mandeville have developed and agreed upon the attached Program for Public Information with the assistance of the University of New Orleans' Center for Hazards Assessment, Response and Technology (CHART); and

WHEREAS, the Program for Public Information is attached and made part of this Resolution by reference.

THE PARISH OF ST. TAMMANY HEREBY RESOLVES to adopt the:
Flood Loss Outreach and Awareness (FLOAT), Lake Pontchartrain, Louisiana Area CRS Users Group
2016 Floodplain and Stormwater Management Program for Public Information (PPI)

so as to better inform our citizens and business owners regarding their threat from flooding and how they can prevent it and earn additional CRS points to assist in maintaining or improving the community's rating and flood insurance premium discount.

THIS RESOLUTION HAVING BEEN SUBMITTED TO A VOTE, THE VOTE THEREON WAS AS FOLLOWS:

MOVED FOR ADOPTION BY: _____ SECONDED BY: _____

YEAS: _____

NAYS: _____

ABSTAIN: _____

ABSENT: _____

THIS RESOLUTION WAS DECLARED ADOPTED ON THE 5 DAY OF JANUARY , 2017, AT A REGULAR MEETING OF THE PARISH COUNCIL, A QUORUM OF THE MEMBERS BEING PRESENT AND VOTING.

_____

STEVE STEFANCIK, COUNCIL CHAIRMAN

ATTEST:

_____

THERESA L. FORD, COUNCIL CLERK

Flood Loss Outreach & Awareness Taskforce (FLOAT)

Lake Pontchartrain, Louisiana Area CRS Users Group

2016 Floodplain and Stormwater Management

Program for Public Information (PPI)

Prepared by members of FLOAT with the assistance of The University of New Orleans' Center for Hazards Assessment, Response & Technology (UNO-CHART)

Table of Contents

List of Figures

List of Tables

Background

The Flood Loss Outreach & Awareness Task force (FLOAT) is a Community Rating System (CRS) Users Group. The purpose of a CRS Users Group is to serve as a support and educational resource for the local communities who participate in the CRS. The Community Rating System (CRS) is a part of the National Flood Insurance Program (NFIP). It provides reductions to flood insurance premiums in participating communities. The reductions are based on community floodplain management programs, including public information activities. To keep those discounts, communities must continue to implement their programs and provide status reports to the NFIP each year.

The CRS is a voluntary program that is available to all National Flood Insurance Program (NFIP) participating communities that incentivizes them to go beyond the minimum floodplain management regulations established by the NFIP to minimize risk in their communities. By taking on CRS activities aimed at increasing floodplain regulation and mitigating existing flood hazards and risks, communities receive "points" that are added together to establish that community's CRS Class. Each class ranking carries with it a percentage discount that is applied to the participating community's residents' flood insurance premiums. FLOAT is a space for community officials to come together and share their best practices and greatest struggles with the CRS program.

Since 2000, the Lake Pontchartrain Basin has been included in no less than 11 Major Presidential Disaster Declarations with the most notable and devastating being Hurricane Katrina, which occurred on August 29, 2005. Out of the soggy rubble of Katrina's rage, the jurisdictions of Southeast Louisiana began to truly take floodplain management policymaking seriously, and began to make changes that have increased the resiliency of the entire region.

In 2011, the member jurisdictions of FLOAT decided to come together, with the invaluable help of the Office of the Louisiana State Coordinator for the NFIP, the Louisiana Region CRS Coordinator for Insurance Services Office (ISO), and the University of New Orleans' Center for Hazards Assessment, Response and Technology (UNO-CHART). From the humble beginnings of FLOAT, only 4 years ago, the group has been able to develop a cohesive program to increase outreach to the public regarding natural hazard preparation, and to continue planning for sustainable communities in the face of the environment in which we live, work and play.

The communities of FLOAT have been active participants in CRS since 1991, and currently the jurisdictions range from 1 Class 6, 4 Class 7s, 3 Class 8s, 1 Class 9, and 1 applicant. Additionally, the 10 members of FLOAT comprise 27% of the total CRS communities in the state of Louisiana, and 42% of the total number of policies in effect in the state.

FLOAT currently has 10 participating communities: St. Tammany Parish, the City of Slidell, the City of Mandeville, the City of Covington, Tangipahoa Parish, St. John the Baptist Parish, Terrebonne Parish, the City of Houma, Orleans Parish, and Lafourche Parish, 8 of which are included in the Program for Public Information (PPI) report. FLOAT is working towards joint outreach efforts to make the southeast region of Louisiana more aware of the inherent risks associated with the area, all while making the citizenry more capable of handling and mitigating these risks. The communities in the FLOAT CRS User's Group:

- Include only 20% of the total number of CRS Communities in the State of Louisiana
- Hold 42% of the NFIP Policies in the State of Louisiana
- Pay 44% of the NFIP Premiums in the State of Louisiana
- Earned 34% of the CRS Discounts in the State of Louisiana

FLOAT has, along with our member jurisdictions, developed educational and outreach projects over the years with input and support from environmental volunteers, numerous partners, and with the use of creative and innovative tools. With such aggressive outreach programs spread out over 10 member jurisdictions composed of 6 parishes and 4 municipalities, FLOAT wanted to assemble all of these activities, opportunities and materials in a single coordinated document.

What follows is the document produced by these efforts.

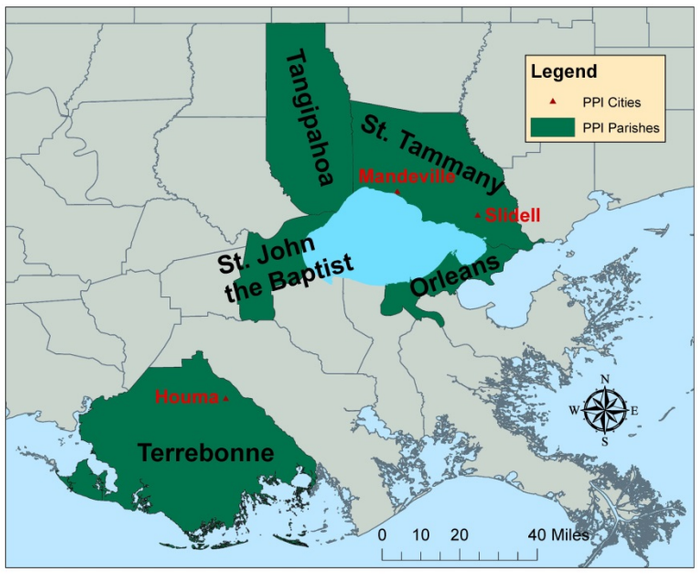

Figure 1: New Orleans Area CRS Users Group Program for Public Information Participants

Goals of the FLOAT Multi-Jurisdictional PPI Plan

The Program for Public Information (PPI) provides participating parishes and municipalities a strategy for informing residents, especially those who are economically disadvantaged or who have a language barrier; business owners; developers; government leaders; and civic leaders about their risk from flooding and what they can do to reduce the risk. The goals of the PPI are:

1. To make the public aware of the flood threat their community may be susceptible to.
2. To promote an all-hazards approach to public outreach.
3. To educate local officials about the importance of making the public aware of flood threats and other hazards.
4. To provide the most comprehensive coverage for public outreach using the most cost effective means, including the pooling of resources by seeking private sector sponsors.
5. To provide a level of consistency in the public message disseminated from the various public entities participating in this strategy.
6. To promote public awareness of their community's Flood Insurance Rate Map.

The PPI's general Target Audiences include:

1. **Residents and Business Owners.** Residents and business owners need to know their property's risk from natural hazards, so they can make informed decisions on how much insurance they should have and what they can do to reduce their risk.

2. **Developers, Design Professionals, and Contractors.** Developers, design professionals, and contractors need to know the flood risk for the property they are working on so they can design and build structures that meet codes, are safe, and lower the property owner's risk from natural hazards.

3. **Realtors.** Realtors need to know how to determine a property's risk from natural hazards so they can inform prospective buyers, and assist them in finding out what can be done to reduce or eliminate the risk.

4. **Insurance Agents**. Insurance agents need to be able to determine a property's risk so they can assist the property owner with acquiring the right type and amount of insurance.

5. **Civic Leaders.** Civic leaders need to know the risks to their community and what they can do to reduce it, so they can influence policy and inform the public.

The PPI's specific Target Audiences include:

1. **Libraries**. Libraries can disseminate information about flood risk to multiple members of the community.

2. **Contractors and Builders (Building Officials Association of Louisiana) (Louisiana Homebuilders Association).** Contractors and builders need to know the flood risk of the property they are working on so that they can build structures that meet codes, are safe, and lower the property owner's risk from natural hazards.

3. **Realtors (Louisiana Realtors Association).** Realtors need to know how to determine a property's risk from natural hazards so they can inform prospective buyers and assist them in finding out what can be done to reduce or eliminate the risk.

4. **Chemical Plants (Reached through the EOC of St. John).** Chemical plants need to understand flood risk so that buildings are kept safe and do not contaminate the nearby community.

5. **Repetitive Flood Loss Area Residents.** Residents in repetitive flood loss areas need to understand their flood risk so that they can take steps to mitigate their homes in order to reduce their flood risk in the future.

    a. **Severe Repetitive Loss Residents.** Residents with severe repetitive losses particularly need to understand their flood risk so that they can adequately mitigate their homes to protect them from flood risk in the future.

6. **Insurance Agents (Professional Insurance Association of Louisiana).** Insurance agents need to be able to determine a property's risk so they can assist the property owner with acquiring the right type and amount of insurance.

7. **Prospective Buyers working with LRA Realtors in the FLOAT region.** Prospective buyers need to understand flood risk so that they understand the full risks associated with the property they are looking to purchase.

8. **Floodplain Residents.** Residents in the floodplain need to understand flood risk so they mitigate their properties and know how to protect themselves and respond during a flood event.

9. **Potential Flood Insurance Policy Holders.** Potential flood insurance policy holders need to understand flood risk so that they know the cost of living in or near a floodplain.

10. **Elected Officials (Membership of the Louisiana Municipal Association).** Elected officials need to understand the flood risks in their locality so they can communicate them to their constituents.

11. **Chamber of Commerce Businesses.** Businesses need to understand flood risk so that they can adequately mitigate their buildings.

12. **Specific Areas:** Garyville, Reserve, Edgard, City of Mandeville, City of New Orleans and LaPlace

Outreach Messages

The outreach messages included in this Program for Public Information (PPI) include:

1) Know your flood hazard – discover where your property is in relation to the floodplain
2) Insure your property for your flood hazard – even properties located outside of the floodplain should be insured for flood
3) Protect people from the hazard – turn around don't drown
4) Protect your property from the hazard – retrofit your home or business to help protect from flooding
5) Build responsibly – retrofit homes or businesses in flood zones, do not build in the floodway
6) Protect natural floodplain functions – keep ditches and culverts clear of debris
7) Protect yourself and your property from hurricanes – have a hurricane plan
8) Be prepared for natural hazards – have plans for hurricanes, tornadoes and other natural events
9) General flood education – find the flood history for your area

These messages are important because all of the communities in FLOAT are susceptible to natural hazards, particularly flooding and hurricanes. Educating the public about these hazards will ensure the safety and protection of all residents in each community.

Multi-Jurisdictional PPI Committee

The FLOAT group has visited stakeholder organization meetings, events and other gatherings to spread the knowledge about its educational programs. This has helped to prepare those who were called for committee membership duty. Sixty-six stakeholders joined the FLOAT CRS User's Group to advise and enhance the PPI. Four meetings were held to work on the PPI – the first on April 10, 2014, the second on October 9, 2014, the third on March 12, 2015, and the fourth on July 9, 2015. The first meeting explained the PPI process and the role of the committee, the second meeting focused on current and future outreach projects, the third meeting included a review of the draft document, and the fourth meeting involved a review of the draft document and an in depth look at the flood insurance assessment.

Figure 2: Photographs of PPI Meetings

St. Tammany Parish:

Dr. deEtte Smythe – Regulatory Manager, St. Tammany Parish Government
Ronnie Simpson – Director of Public Information & Intergovernmental Relations, St. Tammany Parish Government
Alan Pelegrin – Flood Plain Administrator, St. Tammany Parish Government
David Brunet – Coastal Project Manager, St. Tammany Parish Government
Jennifer Bushnell – St. Tammany Parish Public Information Office
David Doss – Senator Vitter's Office (Resident of St. Tammany)

Vickie Nieto – Coin Du Lestin Homeowners Association
Susan Marks – Coin Du Lestin Homeowners Association
Wayne Day – Coin Du Lestin Homeowners Association
Dwain Meche – Timber Branch Homeowners Association
Richard Koen – Magnolia Forest Homeowners Association
Gil Griffin – Lazy River Estates

City of Mandeville:

Chris Brown – Building Official/Floodplain Manager
Lori Spranley – Planner
Chad Roig – Insurance
Jeff Bernard – Banker, State Investors Bank

City of New Orleans:

Jerome Landry – Floodplain Manager
Karen Fernandes – Floodplain Management Intern
Frieda von Qualen – Health Department
Sarah Babcock – Health Department
Emilie Bahr – New Orleans Regional Planning Commission
Brad Kramer – New Orleans Sewerage and Water Board
Prisca Weems – Stormwater Manager, City of New Orleans
Jerry V. Graves, Ph.D. – Director of Land Stewardship, The New Orleans Redevelopment Authority
Casey O'Keefe – Oak Park Civic Association
Kelli Walker – New Orleans Metropolitan Association of Realtors
Melissa O'Donnell – New Orleans Metropolitan Association of Realtors
Lauren Butner – Innovation Delivery Team Analyst, City of New Orleans
Harry Vorhoff – Tulane Institute on Water Law
Tim Jackson – University of New Orleans
James Fondren – Senator Vitter's Office
Larry Landry – Insurance

City of Slidell:

Eric Lundin – Planner
Carol Franze – Louisiana Sea Grant (Resident of Slidell)
Maria C. Guilott – Slidell Economic Development Alliance
Ken Levy – Slidell Economic Development Alliance

St. John the Baptist Parish:

Phyl Cornman – Administrative Assistant
Eric Wolverton – Floodplain Administrator
Paige Falgoust – Communications Department
Bryan A. Castillo – Insurance
Carolyn Robertson – Realtor
Fran Meyers – Realtor
Harold J. Flynn. Jr. – Developer

Tangipahoa Parish:

Nicolas P. LeBlanc – Assistant Building Official
Angelo Giardina – Banking
Brad Stevens – Attorney
Robbie Lee – Insurance

Terrebonne Parish:

Lisa Ledet – Floodplain Manager
Geoffrey S. Large – Planner
Jennifer Gerbasi – Planner
Mary Gueniot Biegler – Bayou Grace Community Services
Patricia Belanger – Resident, Schriever
Peg Case – Terrebonne Readiness and Assistance Coalition
Stephanie Hebert – Insurance

General Support:

Katie Lea – Louisiana Sea Grant (Central)
Jeffery Giering – Governor's Office of Homeland Security and Emergency Preparedness
Pam Lightfoot – NFIP State Coordinator
Josh Muller – Student (Jefferson)
Maggie Olivier – Floodplain Manager (Jefferson)
Susan Garner – UNO-CHART (Orleans)
Alessandra Jerolleman – National Hazard Mitigation Association (Jefferson)
Monica Farris – UNO-CHART (Jefferson)
Darla Duet – Floodplain Manager, Lafourche
Michelle Esposito – Solutient (St. Bernard)
Tara Lambeth – UNO-CHART (Orleans)
Race Hodges – National Hazard Mitigation Association (Orleans)

Community Needs Assessment

The communities in the FLOAT region include populations that may be more vulnerable than others, including individuals over 65, people living below the poverty level, those who speak English as a second language, and those who have low literacy. The percentage of the population that meets these criteria differs in each area of the FLOAT region. The population of the entire region is 930,430. Of that population, 12.1% is over 65, 20.1% is living below the poverty level, 8% speaks English as a second language (ESL), and 15% is illiterate. These numbers are similar throughout Louisiana. The table below describes the specific socio-economic data for each FLOAT area, the FLOAT region, and the state of Louisiana, based on 2012 United States Census Bureau information.

	Orleans	St. Bernard	St. John the Baptist	St. Tammany	Tangipahoa	Terrebonne	FLOAT Region	State
Total Population	369,250	41,635	44,758	239,453	123,441	111,893	930,430	4,601,893
Over 65	42,095	3,789	5,102	33,045	15,060	13,427	112,518	597,750

	11.4%	**9.1%**	**11.4%**	**13.8%**	**12.2%**	**12.0%**	**12.1%**	**13.0%**
Below the Poverty Level	100,436 **27.2%**	7,578 **18.2%**	7,072 **15.8%**	25,861 **10.8%**	27,280 **22.1%**	18,798 **16.8%**	187,025 **20.1%**	889,757 **19.9%**
ESL	35,780 **9.7%**	2,873 **6.9%**	2,954 **6.6%**	14,607 **6.1%**	6,419 **5.2%**	12,081 **10.8%**	74,714 **8.0%**	360,579 **8.4%**
Illiterate	67,204 **18.2%**	5,496 **13.2%**	7,743 **17.3%**	19,635 **8.2%**	20,738 **16.8%**	18,686 **16.7%**	139,502 **15.0%**	736,302 **16.0%**

Table 1: Vulnerable Populations in the FLOAT Region

FLOAT Region's Geography

The localities that make up the FLOAT region are situated in Southeastern Louisiana. They include St. Tammany Parish, the City of Mandeville, the City of New Orleans, the City of Slidell, St. John the Baptist Parish, Tangipahoa Parish, and Terrebonne Parish. All of the areas in the FLOAT region contain or border bodies of water, and include areas of marsh, wetland and swamp. Because of the proximity to water, much of each locality is located in the floodplain. In addition, quite a few parishes and cities within the FLOAT region have a low land elevation. Therefore, much of the FLOAT region is susceptible to flooding.

St. Tammany's Geography-

Topography and Land Use

St. Tammany Parish is located in southeastern Louisiana, on the north shore of Lake Pontchartrain (see Figure 3). The Parish measures approximately 25 miles north to south and 35 miles east to west. It covers 877 square miles and is the fifth largest parish in the state.

Figure 3: St. Tammany Parish

Figure 4 identifies the municipalities and the main features of the Parish. Lake Pontchartrain borders the parish to the south. To the east is the Pearl River, the boundary between Louisiana and Mississippi. To the southeast are the City of Slidell and US Highways 11 and 90 and Interstate 10, the main roads to the eastern entry to New Orleans.

In the western part of the Parish are the cities of Covington, Mandeville, Madisonville and Abita Springs. Crossing the Lake from Mandeville is the Causeway, the 24 mile over water link to the western suburbs of New Orleans. Folsom, Sun and Pearl River are located to the north of the two larger population centers.

Most of St. Tammany Parish is geologically considered Easter Pleistocene Terrace and Gulf Coast Flatwood. In the northeast and east, the predominant landscape feature is the floodplain of the Bogue Chitto and Pearl Rivers. Along the Lake to the south, the land is mostly marsh. The three main features are upland, floodplain and marsh.

Figure 4: St. Tammany Parish Geography

City of Mandeville's Geography-

The City of Mandeville lies in southeastern Louisiana and is located in St. Tammany Parish approximately 25 miles north of the City of New Orleans. Bounded on the east by Bayou Castine, the north and west by Bayou Chinchuba, and Lake Pontchartrain to the south, water is the prominent feature of this low-lying community. The City of Mandeville consists of a total area of 6.8 square miles or 4,352 acres. The City of Mandeville is located on an ancient delta of the Mississippi River.

Landforms are produced by deltaic deposits and pumped fill from Lake Pontchartrain. Soils consist of a fine sandy loam surface layer with sandy clay loam subsoil. Relief within the City ranges from zero feet National Geodetic Vertical Datum of 1929 (NGVD) at the southern city limits near Lake Pontchartrain to approximately 20 feet NGVD at its northern limits. The topography of the City is a generally flat coastal plain and brackish marsh. Approximately 80 percent of the total land area of the City is located within FEMA's 100-year floodplain.

City of New Orleans' Geography-

Orleans Parish lies in southeastern Louisiana and is bordered by Lake Pontchartrain to the north, Jefferson Parish to the west and southwest, and Plaquemines and St. Bernard Parishes and Lake Borgne to the east. Across most of the Parish, elevations vary by only a few feet. Most of Orleans Parish is below sea level and/or surrounded by flood levees. The topography of New Orleans has been particularly influenced by the natural levee of the Mississippi River. With each Mississippi River flood, water spilled out of the river, depositing its sediment to raise the natural levee to an original average of 10 to 15 feet above sea level, and one to two miles in width, sloping very gently into the back swamp. In the New Orleans area today, the Mississippi River flows 10 feet to 15 feet above sea level. The lowest elevations of the City are located in the areas of Lakeview, Gentilly, and New Orleans East.

City of Slidell's Geography-

Slidell is located on the northeast shore of Lake Pontchartrain between the Pearl River Basin and Bayou Liberty. It is bisected by Bayous Bonfouca, Vincent, and Patassat and several large canals draining into the bayous, and eventually into Lake Pontchartrain.

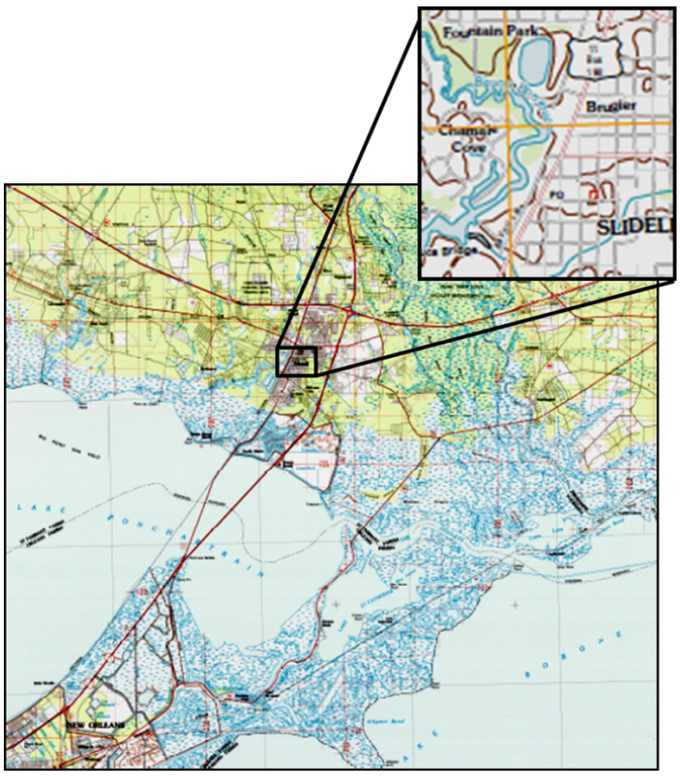

Figure 5: City of Slidell

St. John the Baptist Parish's 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 along 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 east of the river and the rest 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. The parish is located in the terrace and Mississippi floodplain region of southeast Louisiana.

St. John the Baptist Parish 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 1-10 and 1-55. Agricultural land, woodlands, and wetlands comprise the rest of the Parish's acreage.

St. John the Baptist Parish's 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 contains four unincorporated towns: LaPlace, Reserve, Garyville, and Edgard. The total population, according to the 2012 Census, is 44,758. Most buildings are slab on grade, and therefore susceptible to flood damage from shallow flooding and drainage problems. St. John also has 54

trailer parks and approximately 991 individual trailers. St. John consists of agricultural areas, supplemented by heavy commercial, industrial, petrochemical and light manufacturing industries. Flooding in St. John Parish is due to storm surge, severe storms, flash flooding and thunderstorms.

Tangipahoa Parish's Geography-

Tangipahoa Parish is located in southeast Louisiana, north of New Orleans and east of Baton Rouge. It is conveniently close to New Orleans, Baton Rouge and Mississippi. St. Tammany and Washington parishes are located to the east of the parish, while St. Helena and Livingston parishes are located to the west. The state of Mississippi is located to the north of the Parish. St. John the Baptist and Jefferson parishes are located to the south of the parish, meeting in Lake Pontchartrain. Tangipahoa Parish consists of an area of 790.3 square miles, or 505,790 acres. Tangipahoa Parish contains eight incorporated communities: Hammond, Ponchatoula, Amite, Kentwood, Independence, Roseland, Tangipahoa, and Tickfaw.

Topography

The topography of the Parish extends from low flat land in the south to rolling hills in the north. It is the center of the strawberry industry in the South. The true heartland of piney woods in Tangipahoa Parish is characterized by gently rolling hill country dotted with farmsteads and small towns separated by a rich growth of pine forests and occasional hardwoods. The Parish is approximately 51 miles long and 18 miles wide. The terrain of the Parish consists of hills with elevations that range from 370 feet along the northern state boundary to 0 feet in the wetlands along Lakes Maurepas and Pontchartrain.

Terrebonne Parish's Geography-

Terrebonne Parish is situated in southeast Louisiana along the state's Gulf of Mexico coastline. The parish includes approximately 2,100 square miles, and is the second largest parish in Louisiana in terms of land area. More than 85% of the parish area is made up of water and wetlands. To the east is Lafourche Parish, to the west St. Mary Parish, and to the north Assumption Parish. The highest point in Terrebonne Parish is 13 feet above sea level. Major water and cultural features include five bayous, the Intercoastal Waterway, the Houma Navigational Canal, and various canals. The map below (Figure 6) shows the communities in Terrebonne Parish, its position in the state, and its large expanse of water and wetlands.

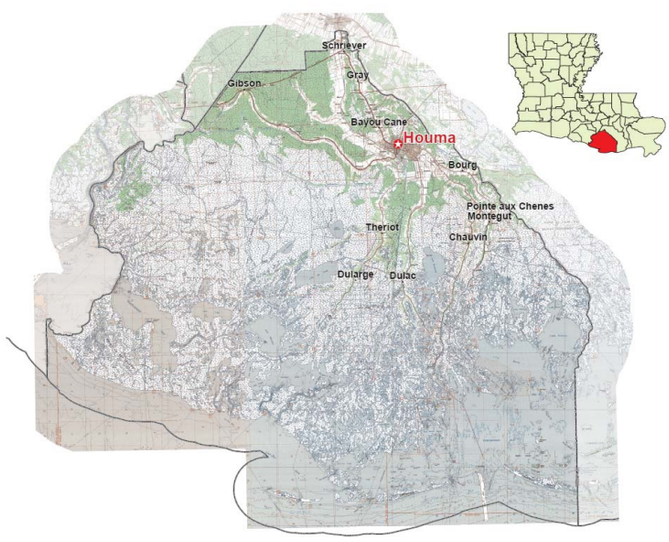

Figure 6: Terrebonne Parish

Flood Hazards

Floodplains are lowlands, adjacent to rivers, lakes, and oceans that are subject to recurring floods. Hundreds of floods occur each year, making them one of the most common hazards in all 50 States and U.S. territories. Floods are also the most widespread of all natural disasters except fire. Flooding typically results from large-scale weather systems generating prolonged rainfall. Most communities in the United States have experienced some kind of flooding after spring rains, heavy thunderstorms, or winter snow thaws.

Flooding is defined as the accumulation of water within a water body and the overflow of excess water onto the adjacent floodplain. 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. Flooding is a natural event for rivers and streams (often called "overbank" flooding), and also can be the result of ponding or overland "sheet" flow when rainfall rates temporarily exceed the drainage capacity of an area. In overbank events, excess water from snowmelt, rainfall, or storm surge accumulates and overflows onto banks and adjacent floodplains. In ponding events, water temporarily accumulates in an area until normal drainage allows it to flow away. Overland, or sheet flow floods, occur when intense rainfall occurs, and water simply runs across the ground, in extreme cases at depths of more than a foot and at relatively high velocities.

The Lake Pontchartrain area is characterized as a coastal zone consisting of low, flat elevations bisected by regular and numerous slow moving rivers and bayous, which are often relied on as an integral part of the cities and parishes drainage systems. The low, flat topography and slow moving waterways combine to increase the risk to sheet flooding and ponding in low lying areas. To compensate for this challenge, cities and parishes rely heavily on pump systems for the removal of storm water from low lying areas and from areas located within flood protection barriers.

Over 80% of the Lake Pontchartrain area is located in a Special Flood Hazard Area (SFHA). Some of these areas have been provided federal, state, or local flood protection barriers. However, many of the most vulnerable areas are outside of the flood protection systems. Even those areas within flood protection systems are vulnerable to flooding when the system is overtopped or breached, as occurred during Hurricanes Karina and Isaac.

The Lake Pontchartrain area is vulnerable to flooding from storm surge, localized drainage deficiencies, and back flooding. The greatest flood threat to the area is by storm surge from tropical storms and tropical cyclones. Storm surges push large quantities of water into an area and cause both sheet and overbank flooding, and can even overtop levees and flood walls. Storm surges that overtop flood protection systems are particularly challenging, because the flood waters are then trapped inside the barrier and must be pumped out along with any rain water that also accumulated during the storm event.

A second leading cause of flooding is localized drainage issues due to insufficient or impaired drainage. The area's low flat topography limits gravity's effect on moving water through the drainage system. Pumps are used to augment the drainage systems ability to remove storm and flood waters, but pumps generally require human intervention to ensure they are maintained, turned on when needed, and continue to operate throughout a storm event. Another challenge is impaired drainage due to silt accumulation, litter and debris clogging pipes and culverts, and uneven/rough drainage channels. The lack of efficient flow causes local blockages or slowing which causes the water to backup, overtop the bank, and flood local areas.

A third likely cause of flooding is back flooding, since most of the drainage systems rely on bayous and rivers draining into the lakes then into the Gulf of Mexico. When Lake Pontchartrain is overfilled, the rivers and bayous cannot drain and actually begin to flow back up stream. The combination of backflow, with a continuing need to pump out storm water, overwhelms the flood protection and drainage capacity

causing flooding. The effect is often exacerbated by tidal conditions, since the majority of the area is in a coastal zone.

St. Tammany's Flood Hazards-

Hurricanes/Tropical Storms

Tropical storms and hurricanes are large-scale systems of severe thunderstorms that develop over tropical or subtropical waters and have a defined, organized circulation. The larger storms generally form over the eastern Atlantic Ocean and move westward. The hurricane season runs from June through November, with the peak activity in September. Tropical storms and hurricanes are categorized by their wind speed. While best known for their winds, these storms can also bring flooding of coastal regions, heavy rains that cause inland flooding, thunderstorms, lightning, and tornadoes. In June and October, storms are more likely to come from the Gulf, while in July through September; they generally form in the South Atlantic. The peak recorded wind speed in the parish was 125 miles per hour during Hurricane Camille in 1969.

Affected Area. Tropical storms and hurricanes can affect the entire parish. Every place in St Tammany Parish is susceptible to their winds, rain, and tornadoes. Figure 7 below shows the coastal areas that will be evacuated for flooding by categories 1 through 4 storms.

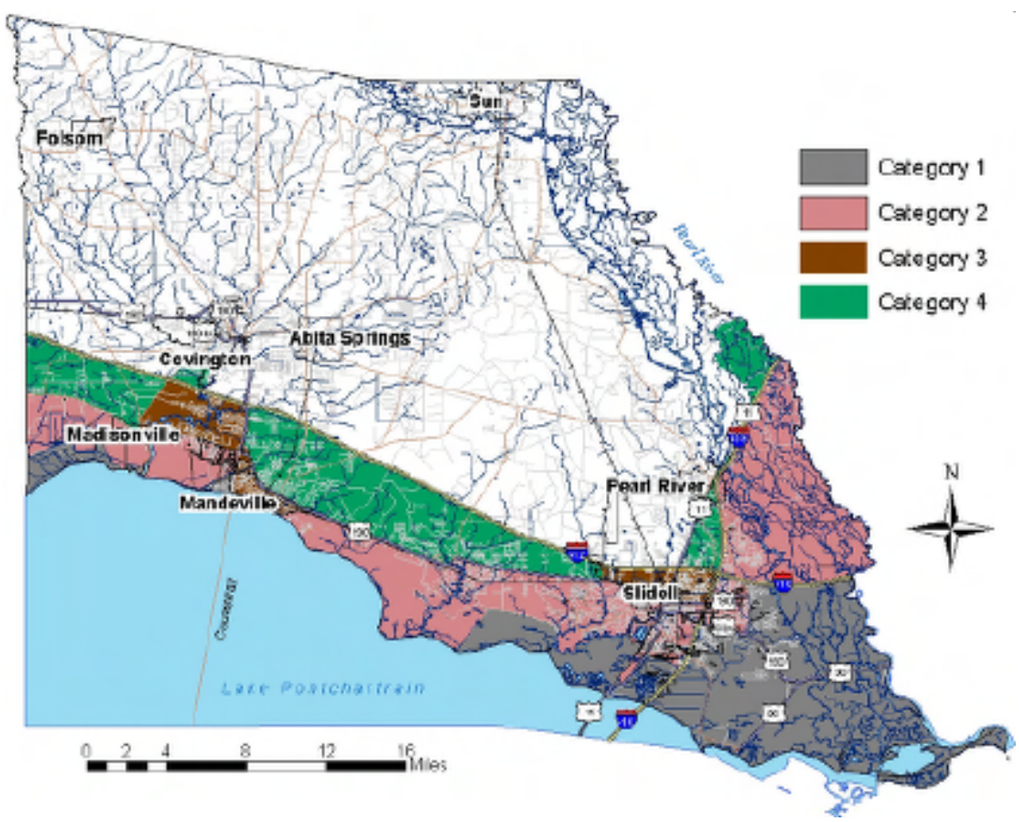

Figure 7: Evacuation of Coastal Areas per Category in St. Tammany Parish

Low lying and coastal areas south of I-12 are most subject to storm surge flooding. The 100-year storm surge elevation at the Causeway and I-10 is 11.6 feet. The flood elevation drops one foot for each 2.75 miles inland.

Frequency. Louisiana has had an average of 3 or 4 hurricanes each decade since detailed records have been kept. Based on historical record, a tropical storm or hurricane should be expected somewhere within the state every 1.2 years (0.83% chance). A hurricane should make landfall every 2.8 years. The odds of a severe category 4 or 5 hurricane coming closer to St. Tammany Parish are lower.

Decade	Hurricanes	T.S.s	Total
1850's	3	1	4
1860's	7	2	9
1870's	6	3	9
1880's	7	3	10
1890's	3	6	9
1900's	2	7	9
1910's	3	2	5
1920's	3	2	5
1930's	2	8	10
1940's	3	9	12
1950's	2	7	9
1960's	4	1	5
1970's	4	3	7
1980's	4	5	9
1990's	3	2	5
Totals	57	61	118
Source: National Weather Service			

Table 2: Louisiana Storm Surge History

Flooding

Flooding is caused by more water than the drainage system can convey. Flooding is dependent on three factors: 1) precipitation, and antecedent conditions in both 2) the watershed and 3) the drainage channel.

Precipitation. St. Tammany Parish receives an average of 64 inches of rain each year. The rain comes from tropical storms, convective thunderstorms, and storms caused by the interaction of warm moist air with colder air from the north. The parish's precipitation is not spread out evenly over the year. The amount of rain that falls varies from storm to storm and varies over an area. Where this rain goes depends on the watershed.

Intensity	Frequency
Category 1	8 years
Category 2	19 years
Category 3	32 years
Category 4	70 years
Category 5	180 years

Source: USGS, "Environmental Atlas of Lake Pontchartrain," In LOEP Hazard Profiles

Table 3: Frequency of Hurricanes passing within 80 Miles of New Orleans

The Watershed. A "watershed" is an area of land that drains into a lake, stream or other body of water. The runoff from rain is collected by ditches and sewers, which send the water to small streams (tributaries), then the water travels to larger channels and eventually to the lowest body of water in the watershed (the main channel, Lake Pontchartrain or the Gulf). When one of these conveyance channels receives too much water, the excess flows over its banks and into the adjacent area – causing a flood.

St. Tammany Parish has 7 major watersheds, which are shown in Figure 8. Within these major watersheds are smaller sub-watersheds that drain into the tributaries. All of these streams have adjacent floodplains that are inundated during a flood.

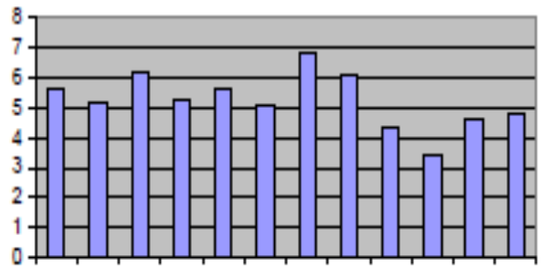

Table 4: Frequency of Hurricanes passing within 80 Miles of New Orleans

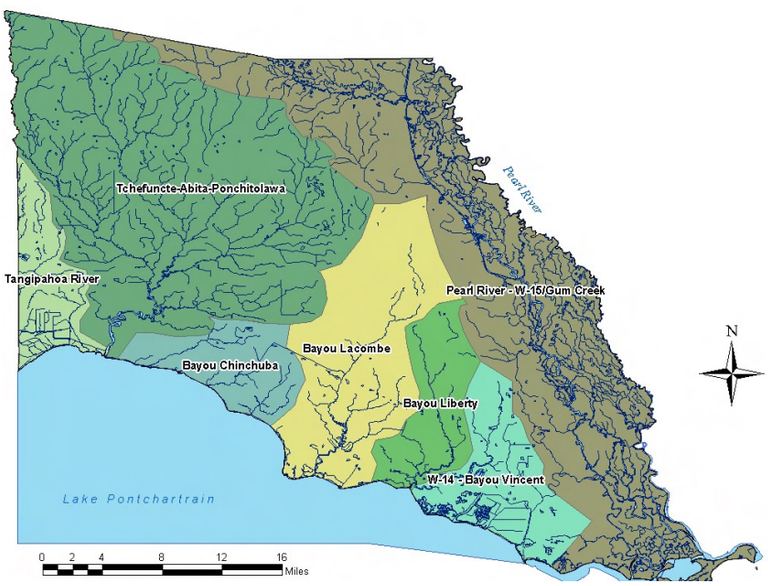

Figure 8: St Tammany Parish Watersheds

The Channel. Flooding can be aggravated by obstructions in the drainage system. There are two kinds: channel obstructions, such as small bridge or culvert openings or log jams, and floodplain obstructions, such as road embankments, fill and buildings. Channel obstructions will aggravate smaller, more frequent floods, while floodplain obstructions impact the larger, less frequent floods where most of the flow is overbank, outside the channel. Channel obstructions can be natural (e.g., log jams or growth) or man-made (e.g., broken culverts or debris). Channel obstructions can be cleared out by work crews or washed away during larger floods. Floodplain obstructions tend to be more permanent.

City of Mandeville's Flood Hazards-

Floods

Hundreds of floods occur each year in the United States, 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 the City of Mandeville can be the result of the following weather events: hurricanes, thunderstorms, or winter storms.

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 United States 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; and subsidence.

City of New Orleans' Flood Hazards-

Hurricanes and Tropical Storms

Flooding in Orleans Parish can be the result of weather events such as hurricanes, thunderstorms (convectional and frontal), storm surge, and winter storms. Convectional rain, or showery precipitation, occurs from convective clouds and falls as showers with rapidly changing intensity. Frontal precipitation occurs when the leading edge of a warm air mass meets a cool air mass. The warmer air is forced over the cool air. As it rises, the warm air cools, moisture in the air condenses, and clouds and precipitation result. In Orleans Parish, heavy rains can occur at any time of the year, although the rainiest months are June, July, and August, when tropical moisture is plentiful along the Gulf Coast.

Flooding

The City of New Orleans has minimal elevation change. As a result of this minimal elevation change, when heavy rainfall events occur, water tends to pool rather than run off rapidly. Elevations below sea level combined with little slope in topography and an extensive levee system mean that rainwater cannot flow out of the Parish, but must be pumped out.

Drainage Systems/Pumping Stations

The greater New Orleans metropolitan area is served by approximately 80 pumping stations in four Parishes (Orleans, Jefferson, St. Bernard, and Plaquemines) with a combined capacity of approximately 30 billion gallons per day. All stations are equipped with pumps that are either directly driven by diesel engines or by electric motors that receive their power from diesel-electric generators. The main metropolitan area (Orleans Parish) is drained by 13 pump stations, which discharge directly into Lake Pontchartrain, the 17th Street, Orleans, and New London Canals, and the Inner Harbor Navigation Channel.

City of Slidell's Flood Hazards-

Slidell's coastal location, numerous bayous and canals, and low elevation and flat topography make it vulnerable to flooding from a number of causes that include hurricane generated storm surge, back flooding from an over filled Lake Pontchartrain, inundation from heavy rains during tropical storms and other storm events, and localized drainage issues. Major flooding incidents occurred during an unnamed major storm in May 1995 ($25.4 million), Tropical Storm Allison in 2001 ($12.8 million), Hurricane Isidore and Tropical Storm Lili in 2002 ($12.4 Million), and Hurricane Isaac in 2012 ($23.4 million). By far the worst event was Hurricane Katrina, a 396 year storm, which struck in August of 2005. The 4,070 flood claims for Hurricane Katrina exceeded $369 million in claim payments and over 51% of the city's 7,917 flood claims and 81% of the city's $454 million in claim payments since the National Flood Insurance Program began in 1978.

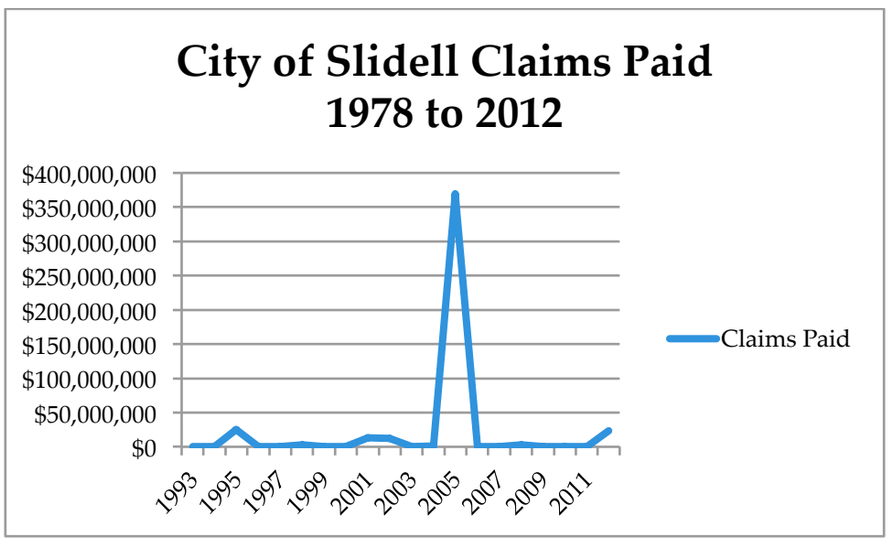

Figure 9: City of Slidell Flood Claim Payouts

Storm Surge and Flooding

The southern part of the City of Slidell and those areas bordering Bayou Bonfouca are the most susceptible to flooding from storm surge and back flooding from Bayous Bonfouca, Liberty, Vincent, and Patassat. A challenge during the most recent hurricane to strike the city, Hurricane Isaac, was the inability of the city's pumps to remove rain water from inside the city's drainage area, because the pumps could not overcome the pressure of a saturated Bayou Bonfouca. The impact of regular flood events, occurring approximately every five years, has created underinvestment in the southern part of the city and has led to an increase in blighted properties, from single family homes to commercial properties.

The greatest concentration of flood vulnerable properties is located in the Palm Lake area, where houses sit on a series of canals connected to Lake Pontchartrain by way of Bayou Bonfouca. The cost of elevating and other means of protecting homes and businesses from flooding in the southern part of the city has caused increased development in the northern part. This shift has increased congestion along Gause Blvd., the main thoroughfare in the northern part of town, and increased construction. Of particular concern are homes in the Driftwood Circle and north 9th St areas. Development in these areas has overstressed the areas' drainage capacity and led to localized flooding during heavy rain and storm events. Exacerbating this problem are homes built lower than the crown of the adjacent street and silt build up in sewers lines from erosion and runoff. These factors are reminders that even areas outside of the Special Flood Hazard Area are vulnerable to flooding, and programs that require retention and detention ponds to hold and release water in a controlled manner, erosion control measures during construction, landscaping, and litter and debris removal from ditches and surrounding areas are key to reducing the risk of flooding and to speeding recovery from flood events.

Past Hazard Mitigation Efforts

The fact remains that the majority of the city is located in the SFHA, and there are no large scale projects underway to protect the city from flooding. Therefore, the City must mitigate against the risk of flooding through a combination of ordinances, codes, designs, and capital projects. To unify these efforts, the city is in the last stage of replacing several of its ordinances including zoning, subdivision regulation, flood prevention, and storm water management, with a Unified Development Code, which will provide for a more holistic and integrated approach to hazard mitigation.

Key to the city's efforts are its outreach programs intended to inform its residents and business owners what they can do to mitigate their individual risk and to speed their recovery from a flood event.

Figure 10: City of Slidell Special Flood Hazard Area

St. John the Baptist Parish's Flood Hazards-

Hurricanes/Tropical Storms

During hurricanes and tropical storms, St. John the Baptist Parish is subject to heavy flooding, due to the effects associated with wetlands and Lake Pontchartrain, Lake Maurepas, and Lac Des Allemands. In St. John, 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.

Storm Surge

Storm surge in St. John is due mainly from Lake Pontchartrain and Maurepas, Lac Des Allemands and Pass Manchac.

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 1-10 and the Parish's northern boundary and is south of LA 3127 to the Parish boundary.

Sources of Riverine Flooding

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. 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.

Drainage Systems/Pumping Stations

St. John the Baptist Parish is subject to heavy flooding due to Lake Pontchartrain, Lake Maurepas, and Lac Des Allemands and the associated wetlands, as previously mentioned. When water levels are high, 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 waters that extend north of U.S. Highway 61 (Airline Hwy) are subject to tidal impact, which 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. 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, areas along U.S. Highway 61 (Airline Highway), and along UPRR tracks. St. John the Baptist Parish has a schedule for the cleaning of existing ditches year round and an active culvert and drainage permit program, along with participating in the States Backflow Prevention Program.

There are currently 22 pumps in the parish, with two more to be added to the Foxwood Subdivision in the future. The parish is planning to buy hydraulic pumps for the Red Bud and Crevasse areas in the future as well. These areas are located along the Mississippi River. Within a year, the parish should have 26 total pumps.

Tangipahoa Parish's Flood Hazards-

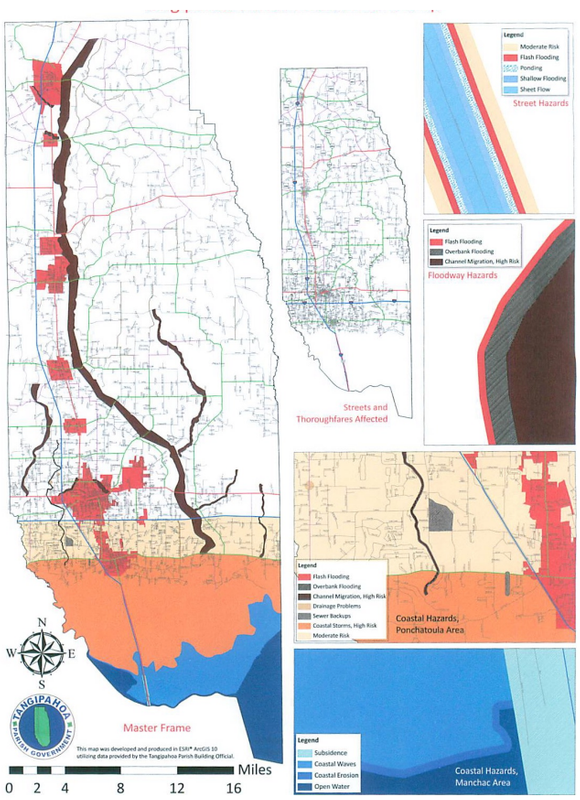

Figure 11: Tangipahoa Parish

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 United States 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 flow; and subsidence.

Floods

Flooding in Tangipahoa Parish can be the result of the following weather events: hurricanes, thunderstorms, or winter storms.

Approximately 45% of the total land area of Tangipahoa Parish is located within FEMA's 100-year floodplain. The majority of the floodplain is found along the

Tangipahoa River, Natalbany River, Lake Maurepas and Lake Pontchartrain shorelines, and the Tchefuncte River. The Tangipahoa River, with a drainage area of 771 square miles at Lake Pontchartrain, flows from the northwestern to the southeastern part of the Parish. The Natalbany River, with a drainage area of 218 square miles at its mouth, flows through the Parish in a southern direction near the western border of the Parish.

Risk Assessment

Approximately 11 percent of the parish's total land area contains frequently flooded soils. These areas generally run along the Tangipahoa, Natalbany, Tchefuncte, and other creeks and rivers and are often flooded for long periods of time, usually between December and May. One-third of the parish is either wetland or subject to flooding. The wetland area is swamp or other wetlands, which have water depths of up to one foot most of the year. This area is located in the lower section of the Parish, the wetland and floodplain of Lake Pontchartrain, and accounts for approximately 14 percent of the parish.

Terrebonne Parish's Flood Hazards-

Terrebonne Parish is mostly water and wetlands. A combination of its deltaic creation, its proximity to the Gulf of Mexico, and a historical concentration of oil and gas exploration activities (construction of man-made access canals) are responsible for greater than 85% of the parish's total acreage being represented by either water or wetlands. Generally from north to south, the wetlands include fresh marsh, intermediate brackish marsh, and salt marsh near the coast line. These marshes are intertwined with hundreds of lakes, bays, bayous, and canals. Some of the more notable water bodies within the parish include: Bayou Black, Bayou Dularge, Bayou Grand Caillou, Bayou Petit Caillou, and Bayou Terrebonne.

These bayous are significant, as they have historically provided the land-building sediment that created the highest areas of the parish. The sediment was deposited during annual flooding cycles of Bayou Lafourche. It is upon these finger-like ridges that all urban and agriculture land exist in the parish today. Because of the formation of these ridges through alluvial processes, the three-foot contour clearly defines the ridges as the "high-ground" of the parish. Virtually all land area other than these ridge areas is susceptible to frequent flooding of some, sort or would be without forced drainage systems; either stormwater, river flooding, storm surge, or backwater flooding. Flooding is both coastal, from storm surge during tropical events, and in the forced drainage areas from rain events. Approximately 90% of the parish is considered environmentally sensitive and in the Special Flood Hazard Area. The graphic below (Figure 12) depicts the ridges that form the bulk of non-flooding urban and agricultural land in the parish.

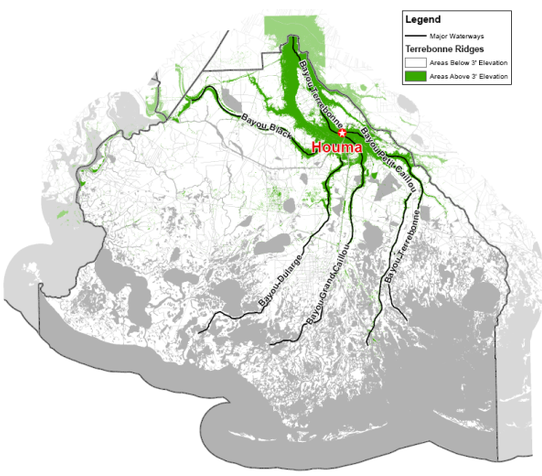

Figure 12: Ridges in Terrebonne Parish

FLOAT Region Flood Insurance Data (Activity 370)

This section will review the flood insurance data in each of the FLOAT communities, flood insurance studies (where available), A Flood Insurance Study, or FIS, is a compilation and presentation of flood risk data for specific watercourses, lakes, and coastal flood hazard areas within a community. When a flood study is completed for the NFIP, the information and maps are assembled into an FIS. The FIS indicates flooding within the City occurs almost equally between the spring from rainfall and in the late summer from tropical cyclone events; however, flooding can occur anytime during the year. This section will also examine pre- and post- FIRM policies and level of flood insurance coverage in each community, as well as make recommendations for enhancing flood insurance coverage in each community.

According to FEMA, a pre-FIRM structure is one in which "construction or substantial improvement occurred on or before December 31, 1974 or before the effective date of an initial Flood Insurance Rate Map (FIRM)."[1] FEMA defines a post-FIRM structure as "a building for which construction or substantial improvement occurred after December 31, 1974 or on or after the effective date of an initial Flood Insurance Rate Map (FIRM), whichever is later."[2] The table below details the initial and current FIRM dates for each community.

Table 5: FLOAT Region Initial FIRM Dates

Community	Initial FIRM date
St. Tammany Parish	2/2/83
City of Mandeville	9/28/79
City of New Orleans	8/3/70
City of Slidell	12/16/80
St. John the Baptist Parish	7/16/80
Tangipahoa Parish	2/2/83
Terrebonne Parish	11/20/70

The majority of flood insurance policies in the FLOAT region related to pre-Flood Insurance Rate Map (FIRM) structures are located in the Special Flood Hazard Area (SFHA) in St. Tammany Parish, the City of Mandeville, the City of New Orleans, and the City of Slidell. In St. John the Baptist Parish, Tangipahoa Parish, and Terrebonne Parish, the majority of the pre-FIRM structures are located in the B, C or X Zones.

The majority of flood insurance policies in the FLOAT region related to post-FIRM structures are located in the SFHA in the City of New Orleans, the City of Slidell, St. John the Baptist Parish, and Tangipahoa Parish. In St. Tammany Parish, the City of Mandeville and Terrebonne Parish the majority of the post-FIRM structures are in the B, C or X Zones.

The table below outlines the flood insurance policies in each community. See Appendix B for more detailed flood insurance information by community.

According to the Insurance Information Institute, 14% of homeowners in the United States have flood insurance, as of 2015.[3] As evidenced in Table 6 below, all of the communities in FLOAT have greater than 14%, which is above the national average.

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[1] http://www.fema.gov/national-flood-insurance-program/definitions

[2] http://www.fema.gov/national-flood-insurance-program/definitions

[3] Accessed 9/1/2015; http://www.iii.org/fact-statistic/flood-insurance

Location	Pre-FIRM Policies in Force		Post-FIRM Policies in Force		Buildings (% of Policies)	
	SFHA	B, C & X	SFHA	B, C & X	SFHA	B, C & X
St. Tammany Parish	1,612	1,263	11,037	21,464	29,292 (43.2%)	66,120 (34.3%)
City of Mandeville	598	315	787	1020	1,521 (91.1%)	3,512 (38.0%)
City of New Orleans	41,943	21,149	17,634	7,817	124,339 (47.9%)	65,557 (44.2%)
City of Slidell	3,415	1,765	1,574	1,068	9,750 (51.2%)	1,094 (100.0%)
St. John the Baptist Parish	455	1,737	2,834	2,354	4,095 (80.3%)	13,415 (30.5%)
Tangipahoa Parish	575	458	1,151	2,338	11,448 (15.1%)	38,625 (7.2%)
Terrebonne Parish	2,227	2,477	3,238	5,786	14,238 (38.4%)	29,649(27.9%)

Table 6: Pre and Post-FIRM Policies in the FLOAT Region[4]

St. Tammany Parish Flood Insurance Study

Sources of Riverine Flooding
Floods in the parish have been caused by localized storms, rain over several days on saturated ground, and tropical storms. Over the last three decades, a flood great enough to have St. Tammany Parish declared a Federal disaster area has occurred on the average of every 3 – 4 years.

Riverine flooding. Flood heights on the larger rivers are recorded at individual river gages. There are seven reporting and recording gages in St. Tammany Parish. Only two gages reported flood heights since 2004 close to these records. They are too far upstream to have been impacted by Katrina's storm surge.

Each gage has its own datum, or starting point for measuring stage or height. That datum can be converted to elevation above sea level, but many users are more comfortable with the gage's stage figures. Some gages have a "flood stage," which is the height when the stream goes out of banks or starts causing property damage. Some gages have been in operation for a longer time and therefore show earlier floods. These streams have flooded in every month of the year, except July and December. More years of records or looking at the top 10 floods would include those months. In other words, it can flood in St. Tammany Parish at any time of the year.

Flood Zones in St. Tammany Parish
St. Tammany Parish has a very narrow V Zone along the lakeshore and a larger one on the Gulf. Areas outside the mapped Special Flood Hazard Area are called X Zones.

[4] Data provided by LA Floodplain Management Program Coordinator, LADOTD. Please note that the number of policies may include multiple policies per structure and that the number includes "contents coverage only" policies.

Advisory flood hazard maps. Following Hurricane Katrina, FEMA concluded that some of its mapped A and V Zones understated the Special Flood Hazard Area (SFHA). In April 2006, FEMA issued the following notice:

FEMA has completed an early assessment of the 1%-annual-chance (or 100-year) flood elevations for coastal areas and areas along Lake Pontchartrain. The analysis incorporates storm data from the past 35 years, including Hurricanes Katrina and Rita, new and existing long-term tidal gage records, and other existing engineering studies…

For coastal areas the results of the storm data analysis indicated that the existing 1%-annual chance flood elevations are 6 to 9 feet higher than the Stillwater Elevations (SWELs) published in the effective Flood Insurance Study (FIS). Specifically, the effective SWELs of 9.0 to 12.1 feet are increased to a uniform Advisory SWEL of 18 feet (relative to the National Geodetic Vertical Datum [NGVD] of 1929) in areas south and east of US 90 and, to account for storm reduction between the Gulf of Mexico and Lake Pontchartrain flooding sources, are increased to a uniform Advisory SWEL of 15 feet NGVD29 between Interstate 10 and US 90.

For areas north and west of Interstate 10 and along Lake Pontchartrain, FEMA is encouraging people to adopt freeboard and elevate structures to at least 1 foot above the current BFEs shown on the effective FIRMs.[5]

With the notice came a series of advisory maps for the Lake Pontchartrain floodplain. The ABFE maps only raised the base flood elevations from storm surge along Lake Pontchartrain. The new advisory maps did not extend the floodplain boundary inland everywhere and did not affect the floodplain delineations for riverine flooding.

DFIRM. FEMA intends to replace both the current Flood Insurance Rate Map and the advisory maps with a new FIRM. The preliminary Standard Digital Flood Insurance Rate Map (DFIRM) for the Parish was presented to the public at an open house on October 22, 2008 at the Parish office. The maps have been under review since that time and won't become effective until sometime after 2015. The extent of the floodplain mapped by FEMA did not increase very much. While the boundaries may not have changed much, the preliminary DFIRM greatly expanded the high velocity wave action area (V Zone).

Flood insurance data. Altogether, the residents of the Parish have collected 1.5 billion dollars in flood insurance claim payments since 1978.

Level of Flood Insurance Coverage in St. Tammany Parish

The below tables and narrative review the commercial and residential buildings in the Special Flood Hazard Area, the number of flood insurance policies in the parish, and map the policies to identify gaps in order to make recommendations about improving flood insurance coverage in the parish.

Table 7: St. Tammany Parish Structures in SFHA, Source: FEMA

St. Tammany Parish Structures in SFHA	
Coastal Area in SFHA	187.08
Coastal Structures in SFHA	18,933.00
Coastal Population in SFHA	42,190.00
County Total Area	900.27
County Total Structures	95,412.00
County Total Structures (2010)	95,412.00

[5] http://www.fema.gov/advisory-base-flood-elevations-st-tammany-parish-louisiana

County Total Population (2010)	233,740.00
Data Source	PMM
FEMA Region	Region VI
NAME	St. Tammany
Percent of Population in SFHA	29.06
Percentage of Structures in SFHA	30.70
Riverine Area in SFHA	264.76
Riverine Structures in SFHA	10,359.00
Riverine Population in SFHA	25,920.00
Total Area in SFHA	451.84
Total Structures in SFHA	29,292.00
Total Population in SFHA	68,110.00

St. Tammany Parish has both structures and population in the Special Flood Hazard Area. This area includes 29,292 structures, and a population of 68,110. The structures in the parish total 95,412, and the population of the parish is 233,740. Therefore, approximately 29.06% of the parish's population lives in a Special Flood Hazard Area, and 30.7% of the structures in the parish are in a Special Flood Hazard Area.

Table 8: St. Tammany Structures by Flood Zone, Source: St. Tammany Parish

Flood Zone	Number of Structures
X	37,275
VE	848
A	298
AE	23,870
0.2% Annual Chance	9,319
Open Water	3
Total Structures	**71,613**

The Special Flood Hazard Area in St. Tammany Parish is made up of zones A, AE and VE. There are 848 structures in Zone VE, 298 structures in Zone A, and 23,870 structures in Zone AE. A majority of the structures in the parish are in Zone X, or the 0.2% annual chance zone, and 3 of the buildings are in open water.

Table 9: St. Tammany Parish Structures and Policies

	SFHA			B, C & X Zones		
Location	Number of Buildings	Number of Policies	Percentage (%)	Number of Buildings	Number of Policies	Percentage (%)
St. Tammany Parish	29,292	12,649	43.2%	66,120	22,727	34.3%

There are 29,292 structures in the SFHA, and 12,649 policies. Therefore, approximately 43.2% of the structures in the SFHA have flood insurance. In addition, there are 66,120 structures outside of the SFHA, and 22,727 policies. Therefore, approximately 34.3% of the structures in the non-SFHA have flood insurance.

Map Analysis

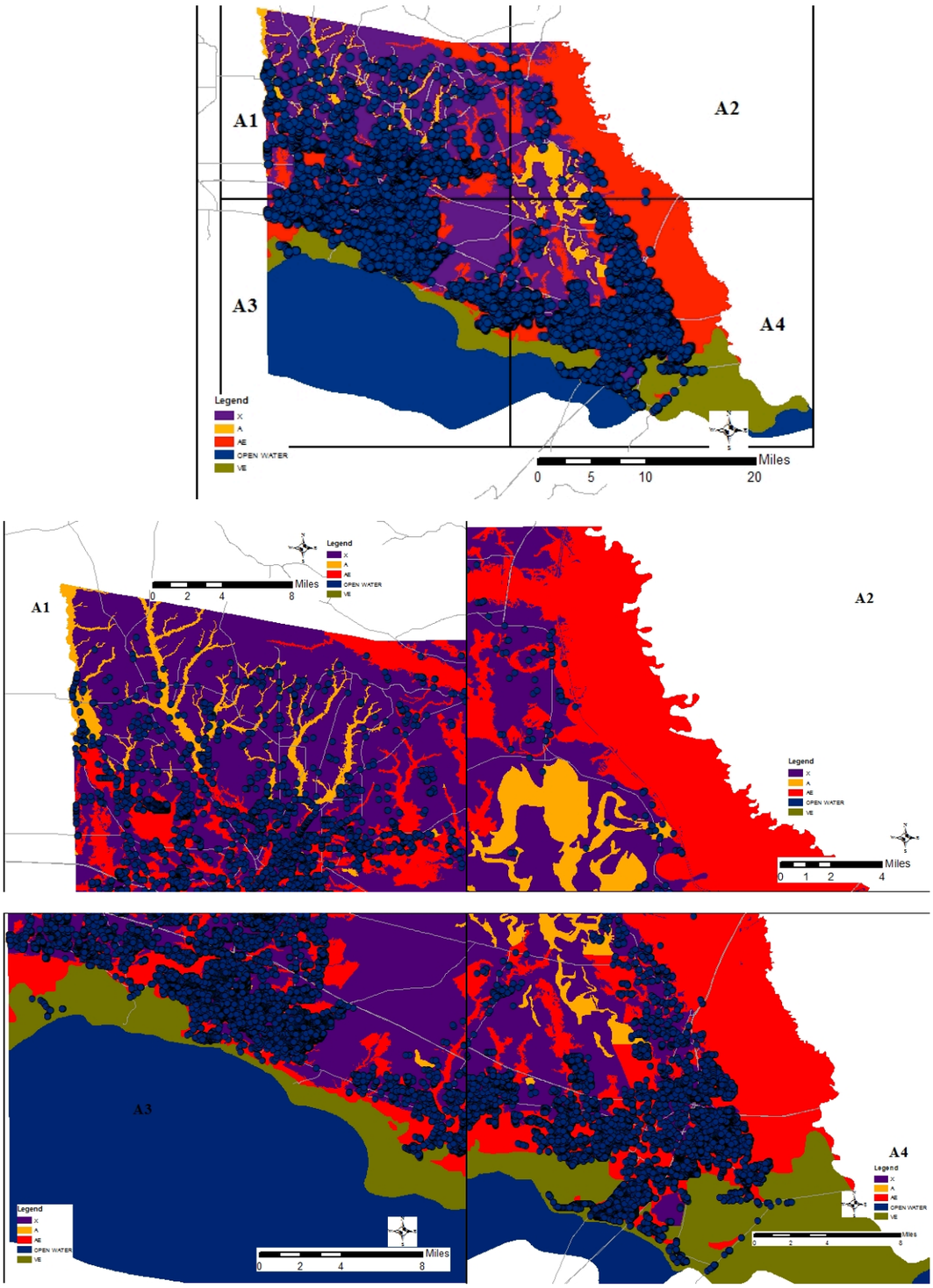

Figure 13: St. Tammany Parish Flood Insurance Policies

Much of the populated areas of the parish have flood insurance policies. The above map reveals gaps in the A, AE, and VE zones. Although there are gaps in the flood insurance policies in the current flood map, the parish expects these gaps to be resolved with the revised DFIRMs.

St. Tammany Parish Current Coverage and Recommendations

Approximately 30.1% of the structures in the parish are located in the SFHA, while 69.9% of the structures in the parish are located outside of the SFHA. The flood insurance policy numbers reveal that 43.2% of structures in the SFHA have flood insurance coverage, and 34.3% of structures in the non-SFHA have flood insurance coverage. Approximately 47.3% of all structures in the city have flood insurance coverage. Although flood insurance coverage is low, the parish expects this to be resolved when the DFIRMs are revised and the Special Flood Hazard Area is reduced.

City of Mandeville Flood Insurance Study-

The most recent Flood Insurance Study (FIS) for the City of Mandeville was published by FEMA in May of 2012. The FIS produced for the city is also supported by a Flood Insurance Rate Map (FIRM), divided into individual FIRM panels which identify the Special Flood Hazard Area (SFHA). The zones in the SFHA are Zones AE and VE in the City of Mandeville.

Based on past and recent history, certain parts of the City clearly have a high probability of flooding. As demonstrated by Hurricane Katrina, the Lakeshore Drive area along Lake Pontchartrain is vulnerable to storm surge flooding. The City is also susceptible to overbank flooding from heavy rain events along Little Bayou Castain, Ravines Aux Coquilles, and Bayou Chinchuba.

Level of Flood Insurance Coverage in the City of Mandeville

The below tables and narrative review the commercial and residential buildings in the Special Flood Hazard Area, the number of policies in the city, and map the policies to identify gaps in order to make recommendations about improving flood insurance coverage in the city.

Table 10: City of Mandeville Structures in SFHA

City of Mandeville Structures in SFHA	
A Zone	47
AE Zone	72
V Zone	1,402
Total Structures in SFHA	1,521
City Total Structures	5,932
Percentage of Structures in SFHA	25.64

Table 11: City of Mandeville Structure Type and Count

City of Mandeville Structure Type and Count	
Miscellaneous:	
Accessory Structures	1,302
Garages	137
Total Miscellaneous	**1,439**
Residential:	

Residential Homes	3,384
Duplex	71
Historic	5
Multi-Unit Buildings	458
Apartments	394
Townhouses	135
Condos	530
Total Residential Units	**4,519**
Total Residential Structures	**3,918**
Commercial	518
Churches	30
Schools	27
Total Commercial	**575**
Total Structures	**5,932**

The City of Mandeville has structures in the Special Flood Hazard Area. This area includes 47 structures in the A Zone, 72 structures in the AE Zone, and 1,402 structures in the V Zone. Therefore, a total of 1,521 structures in the city are in the SFHA. The number of structures in the city total 5,932, including 1,439 garages and accessory structures, 3,918 residential structures, and 575 commercial structures. Approximately 25.64% of the structures in the parish are in the SFHA.

Table 12: City of Mandeville Structures and Policies

	SFHA			B, C & X Zones		
Location	Number of Buildings	Number of Policies	Percentage (%)	Number of Buildings	Number of Policies	Percentage (%)
City of Mandeville	1,521	1,385	91.1%	3,512	1,335	38.0%

There are 1,521 structures in the SFHA, and 1,385 policies. Therefore, approximately 91.1% of the structures in the SFHA have flood insurance. In addition, there are 3,512 structures outside of the SFHA, and 1,335 policies. Therefore, approximately 38.0% of the structures in the non-SFHA have flood insurance.

Occupancy	Number of Policies	Percentage of Total Policies	Number of Buildings	Percentage of Buildings w/ Policies	Total Coverage
Residential	2,424	91.1%	3,918	61.9%	$632,819,000
Non-Residential	237	8.9%	2,014	11.8%	$88,967,400
Total	2,661	100.0%	5,932	44.9%	$721,786,400

There are a total of 3,918 residential structures in the City of Mandeville, 2,424 of which have insurance coverage. Therefore, 91.1% of residential structures in the city have insurance coverage. There are a total of 2,014 non-residential structures in the City of Mandeville, 237 of which have flood insurance coverage. Therefore, 8.9% of non-residential structures have insurance coverage. Throughout the city, approximately 44.9% of structures have insurance coverage.

Map Analysis

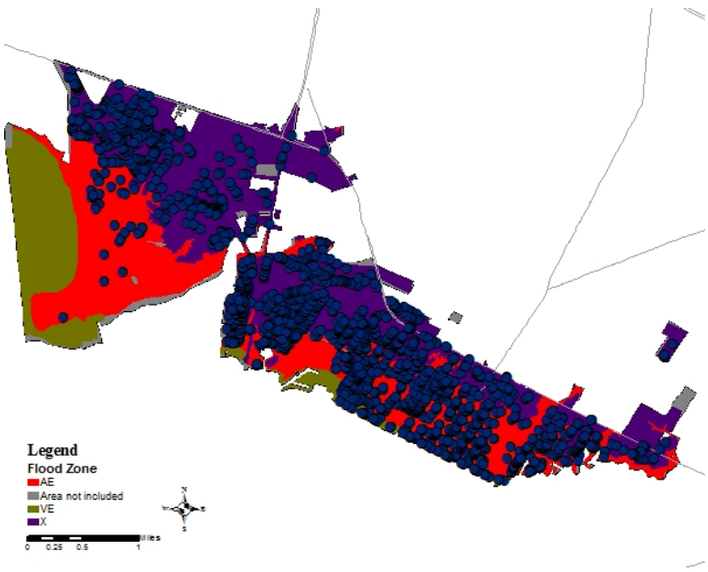

Figure 14: City of Mandeville Flood Insurance Policies

The City of Mandeville has a large representation of policies in its populated areas. In the southern part of the city, there are 78 acres of undeveloped land. The northwest part of the city is primarily lakefront. In addition, there are gaps in policies where Bayou Castine and the cemetery are located. There are some policy gaps in Old Mandeville, and city officials will conduct outreach to increase policies in that area.

City of Mandeville Current Coverage and Recommendations

Approximately 30.2% of the structures in the parish are located in the SFHA, while 69.8% of the structures in the parish are located outside of the SFHA. The flood insurance policy numbers reveal that 91.1% of structures in the SFHA have flood insurance coverage, and 38% of structures in the non-SFHA have flood insurance coverage. In addition, 91.1% of residential structures and 8.9% of non-residential structures have insurance. Approximately 44.9% of structures in the city have flood insurance coverage. The analysis of the mapped policies revealed that there are gaps in the Old Mandeville section of the city, so the city will conduct outreach to increase flood insurance policies in that area. The outreach project is listed in Appendix A.

City of New Orleans Flood Insurance Study-

The most recent Flood Insurance Study (FIS) for Orleans Parish was published by FEMA in September of 1983. The FIS indicates that the past history of flooding within the City suggests that flooding may occur during any season of the year. In the cooler months, the area is subject to heavy rainfalls resulting from fontal passages. In the summer months, heavy rainfalls result from convective thundershowers. In the late summer, hurricanes accompanied by rainfall and super-elevated water-surface elevations (storm surge)

pose the largest threat of flooding in the area. The FIS indicates that the principal sources of flooding in the Parish are rainfall ponding, or hurricane or tropical storm surges from Lake Pontchartrain and Lake Borgne. Although significant enhancements and modifications have been made to pump stations and the flood defenses that protect the City since the FIS was produced in 1983, the principal causes of flooding described in the FIS appear unchanged.

Flood Zones in the City of New Orleans

Flood Hazard Areas (SFHAs) and the risk premium zones applicable to the community. Heavy rains are common in New Orleans, and since a large portion of the City lies within the SFHA, a major flood will result in significant property damage to residential and non-residential structures and disruption to the lives of people who live and work in the City. Sixty-nine percent of all structures in Orleans Parish (95,197 structures) lie within the SFHA (Zone A and V) in Orleans Parish. The map also identifies Zone B, which depicts an area of moderate flood risk. The percentage of each flood zone in Orleans Parish is also provided below.

The flood zone designations are defined as follows:

Zone A1-30. 1 percent-annual-chance flooding. These are also known as numbered A Zones (e.g., A7 or A14).

BFEs are shown in these zones Orleans Parish includes A Zones 1-30. Forty percent of Orleans Parish is located in numbered A Zones.

Zone V. Coastal areas with a 1-percent or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26 percent chance of flooding over the life of a 30-year mortgage. No BFEs are shown within these zones. Forty-two percent of the land in Orleans Parish is located in Zone V.

Zone B. Areas of moderate flood hazard, usually the area between the limits of the 1-percent-annual-chance flood and 0.2-percent-annual-chance flood. B Zones are also used to designate base floodplains of lesser hazards, such as areas protected by levees from the 1-percent-annual-chance flood, or shallow flooding areas with average depths of less than 1 foot or drainage areas less than 1 square mile. Eighteen percent of Orleans Parish is located in Zone B.

Level of Flood Insurance Coverage in the City of New Orleans

The below tables and narrative review the commercial and residential buildings in the Special Flood Hazard Area, the number of flood insurance policies in the parish, and map the policies to identify gaps in order to make recommendations about improving flood insurance coverage in the city.

Table 13: City of New Orleans Structures in SFHA, Source: Louisiana Sea Grant

Flood Zones by Property Type (New Orleans)	
Zone	Count
Residential	
0.2 pct annual chance flood hazard	96,018
X Protected By Levee	50,767
Total residential buildings in non-SFHA	146,785

AE	34,030
VE	16
Total residential buildings in SFHA	34,046
Total residential buildings	180,831
Commercial	
0.2 pct annual chance flood hazard	9,128
X Protected By Levee	9,904
Total commercial buildings in non-SFHA	19,032
AE	4,079
VE	36
Total commercial buildings in SFHA	4,115
Total commercial buildings	23,147
Industrial	
0.2 pct annual chance flood hazard	2,159
X Protected By Levee	2,528
Total industrial buildings in non-SFHA	4,687
AE	1,023
VE	177
Total industrial buildings in SFHA	1,200
Total industrial buildings	5,887
Other	
0.2 pct annual chance flood hazard	36
X Protected By Levee	34
Total other buildings in non-SFHA	70
AE	40
VE	348
Total other buildings in SFHA	388
Total other buildings	458
Total buildings in non-SFHA	170,574
Total buildings in SFHA	39,749

Total buildings	210,323

The City of New Orleans has many structures in the Special Flood Hazard Area. This area includes 39,749 structures, made up of 34,046 residential structures, 4,115 commercial structures, 1,200 industrial structures, and 388 other structures. Approximately 18.8% of residential buildings, 17.8% of commercial buildings, 20.4% of industrial buildings, and 84.7% of other buildings are located in the Special Flood Hazard Area. The structures in the city total 210,323. Therefore, approximately 18.9% of the city's structures are located in a Special Flood Hazard Area.

Table 14: City of New Orleans Structures and Policies

	SFHA			B, C & X Zones		
Location	Number of Buildings	Number of Policies	Percentage (%)	Number of Buildings	Number of Policies	Percentage (%)
City of New Orleans	39,749	59,577	100+%	170,574	28,966	17.0%

There are 39,749 structures in the SFHA, and 59,577 policies. Therefore, over 100% of the structures in the SFHA have flood insurance. In addition, there are 170,574 structures outside of the SFHA, and 28,966 policies. Therefore, approximately 17.0% of the structures in the non-SFHA have flood insurance.

Table 15: City of New Orleans Insurance Coverage

Occupancy	Number of Policies	Percentage of Total Policies	Number of Buildings	Percentage of Buildings w/ Policies	Total Coverage
Residential	79,865	93.0%	180,831	44.2%	$66,548,332
Non-Residential	6,022	7.0%	29,492	20.4%	$15,985,079
Total	85,887	100.0%	210,323	40.8%	$82,533,411

There are a total of 180,831 residential structures in the City of New Orleans, 79,865 of which have insurance coverage. Therefore, 44.2% of residential structures in the city have insurance coverage. There are a total of 29,492 non-residential structures in the City of New Orleans, 6,022 of which have insurance coverage. Therefore, 20.4% of non-residential structures have insurance coverage. Throughout the city, approximately 40.8% of structures have insurance coverage.

Map Analysis

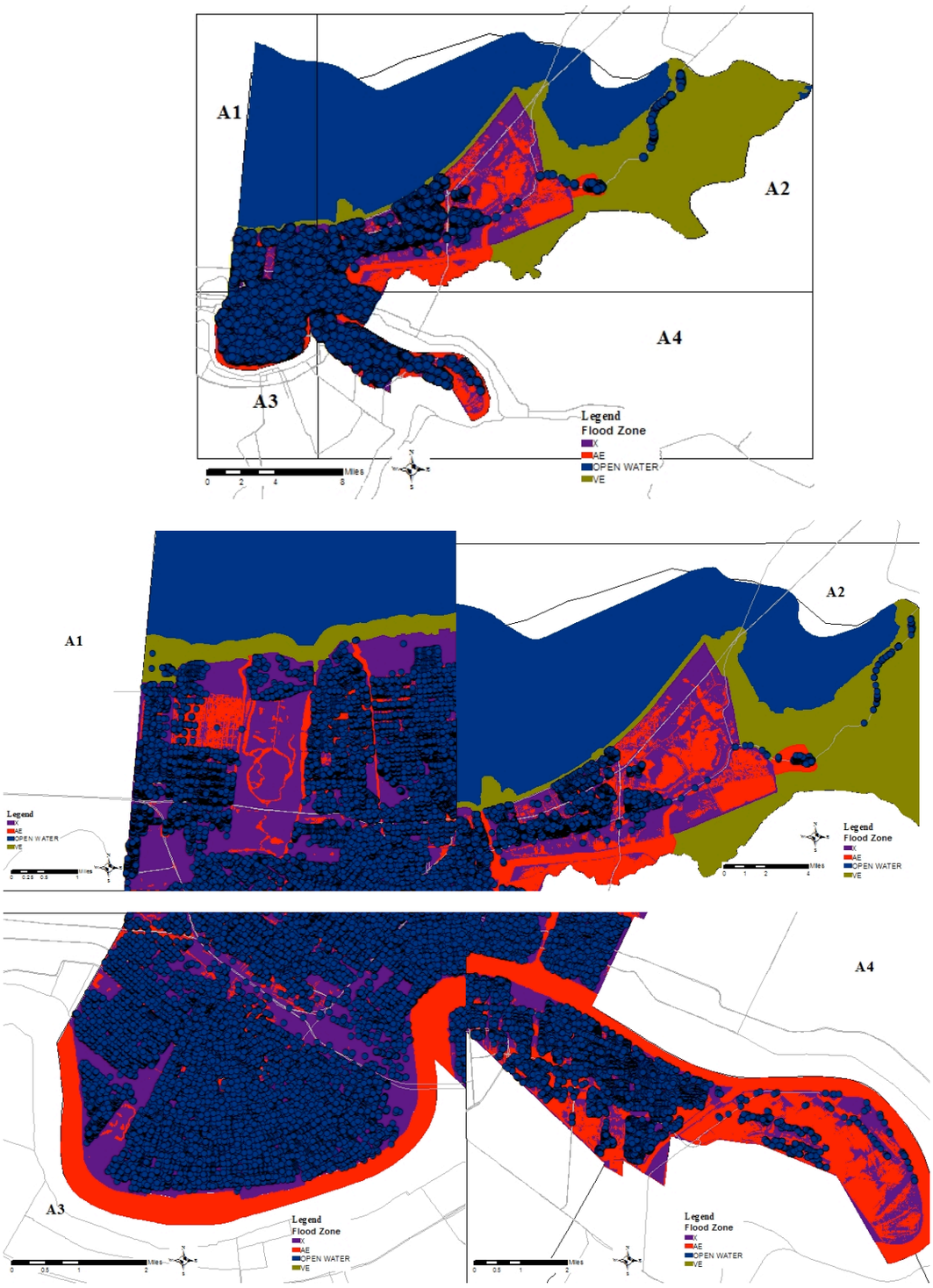

Figure 15: City of New Orleans Flood Insurance Policies

The City of New Orleans has a large representation of policies across its flood zones. However, the map above reveals gaps in the AE and VE zones. The gap in policies in the center of the city is City Park. New Orleans East, in the north eastern part of the city, does not have a lot of policies because it includes swamp, reservoir, and a federal wildlife preserve. Lower Algiers, in the south eastern part of the city, does not have policies because it is undeveloped, and the gap in policies in the Uptown section of the city is due to Audubon Park. Therefore, the most of the gaps in policies revealed on the map are due to open space. In addition, the city is currently going through an appeals process for its DFIRMs.

City of New Orleans Current Coverage and Recommendations

Approximately18.9% of the structures in the city are located in the SFHA, while 81.1% of the structures in the city are located outside of the SFHA. The flood insurance policy numbers reveal that over 100% of structures in the SFHA have flood insurance coverage, and 17.0% of structures in the non-SFHA have flood insurance coverage. In addition, 44.2% of residential structures and 20.4% of non-residential structures have insurance. Approximately 40.8% of all structures in the city have flood insurance coverage. The city is currently going through an appeals process for its DFIRMs, but will continue general outreach to all city residents about acquiring flood insurance.

City of Slidell Flood Overview-

The residents of Slidell are very conscious of their vulnerability to flooding. Within the city there are 7,860 insurance policies with a total "Insurance in force" of $1,834,689,000 and annual premium payments in excess of $6,000,000. The majority of these policies, 5,199, are for properties in the flood zone. However, residents and business owners outside the SFHA also understand their risk, which is evident by the over 2,600 Preferred Risk Policies in the city.

Level of Flood Insurance Coverage in the City of Slidell

The below tables and narrative review the commercial and residential buildings in the Special Flood Hazard Area, the number of flood insurance policies in the city, and map the policies to identify gaps in order to make recommendations about improving flood insurance coverage in the parish.

Table 16: City of Slidell Structures in the SFHA, Source: City of Slidell

City of Slidell Structures in SFHA	
Residential Structures in SFHA	8,580
Commercial Structures in SFHA	1,170
Total Structures in SFHA	9,750
Total Residential Structures	9,515
Total Commercial Structures	1,329
Total Structures in City	10,844
Percentage of Structures in SFHA	89.91%

The City of Slidell has both structures and population in the Special Flood Hazard Area. This area includes 8,580 residential structures, or 88% of the total structures in the city, and 1,170 commercial structures, or 12% of the total structures in the city. Overall, approximately 89.91% of the structures in the city are in the SFHA.

Table 17: City of Slidell Structures and Policies

	SFHA			B, C & X Zones		
Location	Number of Buildings	Number of Policies	Percentage (%)	Number of Buildings	Number of Policies	Percentage (%)
City of Slidell	9,750	4,989	51.2%	1,094	2,833	100%+

There are 9,750 structures in the SFHA, and 4,989 policies. Therefore, approximately 51.2% of the structures in the SFHA have flood insurance. In addition, there are 1,094 structures outside of the SFHA, and 2,833 policies. Therefore, more than 100% of the structures in the non-SFHA have flood insurance. The greater number of policies versus buildings is due to the amount of apartment complexes in the city.

Table 18: City of Slidell Insurance Coverage

Occupancy	Number of Policies	Percentage of Total Policies	Number of Buildings	Percentage of Buildings w/ Policies	Total Coverage
Residential	6,590	90.2%	9,515	69.3%	$1,469,008,100
Non-Residential	717	9.8%	1,329	54.0%	$274,617,000
Total	7,307	100.0%	10,844	67.4%	$1,743,625,100

There are a total of 9,515 residential structures in the City of Slidell, 6,590 of which have flood insurance coverage. Therefore, 69.3% of residential structures in the city have insurance coverage. There are a total of 1,329 non-residential structures in the City of Slidell, 717 of which have flood insurance coverage. Therefore, 54.0% of non-residential structures have insurance coverage. Throughout the city, 67.4% of structures have insurance coverage.

Map Analysis

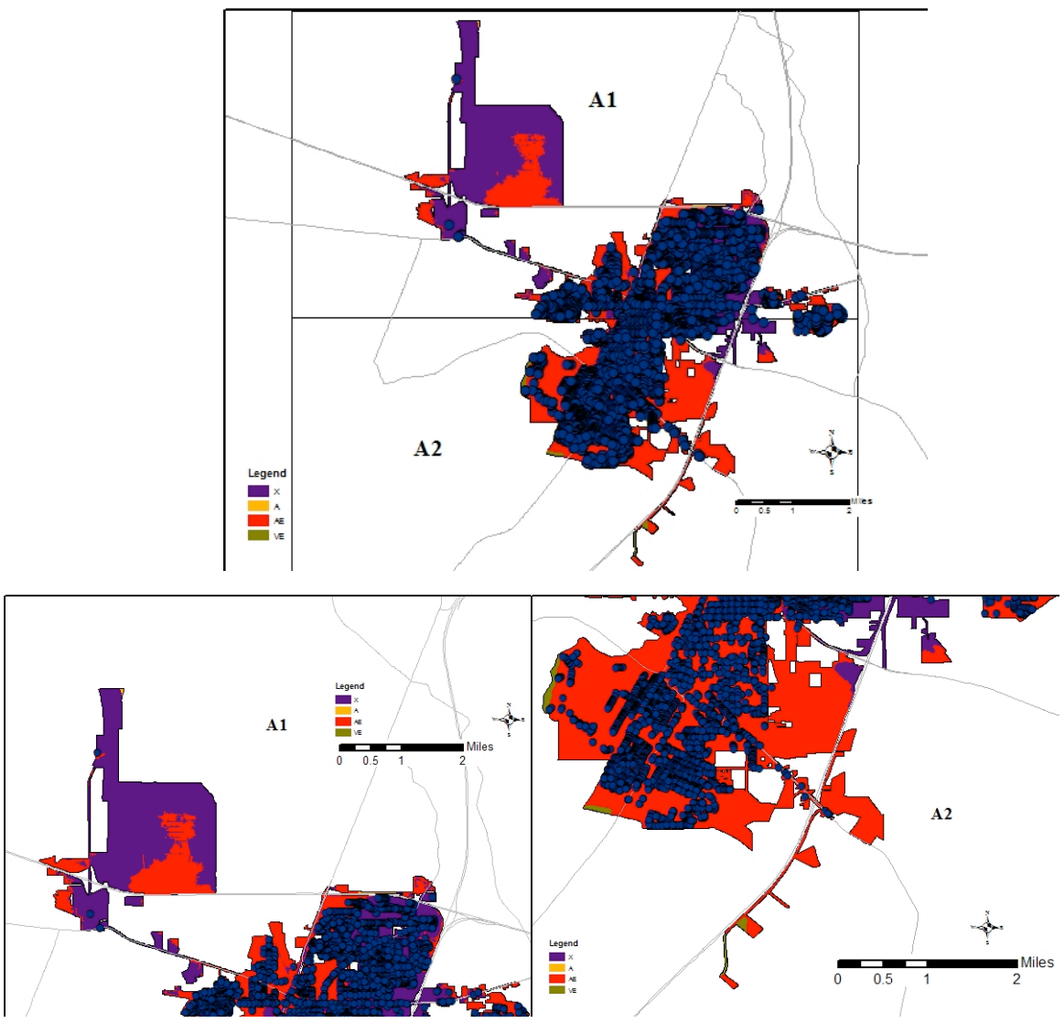

Figure 16: City of Slidell Flood Insurance Policies

The City of Slidell has many flood insurance policies throughout its flood zones. There are also many Preferred Risk Policies in the parish. The above map reveals gaps in the AE zones. In Map A1 of Figure 16 above, the gap in policies in the Southeast quadrant is an apartment complex. Further research into the apartment complex revealed that there are policies in the complex. The northwest gap is made up of military land, wetlands, strip malls and an airport. The gap in the middle of the map is a retention pond and industrial area, and the gap in the western part of the map is a middle school. In Map A2 of Figure 16 above, the northeast gap is an industrial area and high school, the eastern gap is a new town center, and the southeast gaps are a city park and car dealerships. The gap in the southern residential area is an apartment complex, and the gaps in the west are a lake and undeveloped land. Further research revealed that this apartment complex holds many policies as well.

City of Slidell Current Coverage and Recommendations

Approximately 89.91% of the structures in the city are located in the SFHA, while 10.09% of the structures in the city are located outside of the SFHA. The flood insurance policy numbers reveal that 51.2% of structures in the SFHA have flood insurance coverage, and more than 100% of the structures in the non-SFHA have flood insurance coverage. In addition, 69.3% of residential structures and 54.0% of non-residential structures have insurance. Approximately 67.4% of structures in the city have flood insurance coverage. Since most of the city is located in the SFHA, Slidell will continue to target everyone in the city in general for outreach.

St. John the Baptist Flood Insurance Study-

St. John the Baptist Parish's FIS was revised in 1982. This study included a wave height analysis, which revised the original study to include wave crest predictions from storm surge. The original flood insurance study, entitled "Type 5, Flood Insurance Study, Louisiana Coastal Region," predicted still water 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, an additional study was conducted on potential wave damage in St. John the Baptist Parish. A recent revised FIS was adopted in November 2010. The parish is subject to heavy flooding due to Lake Pontchartrain, Lake Maurepas, and Lac Des Allemands effects and the associated wetlands. In St. John, 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.

Flood Zones in St. John the Baptist Parish

Over 87% of the total land area of St. John the Baptist has been designated by FEMA as a Special Flood Hazard Area (SFHA). 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, AE, V and VE are located in the 100-year floodplain. The shore of Lake Maurepas and Pontchartrain are designated as V or VE zones. The rest of the Parish is designated as X zones, or areas in the 500-year floodplain.

Level of Flood Insurance Coverage in St. John the Baptist Parish

The below tables and narrative review the commercial and residential buildings in the Special Flood Hazard Area, the number of flood insurance policies in the parish, and map the policies to identify gaps in order to make recommendations about improving flood insurance coverage in the parish.

Table 19: St. John Structures in the SFHA, Source: FEMA

St. John Structures in SFHA	
Coastal Area in SFHA	205.66
Coastal Structures in SFHA	3,700.00
Coastal Population in SFHA	10,128.00
County Total Area	286.08
County Total Structures	18,726.00
County Total Structures (2010)	18,726.00
County Total Population (2010)	45,924.00
Data Source	NFHL
FEMA Region	Region VI

NAME	St. John the Baptist
Percent of Population in SFHA	22.07
Percentage of Structures in SFHA	21.13
Riverine Area in SFHA	0.00
Riverine Structures in SFHA	0.00
Riverine Population in SFHA	0.00
Total Area in SFHA	205.66
Total Structures in SFHA	3,700.00
Total Population in SFHA	10,128.00

St. John the Baptist Parish has both structures and population in the Special Flood Hazard Area (SFHA). This area includes 3,700 structures, and a population of 10,128. The structures in the parish total 18,726, and the population of the parish is 45,924. Therefore, 19.8% of structures in the parish, and 22.1% of people, are located in the SFHA.

Table 20: St. John Commercial and Residential Buildings by Flood Zone

Flood Zone	Commercial Buildings	Residential Buildings	Total
AE	88	3,757	3,845
VE	2	248	250
Total	90	4,005	4,095

The SFHA in St. John is made up of Zones AE and VE. There are 88 commercial buildings in Zone AE, and 3,757 residential buildings in Zone VE. In addition, there are 2 commercial buildings in Zone VE and 248 residential buildings in Zone VE.

Table 21: St. John Residential Policies

Flood Zone	Residential Policies	Percentage of Number of Buildings	Number of Residences Without Policies
AE	3,268	87.0%	489
VE	21	8.5%	227

Although there are 3,757 residential buildings in Zone AE, only 3,268 (87%) have flood insurance policies. Additionally, only 21 out of the 4,005 residential buildings in Zone VE have flood insurance policies. In other words, only 8.5% of the residential buildings in Zone VE have flood insurance policies.

Table 22: St. John the Baptist Insurance Coverage

Occupancy	Number of Policies	Percentage of Total Policies	Number of Buildings	Percentage of Buildings with Policies	Total Coverage
Residential	6,494	94.7%	18,011	36.1%	$1,689,746,400
Non-Residential	363	5.3%	715	50.8%	$183,773,700
Total	6,857	100.0%	18,726	36.6%	$1,873,520,100

There are a total of 18,011 residential structures in St. John the Baptist Parish, 6,494 of which have flood insurance coverage. Therefore, 36.1% of residential structures in the parish have flood insurance coverage. There are a total of 715 non-residential structures in the parish, 363 of which have flood insurance coverage. Therefore, 50.8% of non-residential structures have flood insurance coverage. Throughout the parish, approximately 36.6% of structures have insurance coverage.

Map Analysis

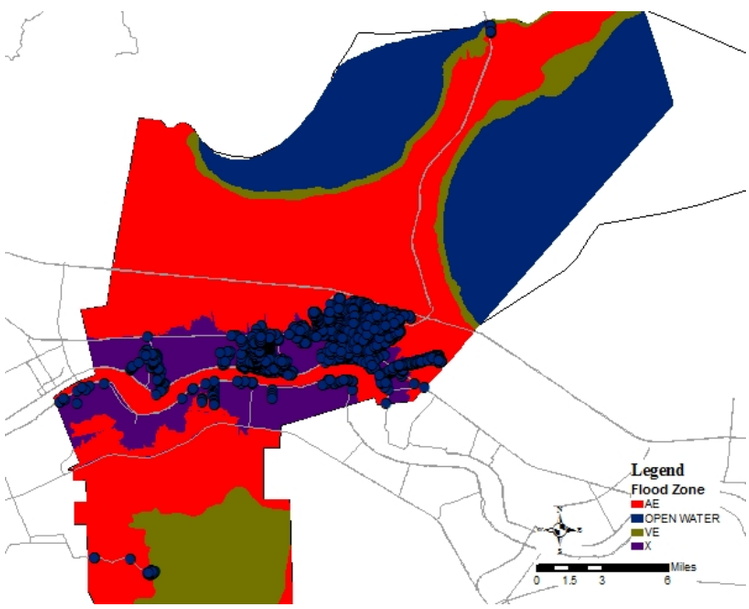

Figure 17: St. John the Baptist Parish Flood Insurance Policies

Most of the populated areas of the parish have flood insurance policies. The above map reveals gaps in the AE and VE zones. There are no policies in the north of the parish because it is made up of marsh and swamp. There is also an industrial area in the north of the parish in the X zone. The west bank of the parish is undeveloped in many areas, and is primarily an X zone in its populated areas. There are some areas of the parish that could increase their insurance policies, including Frenier, Pleasure Bend, and mobile home districts on the west bank. In Pleasure Bend, the flood zone is VE, and a small fraction of the residents have policies.

St. John the Baptist Parish Current Coverage and Recommendations

Approximately 19.8% of the structures in the parish are in the SFHA, while 80.2% of the structures in the parish are located outside of the SFHA. The flood insurance policy numbers reveal that 80.3% of the structures in the SFHA have flood insurance coverage, and 30.5% of structures in the non-SFHA have flood insurance coverage. In addition, 36.1% of residential structures and 50.8% of non-residential structures have insurance. Approximately 36.6% of all structures in the parish have flood insurance coverage. The analysis of the mapped policies revealed that there are gaps in the Frenier and Pleasure Bend areas. Therefore, Parish officials will conduct outreach to the hunting club in the Frenier area to increase flood insurance policies, and will conduct outreach in the Pleasure Bend area and mobile home district areas as well (see Appendix A). Similarly, the flood insurance policy numbers reveal that there are gaps in the parish's VE zone. While 87% of households in the AE zone have policies, only 8.5% of

households in zone VE have policies. Outreach to VE zones throughout the parish will help to increase flood insurance coverage (see Appendix A).

Tangipahoa Parish Flood Insurance Study-

The most recent Flood Insurance Study (FIS) for Tangipahoa Parish was published by FEMA in July of 2010. An FIS is a compilation and presentation of flood risk data for specific watercourses, lakes, and coastal flood hazard areas within a community. When a flood study is completed for the NFIP, the information and maps are assembled into an FIS. The FIS indicates most flooding within the Parish occurs during the winter and spring months, however flooding can occur anytime during the year. During the late summer and fall, very heavy rainfall associated with hurricanes can cause floods. Flooding along Lake Pontchartrain and Lake Maurepas can occur as a result of either headwater floods, wind-driven wave action from hurricanes, or from a combination of both.

The FIS produced for the Parish is also supported by a Flood Insurance Rate Map (FIRM), usually divided into individual FIRM panels. The FIRM is the official map of a community on which FEMA has delineated both the Special Flood Hazard Areas (SFHAs) and the risk premium zones applicable to the community. SFHAs are the areas subject to inundation by the base (1-percent annual chance) flood. These hazard zones are Zone A and V in Tangipahoa Parish.

Level of Flood Insurance Coverage in Tangipahoa Parish

The below tables and narrative review the commercial, residential, agricultural and industrial buildings in the Special Flood Hazard Area, the number of flood insurance policies in the parish, and map the policies to identify gaps in order to make recommendations about improving flood insurance coverage in the parish.

Table 23: Tangipahoa Parish Structures in SFHA, Source: Louisiana Sea Grant

Flood Zones by Property Type (Tangipahoa)	
Zone	Count
Residential	
A	11,505
AE	6,131
Total residential buildings in SFHA	17,636
X	33,798
X500	3,456
Total residential buildings in non-SFHA	37,254
Total residential buildings	54,890
Commercial	
A	77
AE	107
Total commercial buildings in SFHA	184
X	255
X500	79

Total commercial buildings in non-SFHA	334
Total commercial buildings	518
Industrial	
A	98
AE	158
VE	5
Total industrial buildings in SFHA	261
X	225
X500	44
Total industrial buildings in non-SFHA	269
Total industrial buildings	530
Agriculture, Vacant and Forested	
A	6,458
AE	23,281
VE	851
Total agriculture buildings in SFHA	30,590
X	14,043
X500	1,091
Total agriculture buildings in non-SFHA	15,134
Total agriculture buildings	45,733
Parcels within city boundaries not included in parish[6]	
A	6,890
AE	11,346
VE	90
Total city parcels in SFHA	18,326
X	27,969
X500	1,989
Total city parcels in non-SFHA	29,958
Total city parcels	48,284

[6] The Tangipahoa Parish data did not include zoning information within the urban areas of Kentwood, Amite, Independence, Hammond, Ponchatoula and Manchac. Those areas have separate zoning regulations and designations and were not available as part of this project.

Total buildings in SFHA	66,997
Total buildings in non-SFHA	82,949
Total buildings	149,946

Tangipahoa Parish has both structures and population in the Special Flood Hazard Area. This area includes 66,997 structures, made up of 17,636 residential structures, 184 commercial structures, 261 industrial structures, 30,590 agricultural structures, and 18,326 city parcels. Approximately 32.1% of residential buildings, 35.5% of commercial buildings, 49.2% of industrial buildings, 66.9% of agricultural buildings, and 38.0% of city parcels are located in the Special Flood Hazard Area. The structures in the parish total 149,946. Therefore, approximately 44.7% of the parish's structures are located in the Special Flood Hazard Area.

Table 24: Tangipahoa Parish Structures and Policies

	SFHA			B, C & X Zones		
Location	Number of Buildings	Number of Policies	Percentage (%)	Number of Buildings	Number of Policies	Percentage (%)
Tangipahoa Parish	66,997	1,726	2.6%	82,949	2,796	3.4%

There are 66,997 structures in the SFHA, and 1,726 policies. Therefore, approximately 2.6% of the structures in the SFHA have flood insurance. In addition, there are 82,949 structures outside of the SFHA, and 2,796 policies. Therefore, approximately 3.4% of the structures in the non-SFHA have flood insurance.

Table 25: Tangipahoa Parish Insurance Coverage

Coverage	Number of Policies	Percentage of Total Policies	Number of Buildings	Percentage of Buildings w/ Policies	Total Coverage
Residential	4,374	97.2%	54,890	8.0%	$1,082,969,863
Non-Residential	125	2.8%	46,597	0.2%	$154,837
Total	4,499	100.0%	50,073	9.0%	$1,083,124,700

There are a total of 54,890 residential structures in Tangipahoa Parish, 4,374 of which have insurance coverage. Therefore, 8.0% of residential structures in the parish have insurance coverage. There are a total of 46,597 non-residential structures in the parish, 125 of which have insurance coverage. Therefore, 0.2% of non-residential structures have insurance coverage. Throughout the parish, approximately 9.0% of structures have insurance coverage.

Map Analysis

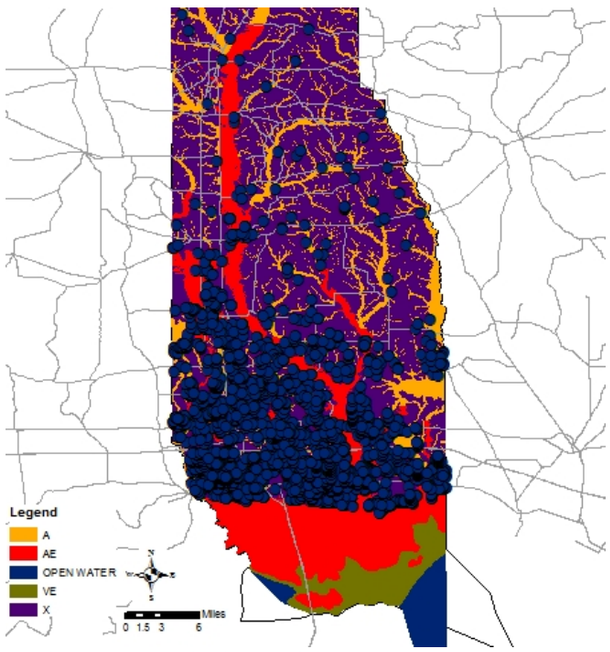

Figure 18: Tangipahoa Parish Flood Insurance Policies

Tangipahoa Parish has many flood insurance policies in its populated areas. The map reveals gaps in the A, AE and VE zones. The southernmost part of the parish is made up of a 30,000 acre wildlife area, which is dead restricted by the Louisiana Department of Wildlife and Fisheries, so there are no residences in that area. There are camps along the Tangipahoa River that are secondary properties and often do not carry flood insurance. It is difficult to conduct outreach to this area, however, as it is only accessible by boat.

Tangipahoa Parish Current Coverage and Recommendations

Approximately 44.7% of the structures in the parish are in the SFHA, while 55.3% of the structures in the parish are located outside of the SFHA. The flood insurance policy numbers reveal that 2.6% of structures in the SFHA have flood insurance coverage, and 3.4% of structures in the non-SFHA have flood insurance coverage. In addition, 8.0% of residential structures and 0.2% of non-residential structures have insurance. Approximately 9.0% of all structures in the parish have flood insurance coverage. The parish will target populated areas in the SFHA as well as secondary properties for flood insurance promotion (see Appendix A).

Terrebonne Parish Flood Insurance Study-

The most recent official Flood Insurance Study for Terrebonne Parish is dated 1984. However, planning efforts refer to the FIS that supports the 2008 DFIRM maps. The Parish is appealing the maps to require that the non-accredited levees and other features in the floodplain are taken into account when the flood risk maps are developed. The parish has a series of 8 to 10 foot levees that have been constructed and maintained by the Parish Levee District. Many of these levees mirror the intended footprint of the Morganza to the Gulf footprint.

Level of Flood Insurance Coverage in Terrebonne Parish

The below tables and narrative review the commercial and residential buildings in the Special Flood Hazard Area, the number of flood insurance policies in the parish, and map the policies to identify gaps in order to make recommendations about improving flood insurance coverage in the parish.

Table 26: Terrebonne Structures in SFHA, Source: Louisiana Sea Grant

Flood Zones by Property Type (Terrebonne)	
Zone	**Count**
Residential	
0.2 pct annual chance flood hazard	16,157
Total residential buildings in non-SFHA	16,157
A	1,127
AE	22,336
VE	2,671
Total residential buildings in SFHA	26,134
Total residential buildings	42,291
Commercial	
0.2 pct annual chance flood hazard	9,591
Total commercial buildings in non-SFHA	9,591
A	321
AE	7,582
VE	1,787
Total commercial buildings in SFHA	9,690
Total commercial buildings	19,281
Industrial	
0.2 pct annual chance flood hazard	841
Total industrial buildings in non-SFHA	841
A	0
AE	2,526
VE	83
Total industrial buildings in SFHA	2,609
Total industrial	3,450

buildings	
Total buildings in non-SFHA	26,589
Total buildings in SFHA	38,433
Total Buildings	65,022

Terrebonne Parish has many structures in the Special Flood Hazard Area. This area includes 38,433 structures, made up of 26,134 residential structures, 9,690 commercial structures, and 2,609 industrial buildings. Approximately 61.8% of residential structures, 50.3% of commercial structures, and 75.6% of industrial structures are located in the Special Flood Hazard Area. The structures in the parish total 65,022. Therefore, approximately 59.1% of structures in the parish are in a Special Flood Hazard Area.

Table 27: Terrebonne Parish Structures and Policies

	SFHA			B, C & X Zones		
Location	Number of Buildings	Number of Policies	Percentage (%)	Number of Buildings	Number of Policies	Percentage (%)
Terrebonne Parish	38,433	5,465	14.2%	26,589	8,263	31.1%

There are 14,238 structures in the SFHA, and 5,465 policies. Therefore, approximately 14.2% of the structures in the SFHA have flood insurance. In addition, there are 26,589 structures outside of the SFHA, and 8,263 policies. Therefore, approximately 31.1% of the structures in the non-SFHA have flood insurance.

Table 28: Terrebonne Parish Insurance Coverage

Occupancy	Number of Policies	Percentage of Total Policies	Number of Buildings	Percentage of Buildings w/ Policies	Total Coverage
Residential	11,003	92.1%	42,291	26.0%	$5,812,149
Non-Residential	938	7.9%	22,731	4.1%	$1,668,127
Total	11,941	100.0%	65,022	18.4%	$7,480,276

There are a total of 42,291 residential structures in the Terrebonne Parish, 11,003 of which have insurance coverage. Therefore, 26.0% of residential structures in the parish have insurance coverage. There are a total of 22,731 non-residential structures in Terrebonne Parish, 938 of which have insurance coverage. Therefore, 4.1% of non-residential structures have insurance coverage. Throughout the parish, approximately 18.4% of structures have insurance coverage.

Map Analysis

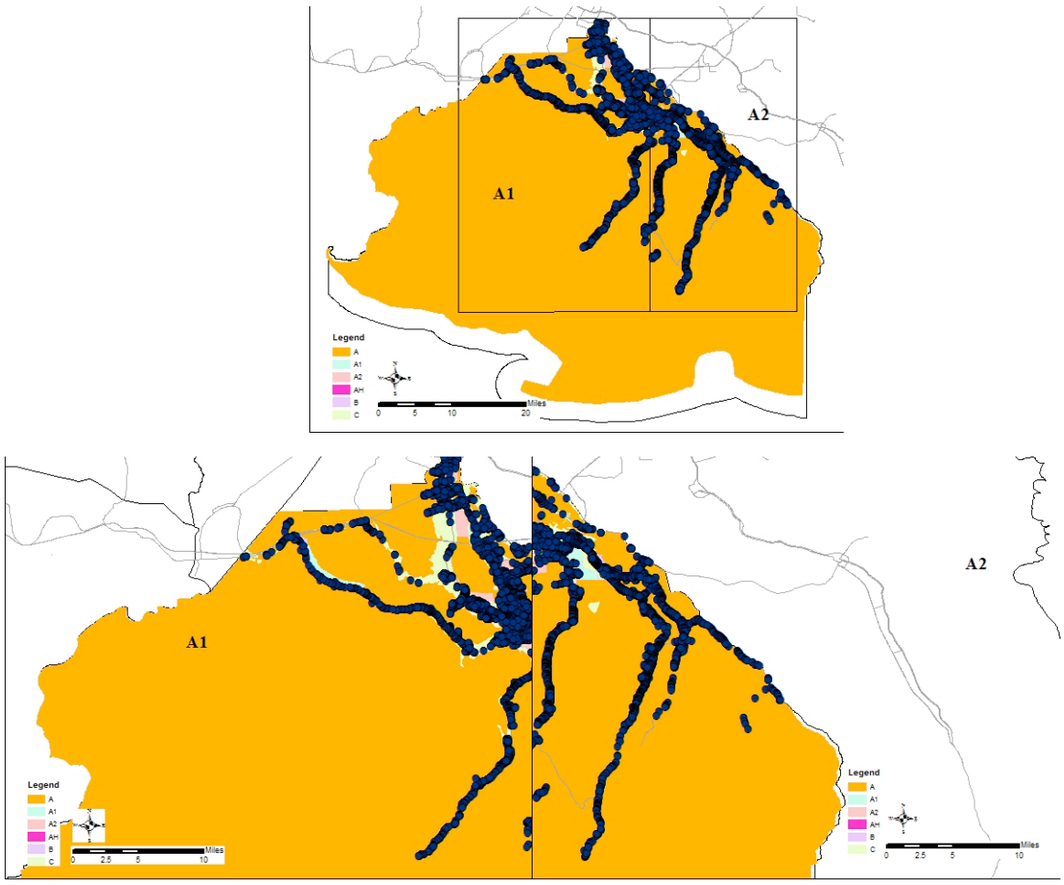

Figure 19: Terrebonne Parish Flood Insurance Policies

Although only 8% of the land in Terrebonne Parish can be developed, the parish has many flood insurance policies in its populated areas. The map reveals gaps in the A zones of the parish. In the west part of the parish, along highway 90, there are gaps in policies, as the area is sparsely populated and the commercial areas of the parish have gaps as well.

Terrebonne Parish Current Coverage and Recommendations

Approximately 59.1% of the structures in the parish are located in the SFHA, while 40.9% of the structures in the parish are located outside of the SFHA. The flood insurance policy numbers reveal that 14.2% of structures in the SFHA have flood insurance coverage, and 31.1% of structures in the non-SFHA have flood insurance coverage. In addition, 26.0% of residential structures and 4.1% of non-residential structures have insurance. Approximately 18.4% of all structures in the parish have flood insurance coverage. As there are gaps in insurance coverage throughout the parish, the parish will continue to target all residents in its flood insurance outreach projects (see Appendix A).

Flood Insurance Assessment Conclusion

While all of the communities in the FLOAT region have structures in the SFHA with flood insurance, they could all improve their insurance coverage. The communities are tackling this issue by conducting outreach projects, revising flood maps, and promoting flood insurance throughout the area.

Repetitive Flooding

FEMA defines repetitive loss properties as those that have received repetitive flooding, in which the NFIP paid two or more claims of more than $1,000 in flood insurance within a ten year period. FEMA defines severe repetitive loss properties as those that have received over $20,000 in flood insurance from 4 or more claims that were greater than $5,000 each, or properties that have flooded more than once, and in which the flood claim payments are greater than the value of the property. The localities in the FLOAT region contain both repetitive loss and severe repetitive loss properties.

St. Tammany Parish Repetitive Flooding

Some areas in St. Tammany Parish flood more frequently than others. Properties closest to the lakefront or streams, as well as those in areas with drainage problems, will be flooded more often than other properties, even more than those in the mapped 100-year floodplain. In 2004, there were 1,345 repetitive loss properties in St. Tammany Parish. This increased to 2,461 by 2008 after Hurricanes Katrina/Rita (September 2005). The majority of the repetitive flooding problem is in the unincorporated areas and Slidell.

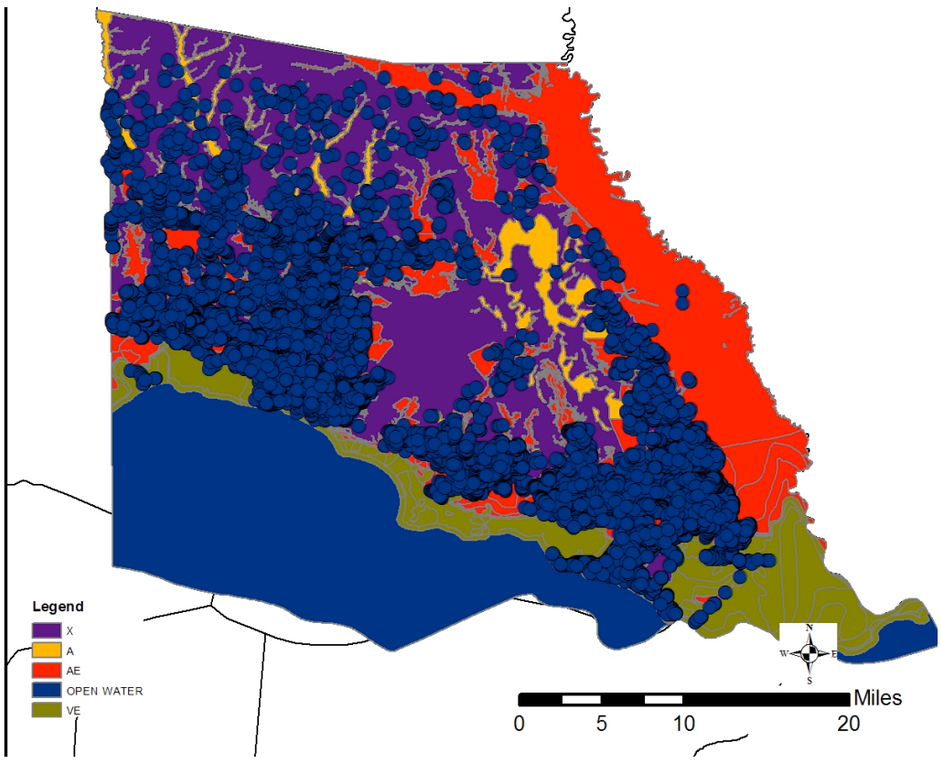

Figure 20: St. Tammany Parish Repetitive Flood Loss Properties Map

City of Mandeville Repetitive Flooding-

As part of the process to reduce or eliminate repetitive flooding to structures across the United States, 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. The City of Mandeville has approximately 69 Repetitive Loss and Severe Repetitive Loss Properties. Review of the repetitive loss properties helps to identify flood prone areas within the city. Currently, 3,034 are structures located within the City of Mandeville. The city has filed insurance claims totaling approximately $33,976,665. These repetitive loss areas have been specifically targeted for mitigation assistance through FEMA elevation and acquisition grants.

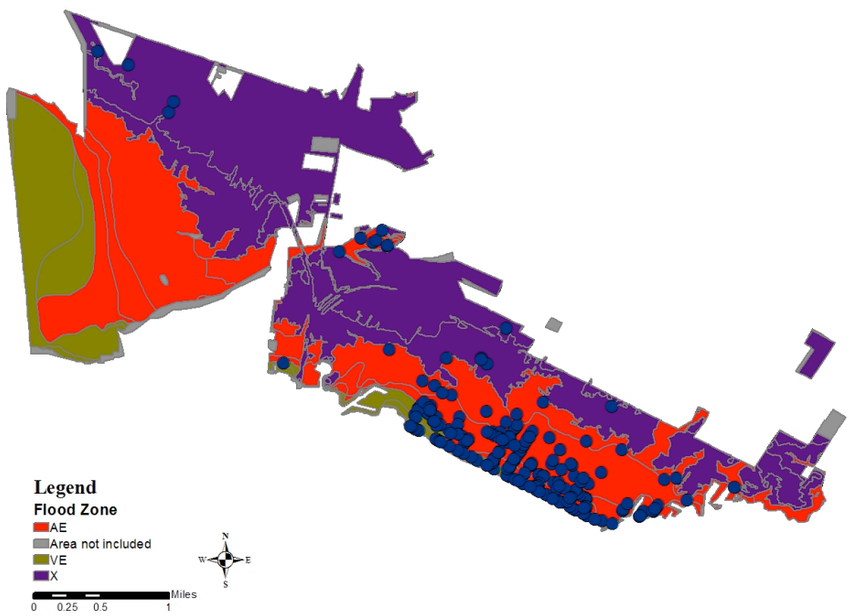

Figure 21: City of Mandeville Repetitive Flood Loss Properties Map

City of New Orleans Repetitive Flooding

Analysis of National Flood Insurance Program Repetitive Loss Records

This flood risk assessment method is based on an analysis of NFIP data for repetitive flood loss (RL) properties. As of September 2009, Orleans Parish had 6,397 such properties, based on a query of the FEMA BureauNet NFIP interface. The query results indicated that 623 of the repetitive loss properties had been mitigated through prior action taken by Orleans Parish, GOHSEP, and/or FEMA. A column is included in the query results indicating that a site has been mitigated, but does not specify the date or type of mitigation action, such as demolition or elevation. After deducting the 623 mitigated properties, there are a total of 5,774 remaining repetitive loss properties in Orleans Parish at the date of the query. Of this total, there are 5,137 residential and 637 non-residential properties. SRL properties are discussed in greater detail further in this section. Approximately 11 percent of the repetitive loss properties in the

Parish are non-residential. The majority of the paid claims, approximately 68 percent, are associated with residential building damages. This skew in the ratio of numbers of non-residential RL properties (11 percent of sample) vs. the value of claims for those properties (32 percent of the total), is fairly typical, and is partly because the contents claims payments for nonresidential properties are about three times higher per claim than residential ones.

Severe Repetitive Loss Properties

As of January 2010, Orleans Parish had 5,972 properties on the NFIP Severe Repetitive Loss (SRL) list. NFIP Severe Repetitive Flood Loss properties are found in 71 Parish neighborhoods, although it should be recognized that both the overall number of SRL properties in the Parish and the numbers in specific neighborhoods are subject to change based on the technical definition of severe repetitive loss, and on the fact that some structures may no longer be present. As of the date of the query, the Broadmoor neighborhood had the highest number of SRL properties at 617, followed by Audubon with 461. As part of the SRL grant program, FEMA provided states with actuarial risk calculations (to show the maximum benefits of mitigation) for 30-year and 100-year planning horizons. The data provided by FEMA includes more details about claims histories at the policy level, but that information is not included here due to data confidentiality restrictions.

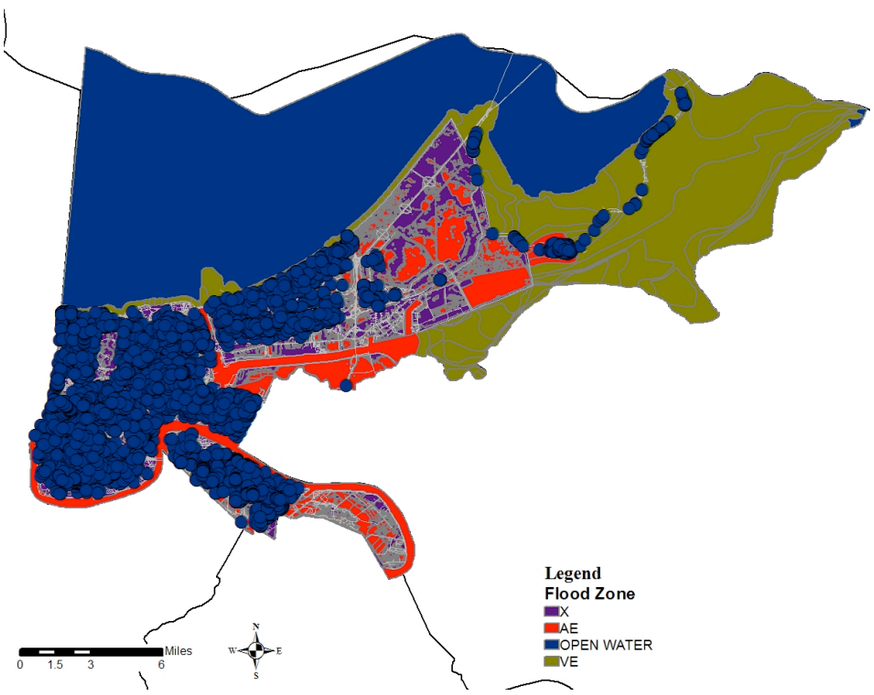

Figure 22: City of New Orleans Repetitive Flood Loss Properties Map

City of Slidell Repetitive Flooding-

One of the City of Slidell's challenges is repetitive losses. As of September 2013, the city has 678 repetitive loss properties, of which 295 are severe repetitive losses. Because of these high numbers, the City is pursuing several methods to reduce risk, including assisting residents to apply for home elevation grants; acquisition and demolition of at risk properties; construction of new local government and privately built levees; new pumping capacity and flood gates at Bayou Patassat; capital improvements to drainage canals; and an aggressive litter abatement program.

The fact remains that the majority of the city is located in the SFHA and there are no large scale projects to protect the city from flooding underway. Therefore, the City must mitigate against the risk of flooding through a combination of ordinances, codes, design, and capital projects. To unify these efforts, the city is in the last stage of replacing several of its ordinances, to include, zoning, subdivision regulation, flood prevention, and storm water management, with a Unified Development Code, which will provide for a more holistic and integrated approach to hazard mitigation.

Key to the city's efforts remains its outreach programs intended to inform its residents and business owners what they can do to mitigate their individual risk and to speed their recovery from a flood event.

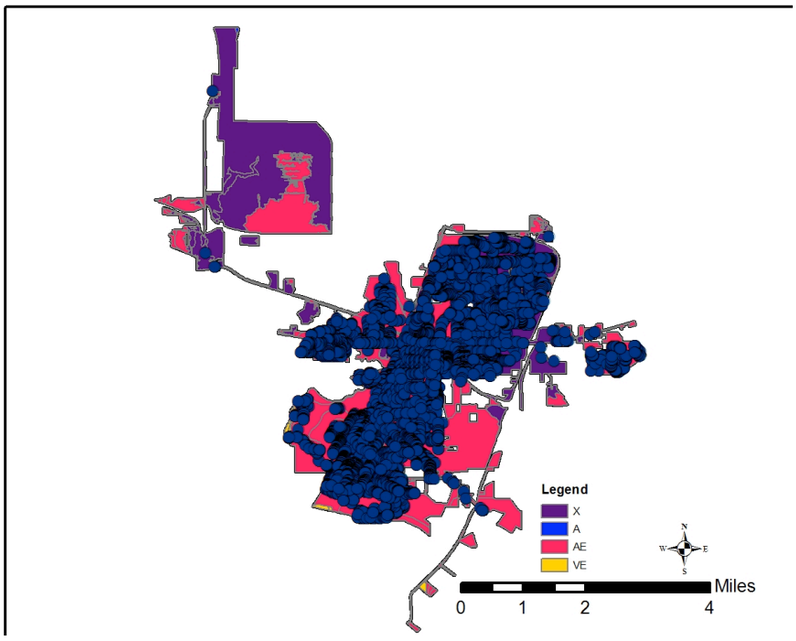

Figure 23: City of Slidell Repetitive Flood Loss Properties Map

St. John the Baptist Parish Repetitive Flooding-

St. John presently lists 216 repetitive loss properties, 11 of which are severe repetitive loss properties. Prior to Hurricane Isaac, which occurred in August 2012, the repetitive loss property list consisted of 79 properties. Due to this event, funding has been allotted for the proposed West Shore Lake Pontchartrain Levee. St. John is also taking advantage of FEMA grant funds for elevation and acquisition, along with recently entering into a contract to perform canal repair, clearing, and drainage work for twenty individual drainage canals. St. John was also awarded a $1,332,604 Gustav/Ike Community Development Block Grant (CDBG) to improve water runoff within the target areas. In addition to the in-house maintenance schedule for canal cleaning, St. John has partnered with various state entities, such as the Lafourche Basin Levee District and the U.S. Coast Guard, to clean other canals throughout the parish. The weed control program implemented in the summer of 2013 will continue to address forty-six canals simultaneously with the canal cleaning project. These projects, combined with the systematic assessment and cleaning of storm drains in target areas, will improve parish-wide drainage. Additional drainage projects are under discussion in order to address remaining drainage issues exposed during Hurricane Isaac.

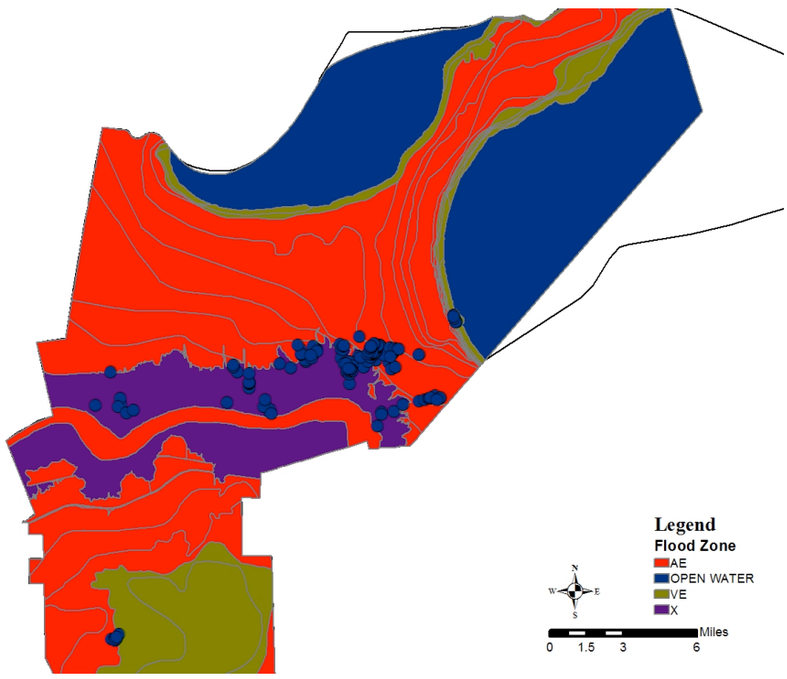

Figure 24: St. John the Baptist Parish Repetitive Flood Loss Properties Map

Tangipahoa Parish's Repetitive Flooding-

As part of the process to reduce or eliminate repetitive flooding to structures across the United States, 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. Tangipahoa Parish has approximately 154 Repetitive Loss and Severe Repetitive Loss Properties. These areas have been specifically targeted for mitigation assistance through FEMA elevation and acquisition grants.

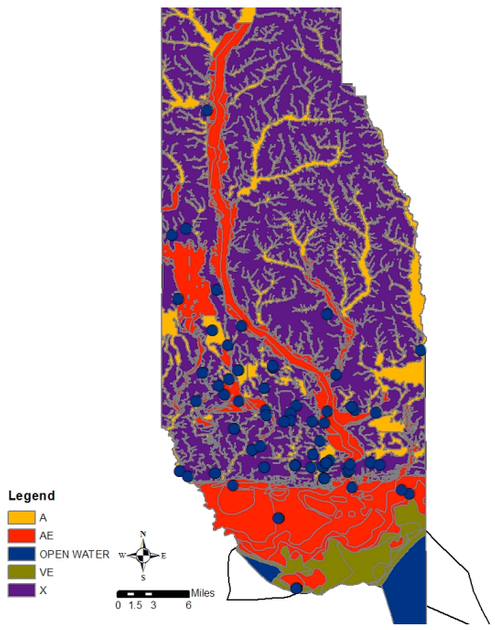

Figure 25: Tangipahoa Parish Repetitive Flood Loss Properties Map

Terrebonne Parish's Repetitive Flooding-

Terrebonne Parish suffered 2,500 flooded residential structures in each of hurricanes Rita and Ike, following damages from hurricanes Lili and Andrew and tropical storms Isidore and Allison. After aggressively pursuing home elevation projects, the parish has approximately 1,368 mitigated and 633 unmitigated repetitive loss structures, according to the latest lists provided from FEMA. This does not reflect the uninsured losses to the parish, which are very difficult to establish. The parish targets recruitment efforts for funding to elevate or demolish homes on the repetitive loss list, or those structures on record as substantially damaged that will be required by law to come into compliance with the parish Flood Damage Prevention Ordinance.

The parish is pursuing multiple lines of defense to reduce flood and wind risks, including options to provide affordable flood insurance, promotions of flood insurance, building codes, enforcement of the flood ordinance, enhanced pump station capacities, generators for resilience, flood gates, and improved and integrated levees.

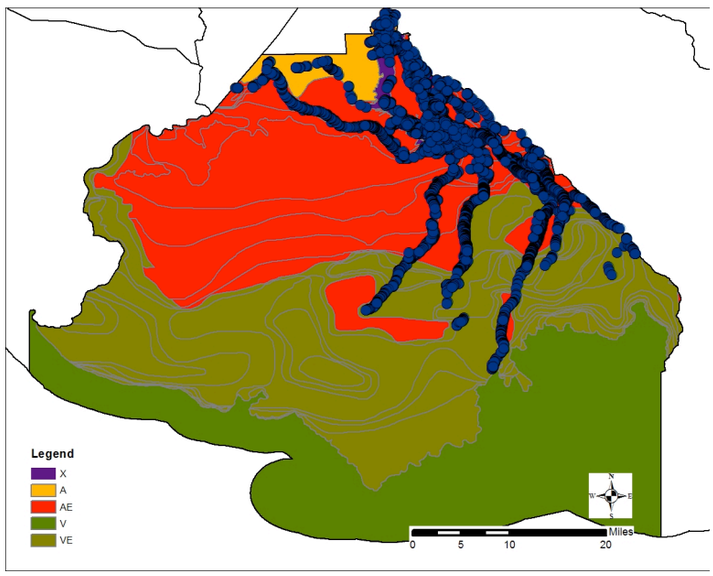

Figure 26: Terrebonne Parish Repetitive Flood Loss Properties Map

Other Public Information Efforts

The outreach projects for the FLOAT PPI are listed in Appendix A. The current ongoing projects are listed first, and they are organized by community. The stakeholder projects and new projects, which are FLOAT-wide, are listed below the current ongoing projects. Each project includes details about the parish, the project itself, the project mechanism, the office, the subject matter, the frequency, the target audience, the activity, the message, and the desired message outcome.

There are also outreach projects that fall under other public information initiatives, including Activity 320 – Map Information Service, Activity 340 – Hazard Disclosure, Activity 350 – Flood Protection Information Website, Activity 360 – Flood Protection Assistance, Activity 370 – Flood Insurance Assessment, Activity 540 – Drainage System Maintenance, and Activity 610 – Flood Warning and Response. The outreach projects that fall under those activities include the following.

Activity 320 – Map Information Service

Activity 320 refers to map information service, and includes mapped information of flood zones, target audiences for the service, and the best ways to reach that audience. The outreach projects that qualify for Activity 320 are listed below:

SJ14, SJ20 – St. John the Baptist Parish provides mapping information by displaying their map throughout the parish. The map includes flood zone information, drainage, and repetitive loss territories. Parish officials will conduct outreach to the hunting club in the Frenier area to increase flood insurance policies, and will conduct outreach in the Pleasure Bend area and mobile home district areas as well.

NO21 – The City of New Orleans provides GIS mapping information through the Nola.gov property viewer. The viewer includes information on flood maps, drainage maps, and repetitive loss territories. The city encourages all of its residents to use the viewer.

STK1 – LSU AgCenter provides an online map tool located at floodmaps.lsuagcenter.com. The website offers flood zone information of both the FIRM and DFIRM maps throughout Louisiana. All residents of Louisiana are encouraged to visit the map and learn about their flood zone.

FL4 – Floodplain managers from across Louisiana attend the New Orleans Home and Garden Show to share LSU AgCenter's website, floodmaps.lsuagcenter.com. The floodplain managers looked up properties for interested attendees, and explained the flood maps to the residents.

Activity 340 –Hazard Disclosure

Activity 340 involves the disclosure of flood hazards, particularly that real estate agents should disclose those hazards to potential homebuyers. The outreach projects that qualify for Activity 340 are listed below:

NO24 – The City of New Orleans promotes hazard disclosure by offering property disclosure forms to the Realtor Association. These forms allow realtors to inform potential homeowners if they are in a flood zone, and encourage homeowners to purchase flood insurance.

NO27 – The City of New Orleans provides brochures to realtors at luncheons. These brochures contain information about flood insurance and retrofitting homes for better flood protection. The realtors are encouraged to give these brochures to potential homeowners.

FL12 – All FLOAT members notify their realtors about hazard disclosure with an email that contains a brochure. This brochure details flood insurance and retrofitting information for prospective homebuyers. The realtors are encouraged to give these brochures to potential homeowners.

Activity 350 – Flood Protection Information Website

Activity 350 includes flood protection websites which contain flood protection messages and warning, safety and evacuation information. The below websites cover the 6 CRS priority topics, as well as the additional topics mentioned in the PPI: protect yourself and your property from hurricanes, be prepared for natural hazards, as well as general flood education.

The outreach projects that qualify for Activity 350 are listed below:

SJ6 – St. John the Baptist Parish's Facebook, Twitter, and main website all contain information on preparing for natural hazards such as flooding and hurricanes, and protecting life and property from those hazards. The website and social media aim to increase the number of policies and retrofits in the parish.

SJ7 – St. John's First Call Emergency Notification is a weather notification alert system that alerts residents of emergency weather conditions year round. The goal of the system is to keep residents safe from weather hazards by increasing the number of people who are aware of the hazard.

NO19 – The City of New Orleans' website, NolaReady, provides hazard mitigation flood awareness and assistance. The website details how to protect life and property from natural hazards. The goal of the website is to increase the number of policies and retrofitted homes in the city.

NO22 – The City of New Orleans' flood safety website includes information on flood safety and warnings, flood protection measures and drainage system maintenance. The aim of the website is to increase the number of policies and retrofitted homes in the parish.

STK1 – LSU AgCenter provides an online map tool located at floodmaps.lsuagcenter.com. The website offers flood zone information of both the FIRM and DFIRM maps throughout Louisiana. All residents of Louisiana are encouraged to visit the map and learn about their flood zone. In addition to flood zone information, the website contains information on base flood elevations, and how to retrofit your home to be above the base flood.

STK5 – UNO-CHART's website floodhelp.uno.edu contains information on preparing and responding to floods, insurance, drainage, and floodplain management. The website includes messages 1-6.

STK6 – Louisiana Sea Grant's Homeowners Handbook, located at seagrant.noaa.gov, includes information on insurance, building responsibly, making a plan for hazards, and retrofitting you home for hazards. The goal of the handbook is to decrease the amount of damage following a flood event.

STK7 – National Sea Grant's Resilience Toolkit, located at seagrant.noaa.gov, includes information on protecting property from hazards, making a plan for hazards, and retrofitting homes for hazards. The aim of the toolkit is to decrease the amount of damage following a flood event.

STK10 – CPRA's website, cims.coastal.louisiana.gov/floodrisk, includes risk and resilience information, specifically coastal restoration projects. The website details flood hazards throughout southeast Louisiana now and in the future. The goal of the website is to protect the citizens of Louisiana from future flood hazards.

STK12 – INCOSE Resilient Systems Working Group's website, extremefloodsafety.org, includes information on protecting people and property from flood hazards, building responsibly, protecting communities from hurricanes, as well as general preparedness and flood education. The website aims to increase the number of institutions in Orleans and Jefferson who look for systems engineering services to address their flood risks.

STK13 – The Greater New Orleans Water Plan, located at gnoinc.org/initiatives/the-greater-new-orleans-water-plan, addresses groundwater and storm water as critical factors in shaping a safer, more livable, and economically vibrant Southeast Louisiana. The website contains information on flood hazards, protecting people and property from the hazards, building responsibly, protecting natural floodplain functions, protecting communities from hurricanes, as well as general preparedness and flood education. The website aims to increase the use of green infrastructure projects and stormwater management projects, at the local, neighborhood and city/parish level.

STK15 – The Coalition for Sustainable Flood Insurance's website, www.facebook.com/CSFIUSA; csfi.info, was created to ensure that flood insurance rates are kept affordable. It includes information on flood hazards, insuring property from flood hazards, protecting people and property from the flood hazard and building responsibly. The aim of the site is to keep flood insurance affordable in order to increase the number of flood insurance policies in the community.

FL3 – The Realtor's Association website, www.nomar.com, contains flood insurance information, including flood hazards, insuring for flood hazards, and contacting officials about the hazard. The website aims to increase the members of NOMAR and the general public who visit the website to get information on flood insurance, find their risk, and get contact information for local and state floodplain officials.

Activity 360 – Flood Protection Assistance

Activity 360 includes information on flood protection assistance and how that assistance will be conducted. The outreach projects that qualify for Activity 360 are listed below:

SL6 – The City of Slidell advises residents and business owners of their risk and how to mitigate it, as required for major projects. The city offers information on flood hazards, insuring for flood hazards, protecting people from the hazard, and building responsibly. The city aims to increase the number of inquiries related to flood designation of properties, and increase the number of inquiries related to retrofitting methods.

FL13 – The FLOAT communities advise residents and business owners of their risk and how to mitigate it, as required for major projects. They offer information on flood hazards, insuring for flood hazards, protecting people from the hazard, and building responsibly. Ways to protect property from flood damage include demolish the building or relocate it out of harm's way, elevate the building above the flood level, elevate damage-prone components, such as the furnace or air conditioning unit, dry floodproof the building so water cannot get into it, wet floodproof portions of the building so water won't cause damage, construct a berm or redirect drainage away from the building, maintain nearby streams, ditches, and storm drains so debris does not obstruct them, correct sewer backup problems. They aim to increase the number of inquiries related to flood designation of properties, and increase the number of inquiries related to retrofitting methods. Each community publiciezes its property protection service on the web, and a community official is available to do site visits and provides advice on financial assistance programs that may be available. The FLOAT group will hold an annual PPI meeting to discuss site visits.

Activity 370 – Flood Insurance Assessment

Activity 370, flood insurance assessment, includes outreach activities specifically on flood insurance. Additionally, as part of the credit for these outreach activities, a parish official must encourage flood insurance. The outreach projects that qualify for Activity 370 are listed below:

FL7 – All of the FLOAT members will dedicate one month to NFIP related messages on social media. The social media month will serve to promote flood insurance and advise residents on how to reduce their rates. The goal of the month is to increase the number of flood insurance policies in the area.

FL8 – All of the FLOAT members will send out a second utility bill mailer dedicated to flood insurance, in order to promote flood insurance and advise residents on how to reduce their rates. The goal of the mailer is to increase the number of flood insurance policies in the area.

FL9 – All of the FLOAT members will distribute a video of an elected parish official discussing the importance of flood insurance through their website, social media, and other methods during the flood awareness month, in order to further promote flood insurance. This outreach project aims to increase the number of flood insurance policies in the area.

Activity 420 – Open Space Preservation

Activity 420 includes open space preservation, deed restrictions, natural functions open space, special flood-related hazards open space, open space incentives, low-density zoning, and natural shoreline protection.

FL16 – The FLOAT communities inform the general public about protection natural floodplain functions through providing information on preservising natural open space, such as wetlands, and providing educational materials and encouraging visits to those locations.

Activity 540 – Drainage System Maintenance

Activity 540 includes drainage system maintenance, and the outreach project points require that the community publicize that maintenance. The outreach projects that qualify for Activity 540 are below:

SJ2 – St. John the Baptist Parish institutes a biannual parish-wide clean up day. This Clean Sweep is publicized in the newspaper and on their website, and encourages residents to keep debris and trash out of ditches and streams. The aim of the outreach project is to publicize the stream dumping regulations in the parish and improve drainage in the parish by increasing the number of clean drains and culverts.

FL14 – The FLOAT communities encourage ditch and culvert clean outs. The aim of the outreach project is to publicize the stream dumping regulations in the area and improve drainage in the parish by increasing the number of clean drains and culverts.

Activity 610 – Flood Warning and Response

Outreach points for Activity 610 are given for outreach projects that detail how the public will be warned about flood hazards, as well as the safety measures they should take. The outreach projects that qualify for Activity 610 are below:

SJ7 – St. John the Baptist Parish's Call Emergency Notification website, stickers and flyers, https://alertregistration.com/atswww/?FC_NOTES=CR_Internal Website/stickers/flyers, are a weather notification alert system that protect people and property from flood hazards, and encourage residents to be prepared for natural hazards. The notification website, stickers and flyers serve to keep residents safe from weather hazards by increasing the number of people who are aware of the hazard.

Draft Review

The draft was sent to Mark Lujan, the FEMA Region 6 insurance liaison, for review.

Annual Evaluation

The Multi-Jurisdictional PPI Committee will meet at least once a year, to evaluate the Plan and incorporate any needed revisions. The evaluation will cover:

• A review of the projects that were completed

• Progress toward the desired outcomes

• Recommendations regarding projects not completed

• Changes in the target audiences

The jurisdictions should refresh their CRS Community Self-Assessment at least once every two years, and bring the results to the Annual Evaluation. The communities will coordinate and facilitate this meeting, and afterward, provide a summary and updated PPI worksheet reflecting the Committee's decisions. The outcomes and revisions will be submitted as part of the annual CRS recertification package for the parishes St. John the Baptist, St. Tammany, Terrebonne, Tangipahoa and the cities Slidell, Mandeville, and New Orleans. An evaluation report will be sent to the appropriate governing body of each jurisdiction for their information.

Plan Adoption

Each of the PPI communities had to adopt this document on an individual basis. The adoption process for each community will be carried out by the appropriate governing body of each jurisdiction.

St. Tammany Parish-

The Multi- jurisdictional Program of Public Information will be introduced as a resolution at the St. Tammany Parish council meeting by the floodplain coordinator, and thence approved by the City Council Members by a simple vote.

City of Mandeville-

The Multi- jurisdictional Program of Public Information will be introduced as a resolution at the City of Mandeville council meeting by the floodplain coordinator, and thence approved by the City Council Members by a simple vote.

City of New Orleans-

The Multi- jurisdictional Program of Public Information will be introduced as a resolution at the City of New Orleans council meeting by The Department of Safety & Permits, and thence approved by the City Council Members by a simple vote.

City of Slidell-

The Multi- jurisdictional Program of Public Information will be introduced as a resolution at the City of Slidell council meeting by the Mayor, and thence approved by the City Council Members by a simple vote.

St. John the Baptist Parish-

The Multi- jurisdictional Program of Public Information will be introduced as a resolution at the St. John the Baptist Council Meeting by the Parish President, and thence approved by the Council Members by a simple vote.

Tangipahoa Parish-

The Multi- jurisdictional Program of Public Information will be introduced as a resolution at the Tangipahoa Parish council meeting by the floodplain coordinator, and thence approved by the City Council Members by a simple vote.

Terrebonne Parish-

The Multi-jurisdictional Program of Public Information (MJ-PPI) will be introduced at a Terrebonne Parish Council meeting by Resolution, and thence approved by the Council Members by a single vote. Once the MJ-PPI is introduced and adopted, a copy of the Terrebonne Parish Council Meeting Minutes will be attached as Appendix E.

ADMINISTRATIVE COMMENT

January 5, 2017

Public Information Office

A resolution in support of a flood prevention outreach program for Public Information so as to better inform our citizens and business owners regarding their threat from flooding and how they can prevent it and earn additional CRS points to assist in maintaining or improving the community's rating and flood insurance premium discount.