

ST. MARY PARISH

HAZARD MITIGATION PLAN

Plan Update 2020

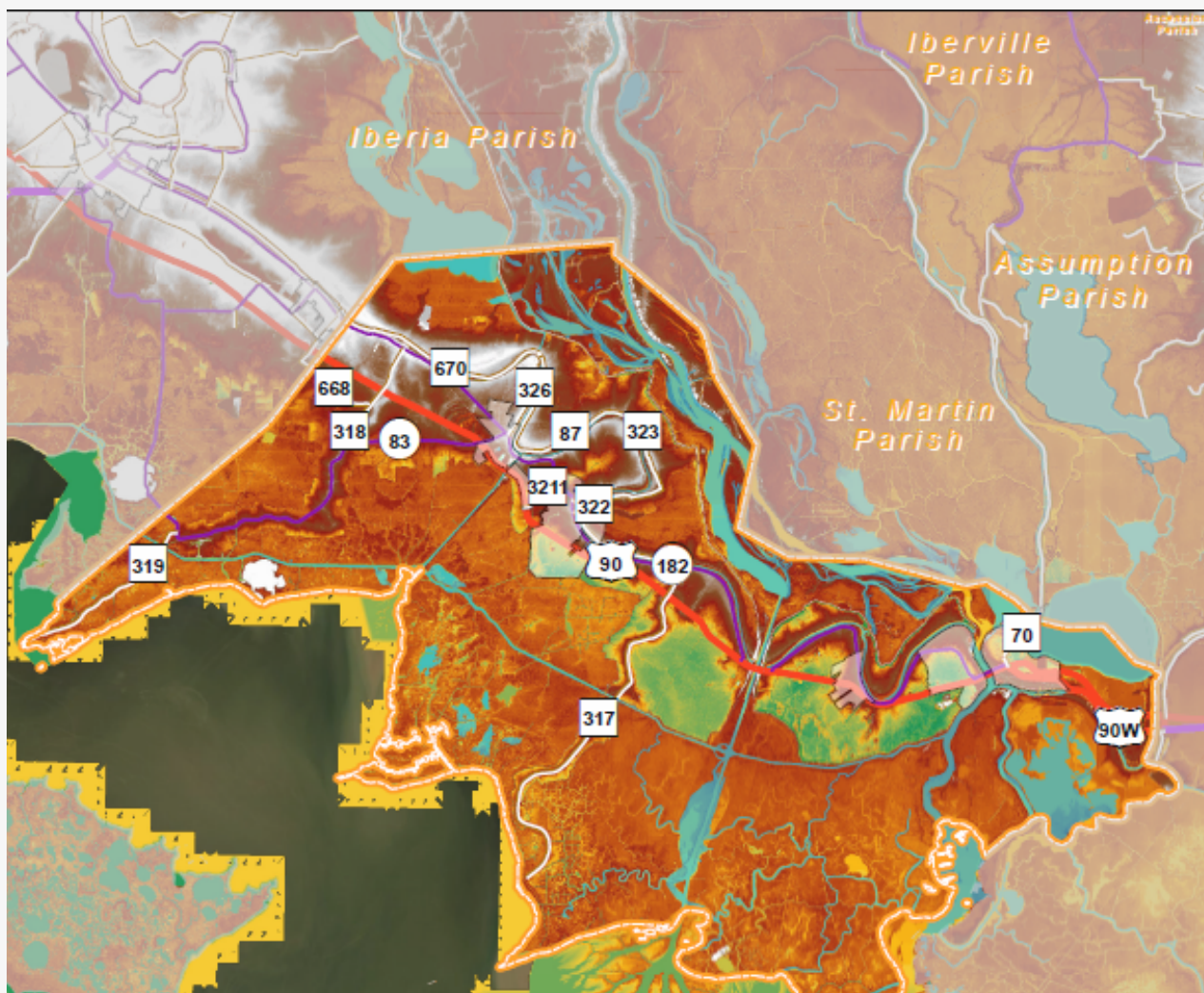


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FOREWORD

ST. MARY PARISH, LOUISIANA

2020 HAZARD MITIGATION PLAN UPDATE

This planning document serves as a record of the process utilized to update the 2020 St. Mary Parish Hazard Mitigation Plan (HMP) to address and protect public safety, accomplish community objectives, prevent damage to assets, and minimize operational downtime after an event.

The original St. Mary Parish HMP was developed in 2004 and obtained Parish and local jurisdiction approval in 2005. The first plan update was approved in 2009, and a more recent update was approved in 2014. This 2020 HMP document represents the third iteration of changes, the Hazard Mitigation Plan Update (HMPU). This plan follows state regulations requiring plan updates to be delivered every 5 years and provides updates projects, notation of major hazard events that impact St. Mary Parish, and consideration of necessary changes.

Through the 2020 HMPU process, the HMP Committee identified four sections of the 2014 plan that required updates. These targeted sections include the Planning Process, Risk Assessment, Mitigation Goals & Strategies, and Maintenance. The 2020 HMPU includes the incorporation of new or updated plans and project lists. The Risk Assessment section includes updates utilizing data from Spatial Hazard Events and Losses Database (SHELDUS) and National Oceanic and Atmospheric Administration (NOAA) recorded events and provides updates specific to each jurisdictional.

Public notifications of meetings are included with the attachments to document inclusivity in the HMPU process and provide additional hazard modeling information. The 2020 project list and action items and mitigation goals and strategies reduce and or avoid long-term vulnerabilities to identified hazards specific to each jurisdiction. The Plan Maintenance section was presented, updated, and confirmed to provide a satisfactory procedure during the Mitigation Goals and Strategies Meeting. HMPU committee members are aware that the next plan update will occur within five years from approval of the 2020 HMPU.

The background image shows a flooded urban area. In the foreground, a large, dark, rectangular concrete block sits in the water. To its right, a blue signpost stands, featuring a sign with a white icon of a tram or trolley. The water is calm, reflecting the surrounding environment. In the background, a bridge structure is visible on the left, and a body of water extends to the horizon under a hazy sky.

SECTION ONE

INTRODUCTION

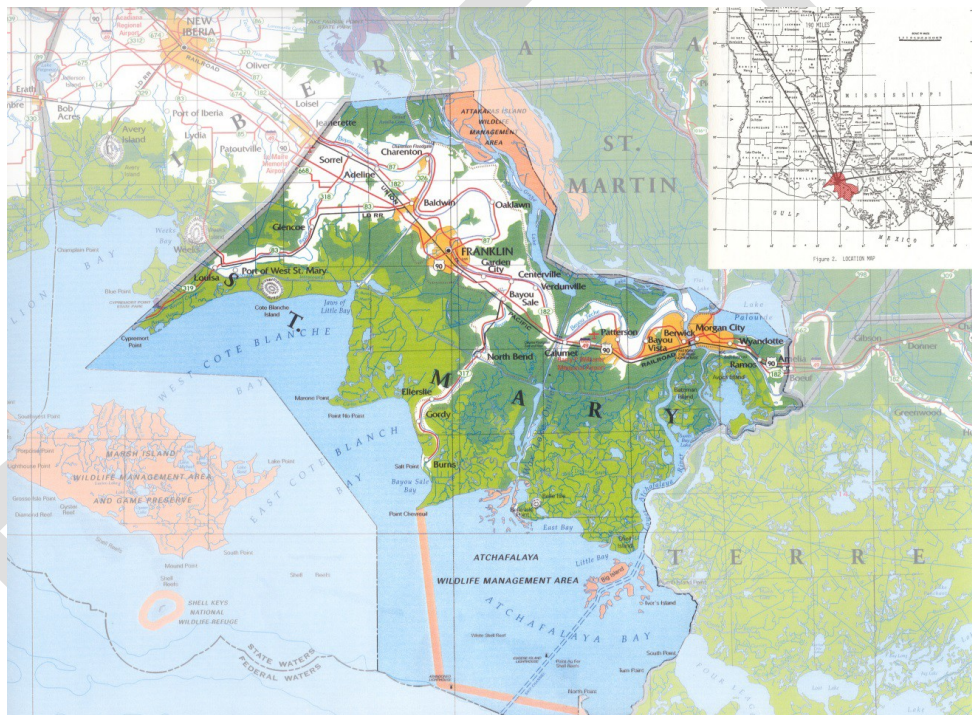
1. INTRODUCTION AND PLANNING PROCESS

The information presented in this chapter is an overview of the geography and socioeconomic characteristics of St. Mary Parish, Louisiana. With this background information, data provided herein may be more easily evaluated.

GEOGRAPHIC SETTING

St. Mary Parish is situated along the Gulf coast in the center of the state's coastline. To the east is Terrebonne Parish, to the west Iberia Parish, and Lower St. Martin and Assumption Parishes border the north. A map of the Parish is presented below:

Figure 1-1 St. Mary Parish Location Map

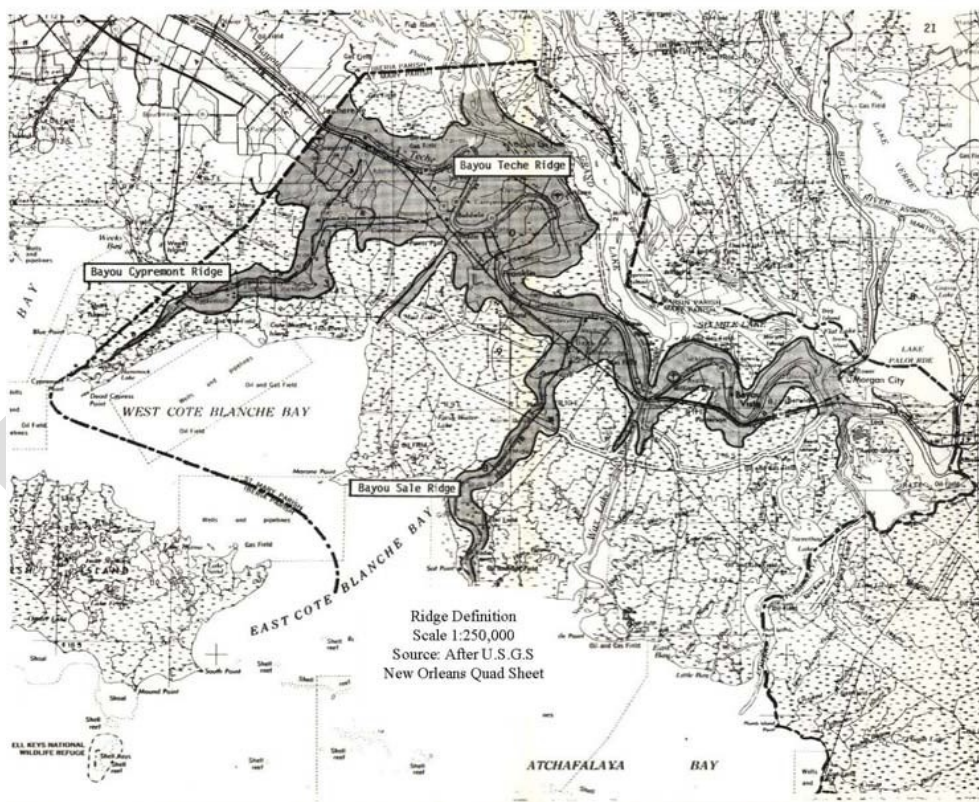


Noted in the image on the following page are five municipalities which include, from east to west, Morgan City, Berwick, Patterson, Franklin, and Baldwin. The Chitimacha Tribe Reservation is shown on the map as Charenton. The parish is bordered to the south by transitional bays of the Gulf of Mexico, i.e., West Cote Blanche Bay, East Cote Blanche Bay, and Atchafalaya Bay. On the north, the parish is bounded by the Atchafalaya Basin and the Lake Verret watershed, two major drainage basins in the state. The Atchafalaya Basin is a floodway controlled by the U.S. Army Corps of Engineers designed to handle approximately one-third of the combined flow of the Mississippi and Red Rivers at the Old River Control Structure in southernmost Concordia Parish.

Levees and/or seawalls surround many of the communities protecting them from river flooding and storm surge. As a result, many of the stormwater drainage systems of the various municipalities include large pumping stations to remove stormwater. The layout of all levees and pump stations in the parish are presented in the risk assessment section of this Hazard Mitigation Plan Update (HMPU). To address existing and proposed levee alignments, the Parish retained Miller Engineers & Associates to prepare the *St. Mary Parish Storm Surge Protection Study* which suggests layouts for additional levee alignments and improvements to existing levees. The study is referred to herein as the “Miller Plan.” The additional levee alignments proposed in the Miller Plan would further protect St. Mary Parish from a surge.

St. Mary is part of three major watersheds, i.e., drainage basins. The area from the western parish line eastward to the Wax Lake Outlet is part of the Vermilion-Teche system. From the Wax Lake Outlet to the Atchafalaya River, the region is part of the Atchafalaya River system. East of the Atchafalaya River, the region is part of the Terrebonne basin which locally is called the Lake Verret watershed.

Figure 1-2 St. Mary Parish Ridge Definition



Bayou Teche traverses the parish from east to west. Geologically, the Teche ridge, the highest areas of the parish, formed as the result of annual flooding cycles of the bayou when, centuries ago, the Mississippi River flowed in the Bayou Teche riverbed. It is upon this ridge and two smaller ridges (which are oriented north to the south generally perpendicular to the Teche Ridge denoting two smaller historical stream bed ridges) that virtually all urban and agricultural land exists in the parish.

Because of the formation of this ridge through alluvial processes, the five-foot contour clearly defines the ridges as the “high-ground” of the parish (excluding two salt domes). The depiction of these three ridges (above) forms an image that is repeated in this report as almost all land areas other than these ridges are susceptible to flooding, either stormwater, riverine, storm surge, or backwater flooding. With little exception, the graphic above depicts the ridges that form the bulk of non-flooding urban and agricultural land in the parish. Exceptions include the lower reaches of the Bayou Cypremort and Bayou Sale (pronounced “Sally”) ridges.

LAND USE

As a snapshot of the community, the following land use map and accompanying table are provided. Based upon this data, over 30% of the parish is urbanized and/or under cultivation. The remaining area of the 381,333-acre parish (not including an additional 236,139 acres of water) is wetlands and forestland. In Chitimacha tribal lands, current and proposed (future) urban land use is 90 percent residential and 10 percent institutional, commercial, or similar. Non-urban land use is agriculture and forest land. Part of the non-urban landscape is cultural and preserved as such by the Tribe.

Figure 1-3 St. Mary Existing Land Use

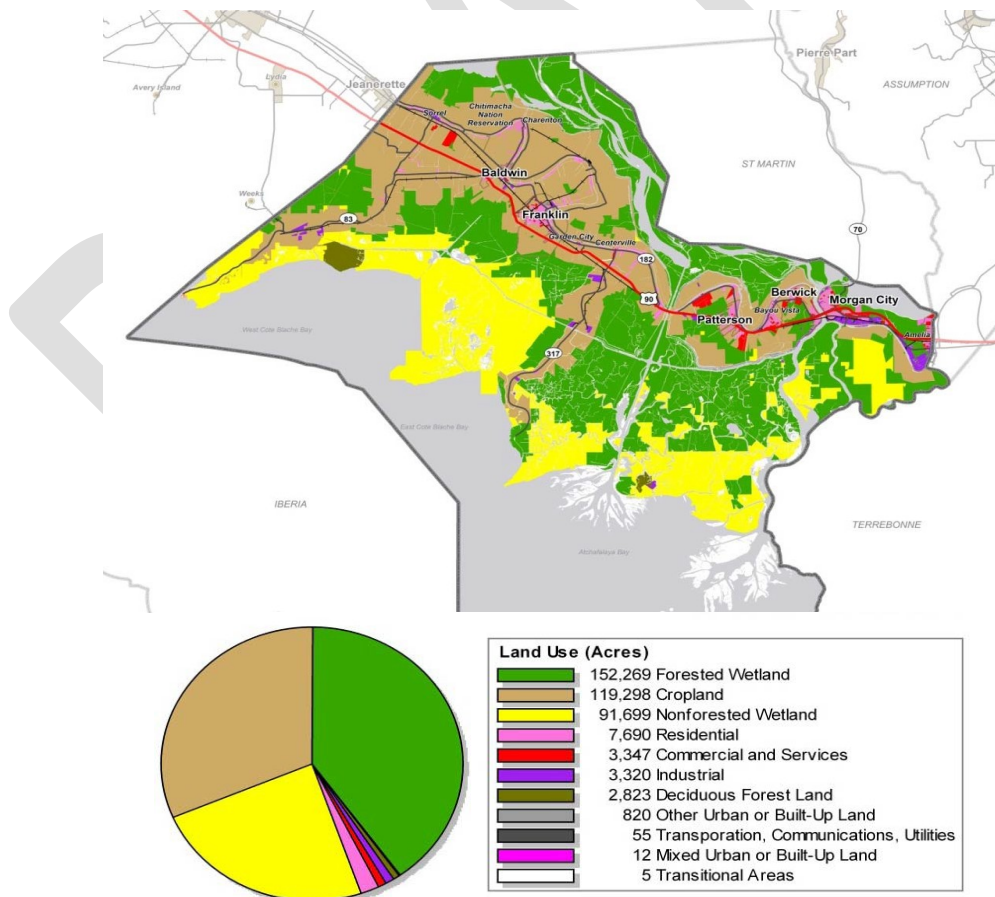


Table 1-1 St. Mary Parish Ridge Definition

EXISTING LAND USE			
DESCRIPTION	ACRES	%	TOTAL
URBAN			4%
Residential	7,690	2.0%	
Commercial and Services	3,347	0.9%	
Industrial	3,320	0.9%	
Other Urban or Built-Up	820	0.2%	
Transportation/Communication/Utilities	55	0.0%	
Mixed Urban or Built-Up	12	0.0%	
AGRICULTURE			31%
Cropland and Pasture	119,298	31.3%	
FORESTED (wetland and non-wetlands)			41%
Deciduous forest land	2,823	0.7%	
Forested Wetland	152,269	39.9%	
NON-FORESTED WETLANDS			24%
Non-forested wetland	91,699	24.0%	
TOTAL	381,333*	100.0%	100%

*Total land area excludes water

SOCIOECONOMIC FACTORS

The parish has experienced continuous population decline spanning from 2010-2019. According to the U.S. Census estimates, the population of the parish currently is 49,348, a seven percent decrease from its population of 52,876 in 2015. Previous U.S. Census data showed the Parish's 2000 population was 53,500 and increased to 54,550 in 2010. The current population is estimated at 53,543, two percent less than its 2010 population.

In 1980, the population was nearly 65,000. In the 2003 comprehensive plan, it is suggested that the rate of population loss will decline, and the parish population will reach 60,000 by 2020. The existing

population is distributed such that the heaviest concentration of people and most urbanized areas are in the eastern end of the parish.

Economy

Much of the parish economy is based upon its geographical setting on the Gulf Coast and the Atchafalaya River. Based upon 2018 U.S. Census Business Patterns drawn from the North American Industry Classification System (NAICS), basic industry relates to construction and manufacturing (primarily boats and oilfield equipment), transportation (boats and trucking), mining (oilfield), agriculture, and fishing. The following table offers a general breakdown of the economy in the parish denoting major business sectors.

Table 1-2 St. Mary Parish Ridge Business Sectors (Source: ACS Census 2018)

St. Mary Parish Employer Sectors 2018				
Sector Discription	Number of establishments	Annual payroll (\$1,000)	First-quarter payroll (\$1,000)	Number of employees
Manufacturing	72	\$ 222,880	\$ 54,779	3,331
Mining, quarrying, and oil and gas extraction	22	\$ 174,930	\$ 39,320	1,835
Construction	74	\$ 85,378	\$ 29,245	1,018
Transportation and warehousing	77	\$ 77,003	\$ 18,050	1,125
Utilities	5	\$ 5,542	\$ 1,746	68
Wholesale trade	67	\$ 50,468	\$ 11,638	849
Retail trade	180	\$ 54,893	\$ 13,604	2,060
Real estate and rental and leasing	73	\$ 41,437	\$ 9,790	700
Management of companies and enterprises	6	\$ 1,684	\$ 587	96
Educational services	12	\$ 2,625	\$ 678	104
Health care and social assistance	103	\$ 72,124	\$ 17,122	2,067
Accommodation and food services	99	\$ 40,813	\$ 9,718	2,252
Arts, entertainment, and recreation	14	\$ 7,854	\$ 1,797	312
Administrative and support and waste management and remediation services	50	\$ 33,579	\$ 6,726	898
Professional, scientific, and technical services	90	\$ 41,271	\$ 10,639	777
Other services (except public administration)	104	\$ 16,592	\$ 4,096	504
Finance and insurance	91	\$ 23,822	\$ 6,082	476
Information	15	\$ 4,764	\$ 1,267	141
Total for all sectors	1,154	\$ 957,659	\$ 236,884	18,613

THE PLANNING PROCESS

How it was prepared...

Special consideration was placed on outreach and engagement methods due to COVID-19 restrictions, to safely provide and encourage public involvement in the plan in the drafting stage. For example, the parish website was utilized to post notifications and provide an alternative participation option utilizing Zoom conferencing. The Risk Assessment, Stakeholder Engagement, and Mitigation Goal Setting meetings applied special COVID restrictions in addition to traditional methods with postings of public notices published in the local newspaper to notify interested citizens and to obtain citizen input. Details of all public meetings of the HMPU committee are presented in attachments (Appendix A).

Who was involved in the process...

Local and regional agencies were directly involved in the planning process by way of their participation on the HMPU committee. These parties included the planning and zoning directors and mayors of the municipalities, and key operations personnel from the public works departments of the municipalities and the parish. Private and non-profit interests were also involved in the process as were business interests by way of committee participation. Neighboring tribal interests were invited to participate in the planning process. Specifically, the Chitimacha Tribe of Louisiana were engaged. A list of HMPU committee members is provided as an attachment (Appendix A).

How the public was involved

Each section of the plan was presented at the three major committee meetings and separate interests were obtained through individual jurisdictional stakeholder interviews provided as an attachment. Stakeholders received a draft copy of the plan update and the plan was placed on the Parish website for public review. Existing plans, studies, and technical information were incorporated into the planning process. Examples include flood data from FEMA, the U. S. Army Corps of Engineers, and the U. S. Geological Survey. Much of this data was incorporated into the risk assessment component of the plan relative to plotting historical events and the magnitude of damages that occurred.

Additionally, the following plans and project lists were incorporated into the HMPU:

- *State of Louisiana Hazard Mitigation Plan (2019)*
- *FEMA Coastal Hazards and Considerations (2018)*
- *Coastal Master Plan (2017)*
- *Climate and Health - Center for Disease and Control Prevention (2017)*
- *St. Mary Levee District Master Plan (2016)*
- *St. Mary Parish Hazard Mitigation Plan Update (2014)*
- *Unified Comprehensive Code/ Comprehensive Plan Update (2014)*

- *Louisiana Coastal Impact Assistance Plan (2010)*
- *St. Mary Parish Hazard Mitigation Plan Update (2009)*
- *Louisiana Comprehensive Master Plan for a Sustainable Coast (2012)*
- *Long Term Recovery Plan (ESF-14) (2007)*
- *Amelia Flood Protection Improvements Plan (2006)*
- *St. Mary Parish Hazard Mitigation Plan (2005)*
- *St. Mary Parish Comprehensive Plan (2003) and Update (2013)*
- *Parish Unified Development Code*
- *Coastal Wetlands Planning Protection and Restoration Act Project List*
- *St. Mary Parish Storm Surge Protection Study (Miller Plan)*
- *St. Mary Parish All Hazards Plan*
- *Chitimacha Tribal Operations Plan*
- *St. Mary Land and Exploration with Submar, Inc., Coastal Engineering and Environmental Consultants, Inc.*

Regarding the Chitimacha Tribe, some existing plans, studies, and/or reports may need updating. According to the HMPU 2020 tribal committee members, the plans will be revisited during the upcoming five-year period. The Chitimacha Tribe has an emergency operations plan; and the casino, also operated by the Tribe, has operations and emergency plans. The Tribe participated in the Parish's All Hazards Plan, and the HMPU 2014. The Tribe's wind hardening projects were added to the St. Mary Parish Hazard Mitigation Plan Update 2014 and drainage improvement projects are added to the multi-jurisdictional plan is evidence of Parish and Tribe coordination (see 2020 project list).



September 16, 2020, HMPU Committee Meeting

MEETING No. 1–September 16, 2020

The kick-off meeting for the Hazard Mitigation Plan Update was held on September 16, 2020, at the St. Mary Parish courthouse. At this meeting the purpose, need, and expectations of the project were discussed; the framework for how the committee would participate in developing plan updates were described, and committee members were engaged in a question and answer session. A copy of the notice, sign-in sheets, meeting agenda, and PowerPoint are presented as Attachments (Appendix A).

MEETING No. 2–November 5, 2020

The second HMPU Committee meeting was held on November 5, 2020, at the St. Mary Parish courthouse. The purpose of the meeting was to examine existing conditions, determine the threat of hazard events impacting the Parish, review critical facilities list, and initiate discussion of preliminary mitigation strategies. A copy of the public notice, sign-in sheets, meeting agenda, and PowerPoint are presented as attachments (Appendix A).

MEETING No. 3–November 30, 2020

The third HMPU Committee meeting was held on November 30, 2020, at the St. Mary Parish courthouse. The purpose of the meeting was to, review findings from stakeholder interview findings and update mitigation strategies, goals, and procedures. A copy of the stakeholder notice, sign-in sheets, meeting agenda, and PowerPoint are presented as attachments (Appendix A).



November 5, 2020 HMPU Risk Assessment Meeting

MEETING No. 4–December 10, 2020

A draft plan review meeting was held on December 10, 2020, at the Parish Courthouse in Franklin, Louisiana. Topics discussed include a past meetings review and the draft plan update. The ad, sign-in sheets, meeting agenda, summary notes, and PowerPoint presentation are presented in (Appendix A).

During Meeting 3, the Hazard Mitigation Plan Update advisory committee discussed the need for a plan that addresses necessary parish and municipal actions in the event of a catastrophic failure of the Old River Control Structure. A major discussion item was the review of the 2020 comprehensive list of mitigation projects and strategies and potential grant funding sources.

Stakeholder Meetings

In addition to committee meetings, the HMPU team held several jurisdiction stakeholder meetings with government officials and tribal leadership to review elements of St. Mary Parish Plan Update 2014 and address participation and mitigation needs specific to each jurisdiction. The smaller group setting provided the added benefit of increased participation and reduced exposure to COVID-19. Tribal representatives provided feedback on the HMPU 2014 and ensured that the proposed plan addresses hazard impacts experienced by the Tribe. Meeting documentation is provided as an attachment (Appendix A).



Photo provided from Stakeholder Meeting with Morgan City Port Commission

PLAN MAINTENANCE PROCEDURES

A plan maintenance process that includes:

St. Mary Parish has developed a plan maintenance process to ensure that regular review and update of the Hazard Mitigation Plan occurs. The Parish has formed a Hazard Mitigation Plan Evaluation Committee that consists of selected members from municipalities, Chitimacha the Tribe local agencies, and the Hazard Mitigation Plan Update Committee which prepared the HMPU as included herewith. The HMP Evaluation Committee will consist of the following representation:

1. St. Mary Parish President
2. St. Mary Parish CAO (responsible for overall coordination of HMP maintenance activities)
3. St. Mary Parish Public Works Director
4. St. Mary Parish Director of Planning and Zoning
5. St. Mary Parish Director of Economic Development
6. St. Mary Parish OEP director
7. St. Mary Parish Sheriff
8. Mayors of each of the five municipalities or his planning and zoning director as his representative
9. St. Mary Levee District Executive Director (or designee)
10. Chitimacha Tribe Chairman (or designee)
11. Chairpersons of each drainage district or his engineering representative

The CAO of the parish will determine the need for an annual meeting during January of every year. If the CAO determines that this annual meeting needs to be conducted, they are responsible for contacting committee members, organizing the meeting, and providing public notification for the meeting to solicit public input. Members will have a one-month period in which to respond to initiate a meeting if anyone feels that issues need to be addressed. However, should a hazard event occur and the need for update analysis surface, a meeting can be called by the CAO or requested by a committee member through the CAO. The parish CAO will also be responsible for maintaining all plan review comments.

Members of the evaluation committee will monitor the plan on an ongoing basis and bring their comments to the yearly evaluation meetings. Ideas to be discussed will include, but are not limited to, the following:

- Do the committee members need to be updated?
- Have any new hazard events occurred?
- Has new funding been allotted?
- Have any projects been implemented?
- Have the project priorities changed?
- Are there any new projects to discuss?

The HMPU Committee reviewed all the above criteria during the planning process.

In addition to the yearly evaluations, the questions listed above, and additional considerations will be made during the formal update process to be completed and approved by FEMA within a five-year cycle. Updates to the Hazard Mitigation Plan will be made fully utilizing the representation of the HMP committee formed for this purpose.

Members of local and parish departments who interact on planning issues, such as the Parish President, Parish CAO, Parish Director of Planning and Zoning, Parish Director of Economic Development, Parish OEP Director, St. Mary Parish Sheriff, mayors of each municipality, Chitimacha Tribe representative, Chairpersons of each drainage district or his engineering representative, met to review the relevance of the HMP's risks and vulnerabilities identified, as well as the goals, objectives, and actions for mitigating the risks, and cataloged all said information for use in future updates to the other local planning mechanisms. Also, at the time such update processes take place, these stakeholders will convene as a committee to review the ongoing relevance of said data and how it can best be utilized in the various planning mechanisms to produce the best possible planning document.

When appropriate, local governments, by way of the individuals who served on the HMPU Committee and the HMP Evaluation Committee, will address the need to incorporate requirements of the mitigation plan into their respective zoning ordinances, comprehensive plans, and/or capital improvement plans if deemed necessary and if not previously included. An effort will be made by all HMPU committee members to ensure consistency in all future planning efforts with the mitigation goals and risk assessment presented in this plan.

Consistency between all planning efforts will ensure a decrease in losses related to hazard events within future and existing developments. If amendments to existing ordinances or new ordinances are required, each political jurisdiction will be responsible for its respective updates. However, based

upon the findings of this plan, little need exists for creating new ordinances or revising existing ordinances as the parish has been dealing with flood mitigation issues for decades as its livelihood depends on it.

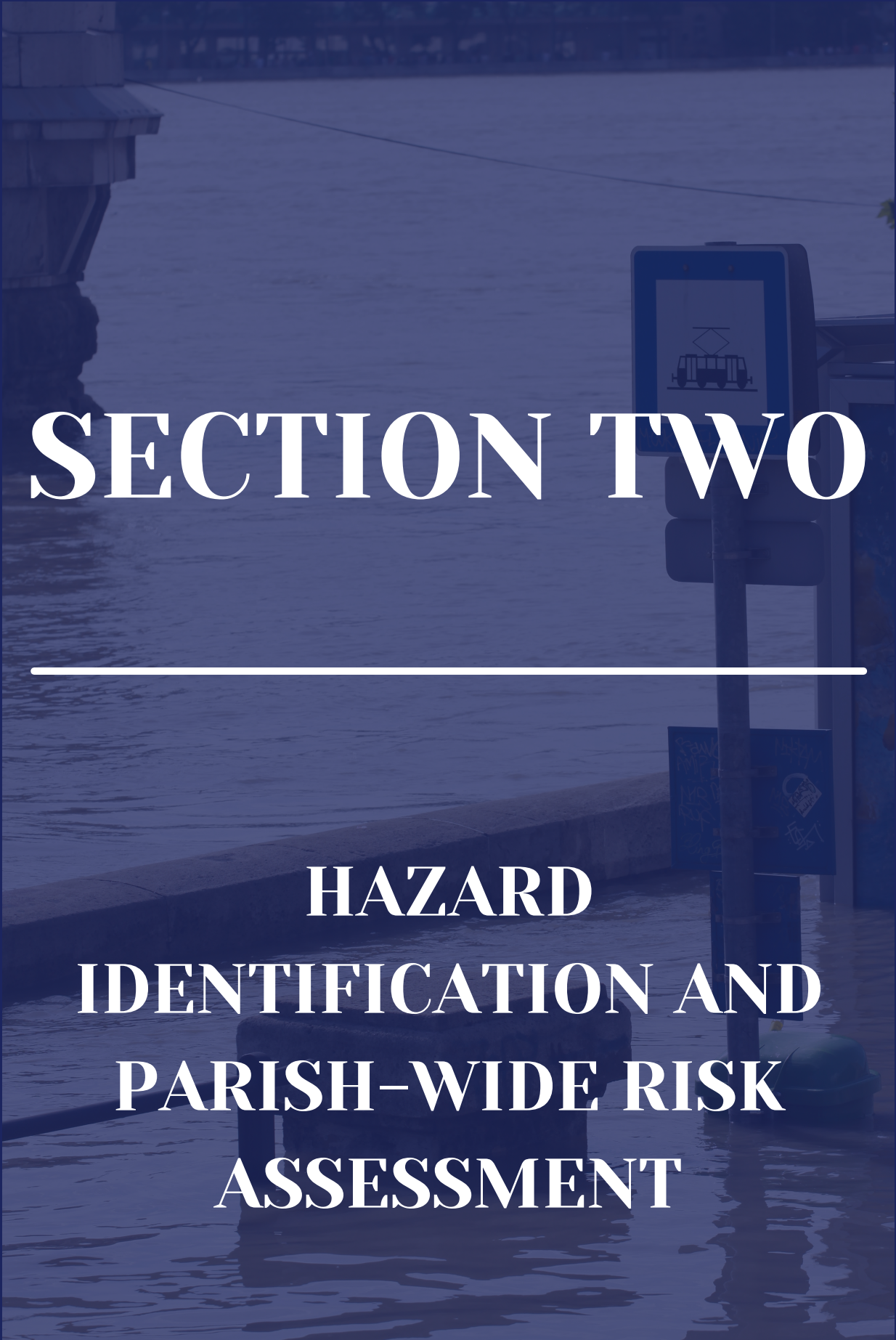
Responsibility for continued public participation will be that of the parish CAO. Copies of the plan will be kept on file at the parish government office and with each municipality. Contained in the plan and presented in the section is a list of members of the plan evaluation committee that can be contacted. Any copies of the plan and proposed changes will be posted on the parish government website. This website will also have an e-mail address and phone numbers to which the public can direct their comments or concerns. The local newspaper will also be notified if any HMP issues arise. The Parish and Tribal governing bodies will formally adopt the updated plan following State and Federal preliminary approvals.

Projects will be the primary function of the Parish government and its steering committee. As such it will coordinate with the Tribal government on projects directly or indirectly impacting the Chitimacha Nation lands.

All projects heading toward implementation require Council (Parish and Tribal) action. All council meetings are advertised, and agendas posted. The Council meets to discuss the budgetary objectives and hazard mitigation will be addressed at this point. The Chitmatcha Tribe will be considered throughout this process and the Tribe Council will also develop actions to implement hazard mitigation objectives. Public participation is welcome and allowed at all meetings.

Public participation is an integral component of the mitigation planning process and will continue to be essential as this Plan evolves. Significant changes or amendments to the Plan require a public hearing before any adoption procedures. Other efforts to involve the public in the maintenance, implementation, monitoring, and evaluation process will be made, as necessary. These efforts may include:

- Advertising meetings of the Mitigation Committee in the local newspaper, public bulletin boards, and/or city and county office buildings
- Designating willing and voluntary citizens and private sector representatives as official members of the Mitigation Committee
- Utilizing local media to update the public of any maintenance and/or periodic review activities taking place
- Utilizing city and parish websites to advertise any maintenance and/or periodic review activities taking place
- Keeping copies of the plan at appropriate public locations

A photograph of a flooded street scene, likely in an urban area. In the foreground, a blue tram stop sign with a white tram icon is partially submerged in water. The water reflects the sign and the surrounding environment. In the background, a concrete bridge structure is visible on the left, and a body of water extends to the horizon. The overall scene is dimly lit, suggesting an overcast day or early morning/late evening.

SECTION TWO

HAZARD IDENTIFICATION AND PARISH-WIDE RISK ASSESSMENT

2. HAZARD IDENTIFICATION AND PARISH-WIDE RISK ASSESSMENT

A risk assessment provides a factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.

This section assesses the various hazard risks facing St. Mary Parish to identify a strategy for mitigation. Having identified the categories of hazards, emergencies, disasters, and catastrophes, this section details the major climatological and natural/human-influenced hazards by (1) defining them, (2) explaining how they are measured, (3) describing their geographic extent, (4) surveying their previous occurrences, and (5) evaluating their future likelihood of occurrences. A vast amount of readily available statistical and mapped data was used to define each of the hazard events presented in this section. Of significant importance are the flood level indications provided by federal sources. The risk assessment was developed using data for past hazard events, existing and future land use data, state and local master plans, FEMA flood maps, and repetitive loss data.

The St. Mary Parish Hazard Mitigation Plan Profile is outlined below. Some exhibits for this section are included as attachments and are presented in appendix B. A vast amount of statistical data and maps were used to define each of the hazard events presented in this section. Table 2-1 provides an overview of the hazards that had been previously profiled in the St. Mary Parish Hazard Mitigation plan published in 2014 and hazards to be profiled in the 2020 update.

Table 2-1: Hazard Profile Summary

Hazard	Profiled in Last Plan (2014)	Profiled in 2020 HM Plan
Coastal Erosion	X	X
Drought		X
Expansive Soils		
Flooding	X	X
Extreme Heat		
Thunderstorms (Hail, Heavy Rain, Lightning, & Wind)		X
Tornadoes	X	X
Tropical Storms/Hurricanes	X	X
Tsunamis		
Winter Weather		X
Volcanoes		

Note: Previous hazards not profiled in the 2020 risk assessment pose minimal risk to jurisdictions within St. Mary Parish

Previous Occurrences

A detailed range of potential hazards was researched and assessed from historical accounts, Spatial Hazard events and Losses Database for the United States (SHELDUS), current DFIRMS, NOAA data, members of the St. Mary Parish HMPU Committee, USACE Gage Data, and USGS Gage Data. Table 2-2 to follow summarizes the NOAA recorded events, property and crop damage estimates, average events per year, and damage per event. A copy of NOAA damage estimates is provided on the following page.

Table 2-2: Hazard Summary Since 1960 for St. Mary Parish Source: Spatial Hazard Events and Losses Database for the United States (SHELDUS)

Hazard	Occurrences since 1960	Return Frequency	Total Property Damages	Property Damage ADJ 2018	Injuries
Flooding	39	Every 1-2 Years	\$ 95,207,254	\$113,064,348	5
TS/Hurricane	28	Every 2 Years	\$ 319,471,750	\$ 510,563,197	537
Tornado	21	Every 2-3 Years	\$ 987,492	\$ 1,977,353	26
Thunderstorm (Hail, Lightning, Severe Wind)	143	Annual Occurrence	\$4,731,946	\$7,461,417	12
Winter Weather	19	Every 3 Years	\$ 993,444	\$ 7,164,221	0
Drought	2	Every 30+ Years	\$ 10,662,500	\$ 15,557,252	0

Note: Cost specific data for Coastal Erosion was not available at the time of the HM Plan Update

During the hazard mitigation kick-off meeting held on September 16, 2020, committee members reviewed hazards covered in the 2014 Hazard Mitigation Plan Update. The group then reached a consensus on the most prevalent hazards in the community. A summary is presented below.

Table 2-3: Includes hazards the presidentially declared storms listed for St. Mary Parish:

Table 2-3: St. Mary Parish Presidentialy Declared Storm Events (1906-2014)

Year	Storm Name	Impact	Damage (\$ Billions)
1906	Hurricane (LA and MS)	Destructive winds and tides	2
1915	Hurricane (LA)	Flooding, high water, and strong winds	2.5
1957	Hurricane Audrey	Storm surge, backwater, tornadoes, high winds	4
1964	Hurricane Hilda	Winds, tornados	2.5
1965	Hurricane Betsy (Grand Isle)	Flooding, winds, and high tides	21
1969	Hurricane Camille (MS, FL)	Flooding, maximum winds	22
1973	River Flood of 1973	Riverine and back-water flooding	n/a
1983	Heavy Rain Event	Heavy rains	n/a
1985	Hurricane Juan	Heavy rains	4
1991	Heavy Rain Event	Heavy rains	n/a
1992	Hurricane Andrew	Heavy rains, tornados	55
1998	Hurricane Georges (LA, MS, AL)	Flooding, high winds, tornados	3.7
2001	Tropical Storm Allison	Heavy rains, tornados	6.5
2002	Tropical Storm Isadore	Heavy rains	0.4
2002	Hurricane Lili	Heavy rains	11
2005	Hurricane Katrina	Heavy rains, high winds	81
2005	Hurricane Rita	Heavy rains, high winds	10
2008	Hurricane Ike	Heavy rains, high winds	20
2008	Hurricane Gustav	Heavy rains, high winds	
2012	Hurricane Isaac	Heavy rains, high winds	1

Table 2-4: St. Mary Parish Major Disaster Declarations (2014-Present)

Disaster Declaration Number	Declaration Date	Type of Disaster
4345	10/16/2017	Tropical Storm Harvey
4458	8/27/2019	Hurricane Barry
4559	8/28/2020	Hurricane Laura

*Note: The full extent of the disaster impact is being determined

Table 2-5: Includes hazards most common to St. Mary Parish and the risk posed per jurisdiction:

Table 2-5 Multi-Jurisdictional Risk Assessment for Hazard Events in St. Mary Parish

Hazard	Ba	Be	C	F	MC	P	U
Coastal Erosion	Low	Low	Low	Low	Med	Low	High
Tropical Storm/Hurricane	High	High	High	High	High	High	High
Levee Failure	Med	High	Low	Med	High	High	Med
Drought	Low	Low	Low	Low	Low	Low	Low
Flooding	Med	High	Low	High	High	Med	High
Tornado	Low	Low	Low	Low	Low	Low	Low
Severe Winter Storm	Low	Low	Low	Low	Low	Low	Low

Legend

	High
	Medium
	Low

Baldwin	Ba
Berwick	Be
Chitimacha Tribe	C
Franklin City	F
Morgan City	MC
Patterson	P
Unincorporated	U

Note: Percentages calculated from historical occurrences listed in NOAA NWS data over a 30 year period.

Table 2-6 Multi-jurisdictional Risk Assessment for Hazard Events in St. Mary Parish

Table 2-6: Probability of Future Hazard Reoccurrence						
Hazard	Baldwin	Berwick	Franklin	Patterson	Morgan City	UN
Drought	10%	10%	10%	10%	10%	10%
Flooding	10%	17%	37%	10%	13%	63%
Thunderstorms (Hail, Lightning & Severe Wind)	100%	100%	100%	100%	100%	100%
Tornadoes	7%	7%	7%	7%	7%	7%
Tropical Storm/Hurricane	46%	46%	46%	46%	46%	46%
Severe Winter Storms	20%	20%	20%	20%	20%	20%

Parish Essential Facilities

The following maps provided in this section provide locations of the facilities considered essential within the parish:

Figure 2-1: St. Mary Parish Essential Facilities

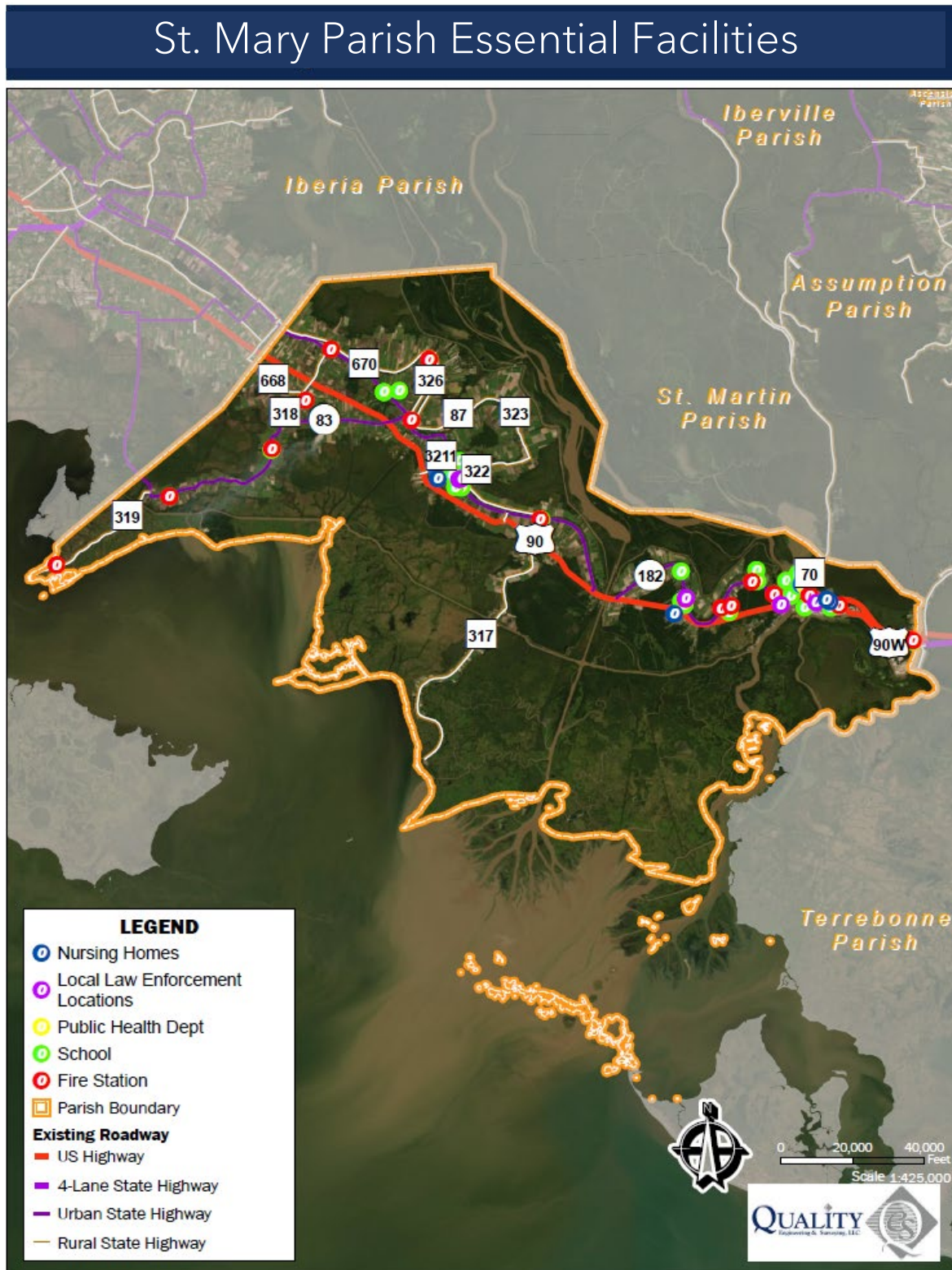


Figure 2-2: St. Mary Parish Schools

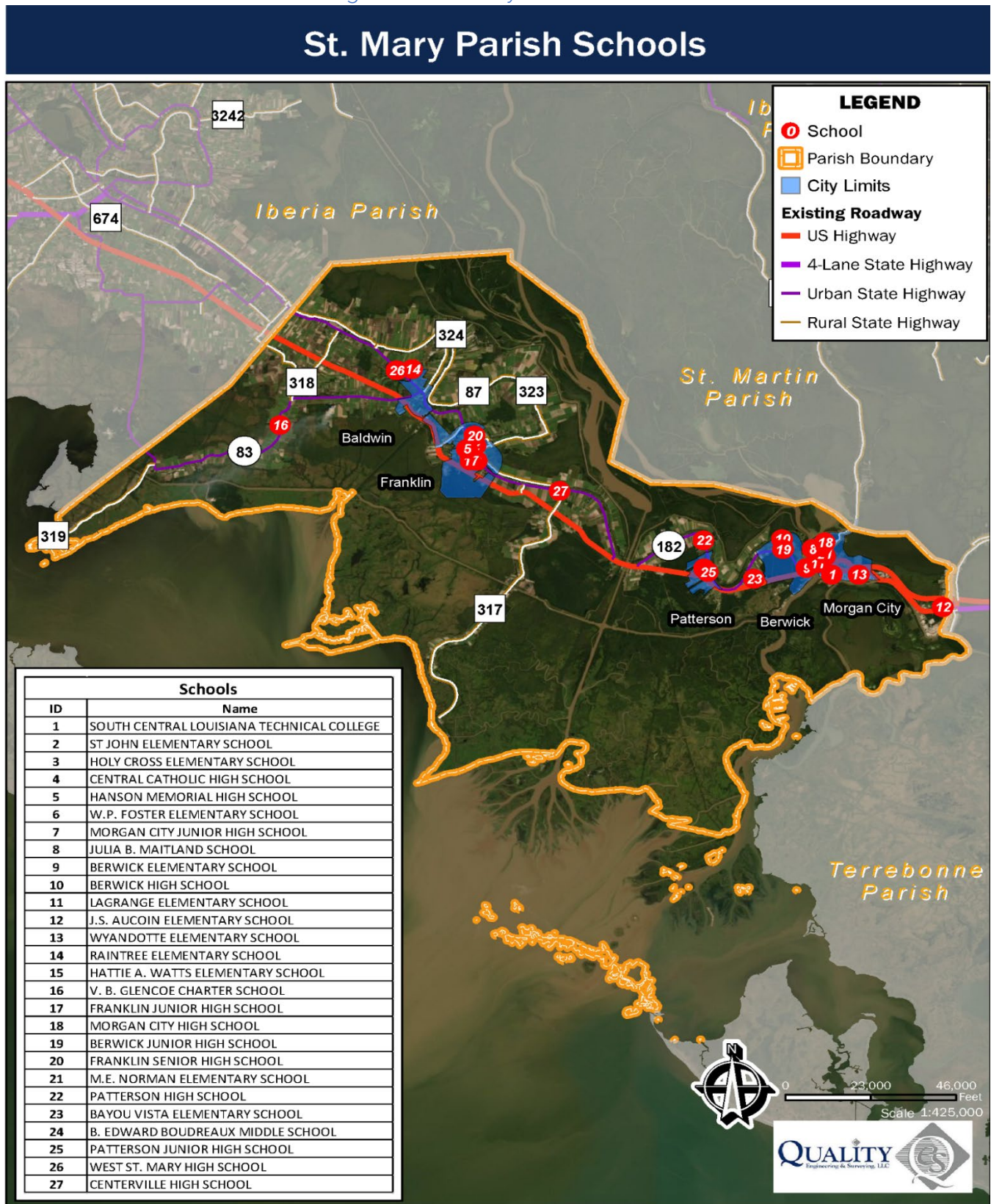


Figure 2-3: St. Mary Parish Public Health

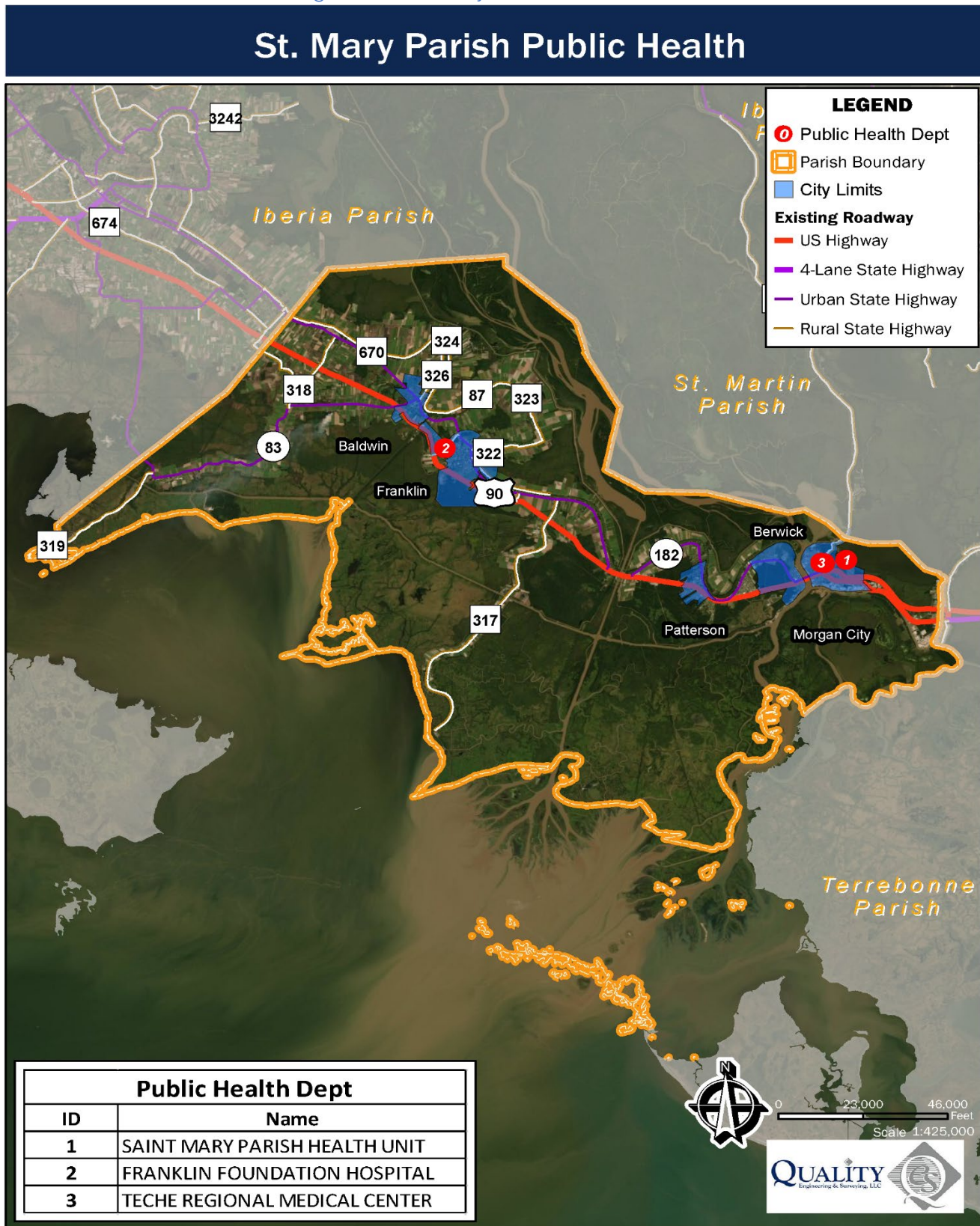


Figure 2-4: St. Mary Parish Fire Stations

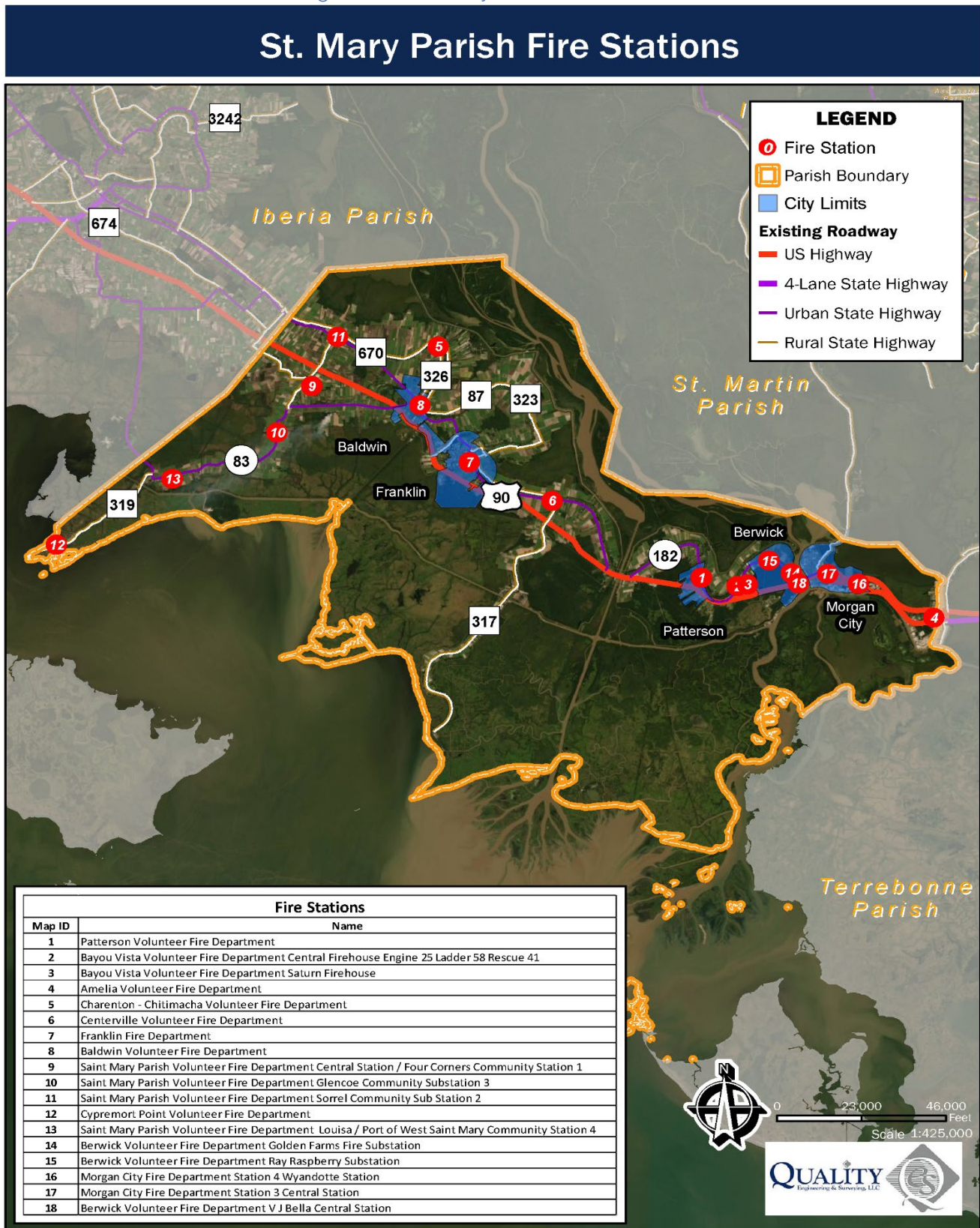


Figure 2-5: St. Mary Parish Law Enforcement

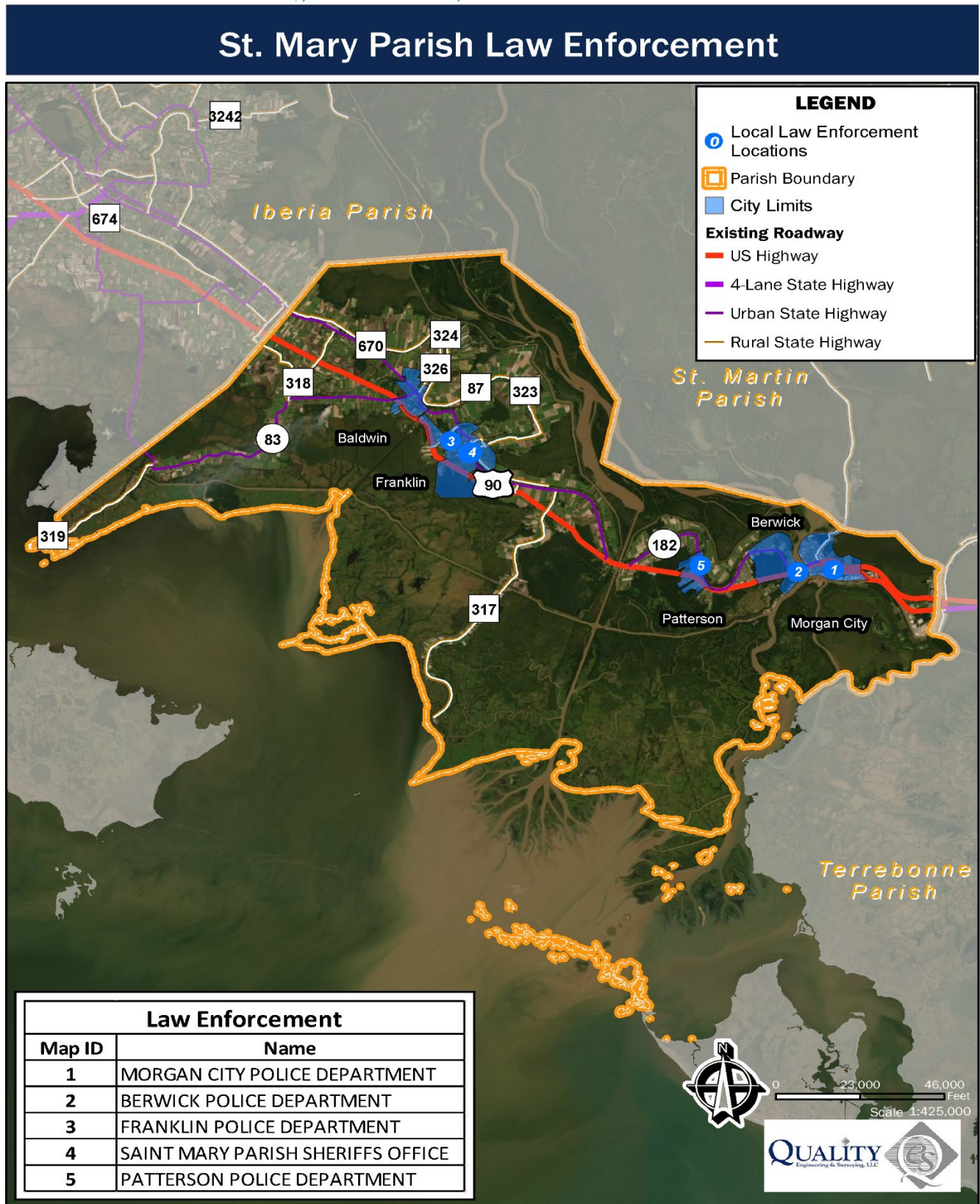
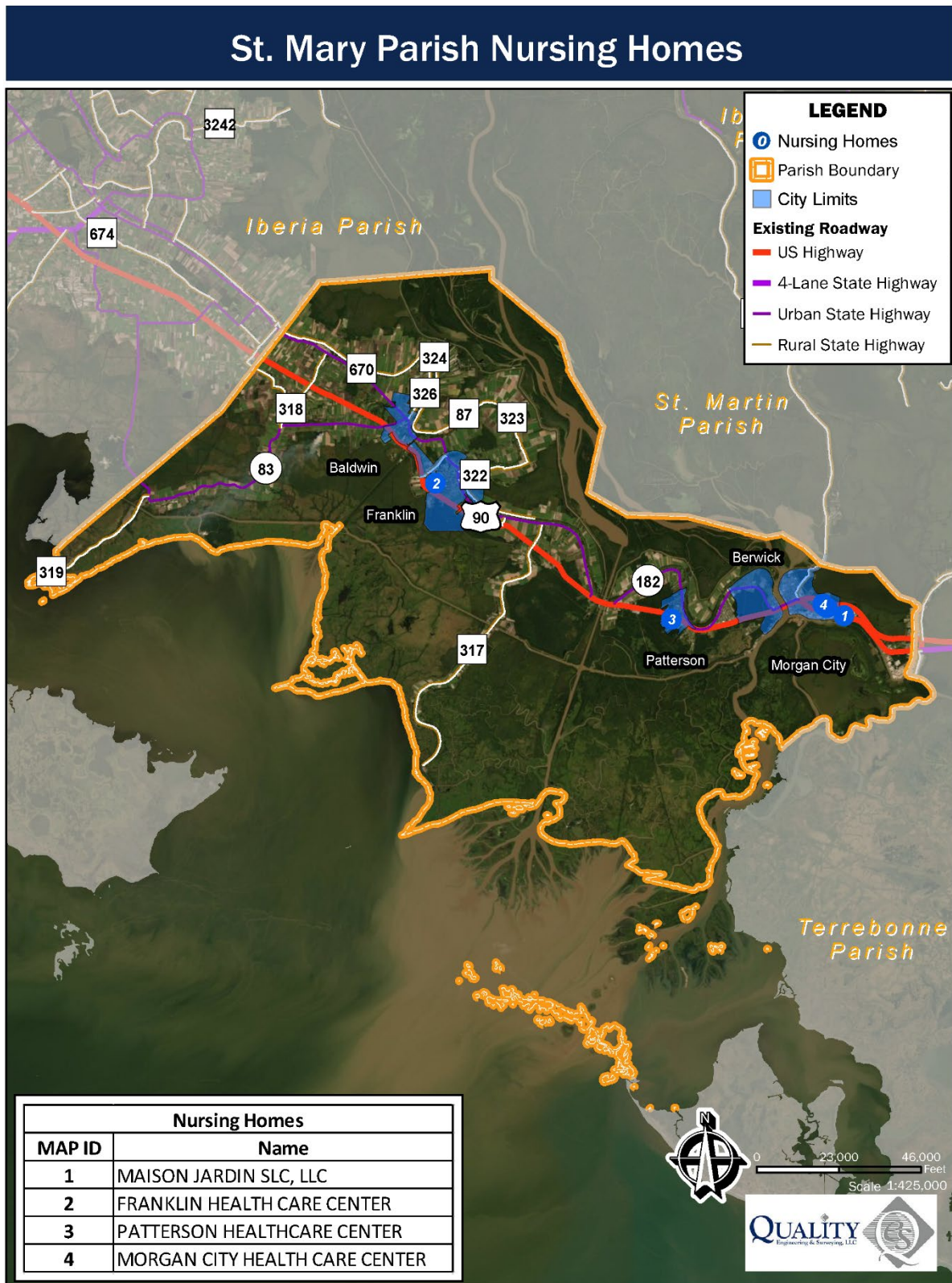


Figure 2-6: St. Mary Parish Nursing Homes



Critical Facilities of the Parish

A detailed list of critical facilities for the entire parish is present as an attachment in Appendix B. This list was compiled according to the following predefined groups:

- Essential facilities
- Transportation systems
- Lifeline utility systems
- High potential loss facilities
- Other important facilities

This information was gathered from sources including HAZUS, parish tax assessor data, and interviews with St. Mary Parish officials. After the list of critical facilities for the entire parish was completed, the HMPU committee reviewed the list and made the necessary changes. Additional critical facility maps are displayed as attachments Appendix B.

Critical Facilities within Hazard Areas

A list of critical facilities within the hazard area was compiled to identify areas truly at risk. As with critical facilities in the parish, the definition of the hazard area was based on risk assessment determined as a function of past storm events in combination with the FEMA-based 100-year flood plain. All identified facilities within these areas were compiled into a second critical facilities list as seen as an attachment in Appendix B.

The Cypremort Volunteer Fire Department is recorded to have suffered past flooding damage. The Cypremort Volunteer Fire Department, located just south of the Gulf Intracoastal Waterway along L.A. Hwy. 319, suffered flooding damage during Hurricane Lili. The damage report indicates that the site flooded to a level of three feet and remained flooded for six to eight hours. With the flood came silt and debris, causing one month of building inactivity. Electricity was restored within three days, and the fire service was back in operation. The critical facility data was collected by the Cypremort Volunteer Fire Department and St. Mary Parish Planning Department officials in the previous HM Plan update and revisited in stakeholder interviews.

The Cypremort Volunteer Fire Department is a single-story, 1,200 square foot building with an occupancy load of 50 people. It has a replacement value of \$166,800, contents value of \$250,200, function value of \$67,000, and a displacement cost of \$184 per day.

This list of critical facilities highlights buildings utilized to support St. Mary Parish in a hazardous event. It was decided that any repetitive loss structures, including residential properties, should also be considered during the mitigation planning.

Figure 2-7: Shows St. Mary Parish location of essential buildings with a potential of 50% or greater damage exposure in a 100-year hazardous event such as a hurricane



A potential levee failure was previously discussed as a highly significant hazard even though no failures have occurred in the area. Should a levee fail during a high-water event such as the Atchafalaya River flood of 1973, catastrophic losses would occur. The probability of levee failure is considered remote but only because of the diligence of parish and federal agencies and their routine inspection and maintenance. Nonetheless, the HMPU Committee considers this a serious threat.

Location

Areas that are inundated by the hypothetical levee failures are as followed:

- Southernmost Atchafalaya River Levee Failure - Inundates Berwick and/or Morgan City depending on the specific location
- Fig Street or Hellenic Levee Failure - Inundates most of the northeastern portion of Morgan City
- Levees north or south of Baldwin and Franklin - Inundates southwest corner of Baldwin and most of Franklin and Chitimacha Tribal lands
- Levees south of Patterson - Inundates most of Patterson, Bayou Vista, and Berwick

A map of levees and pump stations is displayed in Appendix B.

Previous Occurrences / Extents

The failure of a levee or floodwall during any type of high water even would prove catastrophic to the Parish, catastrophic to the parish, the magnitude of which would be dependent on the location of the break. The probability of at least the overtopping of a levee (as historical data has proven in the Bayou Sale area of the parish) is high. Most levees protecting urban areas were constructed by the U. S. Army Corps of Engineers. These levees are maintained by the St. Mary Levee District (SMLD) and/or drainage districts and inspected annually by Parish and Federal offices.

Table 2-7: List of Pump Stations and Responsible Drainage Districts

Pump Station	Responsible Drainage District
Berwick Borrow Canal Pump Station	Wax Lake East Drainage District
Cotton Road Pump Station	Wax Lake East Drainage District
Possum Bayou Pump Station	Wax Lake East Drainage District
Wax Lake Pump Station	Consolidated Drainage District #1
Maryland Pump Station	Consolidated Drainage District #1
Todd Levee Pump Station	Consolidated Drainage District #1
Tech Ridge Franklin Pump Station	Consolidated Drainage District #1
Yokely Reach Pump Station	Consolidated Drainage District #1
Golden Farms Pump Station	Wax Lake East Drainage District
Utah Street Pump Station	Wax Lake East Drainage District
Berwick South Pump Station	Wax Lake East Drainage District

Cannatas Pump Station	Wax Lake East Drainage District
Plantation Inn Pump Station	Subdrainage District #1 of Drainage #2
Gordy Pump Station	Consolidated Drainage District #1
Pump Station	Consolidated Gravity Drainage District #2
Pump Station	Consolidated Gravity Drainage District #2
Pump Station	Consolidated Gravity Drainage District #2
Pump Station	Drainage District #6
Todd Pump Station	Consolidated Drainage District #1
Yokely Pump Station No. 3	Consolidated Drainage District #1
Yokely Enlargement Pump Station	Consolidated Drainage District #1
Franklin Pump Station No. 1	Consolidated Drainage District #1
Franklin Enlargement Pump Station	Consolidated Drainage District #1
Centerville Pump Station	Consolidated Drainage District #1
Maryland Pump Station	Consolidated Drainage District #1
North Bend Pump Station	Consolidated Drainage District #1
Ellerslie Pump Station	Consolidated Drainage District #1

Figure 2-5: Bonnet Carre' Spillway (Source: US Army Corps of Engineers – New Orleans District Website)



Table 2-8: Openings of Bonnet Carre' Spillway

Date	Spillway Opening Cause
April 3, 2020	After heavy rains in the Mississippi and Ohio River valleys increased river stages
May 10, 2019	Heavy rains across the valley prompted a second opening of the year
Feb. 27, 2019	After heavy rains in the Mississippi and Ohio River valleys increased river stages
March 8, 2018	Opened to keep the volume of the Mississippi River flows at New Orleans from exceeding 1.25 million cubic feet per second (CFS).

Frequency / Probability

Levee failure is a major concern to the Parish as all municipalities and the entirety of the unincorporated areas would flood, depending on the location of the break. The probability of an actual levee breach in any given year is less than 1%. Levee failure and related maps are presented as attachments in Appendix B.

In 2011 the combination of springtime snowmelt and rainfall resulting from multiple major storm systems between April 23 and May 2 made a then a record-setting year for flooding in the central US. NOAA estimates that economic losses related to the flooding ranged from three to four billion. During operation of the spillway, materials suspended in the Mississippi River's water are deposited in the floodway and Lake Pontchartrain and Lake Borgne. Also, the vast input of freshwater into these brackish and saline lakes has an immediate, short-term, adverse environmental effect. Waterflow from the Mississippi River was also diverted to the Atchafalaya River, which resulted in its cresting on May 30, 2011. St. Mary Parish is located beyond the river's concrete floodwall and face the risk of adverse impact with opening or failure. If the spillway is open and storm surge, the risk of a levee beak would increase.

Estimated Potential Losses

Using the critical facilities list, HAZUS replacement value data, GIS models, and input from HMPU committee members, loss estimates were compiled in the 2020 HM Plan Update for hypothetical levee failure and composite risk flood events. Using historical high-water marks, the respective areas were inundated, and the critical facility flood levels were noted. The flood levels were then compared to FEMA damage estimate models for structure percent damaged, contents loss, and function loss, to come up with a total loss estimate for the parish critical facilities in each event. The total estimated losses were \$6.6 billion for the composite risk area and \$26.7 billion for the total structure use and function loss for a levee failure.

Detailed cost estimates for each critical facility can be found in Appendix B.

Vulnerability

The levee failure maps and associated inundation areas assume that as storm surge approaches the various levees, all levees fail completely and inundate both municipalities and unincorporated areas of the parish. Areas that are inundated by the hypothetical levee failures are as followed:

- Southernmost Atchafalaya River Levee Failure - Inundates Berwick and/or Morgan City depending on the specific location
- Fig Street or Hellenic Levee Failure - Inundates most of the northeastern portion of Morgan City
- Levees north or south of Baldwin and Franklin - Inundates southwest corner of Baldwin and most of Franklin and Chitimacha Tribal lands
- Levees south of Patterson - Inundates most of Patterson, Bayou Vista, and Berwick

Figure 2-8: View of street flooding from overtopped levees (Source: SMLD)



Land Use

A St. Mary Parish Land Use map is provided below as a description of land uses within the community. Most of the lands within the Parish are considered swampland, accounting for roughly 64% of the Parish's total land area. Construction has not occurred on much of St. Mary Parish lands, with developed areas being estimated at 6% of total parish acreage. There are an estimated 23 thousand buildings in the region with a total building replacement value of 5,064 million dollars (2014 dollars). Approximately 91% of the buildings and 72% of the building value are associated with residential housing.

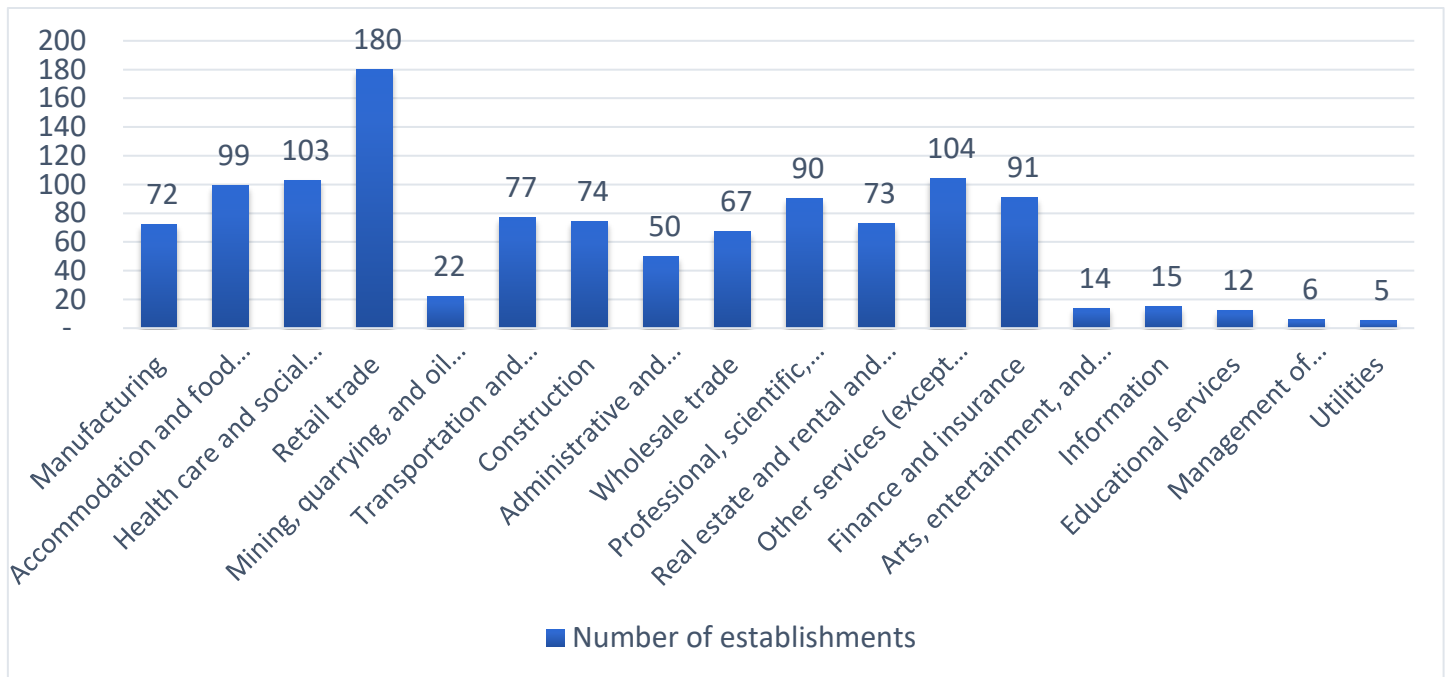
Table 2-9: St. Mary Parish Land Use Breakdown (Source: St. Mary Parish Levee District Masterplan)

DESCRIPTION	ACRES	%	Totals
Urban			2.4%
Residential	7,690	1.2%	
Commercial and Services	3,347	0.5%	
Industrial	3,320	0.5%	
Transportations, communications, and Transportation	55	0.0%	
Other urban or built-up land	820	0.1%	
Agriculture			18.8%
Cropland and pasture	119,298	18.8%	
Forested (wetlands and non-wetlands)			24.4%
Deciduous forest land	2,823	0.4%	
Forested wetland	152,269	23.9%	
Non-forested wetlands			14.4%
Nonforested wetland	91,699	14.4%	
Water	236,139	37.1%	37.1%
Other	18,683	2.9%	2.9%
TOTAL	636,143	100.0%	100.0%

Figure 2-9: Land Use Categories for St. Mary Parish



Figure 2-10: St. Mary Parish Employment Sector



Land Use Exposure

The following sections utilize HAZUS data to analyze the estimated value of land use classifications potentially impacted by hazardous events impacting St. Mary Parish.

Residential

The residential classification of St. Mary Parish is the largest building group within the parish. Data indicates 15,276 structures (dwelling units) with an estimated value of \$806,126,390. Of these buildings, 38% are located in the hazard area with an estimated value of \$278,010,340.

Commercial

Commercial buildings number 1,041 in the parish. The estimated value of these buildings is \$225,216,250, and 49% of the buildings are within the hazard area with an estimated value of \$103,032,900.

Industrial

The industrial classification of the parish consists of 393 buildings with an estimated value of \$53,306,640. Of the buildings noted, approximately 76% are in the hazard area with an estimated value of \$48,317,000.

Agricultural

In the agricultural class, 941 buildings exist with an estimated value of \$68,909,660. Of these, approximately 45% are in the hazard area and have an estimated value of \$39,515,780. While many of these structures are in the areas classified as agricultural, many are residential uses.

Other

Structures classified as other, 58 noted, have an estimated value of \$3,872,710. Within this category, 74% are within the hazard area with an estimated value of \$2,728,680.

Utilities

Within the utility classification, 10 buildings and facilities were identified, 100% of the buildings are in a hazard area. The structures have an estimated value of \$403,020. The following iterations initiated in 2014 Worksheet 3A are updated to represented as attachments in Appendix B

- Levee Failure for the Entire Parish
- Hurricane Risk Assessments

Identified Hazards

The potential destructive power of tropical storms and hurricanes were determined to be the most prevalent hazards to the parish. St. Mary Parish has 23 major declarations events with 22 of those events occurring from impact of the Parish's most significant hazard. This elevates the importance of hurricane and the associated flood impacts during the mitigation planning process. The risk of flooding during a hurricane event, primarily results from storm surge, and high wind speeds. While storm surge is a considerable hazard with immense destructive potential, flooding can also occur from non-hurricane events, such as flash flooding a common occurrence in heavy rainfall.

Hurricanes, tropical storms, and heavy storms present common occurrences, and associated wind damage is an additional threat. Damage from high winds can include roof damage, destruction of homes and commercial buildings, downed trees and power lines, and damage and disruption to services caused by heavy debris.

St. Mary Parish is also susceptible to tornadoes. Tornadoes can spawn from tropical storms or severe weather systems that travel through St. Mary Parish. High winds produced by tornadoes have the potential to destroy residential and commercial buildings, as well as create wind-borne objects from the debris produced by the destruction of the natural and human environment, such as building materials and trees.

The list below contains the most prevalent parish hazards to be analyzed as part of this risk assessment:

- a) Flooding (stormwater, storm surge, backwater, riverine, coastal)
- b) Tropical Storms/Hurricanes
- c) Tornadoes
- d) Thunderstorms (Lightning, Severe Wind, Hail)
- e) Coastal Erosion
- f) Drought
- g) Winter Storms

These hazards propose high levels of risk to the Parish to be discussed in further detail in this section.

Flooding

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

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

Flooding concerns are addressed as the major hazard issue in the parish, and, as such, are detailed throughout this HMP. Additionally, with high river stages and storm surge, flooding occurs in areas far removed from the source of the primary event. Locally, the term “backwater flooding” identifies this phenomenon. The issue is of such concern that the committee chose to include the feature with the overall function of flooding in addition to riverine, stormwater, and storm surge.

Stormwater excesses caused by large amounts of rainfall in a short period occur frequently in this coastal parish. Generally, the most damaging events are related to tropical storms and hurricanes. Most of the problems associated with stormwater events occur in the Franklin area (west end of the Parish), and the Amelia area (easternmost area of the parish). The flooding event of 2016 caused the most significant property damage parish-wide in the last 15 years.

The issue of flooding was discussed in detail and committee members determined that it is the most prevalent and the most frequent hazard to the parish. In stakeholder interviews, many committee members felt that the issue of flooding should be the focus during the mitigation planning process. They also agreed that it should continue to be listed in the four sub-categories noted below riverine,

backwater, stormwater, and storm surge. This approach proved valid in defining both the varying causes of flooding hazards and in determining vulnerability.

Stormwater

Stormwater excesses caused by large amounts of rainfall in a short period occur frequently in this coastal parish. Generally, the most damaging events are related to tropical storms and hurricanes. Primarily low-lying areas of the parish suffered damage from past events including Hurricane Juan in 1985 and Tropical Storm Allison in 2001. Most of the problems associated with stormwater events occur in the Franklin area (west end of the Parish), and the unincorporated Amelia area (easternmost area of the parish).

Storm surge

Storm surge caused by winds of hurricanes and tropical storms cause inundation of coastal floodplains and through coastal river and drainage systems. In the case of storm surge, southerly winds and high tides rise over and through bayous, drainage canals, and marshlands. Low lying coastal areas of St. Mary Parish are vulnerable to this type of flooding due to its predominant marshland coast and its proximity to the Gulf of Mexico. This type of event occurred during Hurricanes Audrey, Lili, Rita, and Ike. Audrey's storm surge, as well as that of Rita and Ike, came up slowly and fell slowly over several days while the surge with Hurricane Lili was very rapid. The primary difference was that the faster moving surge created not only flood damage but also damage associated with the velocity of the rising water. Though Hurricane Audrey occurred nearly a half-century ago, it remains the highest and most critical measure of storm surge in the parish even though landfall was in Cameron Parish approximately 150 miles away.

Surge affects urban structures and cropland in proximity to the lower extremes of the Bayou Cypremort and Bayou Sale ridges nearest the coast and in Franklin where surge flows north into normally south-flowing drainage conduits including the Franklin and Charenton drainage canals. Surge inundation depths of 6-8ft have been recorded. Structures have been destroyed and levees topped damaging sugar cane acreage. Surge has caused the closure of US Highway 90 in western St. Mary Parish following hurricane events.

Backwater

Backwater flooding is normally associated with riverine flooding (Atchafalaya River or Wax Lake Outlet) and is generally indicative of a lack of velocity. Low lying areas, particularly those outside of protection levees are at risk. Riverine based backwater flooding typically occurs during the spring when the Atchafalaya River is at its highest level. Also, a heavy rainfall event within the Lake Verret watershed portion of the Terrebonne Basin coupled with the swollen river and marsh as well as sustained southerly winds hinders drainage outflow causing backwater flooding to the same areas susceptible to storm surge. This phenomenon generally results in the flooding of the eastern areas of the Parish with a focus on the Amelia vicinity. A similar flood

of this type inundated the entire Amelia area in 1975. Because of its location along Bayou Beouf and lack of levee protection, Amelia is also highly susceptible to backwater flooding when combined with stormwater events in the Lake Verrett watershed. Historically, flooding is generally widespread but shallow in these areas. No repetitive losses have been recorded, but tremendous expense in sandbagging, additional pumping, and other major “inconveniences” to individual property owners are noted.

Riverine

Riverine flooding occurs along a river or smaller stream. It is the result of runoff from heavy rainfall or intensive snow or ice melt. The speed with which riverine flood levels rise and fall depends not only on the amount of rainfall but even more on the capacity of the river itself, as well as the shape and land cover of its drainage basin. In the case of St. Mary Parish, it is the Atchafalaya River that generates the greatest flooding concern. The modern-day record is the flood of 1973. The flood of 1973 inundated most of the parish lying lower than the higher reaches of the Teche Ridge and not protected by levees, especially along and east of the Bayou Sale Ridge. This flood caused a federally constructed temporary seawall height extension in Morgan City during the flood. A series of federally funded levee heightening and strengthening and the construction of a new seawall to protect Morgan City and Berwick resulted.

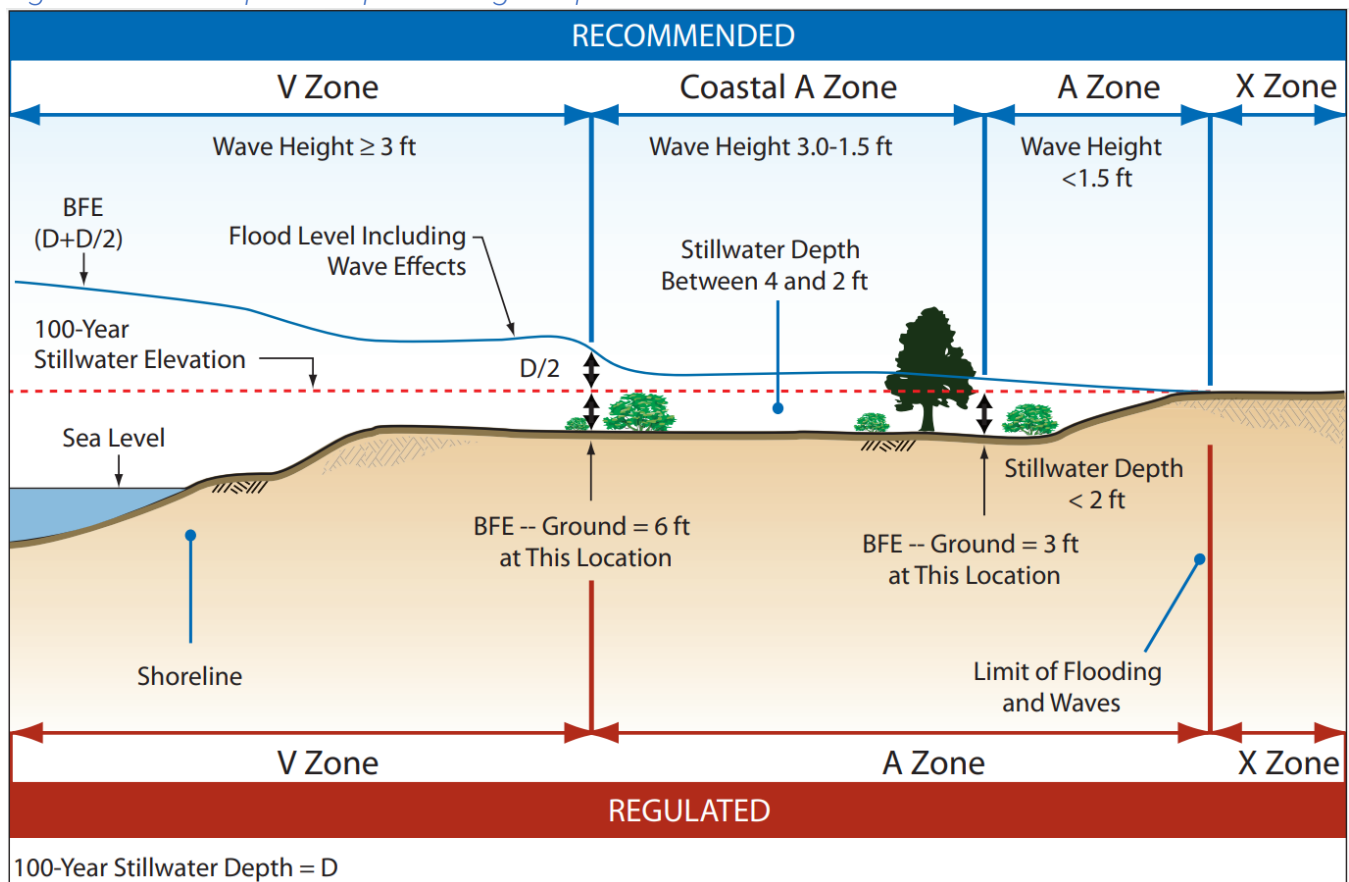
Figure 2-11: Riverine flooding inundation in St. Mary Parish



Coastal

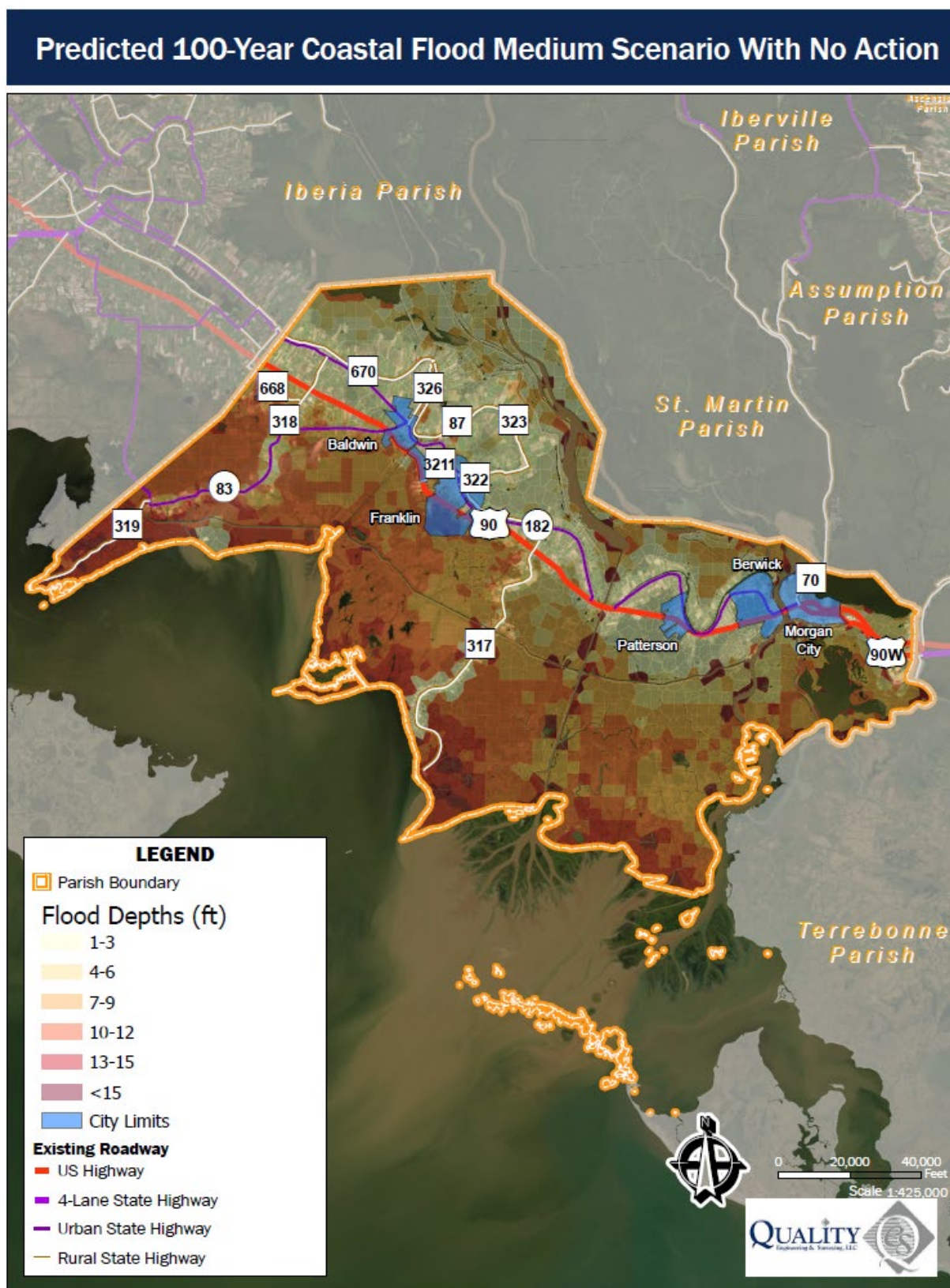
Coastal flooding occurs when waves, tides, storm surge, or heavy rainfall from coastal storms produce a flood. Coastal areas, like all areas, can also flood from high rainfall or overflowing streams. Coastal flooding is influenced by storm surges associated with tropical cyclonic weather systems (e.g., hurricanes, tropical storms, tropical depressions, and typhoons), extratropical systems, and tsunamis. Coastal flooding is primarily characterized by wind-driven waves. Estimating flood velocities in coastal flood hazard areas involves considerable uncertainty, and little reliable historical information or data from actual coastal flood events is available. Despite the uncertainties, there are methods to estimate approximate coastal flood velocities. One common method is based on the still water depth (i.e., the flood depth without waves).

Figure 2-12: Example floodplain along an open coast.



(Source: FEMA)

Figure 2-13: Areas to consider in a 100yr coastal scenario



Location

St. Mary Parish has experienced significant flooding in its history and can expect more in the future. Many parts of the parish are located in the 100-year floodplain. Of the 716,359 acres of land in the parish, 659,207 acres are considered "special flood hazard areas", constituting 92 % of the total land area. In general, the southern half of the planning area has notable vulnerability to flooding, either due to riverine flooding or flooding related to Hurricanes and Tropical Storms. Discussions with HMPU Committee members reiterated that northern areas of the parish were known to have special vulnerability to flooding such as the unincorporated area of Bayou Vista and runoff restrictions along Highway 90 were a concern.

Previous Occurrences / Extents

Historically, there have been 12 flooding events that have created significant flooding with damages in St. Mary Parish between 1999 and 2019. Below is a brief synopsis of the 12 recorded flooding events with listed damages from data retrieved from SHEL DUS and NOAA via the National Weather Service (NWS).

*Table 2-10: Historical Occurrences of Flooding with Property Damages
(1999-2019)*

Date	Location	Event Narrative	Property Damages (ADJ 2018)
6/6/2001	FRANKLIN	Nearly five inches of rain fell in less than three hours, resulting in significant street flooding of the Franklin area. Several homes and many businesses were impacted	\$212,682
10/9/2002	FRANKLIN	n/a	\$279,163
6/11/2003	FRANKLIN	n/a	\$6,824
5/2004	PARISHWIDE	n/a	\$664,656
7/18/2004	MORGAN CITY	n/a	\$66,466

Date	Location	Event Narrative	Property Damages (ADJ 2018)
9/2008	PARISHWIDE	Storm surge values were 12-16 feet across southwestern LA	\$72,971,245
10/22/2009	PARISHWIDE	Widespread flooding across the cities of Patterson, Berwick, and Morgan City. A U.S. Army Corps of Engineers rain gauge at Berwick Locks measured a total of 4.25 inches of rain.	\$5,852
12/8/2009	PARISHWIDE	Reported widespread flooding across Baldwin, Bayou Vista, Berwick, and Morgan City. Thunderstorms repeatedly developed just south of the Louisiana coast and moved northeastward across St. Mary Parish leading to rainfall totals of 6 to 9 inches	\$591,082
6/4/2010	FRANKLIN	Reported most streets in town were flooded, with Iberia Street and Weber Street closed due to high water.	\$3,454
7/19/2011	PARISHWIDE	Between 3 and 4 inches of rain caused sporadic flash flooding in parts of the Morgan City, Berwick, and Amelia areas.	\$111,633
6/9/2013	PARISHWIDE	Flash Flooding was reported in Patterson, Bayou Vista, and Berwick with several roads flooded and a few homes taking on a few inches of water. Rainfall estimates across the area were 5 to 10 inches.	\$21,558
8/14/2016	PARISHWIDE	Flooding along Bayou Teche occurred from around Breaux Bridge southward into Saint Mary Parish. In Saint Mary Parish flooding was mainly confined to the northwest section of the parish along the bayou. Some roadways and structures remained flooded for multiple days as the water slowly drained toward the gulf and the Atchafalaya River.	\$28,262,908

Frequency / Probability

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

Table 2-11: Annual Flood Probabilities for St.Mary Parish

Jurisdiction	Annual Probability	Return Frequency
St.Mary Parish (Unincorporated)	100%	Once a year
Baldwin	15%	6 - 7 years
Berwick	35%	2 - 3 years
Franklin	100%	Once a year
Patterson	25%	1 - 2 years
MC	100%	Once a years

Based on historical record, the overall flooding probability for the entire St. Mary Parish Planning area is 100% with 29 events occurring over a 20-year period. Based on the State's Hazard Mitigation Plan and the amount of significant flooding events that have taken place throughout the parish, the St. Mary Parish Planning area can anticipate having more a flooding event each year.

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

Figure 2-14: Map of flood zone categories for St. Mary Parish

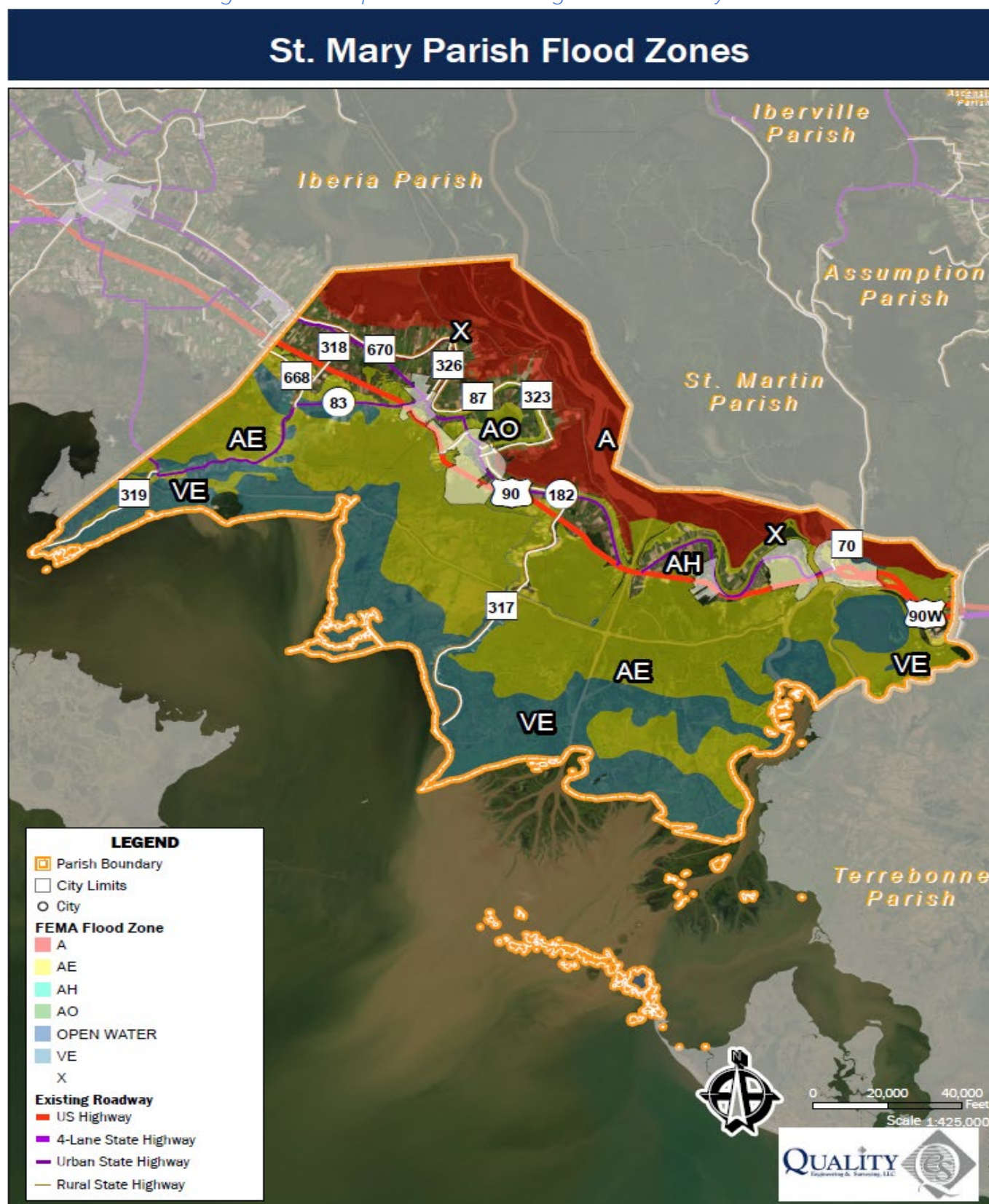
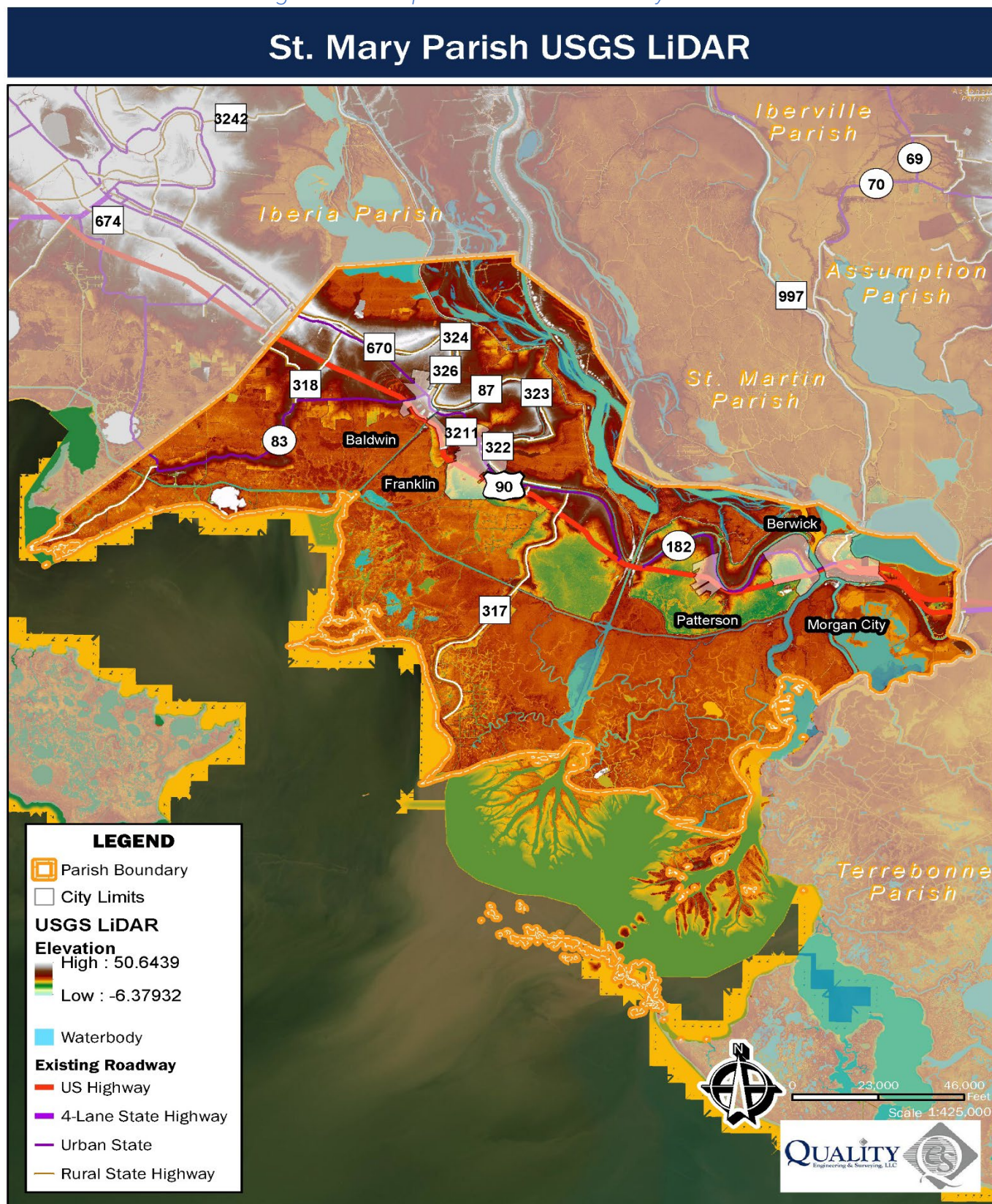


Figure 2-15: Map of elevations for St. Mary Parish



Property Damage

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

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

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

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

Repetitive Loss Properties

The definitions of Repetitive Loss (RL) differ when utilizing different programs such as NFIP (National Flood Insurance Program) or FMA (Flood Mitigation Assistance) classifications.

FMA defines structures covered by a contract for flood insurance made available under the NFIP that:

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

NFIP defines a RL property as any insurable building for which two or more claims of more than \$1,000 were paid by the National Flood Insurance Program (NFIP) within any rolling ten-year period, since 1978.

- a. An RL property may or may not be currently insured by the NFIP.

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

It is covered under a contract for flood insurance made available under the NFIP; It has incurred flood-related damage

For which four or more separate claims payments have been made under flood insurance coverage with the amount of each claim exceeding \$5,000 and with the cumulative amount of such claim payments exceeding \$20,000; or

For which at least two separate claims payments have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structure.

FEMA defines severe repetitive loss as a single-family property that is covered under flood insurance by the NFIP, incurring flood-related damage, with four (4) or more separate insurance claim payments exceeding \$5,000. Additionally, SRL properties meet the following:

- a. The cumulative amount of claim payments exceeding \$20,000; or
- b. At least 2 separate claims payments have been made with the cumulative amount of such claims exceeding the reported value of the property.

Figures regarding repetitive loss structures for St. Mary Parish are provided in Table 2-16.

Figure 2-16: St. Mary Parish Repetitive Loss Structures Percentage Breakdown

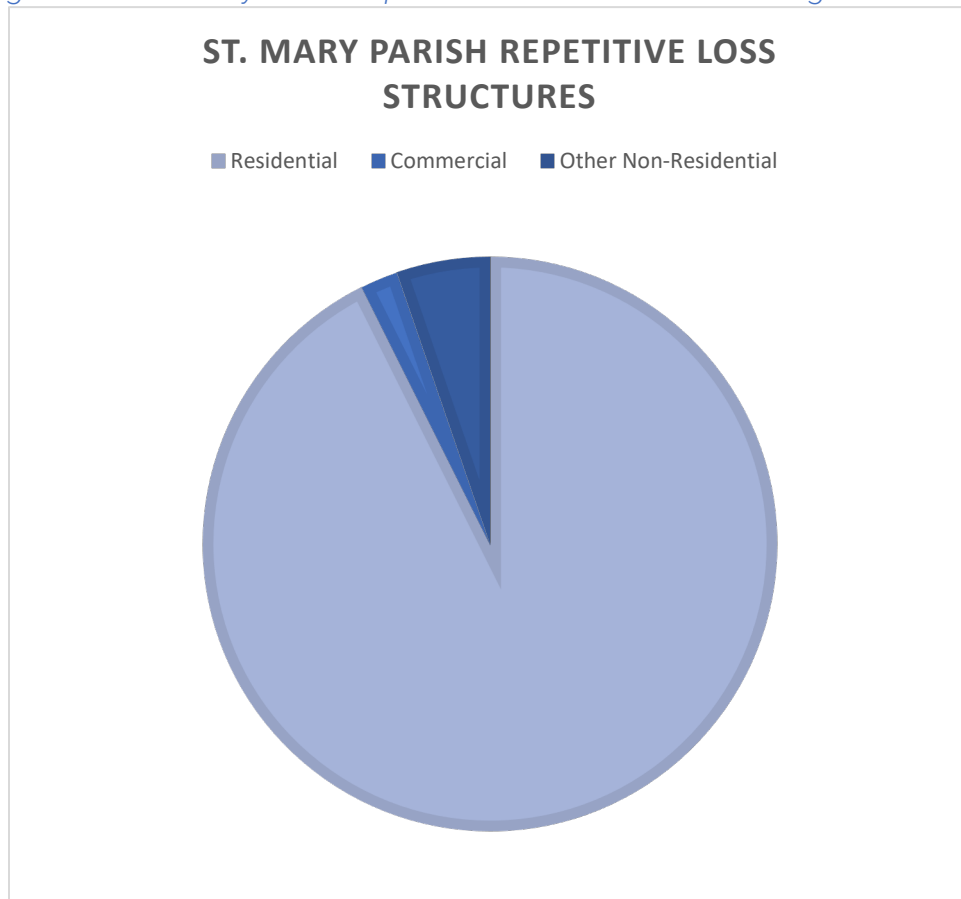


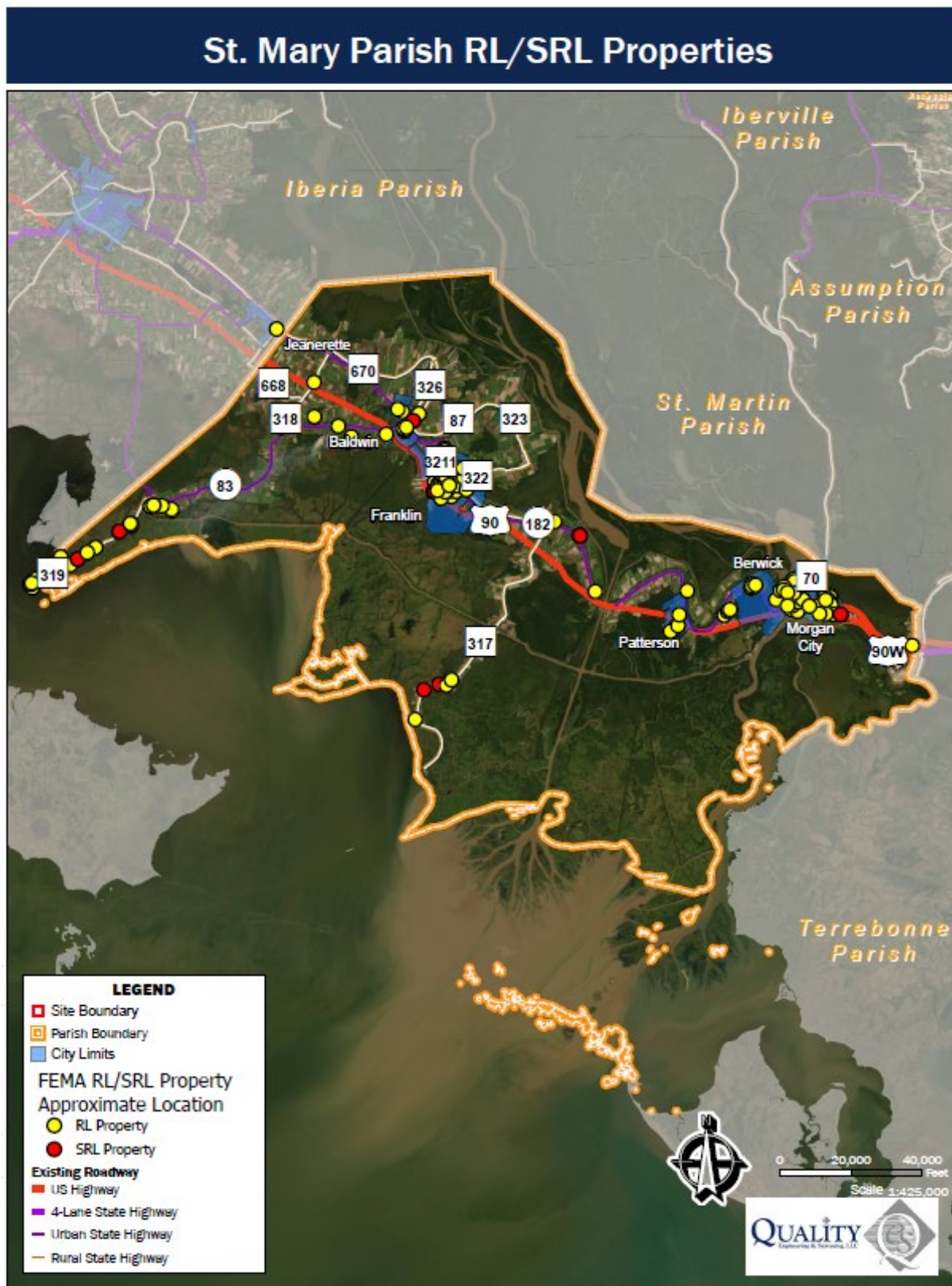
Table 2-17: Repetitive Loss Structures for St. Mary Parish

Jurisdiction	Number of Structures	Residential	Commercial	Other	Total Claims	Total Claims Paid	Average Claim Paid
St. Mary Parish (Unincorporated)	165	153	5	7	456	\$14,875,333	\$32,621
Baldwin	7	7	0	0	21	\$235,757	\$11,227
Berwick	9	9	0	0	26	\$444,266	\$17,087
Franklin	67	64	0	3	183	\$3,593,265	\$19,635
Patterson	8	8	0	0	19	\$335,197	\$17,642
Morgan City	29	28	1	0	85	\$735,907	\$8,658
Total	285	269	6	10	790	\$20,219,725	\$25,595
Chitimatcha Tribe	0	0	0	0	*14	*\$446,260	*\$31,8767

*Note: The Chitimatcha Tribe Reservation is located within St. Mary Parish (Unincorporated). *Figures were estimated based on 660 persons (3% percent) living on the reservation. Additionally, communications with the Tribe found no repetitive loss properties are located on the Reservation.*

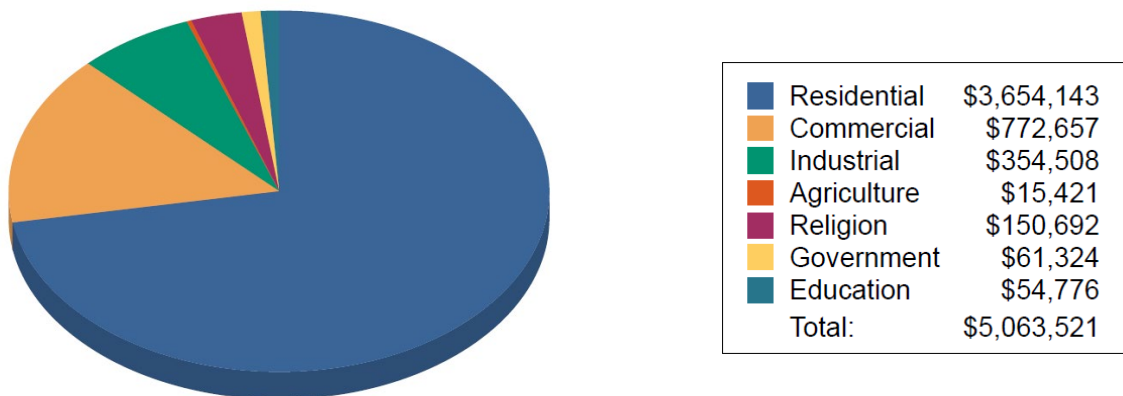
The repetitive loss structures were able to be geocoded to provide an overview of where the repetitive loss structures were located throughout the parish. Figure 2-17 shows the approximate location of the structures. The repetitive loss property map shows a concentrated area of repetitive loss structures focused in and around the incorporated areas of Franklin and Morgan City.

Figure 2-17: St. Mary Parish Repetitive Loss Structures



Figures below assess the expected damages from flooding in St. Mary Parish in the event of a 100yr storm event. Hazus was utilized to provide a methodology and to determine hazard losses at the Parish scale. Below in Figure 2-18 see the cost associated with building stock in 100 yr impact of a flood hazard. Determining the value of building stock helps decision-makers determine where local, state, and regional officials should direct efforts to become more resilient and to reduce risks by preparing for emergency response and recovery.

Figure 2-18: St. Mary Parish Building Stock Exposure to Flooding by General Occupancy



National Flood Insurance Program

Flood insurance statistics indicate that St. Mary Parish has 4,545 flood insurance policies with the NFIP, with total annual premiums of \$27,290,546. In St. Mary Parish, the City of Morgan City is the only participant in the NFIP. St. Mary Parish and each of the incorporated jurisdictions will continue working to adopt and enforce floodplain management requirements, including regulating new construction, Special Flood Hazard Areas, and will continue to monitor activities including local requests for new map updates. Flood insurance statistics and additional NFIP participation details for St. Mary Parish are provided in the tables to follow.

Table 2-14: Summary of Community Flood Maps for St. Mary Parish

CID	Community Name	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Date Joined the NFIP	Tribal
220192	St. Mary Parish (Unincorporated)	n/a	09/03/80	4/19/2017	n/a	No
220193	Baldwin	09/07/73	12/15/78	4/19/2017	n/a	No
220194	Berwick	09/06/1974	09/03/80	4/19/2017	n/a	No
220195	Franklin	03/22/74	09/15/78	4/19/2017	n/a	No
220197	Patterson	08/06/76	07/03/78	4/19/2017	n/a	No
220196	Morgan City	10/05/73	08/15/78	4/19/2017	10/01/91	No
220192	Chitmatcha Tribe	n/a	09/03/80	4/19/2017	n/a	Yes

Table 2-15: Summary of NFIP Policies for St. Mary Parish

Location	No. of Insured Structures	Total Insurance Coverage Value	Annual Premiums Paid	No. of Insurance Claims Filed Since 1978	Total Loss Payments
St. Mary Parish (Unincorporated)	1,309	\$ 322,448,300	\$8,061,208	456	\$14,875,333
Baldwin	50	\$ 13,485,500	\$321,083	21	\$235,757
Berwick	622	\$165,085,100	\$4,127,128	26	\$444,266
Franklin	620	\$116,783,100	\$2,780,550	183	\$3,593,265
Patterson	346	\$83,858,400	\$1,996,629	19	\$335,197
Morgan City	1,598	\$420,165,800	\$10,003,948	85	\$735,907
Total	4,545	\$1,122,526,200	\$27,290,546	334	\$20,219,725
Chitimatcha Tribe (estimates)	*39	*\$9,673,449	*\$ 241,836	*14	*\$ 446,260

Note: The Chitimatcha Tribe Reservation is located within St. Mary Parish (Unincorporated). Figures were calculated based on 3% percent of St. Mary Parish (Unincorporated) living on the reservation.

According to the Policy Information by State and Community dated January 31, 2021, Morgan City participates in the CRS, while the jurisdictions of St. Mary Parish (Unincorporated), the Chitimatcha Tribe, Baldwin, Berwick, Franklin, and Patterson do not participate.

Threat to People

Just as with property damage, depth and velocity are major factors in determining the threat posed to people by flooding. It takes very little depth or velocity for flood waters to become dangerous. A car will float in less than two feet of moving water, and can be swept downstream into deeper waters, trapping passengers within the vehicle. Victims of floods have often put themselves in perilous situations by entering flood waters that they believe to be safe, or by ignoring travel advisories.

Major health concerns are also associated with floods. Flood waters can transport materials such as dirt, oil, animal waste, and chemicals (e.g., farm, lawn, and industrial) that may cause illnesses of various degrees when coming in contact with humans. Flood waters can also infiltrate sewer lines and inundate wastewater treatment plants, causing sewage to backup and creating a breeding ground for dangerous bacteria. This infiltration may also cause water supplies to become contaminated and undrinkable.

Flooding in St. Mary Parish

By definition, flooding is caused when an area receives more water than the drainage system can convey. The following is a synopsis of the types of flooding that St. Mary Parish experiences.

Flash Floods: Flash floods are characterized by a rapid rise in water level, high velocity, and large amounts of debris. They are capable of uprooting trees, undermining buildings and bridges, and scouring new channels. Major factors in flash flooding are the high intensity and short duration of rainfall, as well as the steepness of watershed and stream gradients.

Local Drainage or High Groundwater Levels: Locally heavy precipitation may produce flooding in areas other than delineated floodplains or along recognizable drainage channels. If local conditions cannot accommodate intense precipitation through a combination of infiltration and surface runoff, water may accumulate and cause flooding problems.

Backwater Flooding: Backwater flooding is normally associated with riverine flooding and connotes minimal velocity. All low lying areas are at risk. A heavy rainfall event coupled with a swollen river, canal, bayou, or marsh hinders drainage outflow, causing backwater flooding to the same areas susceptible to storm surge.

Riverine Flooding: Riverine flooding, by definition, is river-based. Most of the riverine flooding problems occur when the Atchafalaya River crests at flood stage levels, causing extensive flooding in low-lying areas.

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

Threat to People

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

Table 2-16: Vulnerable Populations Susceptible to a 100-year Flood Event (Source: Hazus)

Number of People Exposed to Flood Hazards			
Location	# in Community	# in Hazard Area	% in Hazard Area
St. Mary Parish (Unincorporated)	21,008	19,499	92.82%
Baldwin	2,430	722	29.71%
Berwick	4,938	3,221	65.23%
Franklin	7,660	6,059	79.10%
Patterson	12,404	2,520	20.31%
Morgan City	6,110	3,792	62.06%
Total	54,550	50,198	92.02%
Chitimatcha Tribe (estimates)	660	627	<95.00 %

Vulnerability

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

Hurricanes/Tropical Storms

Tropical storms are among the worst hazards Louisiana faces. These spinning, low-pressure air masses draw surface air into their centers and attain strength ranging from weak tropical waves to the most intense hurricanes. Usually, these storms begin as clusters of oceanic thunderstorms off the western coast of Africa, moving westward in the trade wind flow. Hurricane hazards are a primary concern regarding flooding from both stormwater and storm surges. Wind damage from hurricanes is also of major concern. Stormwater issues and surge issues are also addressed as flood concerns. Appendix B provides an analysis of expected losses for the Parish.

Numerous hurricanes and tropical storms have impacted the study area and have the potential to impact the entire parish yearly. A table summarizing these instances is noted in this section. Information includes dates, names, impact to the area, and dollar damage estimates. While much of the hazard impact of hurricanes is focused on flooding issues, the wind is as much a concern to residents and property owners.

Figure 2-19: Saffir-Simpson Hurricane Wind Scale

The Saffir-Simpson Hurricane Scale is a classification used for Western Hemisphere tropical cyclones that exceed the intensities of tropical depressions and tropical storms. Hurricanes are divided into five categories distinguished by the intensities of their sustained winds. To be classified as a hurricane, a tropical cyclone must have maximum sustain

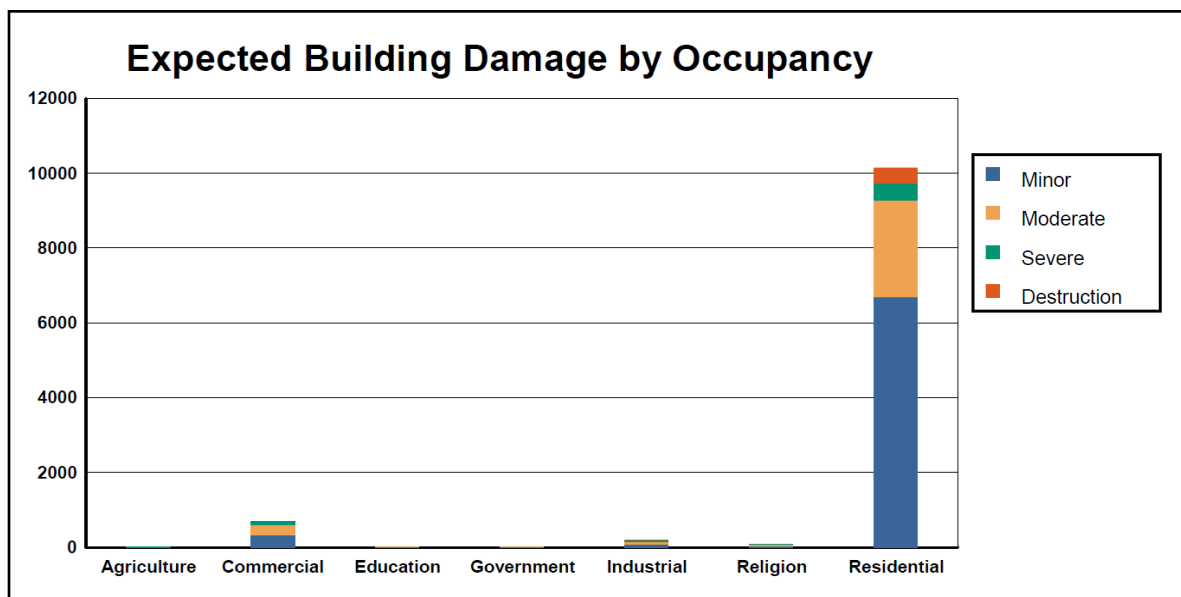
The Saffir-Simpson Hurricane Scale is a classification used for Western Hemisphere tropical cyclones that exceed the intensities of tropical depressions and tropical storms. Hurricanes are divided into five categories distinguished by the intensities of their sustained winds.

Saffir-Simpson Hurricane Wind Scale	
Five	≥ 70 m/s, ≥ 137 knots ≥ 157 mph, ≥ 252 km/h
Four	58-70 m/s, 113-136 knots 130-156 mph, 209-251 km/h
Three	50-58 m/s, 96-112 knots 111-129 mph, 178-208 km/h
Two	43-49 m/s, 83-95 knots 96-110 mph, 154-177 km/h
One	33-42 m/s, 64-82 knots 74-95 mph, 119-153 km/h

Additional classifications

Tropical storm	18-32 m/s, 35-63 knots 39-73 mph, 63-118 km/h
Tropical depression	<17 m/s, <34 knots < 38 mph, <62 km/h

Figure 2-20: St. Mary Parish Building Stock Exposure to Hurricane by General Occupancy (Source: HAZUS)



Location

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

Previous Occurrences / Extents

The central Gulf of Mexico coastline is among the most hurricane-prone locations in the United States, and hurricanes can affect every part of the state. The tropical storm events experienced in St. Mary Parish include tropical storms, and hurricanes. The SHELDUS database reports a total of seven tropical storm/hurricane events occurring within the boundaries of St. Mary Parish between the years 2000 and 2018. NOAA data was used to determine two events occurring after 2018. As a worst case scenario, St. Mary Parish can expect to experience hurricanes at the category 4 level in the future.

Table 2-17: St. Mary Parish Presidentially Declared Storm Events (Source: St. Mary Parish Plan Update 2014)

St. Mary Parish Presidentially Declared Storm Events (1906-2014)			
Year	Storm Name	Impact	Property Damage (\$ Millions)
1906	Hurricane	Destructive winds and tides	2
1915	Hurricane	Flooding, high water, and strong winds	2.5
1957	Hurricane Audrey	Storm surge, backwater, tornadoes, high winds	4
1964	Hurricane Hilda	Winds, tornadoes	2.5
1965	Hurricane Betsy	Flooding, winds, and high tides	21
1969	Hurricane Camille	Flooding, maximum winds	22
1973	River Food of 1973	Riverine and back-water flooding	n/a
1983	Heavy Rain Event	Heavy rains	n/a
1985	Hurricane Juan	Heavy rains	4
1991	Heavy Rain Event	Heavy rains	n/a
1992	Hurricane Andrew	Heavy rains, tornadoes	55
1998	Hurricane Georges	Flooding, high winds, tornadoes	3.7
2001	Tropical Storm Allison	Heavy rains, tornadoes	6.5
2002	Tropical Storm Isadore	Heavy rains, tornadoes	0.4
2002	Hurricane Lili	Heavy rains, tornadoes	1
2005	Hurricane Katrina	Heavy rains, tornadoes	81
2005	Hurricane Rita	Heavy rains, tornadoes	10
2008	Hurricane Ike	Heavy rains, tornadoes	20
2008	Hurricane Gustav	Heavy rains, tornadoes	
2012	Hurricane Isaac	Heavy rains, tornadoes	1

Note: Loss estimates for all affected areas 1906-2005, estimates in 2000 dollars

The table below lists tropical storms impacting St. Mary Parish over the past 5 years:

Table 2-18: St. Mary Parish Tropical Storm Events (Source: NOAA & SHELUDS)

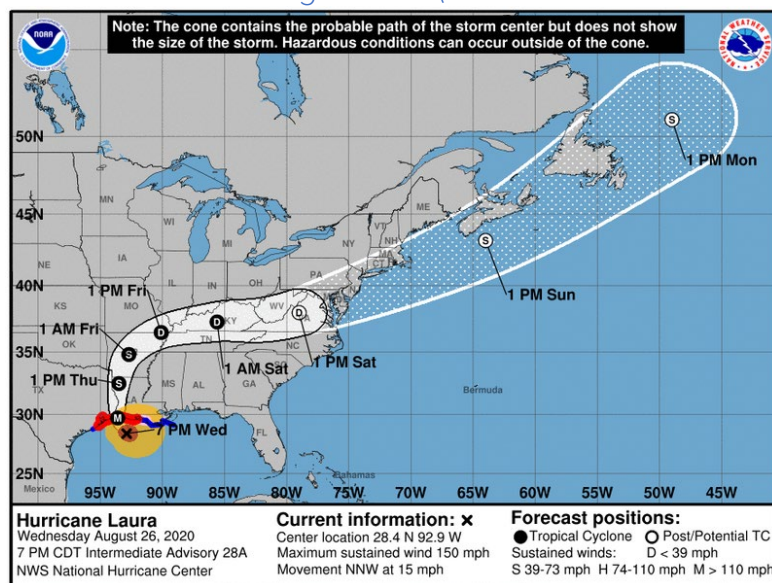
St. Mary Parish Tropical Storm/Hurricane Events (2010-2020)			
Year	Storm Name	Impact	Property Damage
2011	Tropical Storm Lee	Heavy rainfall, high water, and strong winds	\$ 15,000
2012	Hurricane Isaac	Heavy rainfall, high water, and strong winds	\$ 5,000
2019	Hurricane Barry	Heavy rainfall, high water, and strong winds	\$ 5,000,000
*2020	Hurricane Laura	Heavy rainfall, high water, and strong winds	\$ 12,000,000

Note: The full extent of impacts from Hurricane Laura are being determined

Hurricane Laura (2020)

Hurricane Laura was the first major hurricane of the 2020 season. Laura was particularly notable for its explosive strengthening once it emerged in the Gulf of Mexico after crossing Hispaniola. In less than 48 hours, it intensified from a tropical storm to a category 4 hurricane. It was particularly devastating because it reached peak intensity just as it made landfall near the Texas-Louisiana border on August 27, just three days after Hurricane Marco made landfall in eastern Louisiana. Lake Charles, LA was particularly hard hit by Laura's strong winds. There was a voluntary evacuation for the St. Mary Parish. Homes and businesses were damaged by trees, other debris, and wind. Property south of the Intracoastal Waterway was flooded by the storm surge. Over 50 percent of the parish was without power immediately after the storm. Wind gusts ranged from 40 to 70 mph while the storm surge reached 9.45 NAVD88 at Cypremort Point.

Figure 2-21: Hurricane Laura August 2020 (Source: National Hurricane Center)



Hurricane Barry (2019)

Hurricane Barry became the first hurricane of the 2019 Atlantic season and the first to make landfall in the U.S. Barry's circulation broke off the end of a stationary front. The initial disturbance formed over land before meandering to the Gulf of Mexico. Strong vertical shear limited how much it could develop while over the Gulf, but it did achieve hurricane status just as it was making landfall. Despite the relatively weak winds, Barry's slow movement led to flash flooding in Louisiana and Arkansas, including a new statewide record for rain from a tropical cyclone—16.59" in Dierks, AR. As Barry's remnants moved northeastward, it brought hot tropical air with it that exacerbated the ongoing heatwave along the East Coast. St. Mary Parish saw widespread wind damage due to hurricane-force wind gusts that produced widespread power outages lasting for several days. Many homes and businesses saw wind damage from maximum sustained winds of 75 mph.

Figures 2-22: Storm Surge for Hurricane Barry June 2019 (Source: National Hurricane Center)

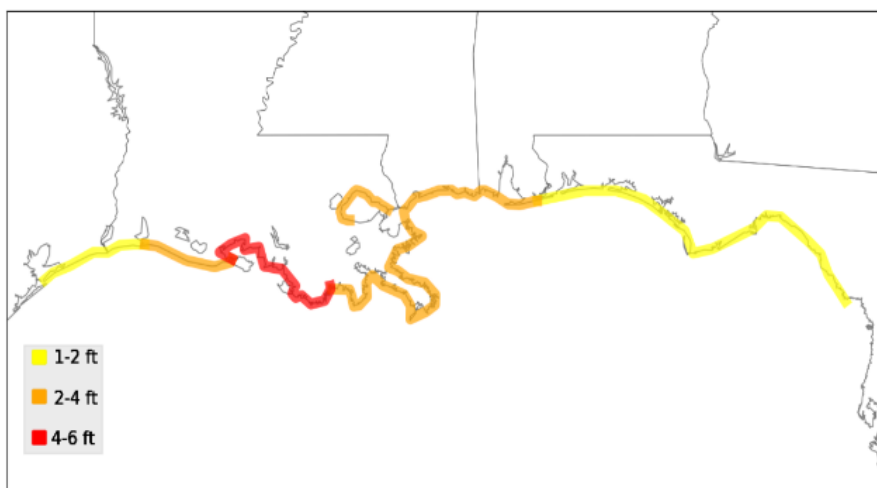


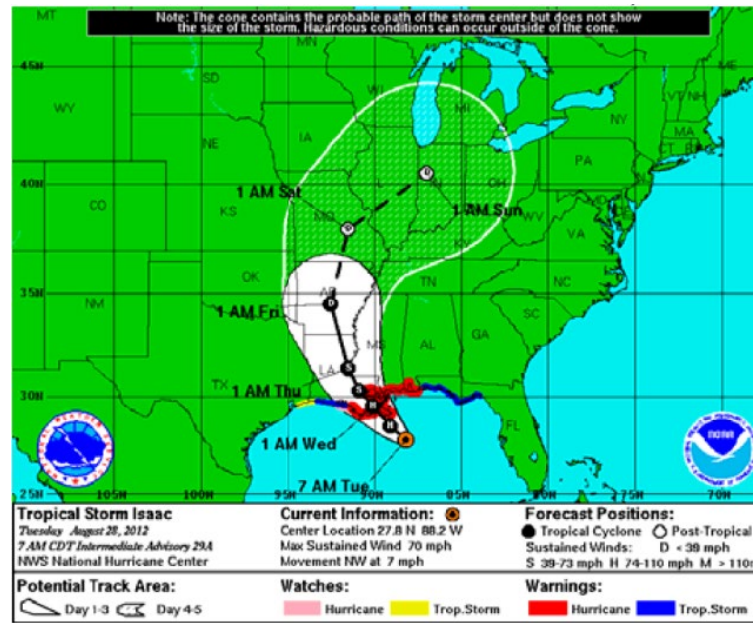
Figure 2-23: St. Parish water line being exposed from impacts from Hurricane Barry (Source: HMPU Committee)



Hurricane Isaac Aug. 29, 2012

Hurricane Isaac was a Category 1 hurricane that made landfall in Plaquemines Parish on August 29, 2012.⁴ The hurricane generated maximum sustained winds of 80 miles per hour but weakened to a tropical storm and then a tropical depression as it progressed over southeastern Louisiana. Approximately one billion dollars in damage was caused by the hurricane (see Appendix B). Minimal damage occurred in St. Mary Parish.

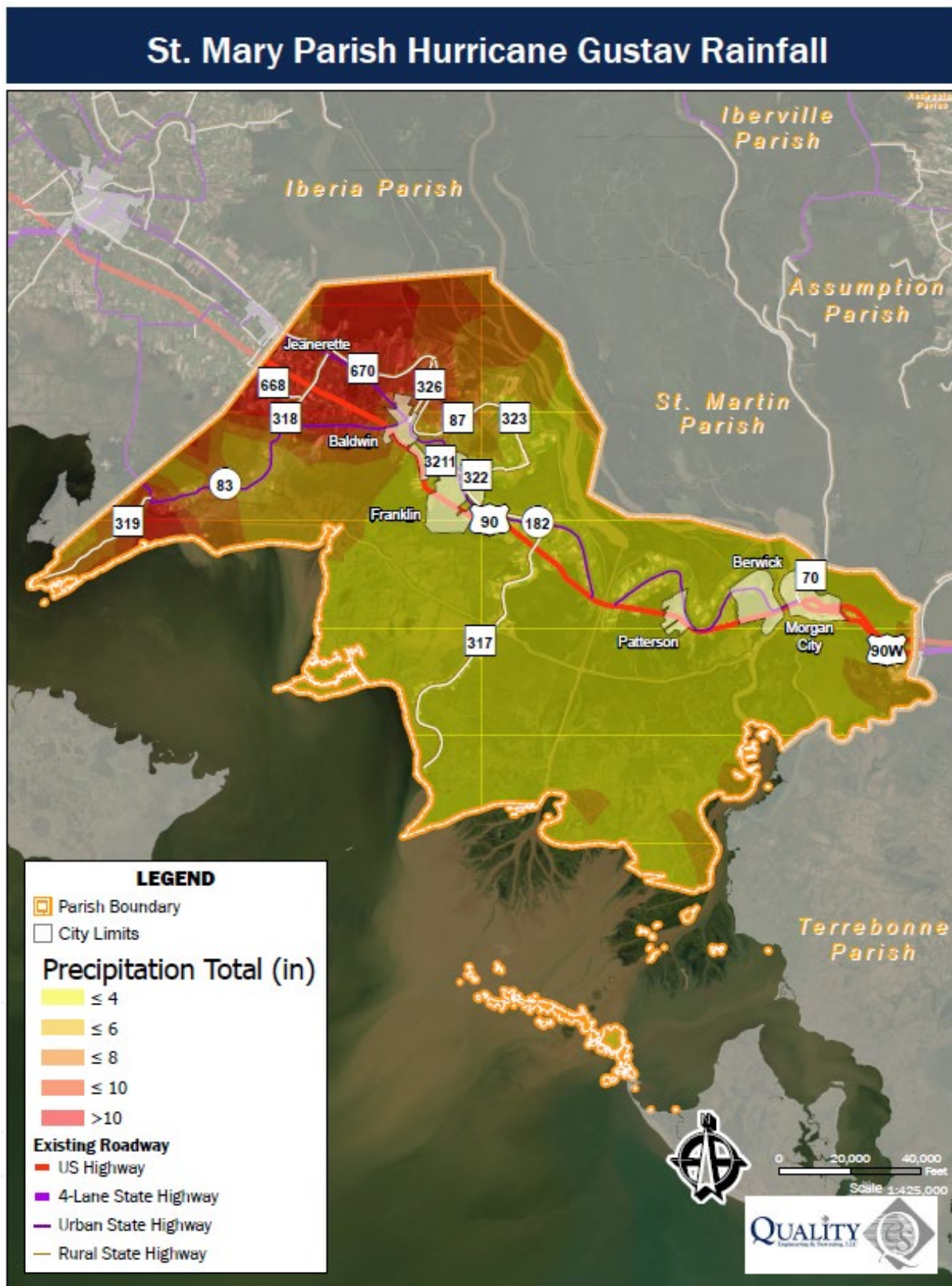
Figure 2-24: Hurricane Isaac storm tracker



Hurricane Gustav (2008)

Near the end of August, a tropical disturbance west of the Windward Islands strengthened into a tropical depression, then a tropical storm on August 25. The storm strengthened again to hurricane strength on August 29 and further intensified to Category 4 strength. Hurricane Gustav made landfall in Cuba first on Isla de la Juventude and later near Los Palacios and continued moving northwestward toward the Gulf of Mexico. The hurricane continued this path across the Gulf of Mexico and made landfall near Grand Isle, Louisiana on the morning of September 1. Gustav had maximum sustained winds of 240 km/hr (130 knots or 150 mph) and a minimum pressure of 941 Mb.

Figure 2-25: Hurricane Gustav Measured Precipitation



Hurricane Ike - (2008)

Approximately two weeks after Hurricane Gustav, Hurricane Ike made landfall in Galveston Island, Texas, on September 12 and 13, 2008. Category 2 winds from Hurricane Ike produced surges in coastal Louisiana that ranged between three feet and six feet in height in areas east of Grand Isle. Storm surge heights increased west of Grand Isle, reaching a maximum of 10 feet at some locations. Storm surges caused widespread levee overtopping and flooding in St. Mary Parish. Highway 90 (Future I-49) was submerged in floodwaters causing restrictions in vehicular traffic flow.



Figure 2-28: Hurricane Ike storm path (Source: NOAA)

Hurricanes Katrina - (2005)

Hurricane Katrina was one of the strongest and most destructive hurricanes on record to impact the coast of the United States. The National Hurricane Center ranked Katrina as the costliest storm (both before and after adjusting for inflation) and the third deadliest in the U.S. since 1851. The hurricane initially made landfall in Plaquemines Parish on August 29, 2005, as a Category 3 storm and continued a north-northeast track with a second landfall occurring near the Louisiana- Mississippi border.

Figure 2-26: St. Mary Parish Rainfall Totals from Hurricane Katrina

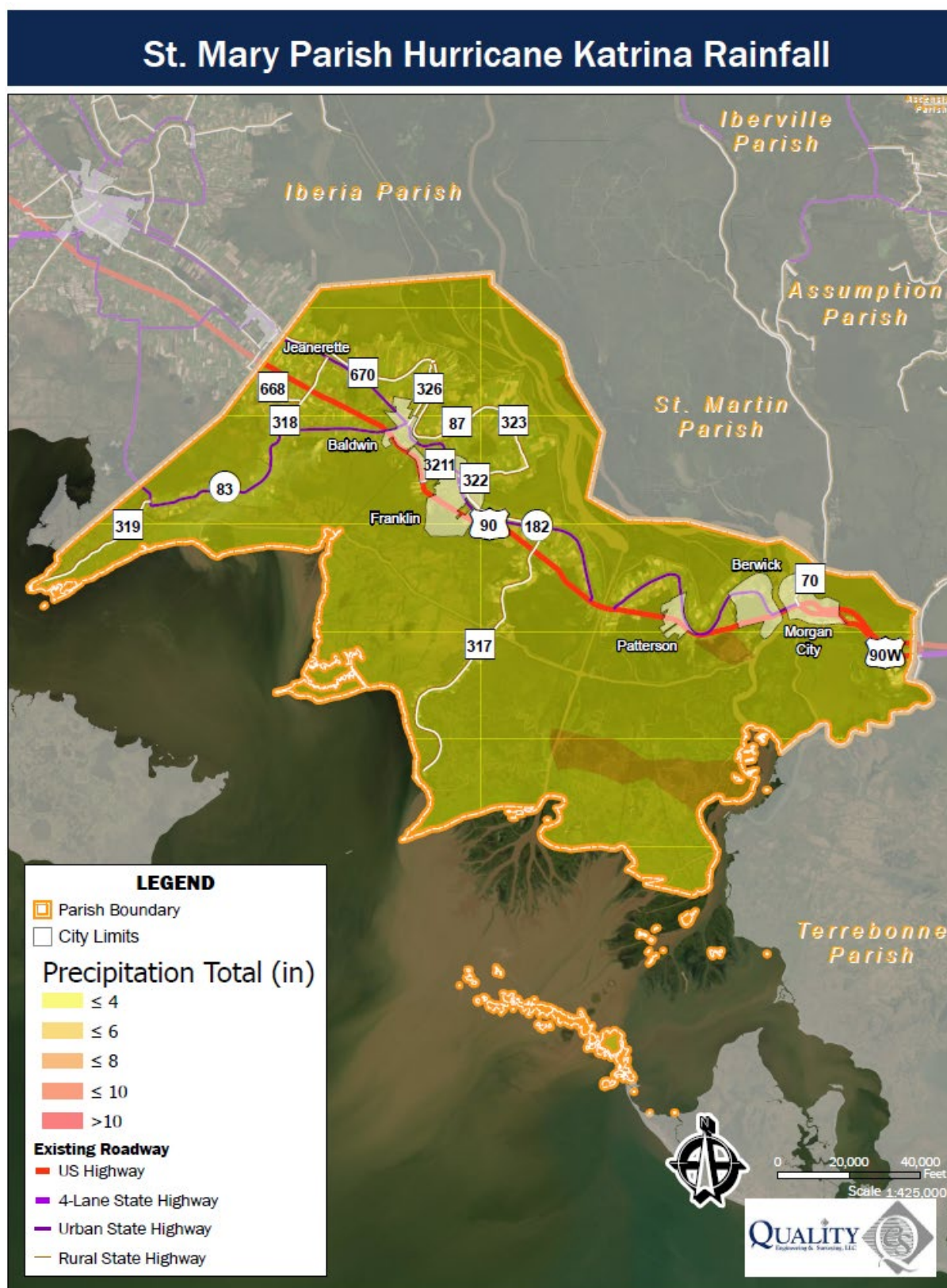
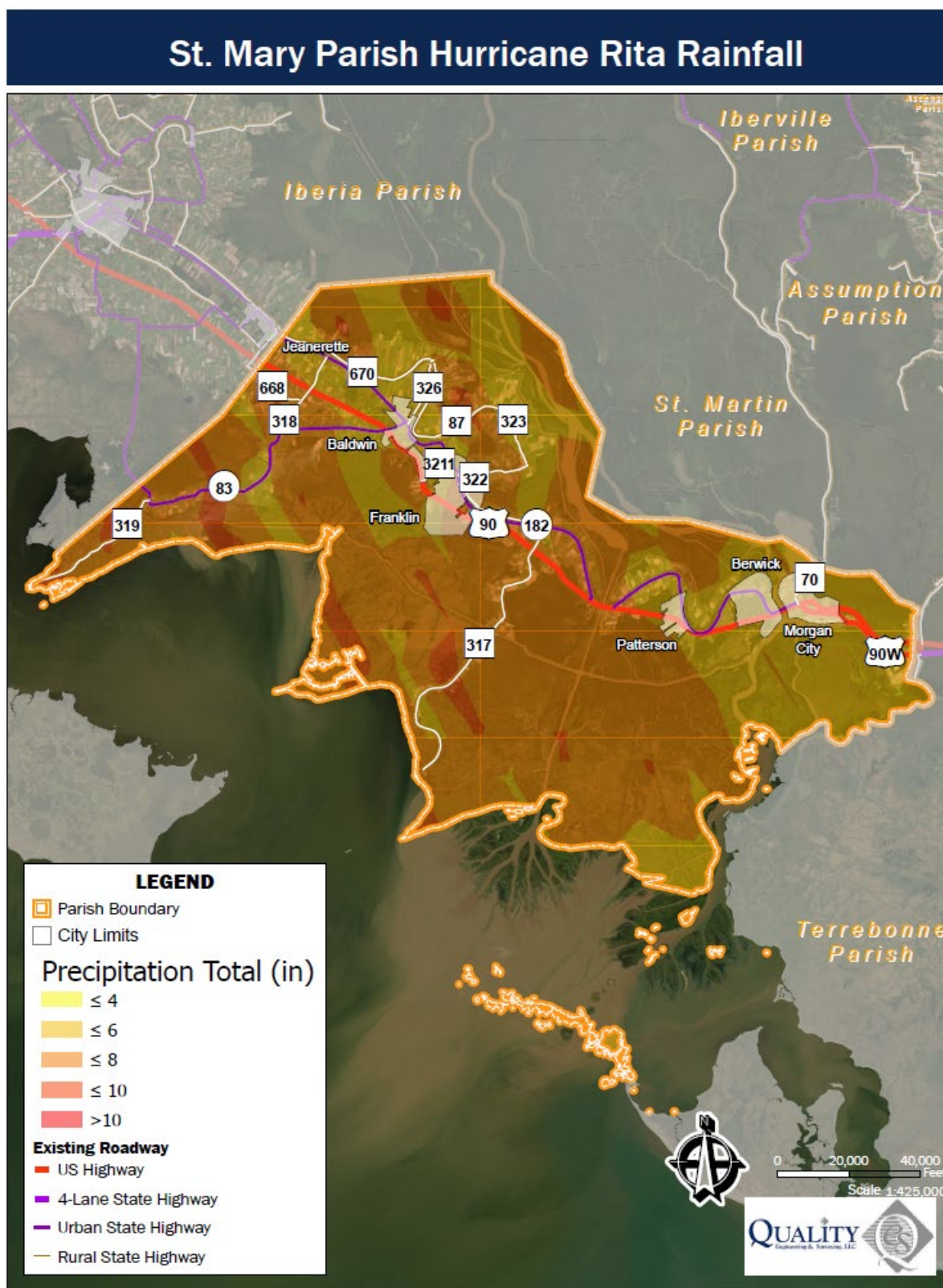


Figure 2-27: St. Mary Parish Rainfall Totals from Hurricane Rita



Hurricane Rita

Hurricane Rita developed on September 18th from a tropical depression and increased in intensity over the next 48 hours, becoming a category 1 hurricane on the 20th. Tracking through the Florida Straits, Hurricane Rita neared the Florida Keys on the 20th, causing sustained tropical storm forced winds on Key West with gusts of up to 76 mph. Rapidly intensifying, Hurricane Rita tracked westward into the Gulf of Mexico and by the afternoon of the 21st, Rita had reached category 5 strength on the Saffir-Simpson scale, with winds of 165 mph. Continuing to intensify to reach wind speeds of 175 mph, the minimum central pressure of the storm dropped to 897 Mb, the third-lowest on record for the Atlantic Basin. This was the first time in recorded history that two hurricanes (Katrina and Rita) have reached category 5 strength in the Gulf of Mexico in a single hurricane season.

Estimated Potential Losses

Using Hazus 100-Year Hurricane model, the 100-Year Hurricane scenario was analyzed to determine losses from this worst-case scenario. Table 2-19 shows the total economic losses that would result from this occurrence.

Table 2-19: Total Estimated Losses for a 100-Year Hurricane Event (Source: Hazus)

Jurisdiction	Estimated Total Losses from 100-Year Hurricane Event
St. Mary Parish (Unincorporated)	239,406
Baldwin	11,503
Berwick	41,103
Franklin	56,512
Patterson	55,726
Morgan City	104,347
Total	508,597
*Chitimatcha Tribe (estimates)	*7,182

*(Source: Hazus) *Note: The Chitimatcha Tribe Reservation is located within St. Mary Parish (Unincorporated). Figures were estimated based on 660 persons (3% percent) living on the reservation.*

Vulnerability

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

Table 2-20: Ratio of Total Losses to Total Estimated Value of Assets for each Jurisdiction in St. Mary Parish

Jurisdiction	Estimated Total Losses from 100-Year Hurricane Event	Total Estimated Value of Assets	Ratio of Estimated Losses to Total Value
St. Mary Parish (Unincorporated)	239,406	1,671,732.00	14.3%
Baldwin	11,503	150,232.00	7.7%
Berwick	41,103	421,165.00	9.8%
Franklin	56,512	767,357.00	7.4%
Patterson	55,726	685,352.00	8.1%
Morgan City	104,347	1,367,683.00	7.6%
Total	508,597	5,063,521.00	10.0%
Chitimatcha Tribe (estimates)	7,182	65,409	9.1%

(Source: Hazus) Note: The Chitimatcha Tribe Reservation is located within St. Mary Parish (Unincorporated). Figures were estimated based on 660 persons (3% percent) living on the reservation.

Based on the Hazus hurricane model, estimated total losses range from 14.3% to 7.4% of the total estimated value of all assets for the unincorporated area of St. Mary Parish and the incorporated areas of Baldwin, Berwick, Franklin, Patterson, and Morgan City. The ratio of estimated loss for the Chitimatcha Tribe is 9.1%.

Threat to People

The total population within the parish that is susceptible to a hurricane hazard is shown in the Table 2-29:

Table 2-29: Number of People Susceptible to a 100-Year Hurricane Event in St. Mary Parish (Source: Hazus)

Number of People Exposed to Hurricane Hazards			
Location	# in Community	# in Hazard Area	% in Hazard Area
St. Mary Parish (Unincorporated)	21,008	21,008	100.0%
Baldwin	2,430	2,430	100.0%
Berwick	4,938	4,938	100.0%
Franklin	7,660	7,660	100.0%
Patterson	12,404	12,404	100.0%
Morgan City	6,110	6,110	100.0%
Total	54,550	54,550	100.0%
Chitimatcha Tribe	660	660	100.0%

See Appendix B for parish and municipality buildings that are susceptible to flooding occurring from tropical storm/hurricanes due to proximity within the 100-year flood plain.

Severe Winter Storm

For Louisiana and other parts of the southeastern United States, a severe winter storm occurs when humid air from the Gulf of Mexico meets a cold air mass from the north. Once the cold air mass crosses Louisiana, and the temperature drops, precipitation may fall in the form of snow or sleet. If the ground temperature is cold enough but air temperature is above freezing, rain can freeze instantly on contact with the surface, causing massive ice storms.

The winter storm events that affect the state of Louisiana are ice storms, freezes, and snow events. Of the winter storm types listed above, ice storms are the most dangerous. Ice storms occur during a precipitation event when warm air aloft exceeds 32 °F, while the surface remains below the freezing point. Ice will form on all surfaces when precipitation originating as rain or drizzle contacts physical structures. These ice storms are usually accompanied by freezing temperatures and occasionally snow.

Winter storms can be accompanied by strong winds, creating blizzard conditions with blinding, wind driven snow, severe drifting, and dangerous wind chill. These types of conditions are very rare in Louisiana, even in north Louisiana, but ice storms are more common. The climatic line between snow and rain often stalls over north Louisiana, creating ideal conditions for ice accumulation.

In a typical winter storm event, homes and buildings are damaged by ice accumulation, either directly by the weight of the ice on the roofs or by trees and/or limbs falling on buildings. While it is not very prevalent, this type of damage can occur in Louisiana, particularly in north Louisiana. Effects of winter

weather more likely to occur in Louisiana, especially south Louisiana, include extreme temperatures which can cause waterlines to freeze and sewer lines to rupture. This is especially true with mobile homes, since cold air is able to access more of the building's infrastructure. Winter storms can also have a devastating effect on agriculture, particularly on crops (like citrus) that are dependent on warm weather. Long exposures to low temperatures can kill many kinds of crops, and ice storms can weigh down branches and fruit.

Winter storms are not only a direct threat to human health through conditions like frostbite and hypothermia, but they are also an indirect threat to human health due to vehicle accidents and loss of power and heat, which can be disrupted for days. However, these impacts are rarely seen in Louisiana. As people use space heaters and fireplaces to stay warm, the risk of household fires and carbon monoxide poisoning increases.

Winter storm events occur throughout Louisiana usually during the colder calendar months of December, January, and February. Severe weather events do not occur with the same frequency across all parts of Louisiana. The northern quarter of Louisiana has historically experienced the more severe winter events while the central, and to an even greater extent the southern parts of the state, such as St. Mary Parish, have experienced the fewest severe winter events.

Location

Because a winter storm is a climatological based hazard and has the same probability of occurring in St. Mary Parish as all of the adjacent parishes, the entire planning area for St. Mary Parish is equally at risk for winter storms. Because severe winter storms occur so infrequently in the coastal area, impacts were considered minimal in this planning effort. However, after extensive analysis, it was determined that one record winter storm across much of St. Mary Parish does not justify as a "prevalent" hazard event.

Previous Occurrences / Extents

According to SHELDUS, there has been three reported winter storm events that have occurred within the boundaries of St. Mary Parish between the years of 1989 and 2019. Data from NOAA (National Weather Service) lists one storm in the last 20 years, shown in Table 2-22 as a brief synopsis.

Table 2-22: Previous Occurrences Severe Winter Storms 2009 – 2019 (Source: NOAA)

Date	Impacts	Property Damage
2/3/2011	Areas of southern Louisiana received around one-tenth to nearly one-quarter of an inch of ice accumulation as well as scattered power outages occurred	\$25,000

While winter storms are climatological events that impact an entire region, there has been one report of damages from winter storms in St. Mary Parish and the incorporated areas of Baldwin, Berwick, Franklin, Patterson, and Morgan City since 2009. Based on previous winter storm events, the worst-case scenario for the unincorporated area of St. Mary Parish and the incorporated areas is a winter damaging crops and property with an adjusted 2018 value above \$6 million. Unincorporated St. Mary Parish and

the incorporated areas of Baldwin, Berwick, Franklin, Patterson, and Morgan City can expect snow accumulation from one to approximately three inches in addition to ice accumulation.

Frequency / Probability

With three damage recording events in 30 years, winter storm events within the boundaries of St. Mary Parish have an annual chance of occurrence calculated at 10% based on the SHELDUS dataset.

Estimated Potential Losses

Since 1989, there have been three reported winter weather events that have resulted in property and/or crop damages according to the SHELDUS database. The total combined property and crop damages associated with these storms have totaled \$285,387. To estimate the potential losses of a winter weather event on an annual basis, the total damages recorded for winter weather events was divided by a thirty year period of winter weather data from SHELDUS (1989 – 2019). This provides an annual estimated potential loss of \$9,513. To assess potential losses to the participating jurisdictions, population percentages were used to assign the estimated potential losses proportionally across the jurisdictions. The following table provides an estimate of potential property losses for St. Mary Parish:

Table 2-23: Estimated Annual Losses for Winter Weather Events in St. Mary Parish

Estimated Annual Potential Losses from Winter Weather for St. Mary Parish						
Unincorporated St. Mary Parish (38.5% of Population)	Baldwin (4.5% of Population)	Berwick (9.1% of Population)	Franklin (14.0% of Population)	Morgan City (22.7% of Population)	Patterson (11.2% of Population)	Chitimacha Tribe (3.1% of Unincorporated)
3,663	428	866	1,332	2,159	1,066	\$114

From 1989 - 2019, there have been no injuries as a result of winter weather in St. Mary Parish.

Vulnerability

Historical damages show that crop damages associated with winter storms are the most vulnerable asset when these disasters occur. There have been no reported injuries or deaths as a result of winters storms. Crops are the most vulnerable asset in St. Mary Parish in the event of a winter storm, and this is also true for the Chitimacha Tribe.

Tornado

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

seconds to minutes later. Tornadoes are a function of high winds, and mitigation steps to reduce damages are being incorporated into the HMPU.

Table 2-24: Comparison of the Enhanced Fujita (EF) Scale to the Fujita (F) Scale

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

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

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

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

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

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

Location

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

Previous Occurrences / Extents

SHELDUS reports a total of 9 tornadoes or waterspouts occurring within the boundaries of St. Mary Parish between the years of 1989-2019. The tornadoes experienced in St. Mary Parish have from ranged EF0 to EF1 on the EF scale, and ranged from F0 to F3 on the F scale. The worst case scenario St. Mary Parish can expect in the future is an EF2 tornado.

The tornado that caused the most damage to property in the last 30 years occurred on April 14, 2018. An EF0 tornado was responsible for a half million dollars in damages. The tornado touched down in unincorporated southeast across US 90 into the marsh and dissipated. The max estimated wind speed was 80 MPH. There have been no fatalities in St. Mary Parish as a result of tornadoes.

Table 2-25: 2009 - 2019 Recorded Tornado Events in St. Mary Parish (Source: NOAA)

Date	Impacts	Property Damage	Location	Magnitude
6/4/2010	A tornado touched down near the intersection of Highway 90 and Highway 318 southeast of Jeanerette. No major damage was reported.	\$2,000	UNINCORPORATED	EF0
3/21/2012	several smaller neighboring storage buildings had minor damage with sheet metal peeled off the corners of the buildings	\$100,000	PATTERSON	EF0
2/23/2016	Tornado touched down near highway 90 on the ground for 2.6 miles before it dissipated. Two businesses and 28 homes were damaged.	\$40,000	BALDWIN	EF1
6/13/2016	A waterspout over Lake Palourde	N/A	PATTERSON	EF0
7/19/2017	A waterspout over Lake Palourde	N/A	UNINCORPORATED	EF0
4/14/2018	Touched down near the Plantation Hotel, continued southeast across US 90 into the marsh and dissipated. The max estimated wind speed was 80 MPH.	\$500,000	UNINCORPORATED	EF0

Estimated Potential Losses

According to the SHELDUS database, historically there have been 20 tornadoes that have caused some level of property damage. The total property damage for claims throughout the Parish is \$1,977,353, with an average cost of \$98,868 per tornado strike. When annualizing the total cost over the 30-year

record, total annual losses based on tornadoes are estimated to be \$27,793. To provide an estimated annual estimated potential loss per jurisdiction, the 2018 Census ACS 5-Yr Estimates population was used to assign the estimated potential losses proportionally across the jurisdictions. Based on the 2018 ACS, Table 2-26 provides an annual estimate of potential losses for St. Mary Parish.

Table 2-26: Estimated Annual Losses for Tornadoes in St. Mary Parish (Source: HAZUS and NOAA)

Estimated Annual Potential Losses from Tornadoes for St. Mary Parish						
Unincorporated St. Mary Parish (38.5% of Population)	Baldwin (4.5% of Population)	Berwick (9.1% of Population)	Franklin (14.0% of Population)	Morgan City (22.7% of Population)	Patterson (11.2% of Population)	Chitimacha Tribe (3.1% of Unincorporated)
\$10,700	\$1,251	\$2,529	\$3,891	\$6,309	\$3,112	\$331

Table 2-27 presents an analysis of building exposure that is susceptible to tornadoes by general occupancy type for St. Mary Parish, and gives an account of building stock that are mobile homes (15%).

Table 2-27: Building Exposure by General Occupancy Type for Tornadoes in St. Mary Parish (Source: HAZUS and NOAA)

Building Exposure by General Occupancy Type for Tornadoes Exposure Types							
Residential	Commercial	Industrial	Agricultural	Religion	Government	Education	Mobile Homes (%)
\$3,654,143	\$772,657	\$354,508	\$15,421	\$150,692	\$61,324	\$54,776	\$ 548,122

The parish has suffered through a three events of tornadic activity in which tornadoes or waterspouts have accounted for three injuries and no fatalities during this 30-year period.

Mobile Home Parks

Even if anchored, mobile homes do not withstand high wind speeds as well as permanent, site-built structures. Although mobile homes are most exposed to damage from tornadoes, all structures are vulnerable to some sort of damage, depending on the severity and location of the tornado. Approximately 18,000 structures are located throughout the unincorporated areas of St. Mary Parish and municipalities are vulnerable to some sort of damage from a tornado. Because of the sporadic nature and historically low losses related to tornado damage, detailed loss estimates were not able to be produced. St. Mary Parish is most vulnerable to the effects of tornadoes during severe tropical storms and hurricanes. Some structural mitigation actions have been identified which will reduce damages caused by tornadoes; however, some wind mitigation actions identified under the hurricane hazard may lessen the effects of tornado-force winds.

Climate data from the SHEL DUS reports 21 tornadoes within St. Mary Parish between the years 1960-2019 with an annual probability of thirty-six percent. A list of the tornados and their associated damages is presented in Table 2-28.

Table 2-28: St. Mary Parish Mobile Home Park Locations

Vicinity	Unincorporated	Approx. # of Units	Locale
Chitimacha		50	Tunica vicinity
Baldwin		50	Smith Lane
Baldwin		20	Happy Acres
Baldwin		20	Yokely Rd.
Franklin		20	MLK near 9th
Franklin		25	Donna Drive
Franklin		10	near Darce
Franklin		20	Friendship Lane
Franklin		10	Off Lee
Franklin		30	Dixie and Kemper Rds.
Centerville	X	20	Cane Road
Centerville	X	30	Roy's Lane and vicinity
Patterson		100	off Red Cypress (multiple)
Patterson		50	Cleveland and Williams
Patterson		100	Zenor Road
Patterson		30	Martin St.
Bayou Vista	X	250	La. Hwy. 182 (multiple)
Bayou Vista	X	100	Arlington
Bayou Vista	X	25	Saturn
Berwick		100	River Road (multiple)
Berwick		10	Versen St.
Berwick		10	Second St.
Berwick		25	Sixth St.
Morgan City		20	Levee Road
Morgan City		20	Mayon St.

Morgan City		50	Allison St.
Morgan City		30	Grizzaff/East Gate St.
Amelia	X	500	Lake Palourde Road (multiple)

Vulnerability

As the entire parish is equally vulnerable to tornado damage, the hazard was profiled for this planning effort. See Appendix B for parish and municipality building exposure.

Thunderstorm (Hail, Lightning, Severe Wind)

The term “thunderstorm” is usually used as a catch-all term for several kinds of storms. Here, “thunderstorm” is defined to include any precipitation event in which thunder is heard or lightning is seen. Thunderstorms are often accompanied by heavy rain and strong winds, and depending on conditions, occasionally by hail or snow. Thunderstorms form when humid air masses are heated, which causes them to become convectively unstable. Consequently, the air masses rise. Upon rising, the air masses’ water vapor condenses into liquid water and/or deposits directly into ice when they rise sufficiently to cool to the dew-point temperature.

Thunderstorms are classified into four main types (single-cell, multi-cell, squall line, and supercell), depending on the degree of atmospheric instability, the change in wind speed with height (called wind shear), and the degree to which the storm’s internal dynamics are coordinated with those of adjacent storms. There is no such interaction for single-cell thunderstorms, but there is significant interaction with clusters of adjacent thunderstorms in multi-cell thunderstorms, and with a linear “chain” of adjacent storms in squall line thunderstorms. Though supercell storms have no significant interactions with other storms, they have very well-organized and self-sustaining internal dynamics, which allows them to be the longest-lived and most severe of all thunderstorms.

The life of a thunderstorm proceeds through three stages: the developing (or cumulus) stage, the mature stage, and the dissipation stage. During the developing stage, the unstable air mass is lifted as an updraft into the atmosphere. This sudden lift rapidly cools the moisture in the air mass, releasing latent heat as condensation and/or deposition occurs, which warms the surrounding environment, thus making it less dense than the surrounding air. This process intensifies the updraft and creates a localized lateral rush of air from all directions into the area beneath the thunderstorm to feed continued updrafts. At the mature stage, the rising air is accompanied by downdrafts caused by the shear of falling rain (if melted completely), or hail, freezing rain, sleet, or snow (if not melted completely). The dissipation stage is characterized by the dominating presence of the downdraft as the hot surface that gave the updrafts their buoyancy is cooled by precipitation. During the dissipation stage, the moisture in the air mass largely empties out.

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

- Severe Thunderstorm Watch: Issued to alert people to the possibility of a severe thunderstorm developing in the area. Expected time frame for these storms is three to six hours.
- Severe Thunderstorm Warning: Issued when severe thunderstorms are imminent. This warning is highly localized and covers parts of one to several parishes (counties).

A variety of hazards might be produced by thunderstorms, including lightning, hail, tornadoes or waterspouts, flash flooding, and high-speed winds called downbursts. Nevertheless, given the criteria, the National Oceanic and Atmospheric Administration (NOAA) characterizes a thunderstorm as severe when it produces one or more of the following:

- Hail of one inch in diameter or larger
- Wind gusts to 58 mph or greater
- One or more tornadoes

Thunderstorms occur throughout Louisiana at all times of the year, although the types and severity of those storms vary greatly depending on a wide variety of atmospheric conditions. Thunderstorms generally occur more frequently during the late spring and early summer when extreme variations exist between ground surface temperatures and upper atmospheric temperatures.

Lightning

Lightning is a natural electrical discharge in the atmosphere that is a by-product of thunderstorms. Every thunderstorm produces lightning. There are three primary types of lightning: intra-cloud, cloud-to-ground, and cloud-to-cloud. Cloud-to-ground lightning has the potential to cause the most damage to property and crops, while also posing as a health risk in the strike vicinity.

Damage caused by lightning is usually to homes or businesses. These strikes can damage electrical equipment inside the home or business and can also ignite a fire that could destroy homes or crops. Lightning continues to be one of the top three storm-related killers in the United States per FEMA, but it also can cause negative long-term health effects to the individual that is struck.

Hailstorm

Hailstorms are severe thunderstorms in which balls or chunks of ice fall along with rain. Hail initially develops in the upper atmosphere as ice crystals that are bounced about by high-velocity updraft winds. The ice crystals grow through the deposition of water vapor onto their surface. They then fall partially to a level in the cloud where the temperature exceeds the freezing point, melt partially, and then get caught in another updraft whereupon re-freezing and deposition grows another concentric layer of ice. After several trips up and down the cloud, they develop enough weight to fall. The size of hailstones varies depending on the severity and size of the thunderstorm. Higher surface temperatures

generally mean stronger updrafts, which allow more massive hailstones to be supported by updrafts, leaving them suspended longer. This longer suspension time means larger hailstone sizes.

*Table 2-29: Spectrum of Hailstone diameters and their everyday description
(Source: National Weather Service)*

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

Frequency

Based on historical data from SHELDUS and NOAA (NWS) for the past 20 years, it is estimated the probability of occurrence for a significant thunderstorm event in St. Mary Parish is approximately 100%, with a greater than annual return frequency. The probability was determined based on a review of significant hail, heavy rain, severe wind, and lightning data that has caused damages in the last 20 years, in which St. Mary Parish has had 45 recorded events.

Table 2-30: 2009 - 2020 Record of Thunderstorms (Hail, Heavy Rain, Lightning, Severe Wind) with Recorded Property Damage (Source: NOAA and SHELDUS)

Location	Date	Event	Damage	Impacts
UNINCORPORATED	3/26/2009	Thunderstorm Wind	\$ 50,000	Reported microburst wind damage along Northwest Boulevard from near Highway 90 to

				around Yokely Road. All damage was in an SW to NE direction with estimated winds around 90 mph.
FRANKLIN	3/26/2009	Thunderstorm Wind	\$ 10,000	Numerous trees and power lines down across the city of Franklin, including on Mitchell Street, Iberia Street, and Sterling Road.
UNINCORPORATED	3/26/2009	Thunderstorm Wind	\$ 100,000	Numerous reports from local media indicate a large downburst with winds estimated up to 80 mph struck the city of Charenton. The roof was blown off the Chitimacha Police Station trailer and a nearby radio tower was toppled.
PATTERSON	3/26/2009	Thunderstorm Wind	\$ 250,000	Large downburst with winds estimated around 80 mph struck from the Patterson Memorial Airport to the city of Patterson. A tree fell on a home on Highway 182 just west of the airport.
UNINCORPORATED	3/26/2009	Thunderstorm Wind	\$ 10,000	Reported the roof of a trailer home was blown off on Arlington Drive in Bayou Vista.
MORGAN CITY	3/26/2009	Thunderstorm Wind	\$ 15,000	Reported wind damage across Morgan City. Several trees were blown down with some falling on homes. Traffic signs and power lines were also knocked down.
FRANKLIN	2/21/2010	Hailstorm (2.5")	\$ 50,000	Franklin Police, Fire, and Sheriff Departments along with several reports from the public indicated hail ranging from golf ball to tennis ball size broke numerous windows in the

				downtown area. This is the largest known hail ever recorded in St. Mary Parish.
UNINCORPORATED	6/7/2010	Lightning	\$ 30,000	Reported a lightning strike caused a 10,000-gallon oil tank containing 5000 gallons of oil to catch fire east of Jeanerette.
UNINCORPORATED	4/4/2011	Thunderstorm Wind	\$ 5,000	Reported power poles and lines were blown down along Highway 83 which knocked out power to 1800 customers in Cypremort Point and surrounding areas.
UNINCORPORATED	4/4/2011	Thunderstorm Wind	\$ 3,000	Reported a tree was blown down in Garden City knocking out power to 580 customers.
UNINCORPORATED	4/26/2011	Hailstorm (1.75")	\$ 50,000	The public reported golf ball size hail damaged several homes, boats, and vehicles.
MORGAN CITY	4/4/2012	Thunderstorm Wind	\$ 25,000	Reported high winds
BERWICK	7/7/2012	Lightning	\$ 1,000	Lightning struck an apartment complex in the Berwick area Saturday afternoon. Isolated power outages were also reported due to the strikes.
MORGAN CITY	7/19/2012	Lightning	\$ 1,000	Lightning struck a pole breaking it in half around 15 feet above the ground. This knocks out power to a portion of Morgan City until 8:15 PM local time.
UNINCORPORATED	5/22/2013	Lightning	\$ 50,000	Lightning struck the Bayou Ramos power substation near Morgan City that and combined with other issues to cut power to the city through the afternoon.

MORGAN CITY	5/22/2013	Thunderstorm Wind	\$ 250,000	An isolated strong thunderstorm moved east across the lower sections of the Atchafalaya Swamp including Flat Lake. A wind gust of 100 knots was recorded at the heliport in Amelia.
UNINCORPORATED	4/27/2015	Thunderstorm Wind	\$ 1,000	A tree was blown down onto highway 87, and another was blown down in Franklin.
BALDWIN	4/27/2015	Thunderstorm Wind	\$ 1,000	A tree with other debris was blown onto Chitimacha Trail.
PATTERSON	7/30/2015	Thunderstorm Wind	\$ 3,000	Trees and power lines were blown down in Patterson.
UNINCORPORATED	5/19/2016	Thunderstorm Wind	\$ 5,000	Reported a tree downed onto a home on Cane Street in Bayou Vista.
UNINCORPORATED	5/19/2016	Thunderstorm Wind	\$ 5,000	Reported power lines and a gas station awning downed during a thunderstorm.
UNINCORPORATED	5/3/2017	Thunderstorm Wind	\$ 2,000	A small metal shed was blown across Verdun Lane in Franklin.
PARISHWIDE	5/3/2017	Hailstorm (1.75 ")	\$ 1,000	A spotter reported golf ball size hail that cracked the windshield of a truck.
PATTERSON	3/29/2018	Thunderstorm Wind	\$ 5,000	High wind during a storm downed a tree onto a car.
UNINCORPORATED	4/18/2019	Thunderstorm Wind	\$ 3,000	Several utility poles were downed onto Railroad Avenue between Pecos and Aycock Streets in Morgan City.
UNINCORPORATED	5/28/2020	Thunderstorm Wind	\$ 5,000	A report of roof and awning damage at Cypremort Point was received through social media.
MORGAN CITY	8/7/2020	Lightning	\$ 15,000	Lightning struck a cedar tree exploding the tree. Fragments of wood

				damaged a couple of nearby homes
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Estimated Potential Losses

According to the SHELATUS and NOAA databases, property damage due to hailstorms in St. Mary Parish have totaled approximately \$ 946,000 since 2009. A list of total related damages by event can be found in Table 2-30 above. To estimate the potential losses of all types of thunderstorm events on an annual basis, the total damages recorded for all events was divided by the total number of a year span of data (2009 - 2019). This provides an annual estimated potential loss of \$946,000. St. Mary Parish has an annual estimated potential loss of \$ 47,300 annually. Table 2-31 provides an estimate of potential annual property losses for each jurisdiction within St. Mary Parish.

Table 2-31: Estimated Annual Losses for Thunderstorm Events in St. Mary Parish

Estimated Annual Potential Losses from Thunderstorm for St. Mary Parish						
Unincorporated St. Mary Parish (38.5% of Population)	Baldwin (4.5% of Population)	Berwick (9.1% of Population)	Franklin (14.0% of Population)	Morgan City (22.7% of Population)	Patterson (11.2% of Population)	Chitimacha Tribe (3.1% of Unincorporated)
\$ 18,211	\$2,129	\$4,304	\$6,622	\$10,737	\$5,298	\$565

Vulnerability

As the entire parish is equally vulnerable to thunderstorm damage, the hazard was profiled for this planning effort because of the potential impact of associated flooding. See Appendix B for parish and municipality building exposure.

Coastal Erosion

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

Frequency / Probability

A significant area of the parish coastline is subject to erosion. The condition is serious enough to be considered prevalent and is considered a significant hazard in the parish. The probability of continued deterioration along this reach of the shoreline is high though minor when compared to

land loss in other neighboring parishes. From the Tribe's perspective, coastal erosion also threatens bodily remains and artifacts.

An aerial view of a marsh coastline is shown below depicting varying types of impacts after a significant storm event. Probability of future occurrence is 100% in that coastal erosion is a perpetual, ongoing process. Data relative to coastal restoration and marsh creation projects in the St. Mary Parish is noted on the project list.

Location

Some of the worst recent contributors to coastal land loss in the state are the tropical cyclones of the past decade. Two storms that stand out in this regard are Hurricanes Katrina and Rita. These powerful cyclones completely covered large tracts of land in a very brief period, permanently altering the landscape. The disastrous legacy of these storms concentrated already ongoing efforts to combat

The 2019 State Hazard Mitigation Plan Update states in coastal Louisiana subsidence and sea-level rise, plus the threat of hurricanes and flooding, combine to create one of the highest rates of relative sea-level rise in the world.

Figure 2-28: 2017 Coastal Master Plan projected land loss and land gain

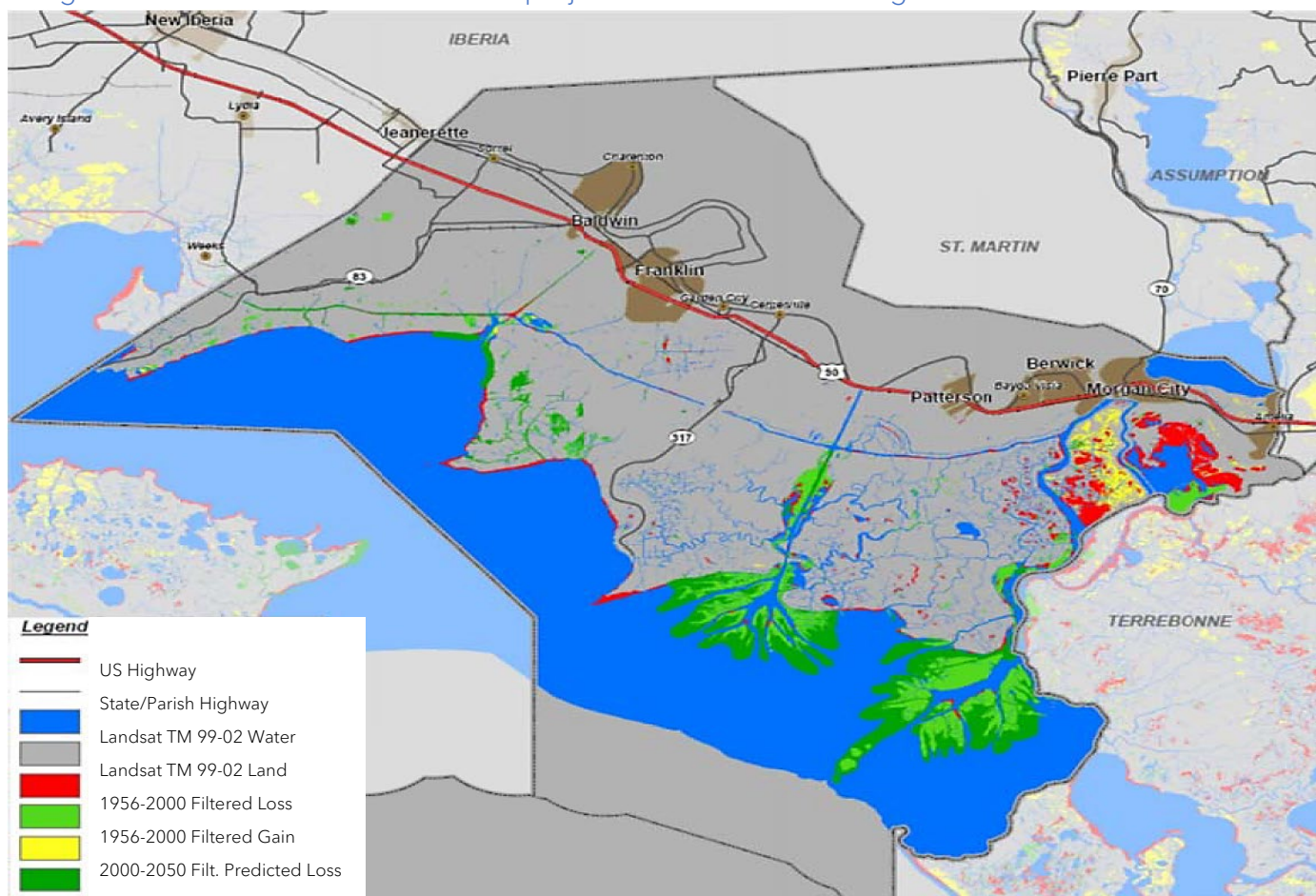
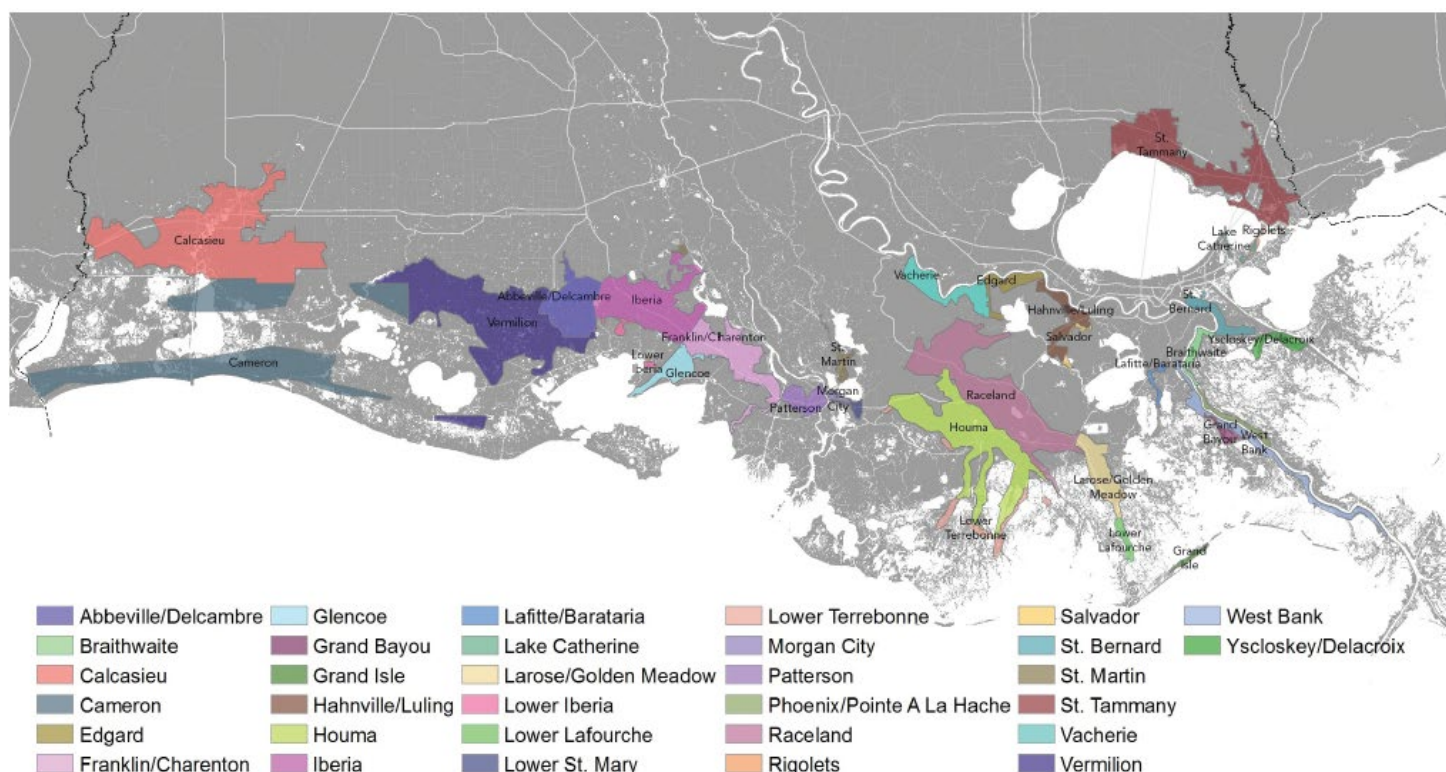


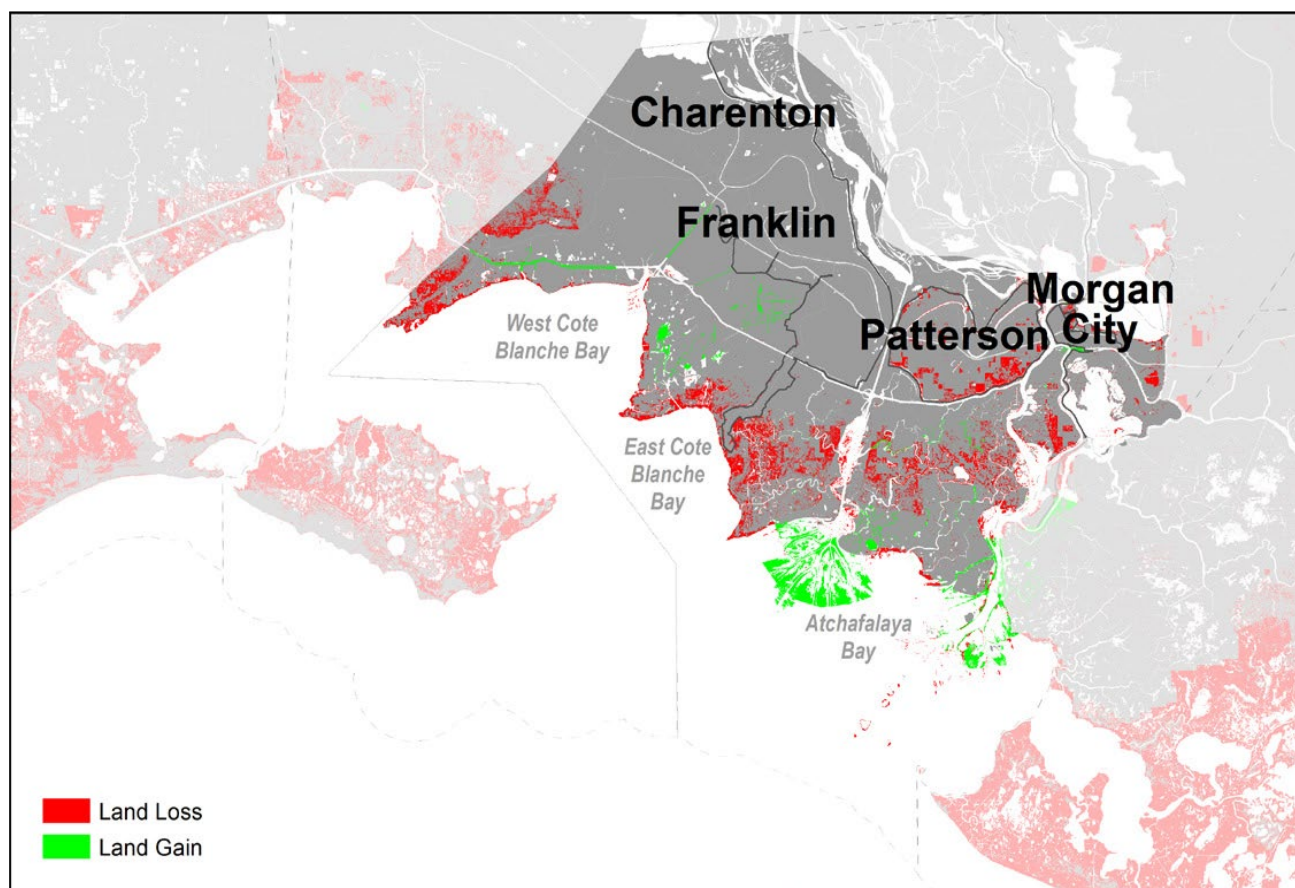
Figure 2-29: (Source: State of Louisiana Hazard Mitigation Plan 2019) *Estimates from the state's 2017 future protection or restoration actions taken.*



Coastal erosion is a widespread challenge in coastal Louisiana. Fortunately, the rate of coastal and marsh erosion in St. Mary Parish is not comparable to the rates seen east of the Atchafalaya River, an area that is eroding rapidly. The main factor in the lower rate of land loss is the sediment-laden waters of the Atchafalaya River which enters the bays of the Gulf of Mexico south of Morgan City and continues to deposit sediments building new land. Land loss from normal wave action is also of concern. The Atchafalaya River and associated Wax Lake Outlet are both building deltas as they migrate westward.

As there is no structures/infrastructure located in the erosion risk zones, loss estimates for coastal erosion are not able to be completed for this plan. The most devastating impact of coastal erosion is the deterioration in the mapped red areas of the coastline and marsh depicted in Figure 2-30.

Figure 2-31: 2017 Coastal Master Plan projected land loss and land gain



Previous Occurrences / Extents

St. Mary Parish faces some increased wetland loss as well as some areas of land gain over the next 50 years under the medium environmental scenario. With no further coastal protection or restoration actions, the parish could lose an additional 27 square miles or 4% of the parish land area. However, the Atchafalaya River delta and the Wax Lake outlet areas continue to grow. Also, with no further action, the parish faces increased future storm surge-based flood risk. Over the next 50 years (under the medium environmental scenario), 100-year flood depths increase substantially to 7-15 feet across the coast. Flood depths also increase to 4-9 feet in the vicinity of Morgan City and Franklin.

Estimated Potential Losses

At the time of this update there was no detailed value estimates placed on coastal land loss in disaster data sources. St. Mary Parish will continue to track this hazard in the future.

Figure 2-32: Example of coastline impacts after a major hazard event



Vulnerability

A significant area of the parish coastline is subject to erosion. The condition is serious enough to be considered prevalent and is considered a significant hazard in the parish. The probability of continued deterioration along this reach of the shoreline is high though minor when compared to land loss in other neighboring parishes. From the Tribe's perspective, coastal erosion also threatens bodily remains and artifacts.

Drought

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

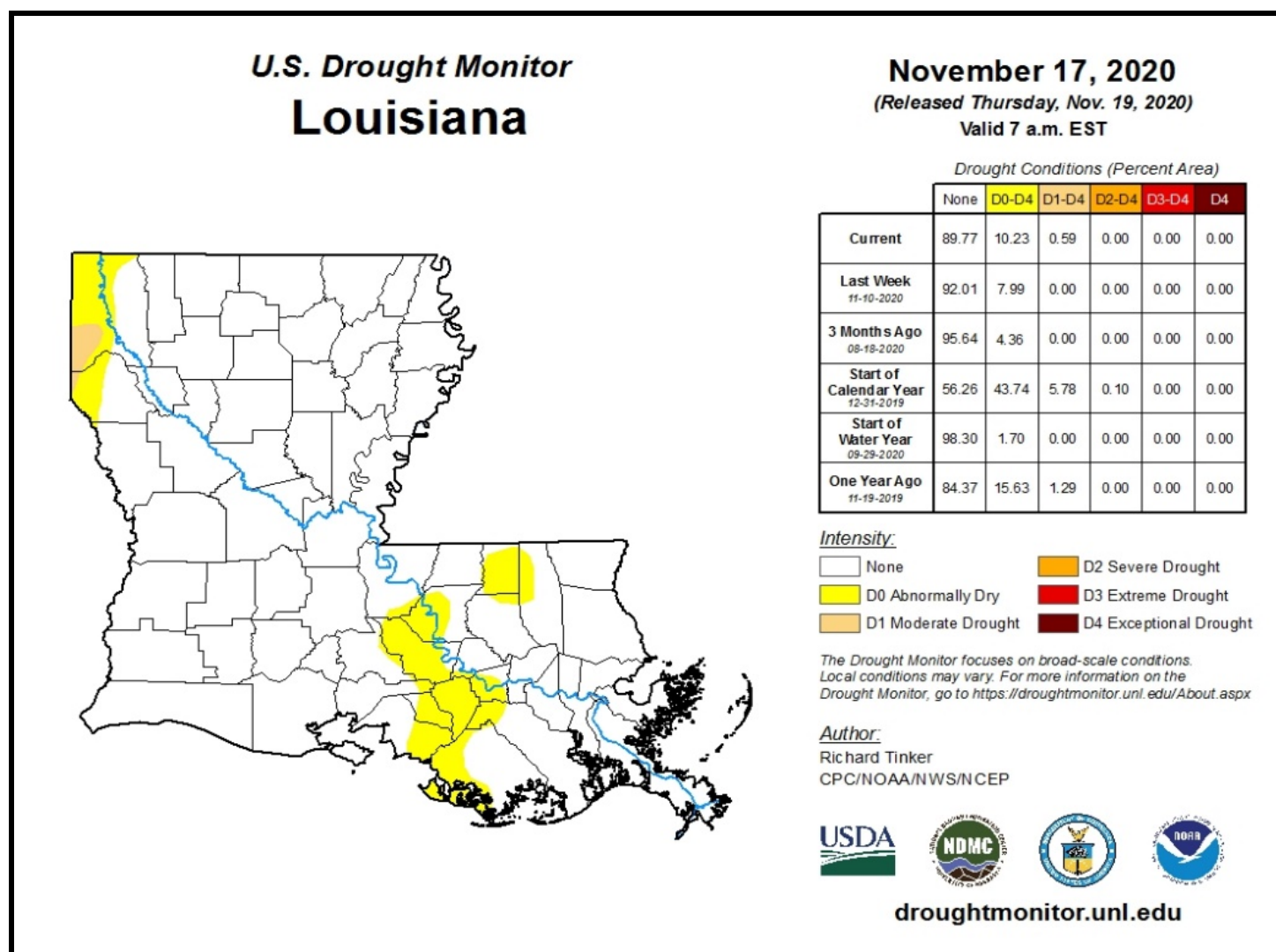
Table 2-32: Palmer Drought Severity Index Classification and Range

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

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

Figure 2-33: United States Drought Monitor for the State of Louisiana and its Parishes (Source:

The National Drought Mitigation Center)



Location

Drought typically impacts a region and not one specific parish or jurisdiction. While the entire planning area can experience drought, the major impact of a drought event in St. Mary Parish is on the agricultural community.

Previous Occurrences / Extents

The SHELDUS database reports a total of two drought events occurring within the boundaries of St. Mary Parish between the years of 1989 to 2019. Table 2-33 identifies the date of occurrence, estimated crop damage, and severity of the events that have occurred in St. Mary Parish. Based on previous occurrences, and in accordance with the Palmer Drought Index, the worst case scenario for drought in St. Mary Parish would be a severe drought event.

Table 2-33: Drought Events with Crop Damage Totals for St. Mary Parish (Source: SHELDUS)

Date	Crop Damage (ADJ 2018)	Palmer Classification
May 1996	\$ 100,026	Moderate Drought
December 2000	\$ 15,457,225	Severe Drought

Frequency / Probability

Based on previous occurrences of two drought events in 30 years, the probability of drought occurrence in the planning area in any given year is 10%.

Estimated Potential Losses

According to the SHELDUS database, there have been two drought events that have caused some level of crop damage. The total agricultural damage from these events is \$15,557,252, with an average cost of \$7,778,626 per drought event. When annualizing the total cost over the 30-year record, total annual losses based on drought is estimated to be \$518,575.

According to the LSU AgCenter, crop production is an important part of the economics of St. Mary Parish. Sugarcane production leads the list, with a gross farm value of \$61,042,230.00 in 2011. Other crops, such as soybeans, citrus fruits and forestry added another \$1,278,954.00. Livestock production, which includes cattle, horses, rabbits, sheep and goats, and swine, also added an additional \$1,066,305.00.

Table 2-34: Estimated Annual Losses for Drought Events in St. Mary Parish

Estimated Annual Potential Losses from Drought for St. Mary Parish						
Unincorporated St. Mary Parish (38.5% of Population)	Baldwin (4.5% of Population)	Berwick (9.1% of Population)	Franklin (14.0% of Population)	Morgan City (22.7% of Population)	Patterson (11.2% of Population)	Chitimacha Tribe (3.1% of Unincorporated)
\$199,651	\$23,336	\$47,190	\$72,601	\$117,717	\$58,080	\$6,189

Vulnerability

Drought is a marginal concern in St. Mary Parish. SHELDUS records noted two events occurring in the last 50 years, and no anticipated drought-related mitigation issues were noted in St. Mary Parish. Drought typically impacts a region and not one specific parish or jurisdiction. While the entire planning area can experience drought, the major impact of a drought event in St. Mary Parish is on the agricultural community.

Future Land Use & Community Trends

A detailed description of land use data is provided in an earlier section of this report in the section entitled "Introduction". Physical and cultural aspects of the parish including land use, drainage basins, and the economy were noted. The text below focuses on future land use and its bearing on this Hazard Mitigation Plan. From 1980 to 2010, the parish experienced periods of population growth and decline. The population declined from 64,253 to 53,500 between 1980 and 2000, and by 2006, the U.S. Census Bureau estimated that the parish's population declined further to 51,867.

The population then grew five percent to 54,650 from 2006 to 2010. Based on the most positive projection of the comprehensive plan completed in 2003, it was envisioned that the population decline would begin to slow and a growth rate will again return to the area. The comprehensive plan anticipated a 2020 population of approximately 60,000 residents. Current Census data estimates the 2019 parish population around 49,000 residents.

Table 2-35: Population Trends since the year 2000

St. Mary Parish Population				
Jurisdiction	2019	2015	2010	2000
St. Mary Parish	49,348	52,876	54,550	53,500
Baldwin	2,219	2,356	2,430	2,571
Berwick	4,419	4,771	4,938	4,404
Franklin	6,709	7,279	7,660	3,661
Morgan City	10,742	11,735	12,404	12,723
Patterson	5,792	6,109	6,110	5,124

It was anticipated that even with a projected rise in population, residential areas that existed in the 1980s will accommodate most of the expected growth. However, the subdivision of land holdings and resulting new home sites have continued to develop at a minimal rate in some areas and a more accelerated rate in others. For the most part, new residential areas have occurred mostly on abandoned agricultural land in the Berwick and Patterson areas. As noted in the introductory section of this HMPU, agricultural lands are located on the highest land in the parish along the Bayou Teche ridge and the two smaller ridges, areas that are not within the 100-year flood plain.

Other urban land use has shown little growth in the past two decades. Therefore, little by way of mitigation options is necessary. Nonetheless, based upon the past several decades of parish development and the management of that development, the St. Mary Parish Government is fully aware of state and federal mandates regarding coastal zone management, flood zone, and hazard management, and protecting the valuable coastal areas of the state.

ST. MARY PARISH HAZARD MITIGATION PLAN

Multi-Jurisdictional Risk Assessment

To ensure parish-wide coverage of hazard planning, each municipality of the parish participated in the creation of the St. Mary Parish Mitigation Plan Update. As noted previously, elected officials, representatives of pertinent public works departments, and representatives of the public from each community participated in the planning process. The parish encompasses five incorporated municipalities: Baldwin, Franklin, Patterson, Berwick, and Morgan City. Each town or city includes its independent governing authority and elected officials including a mayor and city/town council. The risk assessment includes each municipality as well as all unincorporated communities of the Parish. Information provided below focuses on those communities. To determine the risk associated with each jurisdiction the HMPU Committee planning team utilized stakeholder interviews to confirm data from the 2014 HM Plan Update, determine risk specific to each jurisdiction, and provide any additional changes to projects and capacity for the HM Plan Update 2020. Documentation of stakeholder interview participants is provided in Appendix A.

Table 2-36: Multi-Jurisdiction Repetitive Loss Structures

Jurisdiction	Number of Structures	Residential	Commercial	Other	Total Claims	Total Claims Paid	Average Claim Paid
St. Mary Parish (Unincorporated)	165	153	5	7	456	\$14,875,333	\$32,621
Baldwin	7	7	0	0	21	\$235,757	\$11,227
Berwick	9	9	0	0	26	\$444,266	\$17,087
Franklin	67	64	0	3	183	\$3,593,265	\$19,635
Patterson	8	8	0	0	19	\$335,197	\$17,642
Morgan City	29	28	1	0	85	\$735,907	\$8,658
Total	285	269	6	10	790	\$20,219,725	\$25,595
Chitimatcha Tribe (estimates)	0	0	0	0	*14	*\$446,260	*\$31,8767

Note: The Chitimatcha Tribe Reservation is located within St. Mary Parish (Unincorporated). Figures were estimated based on 660 persons (3% percent) living on the reservation. Stakeholder Interviews revealed there were no RL properties located on the reservation.

Figure 2-34: Example Stakeholder Interview Guide and Documentation



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St. Mary Parish Hazard Mitigation Plan Update 2020			
Meeting:	Stakeholder Interview Meeting	Meeting Time:	
Jurisdiction:			

General Questions:

1. What is the status of recommended mitigation actions from 2014?
2. Can you identify new mitigation projects for your jurisdiction?
3. What are the barriers to successful implementation or completion of mitigation actions and possible solutions for overcoming risk?
4. Can you provide any photos of hazardous events to include in the plan update?
5. Can your team provide an update the capacity assessment from 2014?

Print Name _____

Date _____

ST. MARY PARISH HAZARD MITIGATION PLAN

Baldwin

Baldwin, located in the northwestern section of the parish, is not prone to widespread and persistent flood damage. However, according to FEMA, there are eight repetitive loss structures in the town located southeast of State Route 83. Preventative measures to guard against rising concerns are presented in the mitigation strategies section. During stakeholder interviews, it was mentioned that maintenance issues create additional barriers to properly manage runoff water.

Berwick

Berwick is in the eastern section of the parish just west of Morgan City. Flooding, which is limited to the area south of U. S. Hwy. 90, results from stormwater. According to FEMA, two repetitive flood loss structures are located within Berwick. Two are located on Jones Street, and one is located near the river on Belleview Drive. The structure on Jones Street suffers flooding because of inadequate municipal stormwater drainage infrastructure. The situation was recently mitigated with the installation of an improved culvert at a critical location. The structure on Belleview Drive was a warehouse that no longer exists. Therefore, no mitigation is needed.

Riverfront issues like those noted in Morgan City are pertinent. As on the east bank of the Atchafalaya River, flood-proof issues are a function of ongoing activities of the Corps of Engineers and the Atchafalaya Basin Floodway Protection Plan. St. Mary Parish restricts future development unless in conformance with FEMA guidelines. During stakeholder interviews, it was found that an area of the country club was frequently flooding, and maintenance could reduce issues.

Chitimacha Tribe of Louisiana—Unincorporated Area, Reservation Lands

The reservation of the Chitimacha Tribe of Louisiana is located on the Teche Ridge west of Baldwin, in Charenton. No repetitive loss structures on the reservation have been recorded. It is not prone to flooding and is outside of the 100-year floodplain. Because the lands of the Tribe are generally the highest in elevation in the parish, mitigation programs are limited to wind hardening projects. Stormwater drainage is adequate, and the tribal lands are above the surge line. Atchafalaya Basin Levee failure would impact the Tribe if the failure were immediately north of the reservation.

Regarding mitigation activity, the Tribe's policy is to enhance infrastructure to withstand hazard events. The Tribe also enforces the International Building Codes. The Tribe maintains the following departments as part of their normal operations which have programs and policies relevant to hazard management: Safety (Tribal Police Department and Tribal Fire Department) and Buildings. The Casino, which is wholly owned and operated by the Tribe, has programs and policies relevant to hazard management.

The Tribe utilizes the Bureau of Indian Affairs, CDBG, and other funding to support hazard mitigation projects. Private funding generated from the casino and other revenue-producing ventures on reservation lands or lands acquired fee title has been discussed for future use. The need for developing a process for the Tribal government to incorporate the mitigation strategy into other planning mechanisms such as the Tribe's emergency operations plan in the future is recognized. The Tribe will work on this task soon.

ST. MARY PARISH HAZARD MITIGATION PLAN

Franklin

Franklin, the parish seat, is in the northwestern section of the parish just southeast of Baldwin. The low-lying areas of the city are prone to stormwater and storm surge flooding. According to FEMA, there are 67 repetitive loss structures in the Franklin area. All structures suffer from flooding that results from intense amounts of rainfall in short periods in addition to a few surge flood events affecting various structures. Virtually all the houses that flood within the vicinity of Franklin were built before the local FEMA flood study and enactment of the flood zone ordinance. The base floor elevations of these structures are not up to code in comparison with the current municipal flood ordinance. In 2012, a flood gate and levee were constructed to alleviate the storm surge flooding from Franklin Canal. In 2013, pump stations are being planned and/or constructed to also alleviate flooding.

The Pecan Acres subdivision is located along the Franklin Canal in the southwest section of the city and residents near Cayce Street in the northwest are the most affected areas. These structures are flooded from intense rainfall, storm surge funneled from the bay through the Franklin Canal, and during moderate rainfall events when tides are high because of south winds or river-based flood events. During Hurricane Lili, no flooding occurred until three hours after the event peaked when water from the Franklin Canal began overflowing into the area. It was mentioned in stakeholder interviews that property acquisitions needed to properly dredge the canal provide a barrier to manage runoff water more effectively.

Figure 2-35: Flooding in the Pecan Acres Subdivision (Franklin) during Hurricane



ST. MARY PARISH HAZARD MITIGATION PLAN

Patterson

Flooding on Cayce Street (Franklin) during Hurricane Lili Patterson is in the central section of the parish with the Atchafalaya River to its immediate east. Flooding from stormwater and backwater events is limited to areas south of U. S. Highway 90, but this flooding is limited to minor street flooding. According to FEMA, eight repetitive loss structures exist. The residential structure within the city limits is located along the western banks of the Atchafalaya River on McGee Drive. The structures suffer from flooding because base floor elevation is lower than that required at the site along Bayou Teche. Stakeholder interviews revealed that there were drainage culvert issues throughout the city.

Morgan City

Morgan City, located along the Atchafalaya River to the west, the Gulf Intracoastal Canal (GIWW) to the south, the GIWW Alternate to the north, and Lake Palourde and the Lake Verret watershed to the north, lies in the eastern section of the parish just across the river from of Berwick. This community has been prone to flooding caused by all forms of flooding noted in the parish, i.e., riverine, backwater, stormwater, and storm surge. According to FEMA, 29 repetitive loss structures are located within the city limits of Morgan City, all of which have been subject to flooding from stormwater events. From an area-wide perspective, the most affected regions have been the Wyandotte subdivision and sites located outside the community's levee and seawall system along the Atchafalaya River and the GIWW. It was mentioned in stakeholder interviews that there were streets were needed drainage improvements that are included in the updated proposed mitigation project list.

Unincorporated Areas – Amelia & Cypremort Point

Repetitive loss structures in unincorporated areas of St. Mary Parish account for nearly 60% of all repetitive loss properties across the Parish. Amelia, located in the easternmost section of the parish, is an unincorporated community prone to stormwater flooding that is often complicated by riverine and backwater flooding. The unincorporated area is bordered by Bayou Boeuf to the west and the east and Lake Palourde and the Lake Verret watershed to the north. In this area of approximately six square miles, 13 separate drainage areas and respective pump stations have for many years functioned for normal flood protection. In addition to those existing 13 pump stations, one new 12" pump has recently been installed near the recreation complex.

Although Amelia is highly prone to excessive stormwater flooding, most homes are built off the ground. As a result, only one FEMA repetitive loss structures was noted. According to HMP committee members and representatives of the drainage district, flooding largely affects properties along Bayou Boeuf and in the Inglewood Industrial Park Complex. The latter is located on the corner of Lake Palourde Bypass and La. Hwy.182. According to Amelia Drainage District officials, four businesses suffered flooding damage during Tropical Storm Allison, all of which are in the Inglewood Industrial Park Complex. Each of these structures experienced an average flood depth of 1.5 feet. The recently completed *Amelia*

ST. MARY PARISH HAZARD MITIGATION PLAN

Flood Protection Improvements Plan (2006) contains projects that have been incorporated into this HMPU as presented in Section VI. Mitigation Strategies.

Because of the geographic and manmade features of St. Mary Parish, the risk associated with each type of hazard event differs based on any given locale within the parish. To assess the varying levels of risk, a summary table (Table 2-5) is provided to establish the various levels of risk across each incorporated and unincorporated area of the parish.



Figure 2-36: Flooding impacting Bayou Vista

Cypremort Point, located in the southwesternmost section of the parish, is an unincorporated community prone to storm surge flooding. It is bordered by Vermilion Bay to the west and West Cote Blanche Bay to the east. The surrounding land use is predominately marshland. There are around 75 repetitive loss structures that exist within this community, many of which are older structures built below the required base flood elevation. The parish governing authority has worked for over fifteen years to complete mitigation on these remaining structures.

A photograph of a flooded urban street, likely in London, with a tram sign visible on the right. The water is murky and reflects the surrounding environment. A concrete pillar and a metal railing are partially submerged in the foreground. The background shows a bridge structure and distant buildings across the water.

SECTION THREE

MITIGATION STRATEGY

3. HAZARD MITIGATION STRATEGIES

The parish government is a political subdivision of the State of Louisiana as are the municipalities which are all incorporated communities. As such, each has all the powers and authority vested in them by the State of Louisiana typical of all other incorporated municipalities and counties throughout the country. This authority includes the ability to tax, incur debt, enter bonded indebtedness, regulate, plan, make and enforce laws, etc. This authority is also vested in the Tribe by the U.S. Government.

Projects to reduce the potential losses identified in the risk assessment are similar for the unincorporated areas of the parish, the five municipalities, and the Tribe. This conclusion was previously determined based on the input resulting from distribution, coordination, and review of the plan capabilities worksheet (Worksheet 4.1). As part of the 2020 HMPU, each jurisdiction and the Parish were presented a similar draft worksheet at stakeholder interviews for review, comment, and support in the direction of mitigation improvements.

St. Mary Parish reviewed and confirmed the goals, objectives, actions, and projects over the period of the hazard mitigation plan update process. The mitigation actions and projects in this 2020 Hazard Mitigation Plan Update are a product of analysis and review of the St. Mary Parish Hazard Mitigation Plan Steering Committee. The planning team presented a list of projects and actions, both new and from the 2014 plan, for review from October 2020 to December 2020. During the hybrid public meetings (due to Covid-19 restrictions) in November, the committee and participating jurisdictions provided a status of the projects from 2014 and the proposed actions for the 2020 update. There were discussions on the plan update, timeline, and time provided for citizens to discuss each project with subject matter experts from the parish.

There have been no changes to capacity since the HMPU 2014. With the collected data being similar and/or repetitive, the verbal interview was designed to be inclusive of all jurisdictions represented in this hazard mitigation plan. A copy of the composite worksheet for all jurisdictions is presented on the following two pages. Tribal data is also included. However, because of the differences in the Tribal HMPU requirements, a more detailed capacity analysis is provided in the Tribal Addendum. See attachments Appendix C.

Capabilities evaluated for this planning effort include the planning handbook referenced categories: Planning and Regulatory, Administrative and Technical, Financial, and Education and Outreach. Each is summarized below and detailed more in the Tribal addendum for Tribal update purposes.

PLANNING AND REGULATORY

The following text addresses capabilities relative to Plans; Building Codes, Permitting, and Inspections; and Land Use Planning and Ordinances

Plans

As can be evidenced in a quick scan of the jurisdictional capabilities worksheet, the Parish has accomplished more planning than has the municipalities. However, the municipalities share in the Parish planning initiatives as the planning is often parish-wide (e.g., coastal zone management, economic development plan, EOP, comprehensive plan) or by drainage basin (e. g., stormwater management by drainage districts which are parish created entities). While the Chitimacha Tribe is a federal jurisdiction, it also shares in parish planning efforts as well as develops plans specific to the tribe.

Because of the nature of the Hazard Mitigation Planning, the EOP, and other planning efforts at the parish level, the noted plans encompass hazards, identify projects that include mitigation strategies, and can be used to implement mitigation actions.

Capacity Assessment

Stakeholder Interviews and the Mitigation Goals & Strategies meeting allowed the opportunity for jurisdictions to review listed capacity on 2014 HMPU and provide any changes to current capacity. Each jurisdiction was forwarded copies of 2014 listed responses for all fields via email and there were no changes to be made for jurisdictional capacity. No expansions are anticipated at this time. The Parish population is currently declining. Training opportunities for staff members of each jurisdiction will be encouraged when available.

Figure 3-1: Jurisdictional Capacity Assessment Updates Template





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ST. MARY PARISH HAZARD MITIGATION PLAN UPDATE 2020

Hazard Mitigation Strategies - Capabilities Worksheet

Please indicate if your jurisdiction provides the following:

PLANNING AND REGULATORY

	YES	NO
Comprehensive/Master Plan		
Capital Improvements Plan		
Economic Development Plan		
Local Emergency Operations Plan		
Continuity of Operation Plan		
Transportation Plan		
Stormwater Management Plan		
Community Wildfire Protection Plan		
Other Special Plans		

BUILDING CODE, PERMITTING, AND INSPECTIONS

	YES	NO
Building Code		
Floodplain Management		
Building Code Effectiveness grading Schedule (BCEGS) Score		
Fire Department ISO Rating		
Site plan review requirements		

LAND USE PLANNING AND ORDINANCES

	YES	NO
Zoning Ordinance		
Subdivision Ordinance		
Floodplain Ordinance		
Natural hazard specific ordinance (stormwater, steep slope, wildfire)		
Flood insurance rate maps		
Acquisition of land for open space and public recreation use		

Jurisdiction: _____ Date: _____

Does the plan address hazards? _____

Does the plan identify projects to include in the mitigation strategy? _____

Can the plan be used to implement mitigation actions? _____

Are codes adequately enforced? _____

Is the ordinance an effective measure for reducing hazard impacts? _____

Adequately administered and enforced? _____

How can these capabilities be expanded and improved to reduce risk?

ADMINISTRATIVE AND TECHNICAL

	YES	NO
Planning Commission		
Mitigation Planning Committee		
Maintenance programs to reduce risk, e.g., tree trimming, clearing drainage systems		
Mutual aid agreements		
STAFF		
Chief Building Official		
Floodplain Administrator		
Emergency Manager		
Community Planner		
Civil Engineer		
GIS Coordinator		

Additional Comments: _____

Print Name: _____

The St. Mary Parish Hazard Mitigation Committee reviewed and analyzed the risk assessment evaluation performed for the parish as well as goals reflective of that risk assessment. Goals and action items were determined to be those that would have the greatest benefit in reducing or eliminating hazard damage to the parish. The evaluation criteria used in determining these goals and action items are as follows:

- **Social**—Is the mitigation strategy socially acceptable?
- **Technical**—Is the proposed action technically feasible and cost-effective? Does it provide the appropriate level of protection?
- **Administrative**—Does the parish have the capability to implement the action? Is the lead agency capable of carrying out oversight of the project?
- **Political**—Is the mitigation action politically acceptable?
- **Legal**—Does the parish have the authority to implement the proposed measure?
- **Economic**—Do the economic base, protected growth, and opportunity costs justify

the mitigation project?

- **Environmental**—Does the proposed action meet statutory considerations and public desire for sustainable and environmentally healthy communities?

After review of each goal from HMP (2014) which was created from the original HMP (2005) and the HMP (2009), the committee established a consensus on the validity of the goals at the third meeting; therefore, the goals remained mostly unchanged with minor updates to Goals 2 & 6.

The goals to reduce or avoid long-term vulnerabilities to the identified hazards are listed below:

Goal 1:

Eliminate the threat of catastrophic flood loss that could result from levee failure and lessen the need for new levee systems parish-wide and ensure that all levee systems are certified to protect from the critical 100-year storm event thus giving 100-year base flood elevation protection.

Goal 2:

Ensure that each drainage district or entity responsible for operations and maintenance of the respective drainage systems in the parish maintains existing facilities, transition all districts toward automation & remote monitoring, and upgrade facilities where needed; while continuing with current plans for expanding infrastructure, and consideration of future land use in areas of the parish experiencing urban growth, ensuring protection inclusive of 100-year base flood elevation

Goal 3:

Reduce repetitive flood damage in St. Mary Parish including all unincorporated areas, municipalities, and/or drainage districts.

Goal 4:

Facilitate responsible future development in the parish to reduce or eliminate the potential impacts of disasters.

Goal 5:

Minimize property damage resulting from windstorms (i.e., hurricane forced winds)

Goal 6:

Continue state and federal efforts to restore and preserve the parish coastal shoreline particularly as it relates to Coastal Wetland Planning, Protection, and Restoration Act (CWPPRA), Louisiana Department of Natural Resources Coastal Zone Management, Coastal Protection and Restoration Authority (CPRA), and the U. S. Army Corps of Engineers

Goal 7:

Multi-jurisdictional participation in the FEMA Community Rating System Program

Goal 8:

Enhance public awareness.

Specific mitigation actions and projects

The St. Mary Parish Hazard Mitigation Plan Update Committee identified several projects that would reduce and/or prevent future damage from naturally occurring hazard events. This coordinated effort, which included St. Mary Parish stakeholders, the planning committee, and the consultant team was accomplished with frequent and open communications including committee meetings, telephone conversations, emails, and face-to-face jurisdictional meetings with mayors, government staff, drainage districts, etc. The planning team focused on a comprehensive range of specific mitigation actions and projects.

Projects and action items relating to community goals are presented in the following section. Previously, projects were initially filtered to include those projects that were eligible under FEMA's HMG program and those of the highest local priority. To ensure a comprehensive list of mitigation projects, non-HMPG eligible projects and those from the original hazard mitigation plan (2005) and HMP Update 2009, and HMP Update 2014 are included. In contrast, projects identified in previous hazard mitigation planning efforts that have been constructed or otherwise implemented are listed in a complementary project list table. The ongoing and completed projects are listed within this section. In the 2014 plan update, the projects are listed geographically from east to west in the parish and are color-coded to reflect the affected area then subcategorized by responsible jurisdiction.

The following separate categories of data shown in the project list table are presented below. The categories of data sets reflect the column headings in the 2014 Project List included as part of this plan as attachment in the appendices.

- a. The source of the data and/or recommended project – The source data originated in the preparation of the original hazard mitigation plan (2004, extends through the 2009 and 2014 updates, ESF-14 post-Katrina-Rita projects, and is current through projects recommended recently via this multi-jurisdictional planning effort.
- b. **ID**—Identifies each project in numerical order to track the number of projects
- c. **Project Description**—A brief description of the project
- d. **Miscellaneous**—additional description where appropriate
- e. **Status**
- f. **Type**—Drainage, safe room, levee, generator, water supply, hardening, etc.
- g. **HMGP Eligibility**—All projects were identified and listed regardless of HMGP eligibility, but for the benefit of the respective jurisdictions, eligibility was noted.
- h. **Goal**—Identifies the goals as per those identified in this section
- i. **Local Priority**—While the projects are listed geographically from east to west, projects were included for each of the represented jurisdictions, e.g., parish, five municipalities, the Tribe, levee districts, drainage districts, etc. Color coding was used as was an abbreviation (see responsible jurisdiction).

- j. **Affected Area**—Identifies the affected geographical area. In the case of the unincorporated areas, each sector of the parish was given a community or regional designation.
- k. **Responsible Jurisdiction**—These jurisdictions include subdivisions of the parish, i. e, drainage districts, the St. Mary Levee District, etc., as well as municipalities and the Chitimacha Tribe.
- l. **Critical Event**—This category identifies the type of hazard that the project mitigates. Examples include stormwater, riverine events, saltwater intrusion, surge, erosion, or wind events. In some cases, the identified projects cover all events.

The projects identified during plan development that relate directly to the Chitimacha Tribe are listed in cells highlighted in light blue. This data reflects input from Tribe members on the planning committee from input offered during committee meetings and face-to-face stakeholder meetings held on the reservation. As part of the HMPU 2020, a list of projects was compiled from stakeholder interviews and committee meetings with guidance from the 2014 Project List.

Previous efforts to complete a project list to reduce risk and exposure from natural disasters were extensive and prompted the desire to note the 2014 project list within the 2020 HMPU. The 2014 HMP Project List was used as a foundational tool to develop the updated recommended project list. The following separate categories of data shown in the 2020 project list table are presented below:

- a. **ID**—Identifies each project in numerical order to track the number of projects
- b. **Action - Type**—Drainage, safe room, levee, generator, water supply, hardening
- c. **Action Description** – Identifies each project in numerical order to track the number of project
- d. **Funding Source** – All funding sources will be considered for projects: HMGP, FMA, BRIC, CDBG, Local
- e. **Target Completion Date** – Target timeframe
- f. **Responsible Party, Local Agency, or Department** – Responsible jurisdiction and local agency perform working
- h. **Hazard** – Identifies the natural disasters mitigated by listed project. This category identifies the type of hazard that the project mitigates. In some cases, the identified projects cover all events

Project priorities were discussed with all members of this multi-jurisdictional planning effort at stakeholder and committee meetings. The HMPU Committee considered 2014 priorities and the effectiveness of listing previous mitigation actions as priorities. The HMPU Committee recognized that finding collective projects that benefitted all jurisdiction and receive funding from local and federal programs were the aim. The projects were then listed in chronological order of stakeholder interview and per discussion at the mitigation strategies meeting the individual prioritization rankings were removed and the approach was recommended to focus on the funding allotment of available to match with proposed projects.

In addition, the Chitimacha Tribe revealed the desire to also pursue funding opportunities directly to benefit the reservation. The HMP Committee was aware and supportive of the Chitimacha Tribe pursuing all funding opportunities. The plan was revised to include those projects that would be implemented parish-wide or benefitted the most jurisdictions would receive initial priority. It was determined that new projects would create an exhaustive list of projects and funding would be the driving determinant of priority. Those projects impacting all jurisdictions would be considered the top priority.

2020 St. Mary Parish Hazard Mitigation Plan Update - Project List

The 2020 St. Mary Parish Project List Update presented below was compiled by utilizing jurisdictional stakeholder interviews to capture descriptions and responsible parties for proposed hazard mitigation projects. Note: All projects listed outside of the jurisdiction of Baldwin, Berwick, the Chitimacha Tribe, Franklin, Patterson, or Morgan City are the responsibility of St. Mary Parish

B	Berwick, Town of
Ba	Baldwin, Town of
C	Chitimacha Nation
DD1	Consolidated Drainage District No. 1 West of Wax Lake
DD2	Consolidated Drainage District No. 2 Morgan City (backwater levee to Siracusaville including pump stations)
DD6	Amelia and vicinity
MC	Morgan City, City of
MPC	Morgan City Port Commission
Sd 1 of DD1	Bayou Vista and vicinity
F	Franklin, City of
PG	St. Mary Parish Government
Pa	Patterson, Town of
WLE	Wax Lake East Drainage Dist. (Atchafalaya River to the Wax Lake Outlet)
Wds1, 2, 4, 4	Water & Sewer Commission Nos. 1, 2, 3, 4
W5&8SC	Wards 5 and 8 Regional Sewer Commission
SMLD	St. Mary Levee District

All of St. Mary Parish - Mitigation Actions

ID	Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Local Agency & Department	Hazard	Goal	Status
1	Repetitive Loss	Mitigation of Repetitive Losses Parishwide	FEMA, BRIC, CDBG-MIT, (LWI), FMA, CDBG-DR Local	1-3 years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	3	Ongoing
2	Drainage	Drainage Improvement -- Dredge Borrow Canals North of Bayou Teche/Lwr. Atch.	HMGP, FMA, BRIC, CDBG, State, Local	1-3 years	PG, WLE	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	Ongoing
3	Coastal	Mitigate Coastal Erosion	HMGP, FMA, State, CDBG, Local	1-3 years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	6	Ongoing
4	Coastal	Atchafalaya Sediment Delivery to enhance natural delta growth	HMGP, FMA, State, CDBG, Local	1-3 years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	6	Ongoing
5	Coastal	Big Island Mining--dredging and placing dredged material on natural delta lobes	HMGP, FMA, State, CDBG, Local	1-3 years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	6	New
6	Coastal	Castille Pass Channel Sediment Delivery--dredging and extending Castille Pass to promote sub delta development	HMGP, FMA, State, CDBG, Local	1-3 years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	6	New
7	Coastal	Bayou Sale Shoreline Protection to reduce and/or reverse shoreline erosion and create marsh	HMGP, FMA, State, CDBG, Local	1-3 years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	6	New
8	Coastal	Avoca Island Diversion and Land Building to create and protect 143 acres of emerging wetland	HMGP, FMA, State, CDBG, Local	1-3 years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	6	New

9	Coastal	Sediment Trapping at "The Jaws" to create emergent vegetated wetlands	HMGP, FMA, State, CDBG, Local	1-3 years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	6	New
10	Coastal	Restoration of Barrier Reef--East Cote Blanche Bay	HMGP, FMA, State, CDBG, Local	1-3 years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	6	New
11	Coastal	Shoreline Protection/Restoration-Cypremort Point	HMGP, FMA, State, CDBG, Local	1-3 years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	6	New
12	Water supply	Interconnection of potable water systems	FEMA, Local	1-3 years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	Ongoing
13	Evacuation	N-S Evac. Route Along Atchafalaya Basin Levee	HMGP, FMA, CDBG, State, Local	1-3 years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	6	New
14	Policy	Public Policy - All municipalities to apply Community Rating System (CRS)	HMGP, FMA, CDBG, State, Local	1-3 years	PG	Flooding, Tropical Storm/Hurricane	7	New
15	Hardening	Wind Retrofit -- 911 Center plus Safe Room	HMGP, FMA, BRIC, CDBG, Local	1-3 years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	Ongoing
16	Generator	Generators -- All Drinking Water Intakes	HMGP, FMA, BRIC, CDBG, Local	1-3 years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	
17	Safe Room	Provide saferoom at all pump stations to allow continuous access in all rain events	HMGP, FMA, BRIC, CDBG, Local	1-3 years	PG, DD2A, WLE, B, DD1, SMLD, F, SD1 of DD3	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms		New
18	Tech Upgrade	Drainage pump station automation & monitoring system to allow continuous access in all events	HMGP, FMA, BRIC, CDBG, Local	1-3 years	PG, DD2A, WLE, B, DD1, SMLD, F, SD1 of DD2	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms		New

19	Drainage	Sandbar dredging on Berwick Bay/Atchafalaya River along eastside from GIWW North	State, Local	1-3 years	PG, MCpc	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms		New
20	Generator	Generator for Regional Sewer Pump stations in Wards 5 & 8	HMGP, FMA, BRIC, CDBG, Local	1-3 years	PG, W5&8SC	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
21	Tech Upgrade	Communication upgrades, for backup radio in power outages, within the district and to the parish	HMGP, FMA, BRIC, CDBG, State, Local	1-3 years	PG, W5&8SC	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	8	New
22	Levee	Surge Protection - Charenton Canal to Wax Lake Outlet to New Iberia Parish Line Hurricane Protection	FEMA, State, Local	1-5 Years	PG, SMLD	Flooding, Tropical Storm/Hurricane	1	Ongoing
23	Program	Water Rationing Program - Implement a water rationing program with an emphasis on capabilities and enforcement.	FEMA, Local	1-5 years	PG	Drought	8	New
24	Education & Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety of all prevalent natural disasters.	FEMA, Local	1-5 years	PG	All	8	New
25	Generator	Purchase generators and install at critical facilities to continue essential operations parish-wide during events.	FEMA BRIC, HMGP	1-5 years	PG	All	4	New

Unincorporated St. Mary Parish - Mitigation Actions

Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
Drainage	Drainage Improvement - Upgrade Culverts across Hwy 182 in Amelia	HMGP, FMA, BRIC, CDBG, State, Local	1-3 years	PG, DD6	Flooding, Tropical Storm/Hurricane	2	Ongoing
Safe Room	Safe room--Pump Stations 2 and 2A	HMGP, FMA, BRIC, CDBG, Local	1-3 years	PG, DD6	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	Ongoing
Pump Station	Rehabilitate No. 6 Pump and Sump at Bayou Ramos (near electric substation)	HMGP, FMA, BRIC, CDBG, Local	1-3 years	PG, DD6	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Levee	Amelia Levee Construction--Statewide flood control project	HMGP, FMA, BRIC, CDBG, Local	5-10 years	PG, DD6	Flooding, Tropical Storm/Hurricane	1	Ongoing
Generator	Generators -- All Amelia Pump Stations	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD6	Flooding, Tropical Storm/Hurricane	2	Ongoing
Drainage	Drainage Improvements--New Bar Gates for Pump Station Nos. 2 and 2A in Amelia	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD6	Flooding, Tropical Storm/Hurricane	1	New
Pump Station	Install Backwash gate at Bayou Ramos pump station	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD6	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	1	New
Pump Station	Improve Flood Control Pump Stations East of MC--Gravity Drainage District No. 6	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD6	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Generator	Install Water Intake Pump Generator--Water & Sewer Comm. No. 1	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, Wsd1	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New

Design and Additional Study	Morgan City/Amelia Levee Alignment 2 (Miller Drawing No. 12281-8)--Levee construction and Bayou Chene flood control structure	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, SMLD	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	1	Ongoing
Levee	Morgan City/Amelia Levee Alignment 1 (Miller Drawing No. 12281-7)--Levee construction and 15,775 linear foot steel sheet pile wall along Bayou Boeuf	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, SMLD	Flooding, Tropical Storm/Hurricane	1	Ongoing
Drainage	Drainage improvements of the Bayou Vista Middle Road ditch	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, Sd1 of 2	Flooding, Tropical Storm/Hurricane	2	Ongoing
Drainage	Drainage Improvement -- Widening of Drainage ditch and Upgrading of Culverts and Trestle at Cannata's Pump Station and 18 Foot Ditch	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, WLE	Flooding, Tropical Storm/Hurricane	2	New
Drainage	Drainage Improvement -- Enlarge and Widen Culverts near Hollywood Casino (Bayou Vista)	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, WLE	Flooding, Tropical Storm/Hurricane	2	New
Safe Rm	Install Safehouse at Berwick Borrow Canal Pumping Station	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, SMLD, WLE	Flooding, Tropical Storm/Hurricane	5	New
Safe Rm	Install Safehouse at Possum Bayou Pumping Station	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, SMLD, WLE	Flooding, Tropical Storm/Hurricane	5	New
Drainage	Drainage Improvements--North and South Borrow Canals, bayous, and canals	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, SMLD, WLE	Flooding, Tropical Storm/Hurricane	5	New
Generator	Provide Portable Stand-by/back-up Generator	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, SMLD, WLE	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Pump Station	Install New Pump Station on Northwest Side of System	HMGP, FMA, BRIC, CDBG, Local	1-3 years	PG, SMLD, WLE	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	Ongoing

Pump Station	Improve Flood Control Pump Stations East of Wax Lake--WLE	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, WLE	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Drainage	Bayou Teche Drainage Improvements--Patterson to Jeanerette	HMGP, FMA, BRIC, CDBG, Local	5-10 years	PG, DD1, WLE	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Drainage	Bayou Choupique Channel Drainage Improvements	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD1	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	Ongoing
Pump Station	Install Natural Gas Pipeline to Franklin Pump Station (Corps) on the Hanson Canal	HMGP, FMA, BRIC, CDBG, Local	1-3 years	PG, DD1	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	Ongoing
Floodgate	Flood Protection -- Charenton Floodgate	HMGP, FMA, BRIC, CDBG, Local	1-10+ years	PG, DD1	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	1	Ongoing
Floodgate	Flood Protection -- New Floodgate at Baldwin from Miller Plan	HMGP, FMA, BRIC, CDBG, Local	1-10+ years	PG, DD1	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	Ongoing
Study	Initiate problem solving initiative focusing on backflow surge up the Charenton Canal and the Franklin Canal affecting Bayou Teche west of Wax Lake Outlet (Calumet Cut) as well as the Franklin repetitive loss area	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD1	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	4	New
Pump Sta.	Yokely Pump Station Safe Room	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD1	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New

Levee	Franklin Levees (Miller Drawing No. 12281-3)--Levee improvements west and south of Franklin. Levee construction = \$30,590,000; Charenton Canal flood control structure = \$35,000,000	HMGP, FMA, BRIC, CDBG, Local	1-10+ years	PG, DD1	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	1	New
Pump Sta.	Improve Flood Control Pump Stations West of Wax Lake-- Consolidated Drainage District 1	HMGP, FMA, BRIC, CDBG, Local	1-10+ years	PG, DD1	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Pump Sta.	Increase Capacity of Flood Control Pump Stations West of Wax Lake Outlet--Gordy, Maryland, Wax Lake, Franklin, Centerville, Ellerslee, North Bend, and Todd	HMGP, FMA, BRIC, CDBG, Local	5-10+ years	PG, F, DD1	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Levee	Surge Protection - Charenton Canal to Wax Lake Outlet to New Iberia Parish Line Hurricane Protection	HMGP, FMA, BRIC, CDBG, Local	1-10+ years	PG, SMLD	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	1	New
Drainage	Bayou Choupique Channel Drainage Improvements	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD1	Flooding, Tropical Storm/Hurricane	1	New
Pump Station	Install Natural Gas Pipeline to Franklin Pump Station (Corps) on the Hanson Canal	HMGP, FMA, BRIC, CDBG, Local	1-3 years	PG, DD1	Flooding, Tropical Storm/Hurricane	1	New
Floodgate	Flood Protection -- Charenton Floodgate	HMGP, FMA, BRIC, CDBG, Local	1-10+ years	PG, DD1	Flooding, Tropical Storm/Hurricane	1	New
Floodgate	Flood Protection -- New Floodgate at Baldwin from Miller Plan	HMGP, FMA, BRIC, CDBG, Local	1-10+ years	PG, DD1	Flooding, Tropical Storm/Hurricane	1	New
Levee	Ivanhoe Canal/Glencoe Levees (Miller Drawing No. 12281-1)-- construction of approx. 16 miles of new levees north and south of LA Hwy. 83	HMGP, FMA, BRIC, CDBG, Local	1-10+ years	PG, DD1	Flooding, Tropical Storm/Hurricane	1	New
Coastal	Shoreline Stabilization along Vermilion Bay and West Cote Blanche Bay	HMGP, FMA, BRIC, CDBG, Local	5-10+ years	PG	Flooding, Tropical Storm/Hurricane	6	New

Floodgate	Bayou Chene Flood Control Structure	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	PG, SMLD	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Levee	Bayou Sale Levees (Miller Drawing No. 12281-5)--Approx. 18 miles of Levee improvements east and west of Hwy. 317 south of the Intracoastal Waterway and ending near Bayou Sale. Total project cost = \$32,700,000.	HMGP, FMA, BRIC, CDBG, Local	1-3 years	PG, SMLD	Flooding, Tropical Storm/Hurricane	1	New
Hardening	Wax Lake Pump Station Safe Room	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD1	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Pump Station	Elevation -- Pumps in Drainage District 1 to above BFE (4 in process)	HMGP, FMA, BRIC, CDBG, Local	5-10+ years	PG, DD1	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	Ongoing
Hardening	Wind Retrofit--Consolidated DD No. 1 Office	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD1	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Drainage	Drainage Upgrade--Faye Coulee	HMGP, FMA, BRIC, CDBG, Local	5-10+ years	PG, DD1	Flooding, Tropical Storm/Hurricane	2	New
Drainage	Drainage Improvements -- N. of Bayou Teche/Lwr. Atch. along Victoria Riverside Road Berwick to Calumet	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, WLE	Flooding, Tropical Storm/Hurricane	2	New
Repetitive Loss	Mitigation of Repetitive Losses -- Elevation (1 remaining)	HMGP, FMA, BRIC, CDBG, Local	1-3 years	PG	Flooding, Tropical Storm/Hurricane	3	Ongoing
Levee	Four Corners/Baldwin Levees (Miller Drawing No. 12281-2)-- construction of approx. 10 miles of new levees south of LA Hwy. 83 and the communities of Four Corners and Baldwin. Scott Canal flood control structure	HMGP, FMA, BRIC, CDBG, Local	1-10+ years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	1	New

Hardening	Elevation -- Sewer and Water District 5 Lift Station Electrical	HMGP, FMA, BRIC, CDBG, Local	5-10+ years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Generator	West St. Mary Civic Center Emergency Generator	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Hardening	Renovation to St. Mary Parish OHSEP Multi-Purpose Building	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	4	New
Generator	Generator for Yokely Pumping Station (15,000 acres, ¾ of the population of Franklin)	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD1	Flooding, Tropical Storm/Hurricane	2	New
Pump Station	Franklin area pump station on Hanson Canal upgrading pumps	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD2	Flooding, Tropical Storm/Hurricane	2	New
Drainage	Drainage Improvements Kelly Canal	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD1, SMLD	Flooding, Tropical Storm/Hurricane	2	New
Levee	Extension from Yokely Levee along Charenton Canal	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, SMLD	Flooding, Tropical Storm/Hurricane	1	New
Levee	Upgrade existing levees from Wax Lake Outlet to the Charenton Drainage Canal to 100 Yr Flood Protection	HMGP, FMA, BRIC, CDBG, Local	1-10 years	PG, SMLD	Flooding, Tropical Storm/Hurricane	1	New
Levee	Levee from Wyndote Pump Station #7 to the GIWW	HMGP, FMA, BRIC, CDBG, Local	1-10 years	PG, SMLD	Flooding, Tropical Storm/Hurricane	1	New
Levee	Levees from Charenton Drainage Canal to New Iberia Parish Line	HMGP, FMA, BRIC, CDBG, Local	1-10+ years	PG, SMLD	Flooding, Tropical Storm/Hurricane	1	New
Pump Station	(2 each) 24" Hydraulic pumps on trailers with hoses/pipes	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD2A	Flooding, Tropical Storm/Hurricane	2	New
Pump Station	(3 each) 18" Hydraulic pumps on trailers with hoses/pipes	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD2A	Flooding, Tropical Storm/Hurricane	2	New

Pump Station	(4 each) 8" Hydraulic pumps on trailers with hoses	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD2A	Flooding, Tropical Storm/Hurricane	2	New
Generator	Portable generator	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD2A	All Priority Hazards	2	New
Pump Station	Station #9 Add (2) 60" pump with diesel engines for stormwater pumping	HMGP, FMA, BRIC, CDBG, Local	1-5 years	PG, DD2A	Flooding, Tropical Storm/Hurricane	2	New

Town of Baldwin - Mitigation Actions

Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
Hardening	Wind retrofit--Baldwin police & fire stations, city hall, public, works building, and water plant	HMGP, FMA, BRIC, CDBG, Local	5-10 Years	Ba	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Generator	Generators--Baldwin Sewer Lift Stations	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	Ba	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Drainage	Drainage Improvements - Joseph St. and Charenton annex	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	Ba	Flooding, Tropical Storm/Hurricane	2	New
Pump Station	Install a pump station Bayou Choupique Levee	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	Ba	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Generator	Portable trailer mounted generator to move around to sewer pump stations	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	Ba	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New

Town of Berwick - Mitigation Actions

Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
Drainage	Drainage Improvement -- Upgrade Box Culverts and enclose or line influent ditch from Boudreaux Street to Gilmore Street in Berwick	HMGP, FMA, BRIC, CDBG, Local	1-3 Years	B	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	Ongoing
Pump Sta.	Upgrade of Pump Station Capacity -- Replace 2 3 Ongoing" pumps with new modern and efficient 36" lift pumps (Berwick)--Golden Farms pump station	HMGP, FMA, BRIC, CDBG, Local	1-3 Years	B	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	Ongoing
Drainage	Enlarge outlets under RR track where Thorguson, Patty Drive, and Guidry ditches flow south	HMGP, FMA, BRIC, CDBG, Local	1-3 Years	B	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Drainage	Enlarge outfall ditches south of RR track to Wax Lake East Drainage pumps	HMGP, FMA, BRIC, CDBG, Local	1-3 Years	B	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	Ongoing
Drainage	Redirect outfall ditch--Cannata Pump Station in Byu Vista that intersects with Guidry Ditch	HMGP, FMA, BRIC, CDBG, Local	1-3 Years	B	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Drainage	Wind retrofit town hall, fire stations, and public works buildings	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	B	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New

Hardening	Construct Safe Rooms at all drainage pump stations (2)	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	B	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Drainage	Enlarge outfall ditches and/or construct retention ponds	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	B	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Pump Sta.	Pump station for Country Club south of Civic Center	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	B	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Drainage	Drainage Improvement -- Finish Covering Patti Drive Ditch with Concrete (Berwick)	HMGP, FMA, BRIC, CDBG, Local	1-3 Years	B	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Drainage	Drainage Improvement -- West End Ditch: Enclose, concrete line, and/or replace metal culverts w/concrete culverts	HMGP, FMA, BRIC, CDBG, Local	1-3 Years	B	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	Ongoing
Drainage	Enlarge and concrete line Hogan St. ditch	HMGP, FMA, BRIC, CDBG, Local	1-3 Years	B	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New

Pump Station	Natural gas-operated 24" pump for Patti Drive Ditch to Bayou Teche	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	B	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Drainage	Drainage Improvements Country Club Estates: Hogan, Tournament, Snead, Palmer, Hebert, and Jones	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	B	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New

Chitimacha Tribe - Mitigation Actions							
Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
Hardening	Wind Retrofit -- Chitimacha Tribal School	HMGP, FMA, BRIC, CDBG, State, Local	1-5 Years	C	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Hardening	Wind Retrofit -- Chitimacha Police Department	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Hardening	Wind Retrofit -- Chitimacha Fire Department	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Hardening	Wind Retrofit -- Chitimacha Health Clinic	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Hardening	Wind Retrofit -- Chitimacha Museum	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Hardening	Wind Retrofit -- Chitimacha Trading Post	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Hardening	Wind Retrofit -- Chitimacha Administrative/Main Office	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New

Hardening	Wind Retrofit -- Chitimacha Tribal Courthouse/Records Building	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Hardening	Wind Retrofit -- Chitimacha Rivercane Assisted Living Center	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Hardening	Wind Retrofit -- Chitimacha Human Resource/CECHP Building	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Hardening	Wind Retrofit -- Chitimacha Kaxgi Building	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Hardening	Wind Retrofit -- Development Building	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Hardening	Wind Retrofit -- Chitimacha Public Works Building	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Hardening	Wind Retrofit -- Raintree Market	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Hardening	Wind Retrofit -- First National Bank of Jeanerette (owned by Tribe)	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New

Hardening	Wind Retrofit -- Chitimacha Recreation Department	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Hardening	Wind Retrofit--Housing Authority	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Drainage	Drainage Improvements Ralph Darden Parkway	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Flooding, Tropical Storm/Hurricane	2	New
EOC	Emergency operation command center/public saferoom	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	All Hazards	4	New
Drainage	Drainage improvements to major outfalls	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	C	Flooding, Tropical Storm/Hurricane	2	New

City of Franklin - Mitigation Actions							
Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
Study	Initiate problem solving initiative focusing on backflow surge up the Charenton Canal and the Franklin Canal affecting Bayou Teche west of Wax Lake Outlet (Calumet Cut) as well as the Franklin repetitive loss area	HMGP, FMA, BRIC, CDBG, State, Local	1-5 Years	PG, F, DD1	Flooding, Tropical Storm/Hurricane	2	Ongoing
Pump Station	Yokely Pump Station Safe Room	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	PG, F, DD1	Flooding, Tropical Storm/Hurricane	2	New
Levee	Franklin Levees (Miller Drawing No. 12281-3)--Levee improvements west and south of Franklin. Levee construction = \$30,590,000; Charenton Canal flood control structure =\$35,000,000	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	PG, F, DD1	Flooding, Tropical Storm/Hurricane	1	Ongoing
Pump Station	Improve Flood Control Pump Stations West of Wax Lake-- Consolidated Drainage District 1	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	PG, F, DD1	Flooding, Tropical Storm/Hurricane	2	New
Pump Station	Increase Capacity of Flood Control Pump Stations West of Wax Lake Outlet--Gordy, Maryland, Wax Lake, Franklin, Centerville, Ellerslee, North Bend, and Todd	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	PG, F, DD1	Flooding, Tropical Storm/Hurricane	2	New
Drainage	Yokely Canal Needs Dredging	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	F	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Drainage	Cayce Street Improvements	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	F	Flooding, Tropical Storm/Hurricane	2	New

City of Patterson - Mitigation Actions							
Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
Hardening	Safe House Patterson Volunteer Fire Department	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	Pa	All Hazards	2	New
Hardening	Safe Housing Complex for Patterson Public Works Department	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	Pa	All Hazards	2	New
Outreach	Communications tower at central parish location	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	Pa, PG	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Drainage	Drainage Improvement -- Line Lucia Ditch with concrete and/or increase slope/cross section	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	Pa, WLE	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	1	New
Saferoom	Saferoom for the Fire Station	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	Pa	All Hazards	2	New
Hardening	Hardening of the City Hall building	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	Pa	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Hardening	Old Junior High School building - essential facility (hardening upgrade)	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	Pa	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	5	New
Drainage	Drainage Improvements (Area 7): Near Kelli, David, Leo, and Mike Drives	HMGP, FMA, BRIC, CDBG, Local	1-5 Years	Pa	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New

City of Morgan City - Mitigation Actions							
Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
Levee	Upgrade MC backwater levees to certifiable standard	HMGP, FMA, BRIC, CDBG, State, Local	1-3 years	MC	Flooding, Tropical Storm/Hurricane	1	New
Drainage	Drainage Improvement -- Enclose open drainage canals -- Maple Street Canal, Canal behind Cypress Gardens, Marquis Manor Canal	HMGP, FMA, BRIC, CDBG, Local	1-5 years	MC	Flooding, Tropical Storm/Hurricane	2	New
Drainage	Drainage Improvement and Safe Room - New bar grates and safe room at Pump Station #6 in Morgan City	HMGP, FMA, BRIC, CDBG, Local	1-5 years	MC	Flooding, Tropical Storm/Hurricane	2	New
Pump Station	Stabilization of all MC pump station pits and canals (foundations being undermined)	HMGP, FMA, BRIC, CDBG, Local	1-5 years	MC	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Water supply	Alternate Potable Water Intake for Morgan City inside Lower Atchafalaya River system (Bayou Teche)	HMGP, FMA, BRIC, CDBG, Local	1-5 years	MC	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Hardening	Elevate Generators at MC Police Station	HMGP, FMA, BRIC, CDBG, Local	1-5 years	MC	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Hardening	Hardening of MC Police Department/City Court	HMGP, FMA, BRIC, CDBG, Local	1-5 years	MC	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New
Hardening	Hardening of MC Municipal Auditorium (Evacuation Shelter)	HMGP, FMA, BRIC, CDBG, Local	1-5 years	MC	Flooding, Tropical Storm/Hurricane, Tornadoes, Thunderstorms	2	New

Hardening	Hardening of MC City Hall	HMGP, FMA, BRIC, CDBG, Local	1-5 years	MC	Flooding, Tropical Storm/Hurricane, Tornados, Thunderstorms	2	New
Drainage	Box culvert at RR spur across from port office	HMGP, FMA, BRIC, CDBG, Local	1-5 years	MC	Flooding, Tropical Storm/Hurricane, Tornados, Thunderstorms	2	New
Levee	Morgan City/Amelia Levee Alignment 2 (Miller Drawing No. 12281-8)--Levee construction and Bayou Chene flood control structure	HMGP, FMA, BRIC, CDBG, Local	1-5 years	MC	Flooding, Tropical Storm/Hurricane, Tornados, Thunderstorms	1	New
Drainage	Lakeside East - Walnut Street Canal Drainage improvements (installing pump capacity, pits)	HMGP, FMA, BRIC, CDBG, Local	1-5 years	MC	Flooding, Tropical Storm/Hurricane, Tornados, Thunderstorms	2	New
Generator	Generator installed for each lift station in Morgan City	HMGP, FMA, BRIC, CDBG, Local	1-5 years	MC	Flooding, Tropical Storm/Hurricane, Tornados, Thunderstorms	2	New
Levee	Floodwall levee system gate repair	HMGP, FMA, BRIC, CDBG, Local	1-5 years	MC	Flooding, Tropical Storm/Hurricane, Tornados, Thunderstorms	1	New

Identifiable action items

As part of this hazard mitigation plan update goals and objectives were reviewed, updated, and expanded upon from the 2014 Project Listing below. An exhaustive list of all actions, descriptions, responsible parties, hazards, and goals is included as part of the 2020 HMPU on pages 3-8 thru 3-29. Note: Project ID numbers referenced below are for tracking the 2014 plan update included in Appendix C.

Goal 1: Eliminate the threat of catastrophic flood loss that could result from levee failure and lessen the need for new levee systems parish-wide and ensure that all levee systems are certified to protect from the critical 100-year storm event thus giving 100- year base flood elevation protection

Objective 1.1: Protect all of St. Mary Parish's citizens from storm surge flood events

Action 1.1.1: Maintain and expand existing levee protection according to St. Mary Parish Storm Surge Protection Study.

- Timeframe: Ongoing
- Funding: Local, regional, and federal
- Staff: Existing designated full-time personnel in public works and planning departments
- Project List Location Identifier: ID 10, 12, 54, 66, 71, 72, 73, 76, 77, 78, 114, 116, 125

Action 1.1.2: Construction of Amelia Levee – Statewide flood control project.

- Timeframe: Ongoing
- Funding: State
- Staff: SMLD and Drainage District No. 6
- Project List Location Identifier: ID 4

Goal 2: Ensure that each drainage district or entity responsible for operations and maintenance of the respective drainage systems in the parish maintains existing facilities, transition all districts toward automation & remote monitoring, and upgrades facilities where needed; while continuing with current plans for expanding infrastructure, and consideration of future land use in areas of the parish experiencing urban growth ensuring protection inclusive of 100-year base flood elevation

Objective 2.1: Improve existing drainage infrastructure

Action 2.1.1: Widen drainage ditches, upgrade culverts and upgrade trestle between Cannata's Pump Station and the 18-foot ditch in the community of Bayou Vista

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP, local, and regional
- Staff: Existing designated full-time personnel in public works and drainage district
- Project List Location Identifier: ID 44

Action 2.1.3: Enclose open drainage canals in Morgan City, Louisiana, including the Maple Street Canal, the canal behind Cypress Gardens subdivision, and Marquee Manor Canal, to lessen maintenance costs

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP, local, and regional
- Staff: Existing designated full-time personnel in public works and drainage district
- Project List Location Identifier: ID 13

Action 2.1.4: Enclose West End Drainage Ditch

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP, local, and regional
- Staff: Existing designated full-time personnel in public works and drainage district
- Project List Location Identifier: ID 37

Action 2.1.5: Upgrade culverts at Highway 90 and the Tupelo Street Ditch

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP, local, and regional
- Staff: Existing designated full-time personnel in public works and drainage district
- Project List Location Identifier: ID 19

Action 2.1.6: Enclose Middle Road Ditch in Bayou Vista, Louisiana

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP, local, and regional
- Staff: Existing designated full-time personnel in public works and drainage district
- Project List Location Identifier: ID 40

Action 2.1.7: Dredge Bayou Teche along Victoria Riverside Road and the borrow canals

- Timeframe: 1-5 years, as funding permits
- Funding: local and regional
- Staff: Existing designated full-time personnel in public works and drainage district
- Project List Location Identifier: ID 123

Action 2.1.8: Upgrade culverts under Highway 90 near Hollywood Casino and Ryan's in Bayou Vista, Louisiana

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP, local, and regional
- Staff: Existing designated full-time personnel in public works and drainage district
- Project List Location Identifier: ID 45

Action 2.1.9: Complete lining of Patti Drive ditch with concrete in Berwick, Louisiana

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP, local, and regional
- Staff: Existing designated full-time personnel in public works and drainage district
- Project List Location Identifier: ID 36

Action 2.1.10: Line Lucia ditch with concrete and increase slope in Patterson, Louisiana

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP, local, and regional
- Staff: Existing designated full-time personnel in public works and drainage district
- Project List Location Identifier: ID 59

Action 2.1.11: Upgrade culverts and enclose or line influent ditch from Boudreaux Street to Gilmore Street in Berwick, Louisiana

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP, local, and regional
- Staff: Existing designated full-time personnel in public works and drainage district

- Project List Location Identifier: ID 27

Action 2.1.12: Upgrade bar grates at pump stations, including Cypress Gardens and #6 in Morgan City and 2 and 2A in Amelia, Louisiana

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP, local, and regional
- Staff: Existing designated full-time personnel in public works and drainage district
- Project List Location Identifier: ID 6

Action 2.1.13: Upgrade pump station capacity and upgrade drainage ditches in Berwick, Louisiana, and west of the Wax Lake Outlet

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP, local, and regional
- Staff: Existing designated full-time personnel in public works and drainage district
- Project List Location Identifier: ID 28, 29, 30, 31, 34, 37, 38, 67, 68, 74, 122, 123

Action 2.1.15: Stabilize all Morgan City pump station pits and canals

- Timeframe: Ongoing
- Funding: Local, regional
- Staff: Drainage District No. 2
- Project List Location Identifier: ID 18

Action 2.1.16: Install box culverts at RR spur across from Port of Morgan City on Young's Road.

- Timeframe: 1-5 years, as funding permits
- Funding: Local, regional, and federal
- Staff: Port Staff
- Project List Location Identifier: ID 26

Action 2.1.19: Upgrade drainage at North and South Borrow Canals and Bayous

- Timeframe: 1-10 years, as funding permits
- Funding: Local, regional, and federal
- Staff: Wax Lake Outlet
- Project List Location Identifier: ID 50

Action 2.1.20: Install New Pump Station on Northwest Side of System

- Timeframe: 1-10 years, as funding permits
- Funding: Local, regional, and federal
- Staff: Wax Lake Outlet
- Project List Location Identifier: ID 52

Action 2.1.21: Improve Flood Control Pump Stations East of Wax Lake -WLE

- Timeframe: 1-10 years, as funding permits
- Funding: Local, regional, and federal
- Staff: Wax Lake Outlet
- Project List Location Identifier: ID 53

Action 2.1.22: Bayou Teche Drainage Improvements – Patterson to Jeanerette

- Timeframe: 1-10 years, as funding permits
- Funding: Local, regional, and federal
- Staff: Wax Lake Outlet, Drainage District No. 1, and Patterson
- Project List Location Identifier: ID 55

o Objective 2.2: Elevate existing infrastructure to protect from flood damage

Action 2.2.1: Elevate sewer lift stations in Franklin, Louisiana

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP, local, and regional
- Staff: Existing municipal and parish administration
- Project List Location Identifier: ID 60

Action 2.2.2: Elevate electrical components in lift stations in Sewer and Water District No. 5

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP, local, and regional
- Staff: Existing sewer and water district personnel
- Project List Location Identifier: ID 126

Action 2.2.3: Elevate Generators at Morgan City Police Station

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP
- Staff: City of Morgan City
- Project List Location Identifier: ID 21

Action 2.2.4: Elevate Pump Stations to above BFE

- Timeframe: 1-10 years, as funding permits
- Funding: HMGP
- Staff: Drainage District No. 1
- Project List Location Identifier: ID 120

o Objective 2.3: Create new infrastructure to protect from flood damage

Action 2.3.1: Construct new floodgates in Bayou Beouf (Amelia), the Baldwin Canal (Baldwin), Bayou Chene, Hanson Canal/Yellow Bayou Charenton Canal, and Bayou Teche.

- Timeframe: 1-10 years, as funding permits
- Funding: Local, regional, and federal
- Staff: Existing municipal and parish administration, drainage district personnel, and SMLD

• Project List Location Identifier: ID 72, 73, 76, 113, 125, 127 Action 2.3.2: Construct alternate potable water intake for Morgan City inside Lower Atchafalaya River System (Bayou Teche)

- Timeframe: 1-10 years, as funding permits
- Funding: Local, regional, and federal
- Staff: City of Morgan City
- Project List Location Identifier: ID 20

Action 2.3.3: New Pump Station for Country Club South of Civic Center and Franklin Canal Pump Station

- Timeframe: 1-10 years, as funding permits
- Funding: Local, regional, and federal
- Staff: Town of Berwick, Drainage District No. 1, Wax Lake East, and SMLD
- Project List Location Identifier: ID 35

o Objective 2.4: Ensure pump stations and potable water intakes have an adequate power supply in case of a flood event

Action 2.4.1: Install generators at all pump stations

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP, local, and regional
- Staff: Existing drainage district personnel

- Project List Location Identifier: ID 5, 39, 63

Action 2.4.2: Install generators at all potable water intakes

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP, local, and regional
- Staff: Existing water and sewer district personnel
- Project List Location Identifier: ID 112

Goal 3: Reduce repetitive flood damage in St. Mary Parish including all unincorporated areas, municipalities, and/or drainage districts

- o Objective 3.1: Mitigate all repetitive losses in St. Mary Parish

Action 3.1.1: Elevate, acquire, or pilot reconstruct all RL and SRL structures in St. Mary Parish

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP
- Staff: Existing municipal and parish administration
- Project List Location Identifier: ID 97, 124

- o Objective 3.2: Initiate drainage and/or surge flooding studies

Action 3.2.1: Initiate problem-solving initiative focusing on backflow surge up the Charenton Canal and the Franklin Canal affecting Bayou Teche west of Wax Lake Outlet (Calumet Cut) as well as the Franklin repetitive loss area

- Timeframe: 1-5 years, as funding permits
- Funding: Local, regional, and federal
- Staff: Drainage District No. 1
- Project List Location Identifier: ID 64

Goal 4: Facilitate responsible future development in the parish to reduce or eliminate the potential impacts of disasters.

- o Objective 4.1: Promote and permit commercial and industrial development, including public critical facilities, outside of hazard areas to limit business interruption, property damage, and impairment to critical facilities in strict accordance with the parish zoning, flood management, and other applicable state and federal regulations.

Action 4.1.1: Ensure that future development does not increase hazard losses

- Timeframe: Ongoing
- Funding: No additional funds required
- Staff: One full-time member of each municipality and the parish planning department
- Project List Location Identifier: ID 97 & 124

Action 4.1.2: Guide future development away from hazard areas while maintaining other parish goals such as economic development and improving the quality of life

- Timeframe: Ongoing
- Funding: No additional funds required
- Staff: One full-time member of the parish planning department and each municipality

Action 4.1.3: Enforce the International Building Code requirements for all new construction to strengthen buildings against high wind damage

- Timeframe: Ongoing
- Funding: Not additional funds required
- Staff: One current full-time member of the parish districts and each municipality

Action 4.1.4: Provide safe locations for files, records, and computer equipment

- Timeframe: Ongoing
- Funding: HMGP/FMA
- Staff: One current full-time member of the parish, the drainage districts, and each municipality

Action 4.1.5: Install generators at all Critical Facilities

- Timeframe: Ongoing
- Funding: HMGP
- Staff: Parish and Municipal
- Project List Location Identifier: ID 51, 63

o Objective 4.2: Promote preservation and/or conservation of flood-prone areas for parish parks, recreation areas, and general flood plain management

Action 4.2.1: Participate in existing programs at the state and federal levels oriented to environmental enhancement and conservation

- Timeframe: Ongoing
- Funding: local, regional, and federal
- Staff: One current full-time member of the parish

Goal 5: Minimize property damage resulting from wind storms (i. e., hurricane forced winds)

o Objective 5.1: Protect parish, city, and tribal buildings from hurricane/coastal/tropical storm damage

Action 5.1.1: Wind Retrofit St. Mary Parish 911 Center

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP
- Staff: parish administrative staff
- Project List Location Identifier: ID 111

Action 5.1.2: Wind Retrofit Chitimacha Critical Facilities

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP
- Staff: tribal administrative staff
- Project List Location Identifier: ID 81-96

Action 5.1.3: Wind retrofit municipal and other parish facilities

- Timeframe: 1-10 years, as funding permits
- Funding: HMGP
- Staff: Parish and Municipal Staff
- Project List Location Identifier: ID 22-24, 46, 61, 121

o Objective 5.2: Protect Pump Station Employees from hurricane/coastal/tropical storm and tornado events

Action 5.2.2: Construct Safe Room for Pump Station #6 in Morgan City

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP

- Staff: drainage district administrative staff
 - Project List Location Identifier: ID 17
- Action 5.2.3: Construct Safe Room for Pump Stations 2 and 2A in Amelia
- Timeframe: 1-5 years, as funding permits
 - Funding: HMGP
 - Staff: drainage district and parish administrative staff
 - Project List Location Identifier: ID 2

Action 5.2.4: Install safe rooms at other critical facilities

- Timeframe: 1-5 years, as funding permits
- Funding: HMGP
- Staff: drainage district and parish administrative staff
- Project List Location Identifier: 48, 49, 56, 57, 65, 119

Goal 6: Continue state and federal efforts to restore and preserve the parish coastal shoreline particularly as it relates to CWPPRA, Louisiana Department of Natural Resources Coastal Zone Management, CPRA, and the U. S. Army Corps of Engineers

- o Objective 6.1: Maintain dialogue with state and federal authorities

Action 6.1.1: Keep contact and mailing lists current

- Timeframe: Ongoing
- Funding: No additional funds required
- Staff: Parish administrative and planning and zoning staff, drainage district personnel, and city administrative and/or planning personnel with media representatives

Action 6.1.2: Attend meetings at the state and federal levels

- Timeframe: Ongoing
- Funding: No additional funds required
- Staff: Parish administrative and planning and zoning staff, drainage district personnel, and city administrative and/or planning personnel

- o Objective 6.2: Report condition updates to pertinent state and federal authorities.

Action 6.2.1: Ensure that staff and public are aware of the problem and the need to keep parish authorities updated

- Timeframe: Ongoing
- Funding: No additional funds required
- Staff: Parish engineering, public works, administrative, planning, and zoning staff, drainage district personnel, and city administrative and/or planning personnel with media representatives

Action 6.2.2: Report updated findings

- Timeframe: Ongoing
- Funding: No additional funds required
- Staff: Parish engineering, public works, administrative, planning, and zoning staff; drainage district personnel, and city administrative and/or planning personnel with media representatives

- o Objective 6.3: Continue to seek CWPPRA, other federal, and state funds for coastal erosion mitigation

Action 6.3.1: Maintain close liaison with the various programs and persons assigned to those programs at the various levels of government

- Timeframe: Ongoing
- Funding: No additional funds required
- Staff: Parish engineering, public works, administrative, planning, and zoning staff; drainage district personnel, and city administrative and/or planning personnel

Action 6.3.2: Report updated findings

- Timeframe: Ongoing
- Funding: No additional funds required
- Staff: Parish engineering, public works, administrative, planning, and zoning staff; drainage district personnel, and city administrative and/or planning personnel with media representatives

- o Objective 6.4: Continue coastal protection projects to help reduce coastal erosion

Action 6.4.1: Increase Sediment Transport from Atchafalaya River down Wax Lake Outlet for Marsh enhancement and restoration

- Timeframe: Ongoing
- Funding: CPRA
- Staff: Parish engineering, public works, administrative, planning, and zoning staff; drainage district personnel, and city administrative and/or planning personnel

Action 6.4.2: Stabilize shoreline along Vermilion Bay and West Cote Blanche Bay

- Timeframe: Ongoing
- Funding: CPRA
- Staff: Parish engineering, public works, administrative, planning, and zoning staff; drainage district personnel, and city administrative and/or planning personnel
- Project List Location Identifier: ID 115

Goal 7: Multi-jurisdictional participation in the FEMA Community Rating System program (CRS)

- o Objective 7.1: Encourage all political jurisdictions in the parish to join the FEMA Community Rating System Program and National Flood Insurance Program

Action 7.1.1: Add new Regulations reducing development density in flood plains.

- Timeframe: Ongoing
- Funding: No additional funds required
- Staff: Parish administrative and planning and zoning staff, drainage district personnel, and city administrative and/or planning personnel to coordinate
- Project List Location Identifier: ID 110

Action 7.1.2: Each political subdivision to join the CRS

- Timeframe: Ongoing
- Funding: No additional funds required

- Staff: Parish administrative and planning and zoning staff, drainage district personnel, and city administrative and/or planning personnel to coordinate

Action 7.1.3: All jurisdictions to participate in the NFIP—St. Mary Parish, Morgan City, Berwick, Patterson, Franklin, and Baldwin (Chitimacha Tribe covered under unincorporated St. Mary Parish enrollment)

- Timeframe: Ongoing
- Funding: No additional funds required
- Staff: Municipal and Parish administrative staff

Action 7.1.4: Establish a public outreach campaign to ensure all homeowners in floodplains are aware of the various types of coverage options under the NFIP

- Timeframe: Ongoing
- Funding: No additional funds required
- Staff: Municipal and Parish administrative staff coordinate

Action 7.1.5: Establish a homeowner education program on flood mitigation measures

- Timeframe: Ongoing
- Funding: No additional funds required
- Staff: Municipal and Parish administrative staff

Goal 8: Enhance public awareness

- o Objective 8.1: Keep flood plain management in the consciousness of the general citizenry particularly regarding hazardous areas and measures to avoid potential damage and injury

Action 8.1.1: Notify the media of hazard mitigation measures and plans

- Timeframe: Ongoing
- Funding: No additional funds required
- Staff: Parish administrative and planning and zoning staff, drainage district personnel, and city administrative and/or planning personnel with media representatives

Action 8.1.2: Make presentations to civic organizations

- Timeframe: Ongoing
- Funding: No additional funds required
- Staff: Parish administrative and planning and zoning staff, drainage district personnel, and city administrative and/or planning personnel.

- o Objective 8.2: Provide public education for all hazards

Action 8.2.1: Notify the media of hazard mitigation measures and plans

- Timeframe: Ongoing
- Funding: No additional funds required
- Staff: Parish administrative and planning and zoning staff, drainage district personnel, and city administrative and/or planning personnel with media representatives

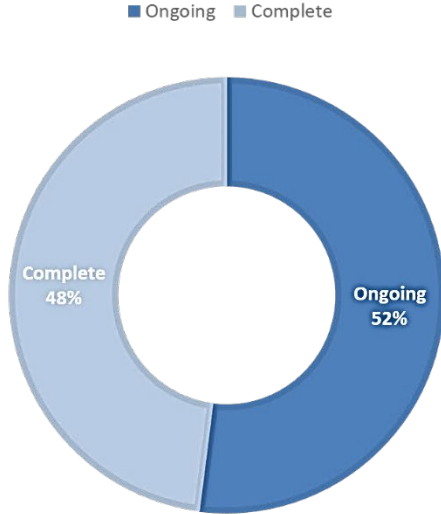
Action 8.2.2: Provide educational brochures to libraries, schools, and other public facilities including mitigation measures for all hazards including hurricanes, tornados, coastal/tropical storms, levee failure

- Timeframe: Ongoing
- Funding: No additional funds required

- Staff: Parish administrative and planning and zoning staff, drainage district personnel, and city administrative and/or planning personnel

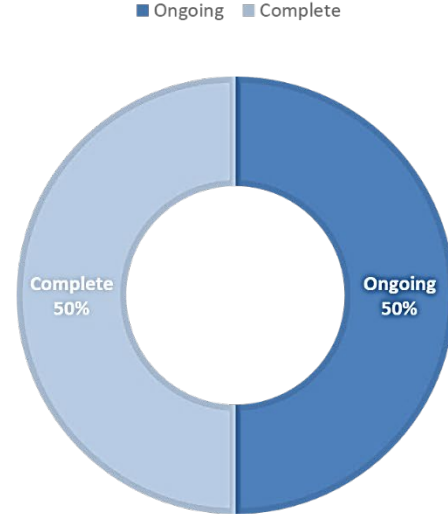
Figure 3-2 Snapshot of initiated mitigation actions

2014 ST. MARY PARISH HM PROJECT STATUS



- 11 out of 21 initiatives were ongoing
- 10 out of 21 are completed

2020 ST. MARY PARISH HM PROJECT STATUS



- 20 out of 40 initiatives are ongoing
- 20 out of 40 are completed

In 2014, the Hazard Mitigation Committee identified 128 hazard mitigation projects to be included in the parish Hazard Mitigation Plan. Each responsible political jurisdiction prioritized its respective projects and local organizations were included for additional transparency. As part of the 2020 Hazard Mitigation Plan Update, Table 3-1 shows the projects that were confirmed as ongoing at the HMPU Committee Meetings.

Table 3-1 Ongoing projects reported for St. Mary Parish

St. Mary Parish Project List 2020 - Ongoing				
Project Description		Status	Type	Responsible Jurisdiction(s)
1	Bayou Chene Flood Control Structure	Ongoing	Ongoing	SMLD
2	Drainage Improvement - Upgrade Culverts across Hwy 182 in Amelia	Ongoing	Drainage	DD6
3	Safe room--Pump Stations 2 and 2A	Ongoing	Safe Rm	DD6
4	Morgan City/Amelia Levee Alignment 2 (Miller Drawing No. 12281-8) Levee construction and Bayou Chene flood control structure	Ongoing	Levee	SMLD
5	Morgan City/Amelia Levee Alignment 1 (Miller Drawing No. 12281-7) Levee construction and 15,775 linear foot steel sheet pile wall along Bayou Boeuf	Ongoing	Levee	SMLD
6	Upgrade MC backwater levees to certifiable standard	Ongoing	Levee	M, SMLD, DD2, P
7	<i>Drainage Improvement -- Enclose open drainage canals -- Maple Street Canal, Canal behind Cypress Gardens, Marquis Manor Canal</i>	Ongoing	<i>Drainage</i>	<i>M, DD2</i>
8	Stabilization of all MC pump station pits and canals (foundations being undermined)	Ongoing	Pump Sta.	DD2
9	Drainage Improvement -- Upgrade Box Culverts and enclose or line influent ditch from Boudreaux Street to Gilmore Street in Berwick	Ongoing	Drainage	B
10	Upgrade of Pump Station Capacity -- Replace 2 30" pumps with new modern and efficient 36" lift pumps (Berwick)--Golden Farms pump station	Ongoing	Pump Sta.	B
11	Enlarge outfall ditches south of RR track to Wax Lake East Drainage pumps	Ongoing	Drainage	B
12	Drainage improvements of the Bayou Vista Middle Road ditch	Ongoing	Drainage	Sd1 of 2
13	Install New Pump Station on Northwest Side of System	Ongoing	Pump Sta.	SMLD, WLE
14	Franklin Levees (Miller Drawing No. 12281-3) --Levee improvements west and south of Franklin. Levee construction = \$30,590,000; Charenton Canal flood control structure = \$35,000,000	Ongoing	Levee	DD1
15	Surge Protection - Charenton Canal to Wax Lake Outlet to New Iberia Parish Line Hurricane Protection	Ongoing	Levee	SMLD
16	Bayou Choupique Channel Drainage Improvements	Ongoing	Drainage	DD1
17	Install Natural Gas Pipeline to Franklin Pump Station (Corps) on the Hanson Canal	Ongoing	Pump Sta.	DD1
18	Flood Protection -- Charenton Floodgate	Ongoing	Floodgate	DD1
19	Flood Protection -- New Floodgate at Baldwin from Miller Plan	Ongoing	Floodgate	DD1
20	Wind Retrofit -- 911 Center plus Safe Room	Ongoing	Hardening	P

Table 3-2 shows the projects that were confirmed as complete at the HMPU Committee Meetings.

Table 3-2 Completed projects reported for St. Mary Parish

St. Mary Parish Project List 2020 - Complete				
Project Description		Status	Type	Responsible Jurisdiction(s)
1	Drainage Improvement -- Improve Drainage along RR Tracks, Young's Road Industrial Park, Oceaneering (M. Loupe)	Complete	Drainage	M, DD2
2	Flood Protection -- New 500' Berm at Lake End Park	Complete	Levee	M, DD2
3	Drainage Improvement -- Culvert Upgrade at Highway 90 on Tupelo Street Ditch	Complete	Drainage	M, DD2
4	Generator for new port emergency ops center	Complete	Gen.	MPC
5	Generators -- Pump Stations in Berwick	Complete	Gen.	B
6	Culvert under US 90 at Jupiter Street (HMGP)	Complete	Drainage	Sd1 of 2
7	Drainage Improvement -- Culvert Upgrades at Highway 90	Complete	Drainage	Sd1 of 2
8	Drainage Improvement -- Widen Opperman Road Drainage Canal	Complete	Drainage	Sd1 of 2
9	Harden Harry P. Williams Airport FBO facility	Complete	Hardening	P
10	Upgrade drainage canals and arteries within the Wax Lake East Drainage District (include Patterson Bayou Dynamite Canal from US90 to Borrow Pit)	Complete	Drainage	WLE
11	Calumet/Patterson/Bayou Vista/Berwick Levees (Miller Drawing No. 12281-6)--Approx. 12 miles of levee improvements south of the referenced communities	Complete	Levee	SMLD
12	Generator--Baldwin Fire Station	Complete	Gen.	Ba
13	Franklin Canal Pump Station	Complete	Pump Sta.	SMLD
14	Yokeley Levee Improvements	Complete	Levee	SMLD
15	Hanson Canal and Yellow Bayou Floodgates and Pump Stations	Complete	Floodgate	P
16	Hanson Canal flood control structure	Complete	Floodgate	DD1
17	Centerville/Ricohoc Levees (Miller Drawing No. 12281-4)--Levee improvements south of U.S. Hwy 90 and the communities of Centerville and Ricohoc	Complete	Levee	DD1
18	Generator for Water Pump at Water & Sewer Commission No. 4	Complete	Gen.	Wsd4
19	Bayou Choupique Flood Protection Ring Levee	Complete	Levee	Ba, SMLD
20	Bayou Teche Recon Study and Modeling for Floodgate	Complete	Study	SMLD

Parish Priority Projects

The actions presented on the previous pages were categorized to organize priorities by HMGP grant eligibility. Potential projects identified included properties and areas that have localized flooding or drainage problems as noted in the St. Mary Parish Hazard Mitigation Plan (2005) and 2008 update. Most of the projects from the original plan were not eligible for

HMGP funding, but those that were carried forward to project prioritization. The project list reviewed for prioritization also included consideration of repetitive loss (RL) and severe repetitive loss (SRL) properties in the incorporated and unincorporated areas of the parish. The project list below, Table 3-3 was available at the HMPU Committee Meeting for review and comment.

Table 3-3 St. Mary Parish Priority Project List 2014

Parish Priority Projects List 2014			
Project Description	Goal	Affected Area	Responsible Jurisdiction(s)
Rehabilitate No. 6 Pump and Sump at Bayou Ramos (near electric substation)	2	AU	DD6
Drainage Improvements--New Bar Gates for Pump Station Nos. 2 and 2A in Amelia	1	AU	DD6
Install Backwash gate at Bayou Ramos pump station	1	AU	DD6
Morgan City/Amelia Levee Alignment 1 (Miller Drawing No. 12281-7)--Levee construction and 15,775 linear foot steel sheet pile wall along Bayou Boeuf	1	AMUT	SMLD
Drainage Improvement -- Enclose open drainage canals -- Maple Street Canal, Canal behind Cypress Gardens, Marquis Manor Canal	2	M	M, DD2
Drainage Improvement -- Improve Drainage along RR Tracks, Young's Road Industrial Park, Oceaneering (M. Loupe)	2	M	M, DD2
Flood Protection -- New 500' Berm at Lake End Park	1	M	M, DD2
Enlarge outlets under RR track where Thorguson, Patty Drive, and Guidry ditches flow south	2	B	B
Enlarge outfall ditches south of RR track to Wax Lake East Drainage pumps	2	B	B
Redirect outfall ditch--Cannata Pump Station in Bayou Vista that intersects with Guidry Ditch	2	B	B
Drainage Improvement -- Culvert Upgrades at Highway 90	2	Bv	Sd1 of 2
Drainage Improvement -- Widen Opperman Road Drainage Canal	2	Bv	Sd1 of 2
Drainage Improvement -- Widening of Drainage ditch and Upgrading of Culverts and Trestle at Cannata's Pump Station and 18 Foot Ditch	2	BvU	WLE
Safe House Patterson Volunteer Fire Department	2	Pa	Pa
Safe Housing Complex for Patterson Public Works Department	2	Pa	Pa
Communications tower at central parish location	2	Pa	Pa
Elevate Franklin Sewer Lift Stations	2	F	F

Wind retrofit--Baldwin police & fire stations, city hall, public works building, and water plant	2	Ba	Ba
Generator--Baldwin Fire Station	2	Ba	Ba
Yokely Pump Station Safe Room	2	FU	DD1
Franklin Levees (Miller Drawing No. 12281-3) --Levee improvements west and south of Franklin. Levee construction = \$30,590,000; Charenton Canal flood control structure = \$35,000,000	1	FU	DD1
Improve Flood Control Pump Stations West of Wax Lake-- Consolidated Drainage District 1	2	FBaU	DD1
Wind Retrofit -- Chitimacha Tribal School	5	C	C
Wind Retrofit -- Chitimacha Police Department	5	C	C
Wind Retrofit -- Chitimacha Fire Department	5	C	C
Big Island Mining--dredging and placing dredged material on natural delta lobes	6	Pw	P
Castille Pass Channel Sediment Delivery--dredging and extending Castille Pass to promote sub delta development	6	Pw	P
Bayou Sale Shoreline Protection to reduce and/or reverse shoreline erosion and create marsh	6	Pw	P
Ivanhoe Canal/Glencoe Levees (Miller Drawing No. 12281-1)-- construction of approx. 16 miles of new levees north and south of LA Hwy. 83	1	WU	DD1

Note: All projects listed outside of the jurisdiction of Baldwin, Berwick, the Chitimacha Tribe, Franklin, Patterson, or Morgan City are the responsibility of St. Mary Parish

The 2020 St. Mary Project List was prepared from face-to-face stakeholder interviews, committee meetings, and reviewed as part of the draft plan. References were made to projects listed previously and recent development improvements being made by other authorities. The project list below, Table 3-4 was available at the HMPU Committee Meeting for review and comment.

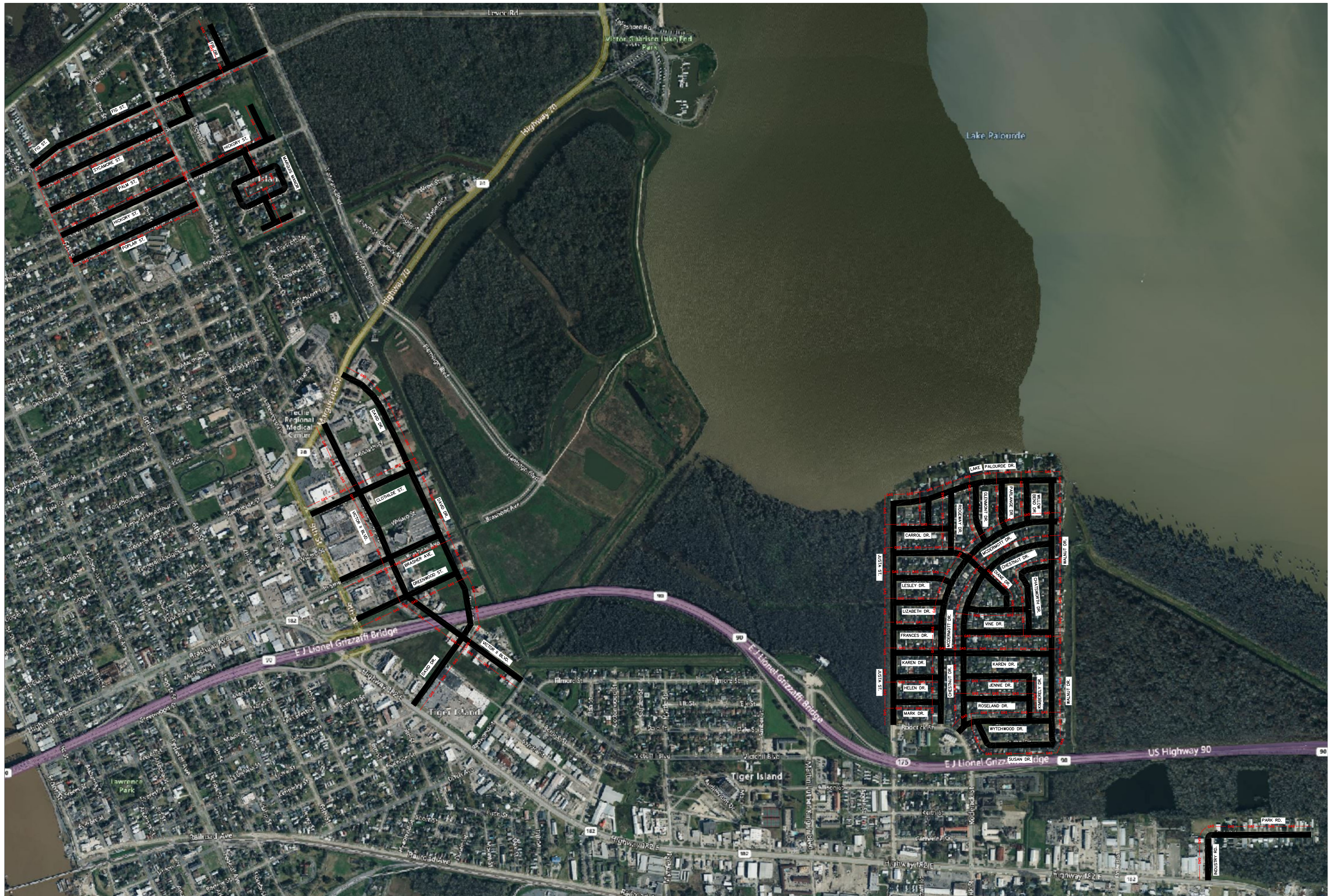
Table 3-4 shows the projects that were confirmed as necessary as part of the HMPU Committee Meetings.

Table 3-4 St. Mary Parish Priority Project List 2020

2020 St. Mary Parish Hazard Mitigation Plan Update - Project List		
The 2020 St. Mary Parish Project List Update presented below was compiled by utilizing jurisdictional stakeholder interviews to capture descriptions and responsible parties for proposed hazard mitigation projects. Note: All projects listed outside of the jurisdiction of Baldwin, Berwick, the Chitimacha Tribe, Franklin, Patterson, or Morgan City are the responsibility of St. Mary Parish		
B	Berwick, Town of	
Ba	Baldwin, Town of	
C	Chitimacha Nation	
DD1	Consolidated Drainage District No. 1 West of Wax Lake	
DD2	Consolidated Drainage District No. 2 Morgan City (backwater levee to Siracusaville including pump stations)	
DD6	Amelia and vicinity	
MC	Morgan City, City of	
MPC	Morgan City Port Commission	
Sd 1 of DD1	Bayou Vista and vicinity	
F	Franklin, City of	
PG	St. Mary Parish Government	
Pa	Patterson, Town of	
WLE	Wax Lake East Drainage Dist. (Atchafalaya River to the Wax Lake Outlet)	
Wds1, 2, 4, 4	Water & Sewer Commission Nos. 1, 2, 3, 4	
W5&8SC	Wards 5 and 8 Regional Sewer Commission	
SMLD	St. Mary Levee District	
	Project Description	Responsible Jurisdiction
1	Provide saferoom at all pump stations to allow continuous access in all rain events	DD2A, WLE, B, DD1, SMLD, F, SD1 of DD3
2	Drainage pump station automation & monitoring system to allow continuous access in all events	DD2A, WLE, B, DD1, SMLD, F, SD1 of DD2
3	West St. Mary Civic Center Emergency Generator	PG
4	Renovation to St. Mary Parish OHSEP Multi-Purpose Building	PG

5	Lakeside East - Walnut Street Canal Drainage improvements (installing pump capacity, pits)	M
6	Generator installed for each lift station in Morgan City	M
7	Floodwall levee system gate repair	M
8	Drainage Improvements - Joseph St. and Charenton annex	Ba
9	Install a pump station Bayou Choupique Levee	Ba
10	Portable trailer mounted generator to move around to sewer pump stations	Ba
11	Natural gas-operated 24" pump for Patti Drive Ditch to Bayou Teche	B
12	Drainage Improvements Country Club Estates: Hogan, Tournament, Snead, Palmer, Hebert, and Jones	B
13	Generator for Yokely Pumping Station (15,000 acres, $\frac{3}{4}$ of the population of Franklin)	DD1
14	Franklin area pump station on Hanson Canal upgrading pumps	DD1
15	Drainage Improvements Kelly Canal	DD1 and SMLD
16	Extension from Yokely Levee along Charenton Canal	SMLD
17	Upgrade existing levees from Wax Lake Outlet to the Charenton Drainage Canal to 100 Yr Flood Protection	SMLD
18	Levee from Wyndote Pump Station #7 to the GIWW	SMLD
19	Levees from Charenton Drainage Canal to New Iberia Parish Line	SMLD
20	Yokely Canal Needs Dredging	F
21	Cayce Street Improvements	F
22	Drainage crossings at Hwy 90 / SE Boulevard, Universe Street, and Tucker Road Ditch	SD1 of DD2
23	Bertrand-Vinning Pump Station upgrade, add 48" pump (Bayou Vista)	SD1 of DD2
24	Portable 24" hydraulic pump on trailer	SD1 of DD1
25	Lantz Donahue Pump Station	SD1 of DD2
26	Add additional culvert crossing under railroad tracks at Guidry Drainage Ditch	WLE
27	Generator at Berwick Pump Station upgraded (Wax Lake Drainage)	WLE
28	Upgrade the stripper pump Eastside of Cotton Rd (strips the bar pit)	WLE
29	Sandbar dredging on Berwick Bay/Atchafalaya River along eastside from GIWW North	MCpc
30	Saferoom for the Fire Station	Pa

31	Hardening of the City Hall building	Pa
32	Old Junior High School building - essential facility (upgrade)	Pa
33	Drainage Improvements (Area 7): Kelli, David, Leo, and Mike Drive	Pa
34	Generator for Regional Sewer Pump stations in Wards 5 & 8	W5&8SC
35	Need some communication upgrades, backup radio in power outages, within the district and to the parish	W5&8SC
36	Hardening of WSC #4 structures	Wds 4
37	Saferoom for emergency storm events	Wds 4
38	Floodwall/barrier around the water plant	Wds 4
39	Secondary water intake lake	Wds 4
40	(2 each) 24" Hydraulic pumps on trailers with hoses/pipes	DD2A
41	(3 each) 18" Hydraulic pumps on trailers with hoses/pipes	DD2A
42	(4 each) 8" Hydraulic pumps on trailers with hoses	DD2A
43	Station #9 Add (2) 60" pump with diesel engines for stormwater pumping	DD2A
44	Portable generator	DD2A
45	Drainage Improvements Ralph Darden Parkway	C
46	Emergency operation command center/public saferoom	C
47	Drainage improvements to major outfalls	C

[illegible]

Morgan City NGDISM Grant Application

Equipment Cost					
Item No.	Item Description	Unit	TOTAL	Unit Price	Total Amount
1	ZEVAC Blowdown Recovery System	EA	1	\$48,000.00	\$48,000.00
2	Heath Consultants - Remote Methane Leak Detector - Complete Solution	EA	1	\$20,400.00	\$20,400.00
Subtotal without contingencies					\$68,400.00



SHEET NUMBER		MORGAN CITY	
PARISH/COUNTY		NGDISM GRANT APPLICATION	
CITY		FEMA FLOOD MAP	
PROJECT			
DESIGNED -		SIBB GROUP, LLC	
CHECKED -		QUALITY BY DESIGN	
DETAILED -		FAX 504.751.1101 • BAYOU HOMES, LA 70087 • (202) 769-3460 • FAX (202) 769-3466	
DATE			
BY			
REVISION DESCRIPTION			

Morgan City NGDISM Grant Application

Construction Cost Estimate					
Item No.	Item Description	Unit	TOTAL	Unit Price	Total Amount
1	4" MDPE Pipe Furnished and Installed including	FT	62,832	\$38.00	\$2,387,616.00
2	1" Pipe Furnished and Installed including Tracer Wire	FT	53,300	\$20.10	\$1,071,330.00
3	4" MDPE Full-Port Ball Valve w/Box	EA	100	\$1,200.00	\$120,000.00
4	1" Service Tapping Tee on 4" PE with Excess Flow Valve	EA	820	\$650.00	\$533,000.00
5	1" Anodeless Riser and Meter Valve	EA	820	\$465.60	\$381,792.00
6	Regulators, Residential	EA	675	\$133.00	\$89,775.00
7	Residential Gas Meter installed	EA	675	\$325.50	\$219,712.50
8	Fittings (90 ell, nipples, tee, drip cap) typical meter set	EA	675	\$24.20	\$16,335.00
9	Meter swivel/collar (pair)	EA	675	\$36.30	\$24,502.50
10	Customer Service Transfer From Old to New Main	EA	820	\$440.00	\$360,800.00
11	Tie-In Proposed 4" PE to existing 4", or 2" Exist Gas Line	EA	18	\$3,250.00	\$58,500.00
12	Cap and Abandon Existing PVC gas mains, size 4" thru 2"	EA	43	\$250.00	\$10,750.00
13	Crushed Limestone for traffic maintenance aggregate & driveway restoration	CY	500	\$50.00	\$25,000.00
14	Furnish and Install Silt Fence	FT	20,000	\$1.75	\$35,000.00
15	Tracer Wire Pedestals (every 1500 ft)	EA	45	\$316.00	\$14,220.00
16	Furnish and Install Hay bales	EA	300	\$7.50	\$2,250.00
17	Seed, Fertilize & Hay Mulch Trench Line	LF	25,000	\$0.50	\$12,500.00
Subtotal without contingencies					\$5,363,083.00

The United States Department of Transportation (USDOT)

Standard Title VI/Non-Discrimination Assurances

The City of Morgan City (herein referred to as the “Recipient”),
HEREBY AGREES THAT, as a condition to receiving any Federal financial assistance from the U.S. Department of Transportation (DOT), through the Pipeline and Hazardous Materials Safety Administration (PHMSA), is subject to, and will comply with, the following:

Statutory/Regulatory Authorities

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin);
- 49 C.F.R. Part 21 (entitled *Non-discrimination In Federally-Assisted Programs Of The Department Of Transportation—Effectuation Of Title VI Of The Civil Rights Act Of 1964*);
- 28 C.F.R. section 50.3 (U.S. Department of Justice Guidelines for Enforcement of Title VI of the Civil Rights Act of 1964);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 *et seq.*).

The preceding statutory and regulatory cites hereinafter are referred to as the “Acts” and “Regulations,” respectively.

General Assurances

In accordance with the Acts, the Regulations, and other pertinent directives, circulars, policy, memoranda, and/or guidance, the Recipient hereby gives assurance that it will promptly take any measures necessary to ensure that:

“No person in the United States shall, on the grounds of race, color, national origin, gender, age, or disability be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity,” for which the Recipient receives Federal financial assistance from DOT, including the Pipeline and Hazardous Materials Safety Administration.

The Civil Rights Restoration Act of 1987 clarified the original intent of Congress, with respect to Title VI and other Non-discrimination requirements (The Age Discrimination Act of 1975, and Section 504 of the Rehabilitation Act of 1973), by restoring the broad, institutional-wide scope and coverage of these non-discrimination statutes and requirements to include all programs and activities of the Recipient, so long as any portion of the program is Federally assisted.

Specific Assurances

More specifically, and without limiting the above General Assurance, the Recipient agrees with and gives the following Assurances with respect to its Federally assisted

PHMSA Natural Gas Distribution Infrastructure Safety and Modernization (NGDISM) Grant:

1. The Recipient agrees that each “activity,” “facility,” or “program,” as defined in §§ 21.23 (b) and 21.23 (e) of 49 C.F.R. § 21 will be (with regard to an “activity”) facilitated or will be (with regard to a “facility”) operated, or will be (with regard to a “program”) conducted in compliance with all requirements imposed by, or pursuant to the Acts and the Regulations.
2. The Recipient will insert the following notification in all solicitations for bids, Requests For Proposals for work, or material subject to the Acts and the Regulations made in connection with all (***PHMSA NGDISM Grant***) and, in adapted form, in all proposals for negotiated agreements regardless of funding source:

“The City of Morgan City, Louisiana, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that with respect to any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.”

3. The Recipient will insert the clauses of Appendix A and E of this Assurance in every contract or agreement subject to the Acts and the Regulations.
4. The Recipient will insert the clauses of Appendix B of this Assurance, as a covenant running with the land, in any deed from the United States effecting or recording a transfer of real property, structures, use, or improvements thereon or interest therein to a Recipient.
5. That where the Recipient receives Federal financial assistance to construct a facility, or part of a facility, the Assurance will extend to the entire facility and facilities operated in connection therewith.
6. That where the Recipient receives Federal financial assistance in the form, or for the acquisition of real property or an interest in real property, the Assurance will extend to rights to space on, over, or under such property.
7. That the Recipient will include the clauses set forth in Appendix C and Appendix D of this Assurance, as a covenant running with the land, in any future deeds, leases, licenses, permits, or similar instruments entered into by the Recipient with other parties:
 - a. for the subsequent transfer of real property acquired or improved under the applicable activity, project, or program; and
 - b. for the construction or use of, or access to, space on, over, or under real property acquired or improved under the applicable activity, project, or program.

8. That this Assurance obligates the Recipient for the period during which Federal financial assistance is extended to the program, except where the Federal financial assistance is to provide, or is in the form of, personal property, or real property, or interest therein, or structures or improvements thereon, in which case the Assurance obligates the Recipient, or any transferee for the longer of the following periods:
 - a. the period during which the property is used for a purpose for which the Federal financial assistance is extended, or for another purpose involving the provision of similar services or benefits; or
 - b. the period during which the Recipient retains ownership or possession of the property.
9. The Recipient will provide for such methods of administration for the program as are found by the Secretary of Transportation or the official to whom he/she delegates specific authority to give reasonable guarantee that it, other recipients, sub-recipients, sub-grantees, contractors, subcontractors, consultants, transferees, successors in interest, and other participants of Federal financial assistance under such program will comply with all requirements imposed or pursuant to the Acts, the Regulations, and this Assurance.
10. The Recipient agrees that the United States has a right to seek judicial enforcement with regard to any matter arising under the Acts, the Regulations, and this Assurance.

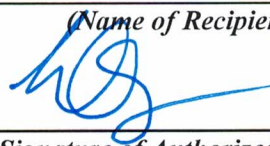
By signing this ASSURANCE, the Recipient also agrees to comply (and require any sub-recipients, sub-grantees, contractors, successors, transferees, and/or assignees to comply) with all applicable provisions governing the PHMSA access to records, accounts, documents, information, facilities, and staff. You also recognize that you must comply with any program or compliance reviews, and/or complaint investigations conducted by PHMSA. You must keep records, reports, and submit the material for review upon request to PHMSA, or its designee in a timely, complete, and accurate way. Additionally, you must comply with all other reporting, data collection, and evaluation requirements, as prescribed by law or detailed in program guidance.

The Recipient gives this ASSURANCE in consideration of and for obtaining any Federal grants, loans, contracts, agreements, property, and/or discounts, or other Federal-aid and Federal financial assistance extended after the date hereof to the recipients by the U.S. Department of Transportation under the (PHMSA NGDISM Grant). This ASSURANCE is binding on City of Morgan City , other recipients, sub-recipients, sub-grantees, contractors, subcontractors and their subcontractors', transferees, successors in interest, and any other participants in the (PHMSA NGDISM Grant). The person(s) signing below is authorized to sign this ASSURANCE on behalf of the Recipient.

City of Morgan City

(Name of Recipient)

by



(Signature of Authorized Official)

DATED September 1, 2022

these appendices are for your use, you do not need to fill out and return

APPENDIX A

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.
3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor’s obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.
4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Pipeline and Hazardous Materials Safety Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the Pipeline and Hazardous Materials Safety Administration, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a contractor’s noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Pipeline and Hazardous Materials Safety Administration may determine to be appropriate, including, but not limited to:
 - a. withholding payments to the contractor under the contract until the contractor complies; and/or
 - b. cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement

as the Recipient or the *Pipeline and Hazardous Materials Safety Administration* may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

APPENDIX B

CLAUSES FOR DEEDS TRANSFERRING UNITED STATES PROPERTY

The following clauses will be included in deeds effecting or recording the transfer of real property, structures, or improvements thereon, or granting interest therein from the United States pursuant to the provisions of Assurance 4:

NOW, THEREFORE, the U.S. Department of Transportation as authorized by law and upon the condition that the City of Morgan City ⁺ will accept title to the lands and maintain the project constructed thereon in accordance with (The Infrastructure Investment and Jobs Act (IIJA) (Pub. L. 117-58)), the Regulations for the Administration of (*Natural Gas Distribution Infrastructure Safety and Modernization Grant Program*), and the policies and procedures prescribed by the *Pipeline and Hazardous Materials Safety Administration* of the U.S. Department of Transportation in accordance and in compliance with all requirements imposed by Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation pertaining to and effectuating the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252; 42 U.S.C. § 2000d to 2000d-4), does hereby remise, release, quitclaim and convey unto the City of Morgan City ⁺ all the right, title and interest of the U.S. Department of Transportation in and to said lands described in Exhibit A attached hereto and made a part hereof.

(HABENDUM CLAUSE)

TO HAVE AND TO HOLD said lands and interests therein unto City of Morgan City ⁺ and its successors forever, subject, however, to the covenants, conditions, restrictions and reservations herein contained as follows, which will remain in effect for the period during which the real property or structures are used for a purpose for which Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits and will be binding on the City of Morgan City ⁺, its successors and assigns.

The City of Morgan City ⁺, in consideration of the conveyance of said lands and interests in lands, does hereby covenant and agree as a covenant running with the land for itself, its successors and assigns, that (1) no person will on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination with regard to any facility located wholly or in part on, over, or under such lands hereby conveyed [,] [and]* City of Morgan City
(2) that the City of Morgan City ⁺ will use the lands and interests in lands and interests in lands so conveyed, in compliance with all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations and Acts may be amended[, and (3) that in the event of breach of any of the above-mentioned non-discrimination conditions, the Department will have a right to enter or re-enter said lands and facilities on said land, and that above described land and facilities will thereon revert to and vest in and become the absolute property of the U.S. Department of Transportation and its assigns as such interest existed prior to this instruction].* (*Reverter clause and related language to be used only when it is determined that such a clause is necessary in order to make clear the purpose of Title VI.)

APPENDIX C

CLAUSES FOR TRANSFER OF REAL PROPERTY ACQUIRED OR IMPROVED UNDER THE ACTIVITY, FACILITY, OR PROGRAM

The following clauses will be included in deeds, licenses, leases, permits, or similar instruments entered into by the City of Morgan City pursuant to the provisions of Assurance 7(a):

- A. The (grantee, lessee, permittee, etc. as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree [in the case of deeds and leases add “as a covenant running with the land”] that: City of Morgan City
1. In the event facilities are constructed, maintained, or otherwise operated on the property described in this (deed, license, lease, permit, etc.) for a purpose for which a U.S. Department of Transportation activity, facility, or program is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee, lessee, permittee, etc.) will maintain and operate such facilities and services in compliance with all requirements imposed by the Acts and Regulations (as may be amended) such that no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.
- B. With respect to licenses, leases, permits, etc., in the event of breach of any of the above Non-discrimination covenants, City of Morgan City will have the right to terminate the (lease, license, permit, etc.) and to enter, re-enter, and repossess said lands and facilities thereon, and hold the same as if the (lease, license, permit, etc.) had never been made or issued.*
- C. With respect to a deed, in the event of breach of any of the above Non-discrimination covenants, the City of Morgan City will have the right to enter or re-enter the lands and facilities thereon, and the above described lands and facilities will there upon revert to and vest in and become the absolute property of the City of Morgan City and its assigns.*(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.

APPENDIX D

CLAUSES FOR CONSTRUCTION/USE/ACCESS TO REAL PROPERTY ACQUIRED UNDER THE ACTIVITY, FACILITY OR PROGRAM

The following clauses will be included in deeds, licenses, permits, or similar instruments/agreements entered into by City of Morgan City pursuant to the provisions of Assurance 7(b):

- A. The (grantee, licensee, permittee, etc., as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, "as a covenant running with the land") that (1) no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishing of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, (3) that the (grantee, licensee, lessee, permittee, etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the Acts and Regulations, as amended, set forth in this Assurance.
- B. With respect to (licenses, leases, permits, etc.), in the event of breach of any of the above Non-discrimination covenants, City of Morgan City will have the right to terminate the (license, permit, etc., as appropriate) and to enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued.*
- C. With respect to deeds, in the event of breach of any of the above Non-discrimination covenants, City of Morgan City will there upon revert to and vest in and become the absolute property of City of Morgan City and its assigns.*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

APPENDIX E

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

Pertinent Non-Discrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq.*), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration’s Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 *et seq.*).

ATTACHMENTS FORM

Instructions: On this form, you will attach the various files that make up your grant application. Please consult with the appropriate Agency Guidelines for more information about each needed file. Please remember that any files you attach must be in the document format and named as specified in the Guidelines.

Important: Please attach your files in the proper sequence. See the appropriate Agency Guidelines for details.

1) Please attach Attachment 1	1237-Attachment A 2020 St. -Ma	Add Attachment	Delete Attachment	View Attachment
2) Please attach Attachment 2	1238-LOS City of Morgan City	Add Attachment	Delete Attachment	View Attachment
3) Please attach Attachment 3	1239-MC AERIAL .pdf	Add Attachment	Delete Attachment	View Attachment
4) Please attach Attachment 4	1240-MC Disadvantaged Communi	Add Attachment	Delete Attachment	View Attachment
5) Please attach Attachment 5	1241-MC Equipment Costs.pdf	Add Attachment	Delete Attachment	View Attachment
6) Please attach Attachment 6	1242-MC Flood Map.pdf	Add Attachment	Delete Attachment	View Attachment
7) Please attach Attachment 7	1243-MC USGS Quad.pdf	Add Attachment	Delete Attachment	View Attachment
8) Please attach Attachment 8	1244-MC Construction Costs.pdf	Add Attachment	Delete Attachment	View Attachment
9) Please attach Attachment 9		Add Attachment	Delete Attachment	View Attachment
10) Please attach Attachment 10		Add Attachment	Delete Attachment	View Attachment
11) Please attach Attachment 11		Add Attachment	Delete Attachment	View Attachment
12) Please attach Attachment 12		Add Attachment	Delete Attachment	View Attachment
13) Please attach Attachment 13		Add Attachment	Delete Attachment	View Attachment
14) Please attach Attachment 14		Add Attachment	Delete Attachment	View Attachment
15) Please attach Attachment 15		Add Attachment	Delete Attachment	View Attachment

Budget Narrative File(s)

* **Mandatory Budget Narrative Filename:**

Add Mandatory Budget Narrative

Delete Mandatory Budget Narrative

View Mandatory Budget Narrative

To add more Budget Narrative attachments, please use the attachment buttons below.

Add Optional Budget Narrative

Delete Optional Budget Narrative

View Optional Budget Narrative

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

If any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions. Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

* APPLICANT'S ORGANIZATION

City of Morgan City

* PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

Prefix: Mr. * First Name: Lee Middle Name:

* Last Name: Dragna Suffix:

* Title: Mayor

* SIGNATURE: Hannah Roy

* DATE: 08/05/2022

Project Narrative File(s)

* **Mandatory Project Narrative File Filename:**

[Add Mandatory Project Narrative File](#)

[Delete Mandatory Project Narrative File](#)

[View Mandatory Project Narrative File](#)

To add more Project Narrative File attachments, please use the attachment buttons below.

[Add Optional Project Narrative File](#)

[Delete Optional Project Narrative File](#)

[View Optional Project Narrative File](#)

Application for Federal Assistance SF-424

* 1. Type of Submission:

- ☐ Preapplication
☒ Application
☐ Changed/Corrected Application

* 2. Type of Application:

- ☒ New
☐ Continuation
☐ Revision

* If Revision, select appropriate letter(s):

* Other (Specify):

* 3. Date Received:

08/05/2022

4. Applicant Identifier:

5a. Federal Entity Identifier:

5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: City of Morgan City

* b. Employer/Taxpayer Identification Number (EIN/TIN):

72-6000908

* c. UEI:

P9N1X677Q4K7

d. Address:

* Street1:

512 First Street

Street2:

* City:

Morgan City

County/Parish:

St. Mary Parish

* State:

LA: Louisiana

Province:

* Country:

USA: UNITED STATES

* Zip / Postal Code:

70380-3702

e. Organizational Unit:

Department Name:

Water, Sewer, Gas Department

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:

Ms.

* First Name:

Hannah

Middle Name:

* Last Name:

Roy

Suffix:

Title: Grant Writer and Administrator

Organizational Affiliation:

* Telephone Number:

9853851770

Fax Number:

9853857519

* Email:

h.roy@cityofmc.com

Application for Federal Assistance SF-424

* 9. Type of Applicant 1: Select Applicant Type:

C: City or Township Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

* 10. Name of Federal Agency:

Pipeline and Hazardous Materials Safety Admin

11. Catalog of Federal Domestic Assistance Number:

20.708

CFDA Title:

Natural Gas Distribution Infrastructure Safety and Modernization Grant Program

* 12. Funding Opportunity Number:

693JK322NF0018

* Title:

FY 2022 Natural Gas Distribution Infrastructure Safety and Modernization Grant

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

1236-Areas affected by project attachment.p

Add Attachment

Delete Attachment

View Attachment

* 15. Descriptive Title of Applicant's Project:

City of Morgan City PVC Replacement Project

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments

Application for Federal Assistance SF-424**16. Congressional Districts Of:**

* a. Applicant LA-003

* b. Program/Project LA-003

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment

Delete Attachment

View Attachment

17. Proposed Project:

* a. Start Date: 01/02/2023

* b. End Date: 01/02/2026

18. Estimated Funding (\$):

* a. Federal	7,508,005.94
* b. Applicant	0.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	7,508,005.94

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

- ☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .
- ☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- ☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**☐ Yes ☒ No

If "Yes", provide explanation and attach

Add Attachment

Delete Attachment

View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 18, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: Mr. * First Name: Lee

Middle Name:

* Last Name: Dragna

Suffix:

* Title: Mayor

* Telephone Number: 9853851770 Fax Number: 9853857519

* Email: l.dragna@cityofmc.com

* Signature of Authorized Representative: Hannah Roy

* Date Signed: 08/05/2022

BUDGET INFORMATION - Construction Programs

NOTE: Certain Federal assistance programs require additional computations to arrive at the Federal share of project costs eligible for participation. If such is the case, you will be notified.

COST CLASSIFICATION	a. Total Cost	b. Costs Not Allowable for Participation	c. Total Allowable Costs (Columns a-b)
1. Administrative and legal expenses	\$ 0.00	\$ 0.00	\$ 0.00
2. Land, structures, rights-of-way, appraisals, etc.	\$ 0.00	\$ 0.00	\$ 0.00
3. Relocation expenses and payments	\$ 0.00	\$ 0.00	\$ 0.00
4. Architectural and engineering fees	\$ 208,434.07	\$ 0.00	\$ 208,434.07
5. Other architectural and engineering fees	\$ 0.00	\$ 0.00	\$ 0.00
6. Project inspection fees	\$ 616,754.55	\$ 0.00	\$ 616,754.55
7. Site work	\$ 0.00	\$ 0.00	\$ 0.00
8. Demolition and removal	\$ 0.00	\$ 0.00	\$ 0.00
9. Construction	\$ 5,363,083.00	\$ 0.00	\$ 5,363,083.00
10. Equipment	\$ 68,400.00	\$ 0.00	\$ 68,400.00
11. Miscellaneous	\$ 0.00	\$ 0.00	\$ 0.00
12. SUBTOTAL (sum of lines 1-11)	\$ 6,256,671.62	\$ 0.00	\$ 6,256,671.62
13. Contingencies	\$ 1,251,334.32	\$ 0.00	\$ 1,251,334.32
14. SUBTOTAL	\$ 7,508,005.94	\$ 0.00	\$ 7,508,005.94
15. Project (program) income	\$ 0.00	\$ 0.00	\$ 0.00
16. TOTAL PROJECT COSTS (subtract #15 from #14)	\$ 7,508,005.94	\$ 0.00	\$ 7,508,005.94
FEDERAL FUNDING			
17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share.) Enter eligible costs from line 16c Multiply X 100 % Enter the resulting Federal share.			\$ 7,508,005.94

ASSURANCES - CONSTRUCTION PROGRAMS

OMB Number: 4040-0009
Expiration Date: 02/28/2025

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0042), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the Awarding Agency. Further, certain Federal assistance awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant:, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, the right to examine all records, books, papers, or documents related to the assistance; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will not dispose of, modify the use of, or change the terms of the real property title or other interest in the site and facilities without permission and instructions from the awarding agency. Will record the Federal awarding agency directives and will include a covenant in the title of real property acquired in whole or in part with Federal assistance funds to assure non-discrimination during the useful life of the project.
4. Will comply with the requirements of the assistance awarding agency with regard to the drafting, review and approval of construction plans and specifications.
5. Will provide and maintain competent and adequate engineering supervision at the construction site to ensure that the complete work conforms with the approved plans and specifications and will furnish progressive reports and such other information as may be required by the assistance awarding agency or State.
6. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
7. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
8. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards of merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
9. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
10. Will comply with all Federal statutes relating to non-discrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681 1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

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Standard Form 424D (Rev. 7-97)
Prescribed by OMB Circular A-102

11. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal and federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
12. Will comply with the provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.
13. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333) regarding labor standards for federally-assisted construction subagreements.
14. Will comply with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
15. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
16. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
17. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq).
18. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
19. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.
20. Will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act (TVPA) of 2000, as amended (22 U.S.C. 7104) which prohibits grant award recipients or a sub-recipient from (1) Engaging in severe forms of trafficking in persons during the period of time that the award is in effect (2) Procuring a commercial sex act during the period of time that the award is in effect or (3) Using forced labor in the performance of the award or subawards under the award.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	TITLE
Hannah Roy	Mayor
APPLICANT ORGANIZATION	DATE SUBMITTED
City of Morgan City	08/05/2022

SF-424D (Rev. 7-97) Back

2022

Natural Gas Distribution Infrastructure
Safety and Modernization Grant Program

PROJECT NARRATIVE
FOR
CITY OF MORGAN CITY
ST. MARY PARISH, LOUISIANA

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Cover Letter

Name and Title: Natural Gas Distribution Infrastructure Safety and Modernization Grant Program Fiscal Year 2022

Organization Name: City of Morgan City

Structure of the Organization and Mission: The City of Morgan City was incorporated in 1871. Effective June 8, 1987, the city adopted a Home Rule Charter and began operating under an elected mayor and city council. The Home Rule Charter was adopted by the voters of Morgan City and allows elected officials to govern the city within a smaller demographic of the parish in which it resides.

Leadership:

Mayor – Lee Dragna

Chief Administrative Officer – Charlie Solar, Jr.

Councilman District 1 - Tim Hymel

Councilman District 2 - Mark Stephens

Councilman District 3- Ron Bias

Councilman District 4/ Mayor Pro-Tem – Steve Domangue

Councilman District 5 – Louis Tamporello, Jr.

Finance Director – Deborah Garber

Grant Writer – Hannah Roy

Gas Operator – Kawika Kaai

Programs and Special Expertise:

The City of Morgan City operates and maintains many different services, including: police and fire protection, streets and drainage, parks and recreation, social services (encompassing urban redevelopment and housing), and general administration services. In addition to these services, the city also owns and operates two enterprise activities: a utilities system that generates and distributes electricity, natural gas, and water services and a utilities system that provides sanitation and sewer services within the city.

Experience and capacity to manage Federal grant programs:

The City of Morgan City has successfully received and managed several federal grants throughout the years; the most recent federal funding received has been the American Rescue Plan Act, LCDBG, FEMA, and more. To ensure compliance with all program rules and regulations, the city employs a full-time grant writer and administrator. In addition to the full-time grant writer and administrator on staff, the city's financial director is well-versed in managing federal funds.

Contact information for the designated project director responsible for coordinating the funded activities:

Hannah Roy, M.P.A.P.
Grant Writer
City of Morgan City
512 First Street
Morgan City, LA 70380
Office: (985)385-1770
Email: h.roy@cityofmc.com

Authorized Representative to accept the awarded document and submit required Federal financial reports and progress reports:

Mayor Lee Dragna
512 First Street
Morgan City, LA 70380
Office: (985)385-1770
Email: g.bonner@cityofmc.com

Deborah Garber
512 First Street
Morgan City, LA 70380
Office: (985)385-1770
Email: d.garber@cityofmc.com

Project Narrative

Applicant Eligibility

The City of Morgan City owns and operates its own utilities system; the municipality-owned utilities system generates and distributes electricity, natural gas, and water services to residents of the area. The City of Morgan City is requesting grant funds for the purpose of replacing the existing legacy PVC pipes that are non-traceable (due to the lack of tracer wire) and prone to leakage within the glue joints. The city also seeks to replace the aging copper services and meters that affect over 82% of customers within the project areas (675 customers affected/ 820 total customers). All project areas included within this project are designated by U.S. DOT as "disadvantaged census tract areas".

Project Summary

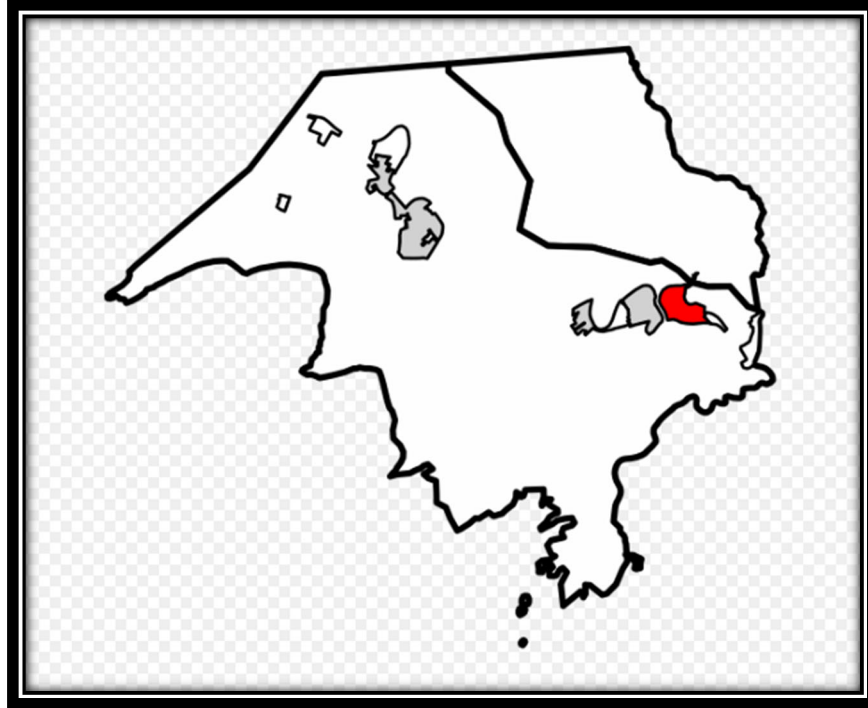
The proposed project includes two project components; the first component is compliance and safety and the second component is decreasing the amount of unaccounted natural gas to improve operator and consumer safety. The City of Morgan City plans to replace the existing, undetectable PVC natural gas mains with four-inch PE coiled pipe. Additionally, the project requires the replacement of service pipe with one-inch PE coiled pipe. Repairing the natural gas distribution system will also include the installation of four-inch PE ball valves (to allow for isolation of the system with minimal disruption to customers), necessary road bores, tracer wire pedestals, and associated tie-ins to the existing gas mains. Around 820 existing customer services will receive new service taps, excess flow valves, and new anodeless risers, meters and regulators (if necessary) as a part of the system repairs. Approximately 675 customers will require the replacement of aging meters.

Project Location

The City of Morgan City is a part of St. Mary Parish, which is located within southeast Louisiana.



St. Mary Parish

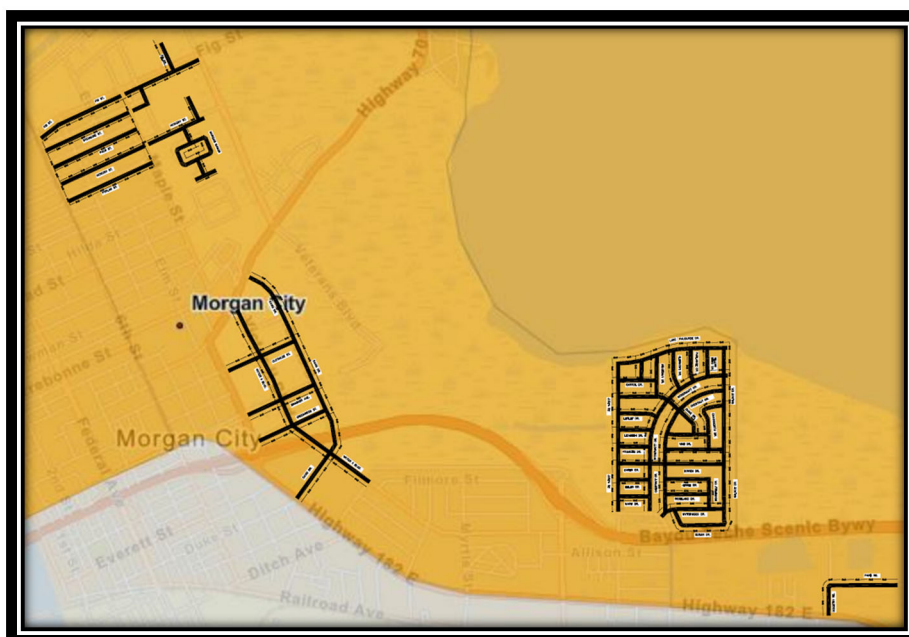


Morgan City (shown within the Parish limits)

The four project areas are shown below and overlaid on the U.S. DOT Disadvantaged Communities reference map found at:

[Transportation Disadvantaged Census Tracts \(arcgis.com\)](https://arcgis.com)

As shown, all of the project areas are within Transportation Disadvantage Census Tracts.



Project Schedule

This project will be monitored by a third party consultant to ensure the project timeline stays on track. Any disruptions to the project schedule will be addressed immediately and a resolution will be approved by Morgan City. The schedule below provides the estimated number of days to be spent on each task and the expected timeline for each task from the date of the grant notice or award.

Task		Duration
Permitting		30 Days
	State Planning Approval (if required)	
	Local Planning Approval (if required)	
	Tier 2 Environmental Questionnaire	
Preliminary Plans		90 Days
	Determine Preliminary Routing	
	Plan in Hand	
	Prepare Preliminary Design Drawings	
	Preliminary Construction Cost Estimate	
	Owner Review and Approval of Preliminary Plans	
	Project Permitting	
	Public Hearings and Community Input	
	Project Partnership and Implementation of Agreements (if required)	
Final Plans		60 days
	Final Construction Plans	
	Right-of-Way Acquisition (if required)	
	Final Construction Cost Estimate	
	Project Specifications	
	Owner Review and Approval of Final Plans	
Bidding Services		60 days
	Advertisement of Bids	
	Pre-Bid Conference	
	Issue Addendum as necessary	
	Evaluate Bids and Bidder Qualifications	
	Recommend Award to Owner	
	Issue Notice of Award and Contract Documents	
Construction Administration		855 Days
	Pre-construction Conference	
	Material Submittal Review	
	Process Pay Request and Change Orders	
	Manage Resident Project Inspectors	
	Project Closeout	

Project Eligibility

The proposed project meets the eligibility requirements listed below. Eligible grant project expenses include the following:

- The Morgan City PVC Replacement Project includes the construction costs related to locating the existing PVC installed mains that lack tracer wire and installing Polyethylene (PE) gas mains, PE service lines, obstruction bores, PE valves, tracer wire pedestals, anodeless risers, regulators and meters.
- Labor costs associated with the proposed PVC replacement project includes engineering fees for the project design, bidding services, and construction administration; project manager fees for planning and scheduling installations (minimizing customer outages); inspector services for overseeing contract services during construction phases; and the additional technical labor supplied by the City of Morgan City employees to replace gas meter sets and re-light customer appliances. Equipment costs included will assist in the reduction of methane emissions and will help reduce incidents and fatalities by alleviating leaks within the system. The equipment to be purchased to detect leaks more efficiently, quickly, and safely will be the HEATH Remote Methane Leak Detector – Complete System (RMLD-CS). The HEATH RMLD-CS is a highly advanced technology, capable of detecting methane leaks from a remote distance, thus creating a safer survey in areas that may be difficult to reach such as busy roadways, fenced-off areas and other places that are hard to access. Included in the equipment costs for this application will be the purchase of a ZEVAC Blowdown Recovery System, which demonstrates the gas systems' dedication towards net zero emissions. The ZEVAC is a gas recovery machine that eliminates methane escape during maintenance and inspections. The ZEVAC equipment reduces risk by capturing, recycling and reusing greenhouse gasses and preventing them from being released into the atmosphere during routine maintenance and purging of lines, ultimately eliminating the need for venting and flaring.

Project Funding

The City of Morgan City desperately needs to replace all the remaining, outdated PVC piping within their natural gas system. The city has made a continuous effort to replace the legacy PVC pipe as funding has become available, however, the limited resources accessible to this rural area has made funding a project of this scale incredibly difficult. Receiving this grant will expedite the critical replacement of this aging infrastructure, while also providing safety inspections to homeowners. Safety inspections on appliances and affiliated piping/ventilation of appliances will occur when services are transferred from the existing PVC lines to the new PE gas facilities, thus improving the safe delivery of energy to a historically underserved rural community.

Funding the proposed project in its entirety will allow for all remaining PVC gas mains, services and meters to be replaced; any partial funding will be allocated to the areas of greatest need.

Detailed Project Description

Statement of Work

The City of Morgan City plans to replace 11.9 miles of existing 2" and 4" PVC mains with 4" PE coiled pipe. The project will replace 820 copper service lines with PE service lines for all customers within the project area and replace 675 aging residential meters that can no longer be fitted for repairs. Isolation valves will

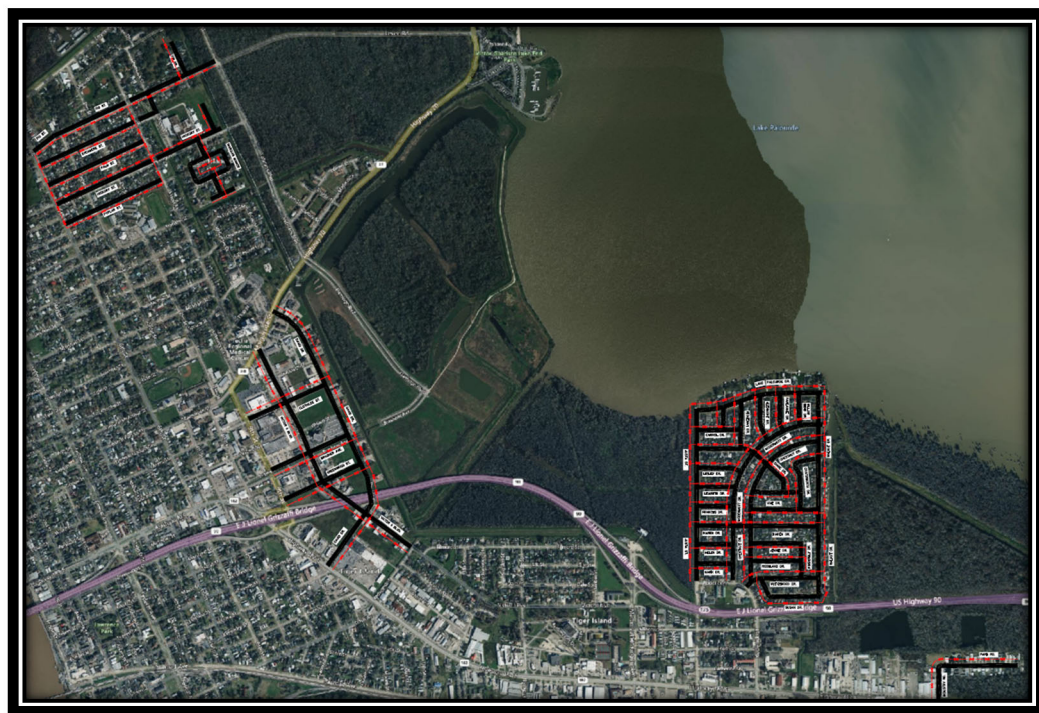
be installed at critical locations to allow for minimal disruption to residents and the ability to make repairs to the main while not under pressure. Upon completion of the project, all remaining PVC pipe within the system will be replaced.

All mains will be replaced with 4" PE pipe to allow for additional capacity within the system. Morgan City is a region that experiences severe weather events, such as hurricanes and extreme flooding, that often result in prolonged power outages that span over weeks or possibly even months. Since the construction of the original system, many residents have begun to utilize portable or permanent natural gas generators, which puts extreme loads on the existing system and affects supply. By replacing the mains with 4" PE pipe, the system will be better equipped to handle the system load.

The project will be managed by a consulting firm that has extensive knowledge and experience in natural gas distribution systems. The project manager, project coordinators, and project inspectors are expected to have years of experience in the industry and be knowledgeable of PHMSA and local plumbing codes and requirements. Consultants will act as operator's agent and be responsible for project management, planning, scheduling, coordinating with contractor, handling inspections, and overall project oversight.

The City of Morgan City intends to perform the natural gas distribution system replacements by publicly advertising, competitively bidding, and awarding the project to the lowest, qualified, licensed Municipal and Public Works contractor as required by the Louisiana Public Bid Law Revised Statute 38:2211-2296.

The mains to be replaced are shown outlined in red in the below aerial photograph.



Safety Risk Profile

The Safety Risk Profile of vintage 4-inch and 2-inch PVC in the city's distribution system has been identified in the 2019 DIMP report as other threats.

Threat: Other Threats->Other

Description: PVC Main Lines in the gas distribution system are without tracer wire for locating and are subject to leaking in the glue joints.

Rank	User Rank	SHRIMP Rank	Relative Risk Score	Probability Score	Consequence Score	Leak Cause Factor	Incident Probability Factor
1	0	12	1	1	1	1	1
Not Included In Previous Plan							

Ranked here, in part, for the following reasons:

- No threat indicators were found

Section 11.1 Implementation Plan from the Morgan City 2019 DIMP includes the following:

“A. Procedures, policies and/or recordkeeping systems will be modified as follows to collect and retain information required to be collected and retained under the DIMP plan, including:

3. The following threat specific Performance Measures (presented by section in risk rank order):

a. For **other threats** on the **PVC Main Line (PVC Main Lines in the gas distribution system are without tracer wire for locating and are subject to leaking in the glue joints.)** section, MORGAN CITY GAS DEPT, CITY OF will:

- Track the amount of PVC Main Line pipe replaced in the gas distribution system and the amount of PVC Main Line pipe left to be replaced.

MORGAN CITY GAS DEPT, CITY OF will implement as follows:

The City of Morgan City will track the amount of PVC pipe replaced in the gas distribution system and the amount of PVC pipe left to be replaced as funds become available. As PVC pipe changes, it will be documented on a "Leakage Inspection Report" as described in Section 8.4.11 of the City of Morgan City Operation and Maintenance Manual. PVC pipe updates will be reported annually on PHMSA form F 7100.1.1 as described in Section 2.3 of the City of Morgan City Operation and Maintenance Manual. The responsible party for initiating and completing this corrective action is the City of Morgan City Gas Operator, support staff including maintenance personnel and the clerical staff responsible for records, maintenance and retention.”

B. Additional/Accelerated Actions included in this DIMP plan:

2. The following threat specific Additional/Accelerated Actions (presented by section in risk rank order):

a. For **other threats** on the **PVC Main Line (PVC Main Lines in the gas distribution system are without tracer wire for locating and are subject to leaking in the glue joints.)** section, MORGAN CITY GAS DEPT, CITY OF will:

- Replacement program

MORGAN CITY GAS DEPT, CITY OF will implement as follows:

PVC pipe in the system is considered a hazard because it has no wire for locating. The City of Morgan City will be embarking on a replacement program to replace the PVC Pipe in the system

with Polyethylene pipe. The program should be completed as funds become available. The responsible party for initiating and completing this change is the City of Morgan City Gas Operator including maintenance personnel and the clerical staff responsible for records retention.

Environmental Statement

See the Environmental Analysis below.

Title VI of the Civil Rights Act, Section 504 of the Rehabilitation Act

The entire project is located within the U.S. DOT Transportation Disadvantage Census Tract Areas. There will be no disproportionately high and adverse human health or environmental effects to the residents within the project area.

The public will have the opportunity to participate in the project during the public information meeting that will be conducted to inform the residents in the area of the proposed project and to receive their comments. A notice will be placed in the local newspaper and posted at the parish offices.

The project will not have any negative effects on low-income or minority areas, therefore there is no need for mitigation measures.

Statement of Authority and Pipeline Infrastructure Safety and Modernization Capabilities

The City of Morgan City operates a natural gas distribution system, which is regulated by the Louisiana Department of Natural Resources, Office of Conservations, Pipeline Division. The Operator ID is 12776.

The City of Morgan City has operated and maintained the system since its creation and is qualified to continue to do such.

Projected Outputs and Objectives

(1) Quantity (e.g., feet, yards, or mileage and diameter) of pipeline affected:

62,832 LF of mains

53,300 LF of services

675 Meters and regulators

(2) Cost of equipment that may be purchased for the project, if appropriate:

\$82,080.00

(3) Estimated number of jobs the project may create:

Position	Number of People
Project Manager	1
Senior Design Engineer	1
Project Engineer	1
CAD Technician	2
Contractor Crew	12
Project Inspectors	4

(4) Estimate of the project's potential for benefiting disadvantaged rural and urban communities: The project has the potential to benefit 100% of the disadvantaged rural communities within the project areas.

(5) Estimate of the economic impact or growth over the length of the project:

Upon completion of the project, a consistent and sufficient amount of pressure of will be within the gas mains and ensure proper and safe delivery to commercial and residential customers.

The commercial customers will realize a significant economic impact as sufficient pressure will allow for uninterrupted service during extreme weather events through the use of emergency generators. South Louisiana is prone to extreme events that cause significant power outages for days, weeks and sometimes months. A reliable source of natural gas to power emergency generators during these extreme weather events will allow businesses to continue supplying goods and services to residents and prevent the ruin of any perishable goods that businesses or residents possess. Having the ability to safely maintain, supply, and distribute vital goods and services during these disasters is an invaluable benefit to the rural community.

Furthermore, the ability to provide sufficient pressure will allow for economic growth through the expansion of existing businesses and the potential for additional commercial and residential developments. The potential for development of additional consumers can produce many jobs in the community and can provide additional tax dollars for Morgan City.

(6) Estimate of the reduction in methane emissions attributable to the project:

By replacing the PVC mains, which are brittle pipes with potentially leaking joints, a reduction of lost and unaccounted for gas will occur and be indicated on subsequent annual reports. Additional items to be incorporated in the reduction of methane emissions will be the use of the HEATH Remote Methane Leak Detector- Complete Solution and the ZEVAC Blowdown Recovery System.

Currently, the City of Morgan City experiences grade 3 leaks at the meter sets due to corrosion and deterioration. The grade 3 leaks will be completely eliminated by replacing the PVC mains.

Output Criteria #1: Safety

Replacing the proposed sections of the natural gas system will provide reliable infrastructure that is needed for the safe delivery of natural gas to consumers. The project will eliminate the current aging infrastructure that is prone to leakage and create records to be used for maintaining and locating the underground system when damage prevention is needed. In addition to enhancing the underground infrastructure, a safety check will be performed on customer-owned facilities when new services, meters, and regulators are put into service. This inspection will include pressure testing customer-owned lines, a visual inspection of appliances to ensure they are up to code, and an inspection of vents for potential carbon monoxide sources. Each customer within the specific project areas mentioned will be given a customer information packet as part of the Morgan City Public Awareness program.

Output Criteria #2: Environment

By replacing the remaining PVC pipes within the natural gas system, the number of potential gas leaks due to aging thin-walled, brittle PVC piping will be significantly reduced. Replacing PVC gas mains with PE pipe will result in additional benefits that protect the environment and climate during repairs. PVC pipe cannot be squeezed-off like PE pipe to stop the flow of gas, or to isolate a section to allow safe repairs. Without

this, the gas department crew must attempt to repair the PVC lines while gas is flowing, which is very dangerous for the crew members and increases the potential of uncontrolled methane leaks into the atmosphere. PVC pipe has become obsolete for gas use because of the how difficult repairs can be and the safety issues associated with making the repairs. Polyethylene (PE) pipe has become the industry standard for gas distribution piping because it can be squeezed off to shut off the flow of gas. This eliminates having to make repair connections while gas is flowing. PE pipe is flexible and remains flexible after many years of service. PE pipe also allows permanent repairs to be made by fusing the repair sections into the existing piping.

Replacing the aging meters will reduce the risk of leaks around meter sets and provide customers with a home piping appliance inspection to ensure appliances are operating correctly and not emitting dangerous CO2 emissions and/or natural gas leaks on any customer-owned piping.

Output Criteria #3: Job Creation

The City of Morgan City will utilize licensed and pre-qualified regional gas utility contractors along with local, licensed plumbers to provide reconnection services and customer home inspections.

Output Criteria #4: Equity

The project area is located entirely within U.S. DOT Transportation Census Disadvantaged Areas.

Project Implementation and Management

Each project phase will be monitored by project inspectors from both a qualified, third-party source and/or the City of Morgan City employees. Field audits will include a comprehensive checklist to monitor pipeline safety compliance and OSHA requirements, in addition to utilizing best practices for restoring areas of excavation.

Explanation of Evaluation and Selection Criteria Equivalence

To ensure that the project meets all the evaluation and selection criteria outlined in Section E of the NOFO, the entire process has been thoroughly vetted by a professional consulting engineering firm hired for preparation of the application. All weekly webinars hosted by PHMSA have been attended, all FAQs released have been reviewed and analyzed to determine if adjustments to the application would be required, and the APGA website has been closely monitored for any additional information. This provided the consultant with a complete understanding of the applicable projects and the application components needed to prepare a thorough and complete application.

The consulting engineering firm employs staff members, some with over 40 years of experience in the gas industry, to prepare the application and complete the remaining phases of the project. This experience includes preparation of construction plans, DIMP plans, Operations and Maintenance Plans, leak surveys, pressure monitoring, system mapping, and assistance with operator training and compliance. The firm has completed hundreds of projects, therefore has a thorough understanding of all components of the project requirements, the NOFO, and the information required therein.

To complete this application, the consultant reviewed all annual reports, operation and maintenance manuals, DIMP reports, and safety inspection reports available. After reviewing available data, the consultant met with both the operator, office, and field personnel to review the data and prioritize projects. Additionally, field inspections were completed to fully evaluate any visible components of the system.

Based on the knowledge of the NOFO process and the gas system included herein, the consultant prepared this application. To ensure that all applicable portions of the evaluation criteria were addressed, a checklist was prepared and completed prior to the submittal of the grant application. The checklist was peer reviewed by a person independent of the application preparer to verify that all components were completed.

Statement Certifying Compliance with Equity Requirement

In accordance with Executive Order 13985, the City of Morgan City certifies compliance with Executive Order 13985 by providing access to natural gas services to all protected individuals and underserved communities in a consistent and fair manner.

Buy America

By the requirements of the Buy America provisions of IIJA Division G §§ 70911-70917, any contractor selected through the Louisiana Bid Law process must purchase, to the maximum extent practicable, domestic products produced and processed in the United States. The Buy American provision will be included in the Advertisement of Bids, discussed in the pre-bid conference, and a Buy American acknowledgement will be required as part of all bid packages. The contractor who is awarded the project will be required to include documentation with the material submittals from suppliers indicating proof of origin of all products to be used in the PVC replacement projects funded by the Natural Gas Distribution Infrastructure Safety and Modernization Grant Program.

Critical Infrastructure Security and Resilience

The City of Morgan City has been provided the recommendations of the Critical Infrastructure Security and Resilience and the National Security Presidential Memorandum on Improving Cybersecurity for Critical Infrastructure Control Systems and the TSA Pipeline Security Guidelines.

Pursuant to LA R.S. 42:1267, the LA Department of Civil Service has developed training programs designed to keep state agencies safe from cyberattack. Under this law, the Department of State Civil Service shall make the education and training on cybersecurity available to agencies within political subdivisions of the state at a minimal cost. It is the intent of the City of Morgan City to facilitate the training and education prior to receipt of any grant funds.

In 2020, St. Mary Parish updated their Hazard Mitigation Plan and it was adopted by the City of Morgan City (see attachment A). This document includes a list of all critical facilities within the parish.

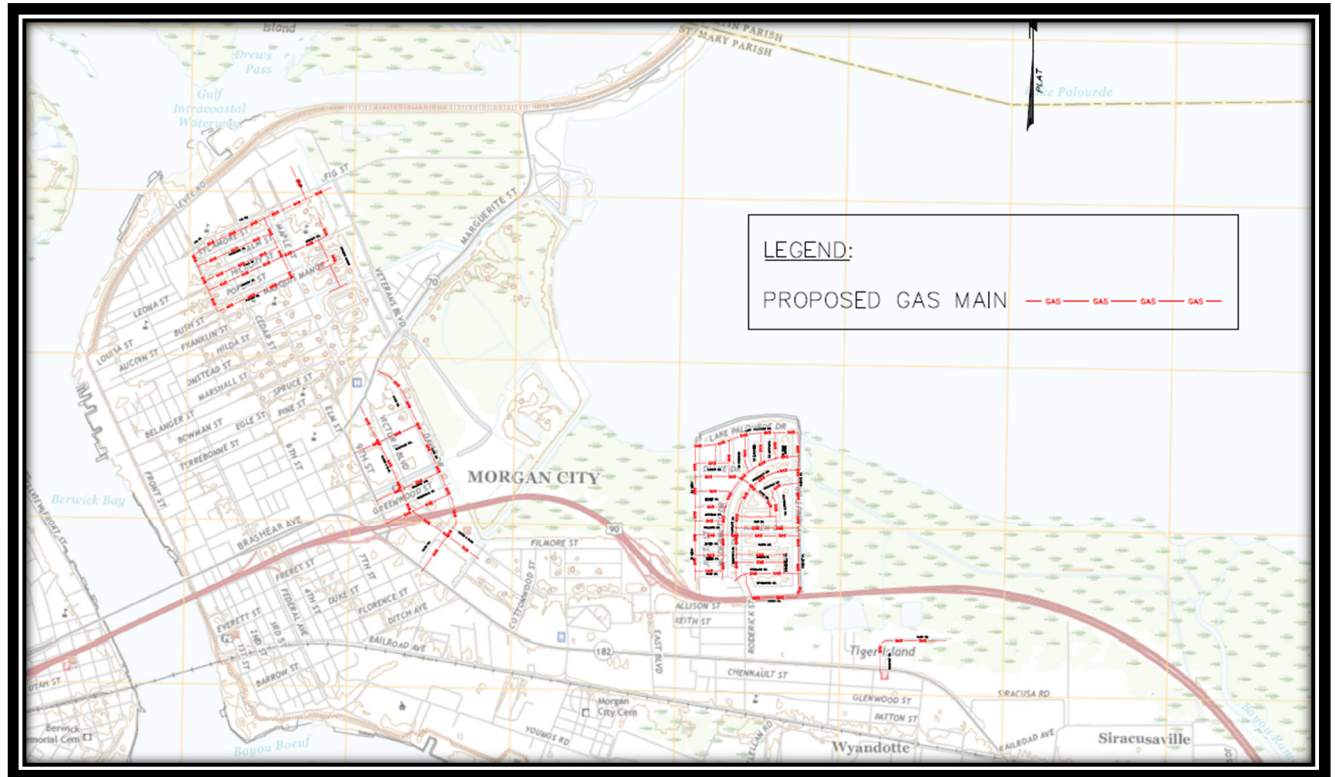
The project included herein is not anticipated to impact any critical infrastructure facilities.

Environmental Analysis

Project Description and Location

The project includes 62,832 LF of buried 4" PE gas mains, 53,300 LF of buried 1" PE service mains, 675 residential meters and regulators and 100 each 4" isolation valves. It is intended for all gas mains and valves to be installed within existing right of ways. The service lines will be installed on private property from the main to the house.

USGS Maps



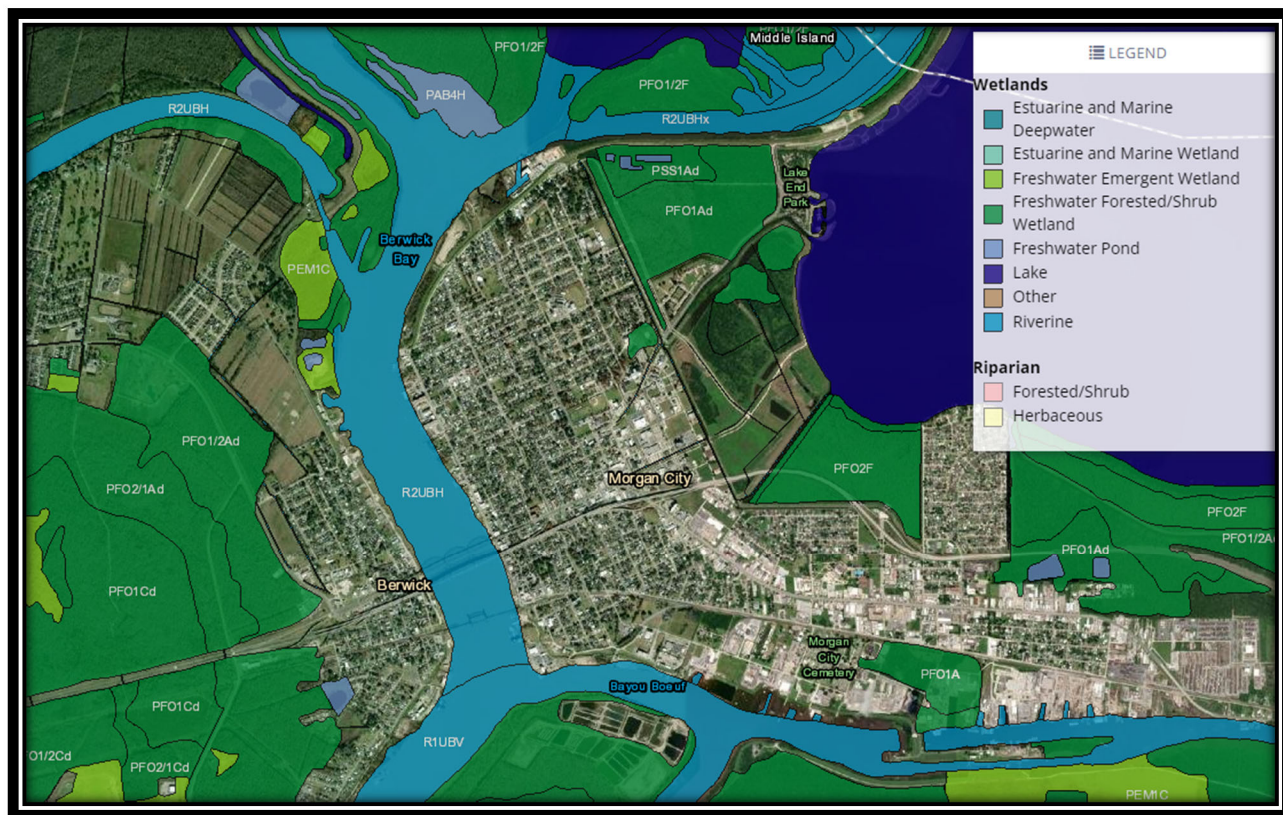
Property Changes

All of the existing gas pipes to be replaced are currently in the existing right-of-way along roadways. The replacement pipe will remain inside of these existing right-of-ways. All proposed gas pipe installation will be by means of open trench or horizontal directional drilled which will be redressed to the pre-construction conditions. No areas outside of the existing right-of-ways will be affected by the construction of this PVC replacement project.

Wetlands

According to the National Wetlands Inventory,

<https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>, it appears that some wetlands do exist within Morgan City, but these areas are not within the populated project areas.



Threatened and Endangered Species

There are 26 endangered species found within the State of Louisiana according to:

<https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=LA&stateName=Louisiana&statusCategory=Listed>

Scientific Name	
Trichechus manatus	Potamilus inflatus
Grus americana	Margaritifera hembeli
Picoides borealis	Geocarpon minimum
Charadrius melodus	Schwalbea americana
Eretmochelys imbricata	Isoetes louisianensis
Dermochelys coriacea	Quadrula cylindrica cylindrica
Lepidochelys kempii	Pituophis ruthveni
Graptemys oculifera	Grus americana
Gopherus polyphemus	Calidris canutus rufa
Acipenser oxyrinchus (=oxyrhynchus) desotoi	Caretta caretta
Scaphirhynchus albus	Myotis septentrionalis
Lampsilis abrupta	Laterallus jamaicensis ssp. jamaicensis

Beings that the project limits are within existing developed areas; it is unlikely that any species will be impacted.

Floodplains

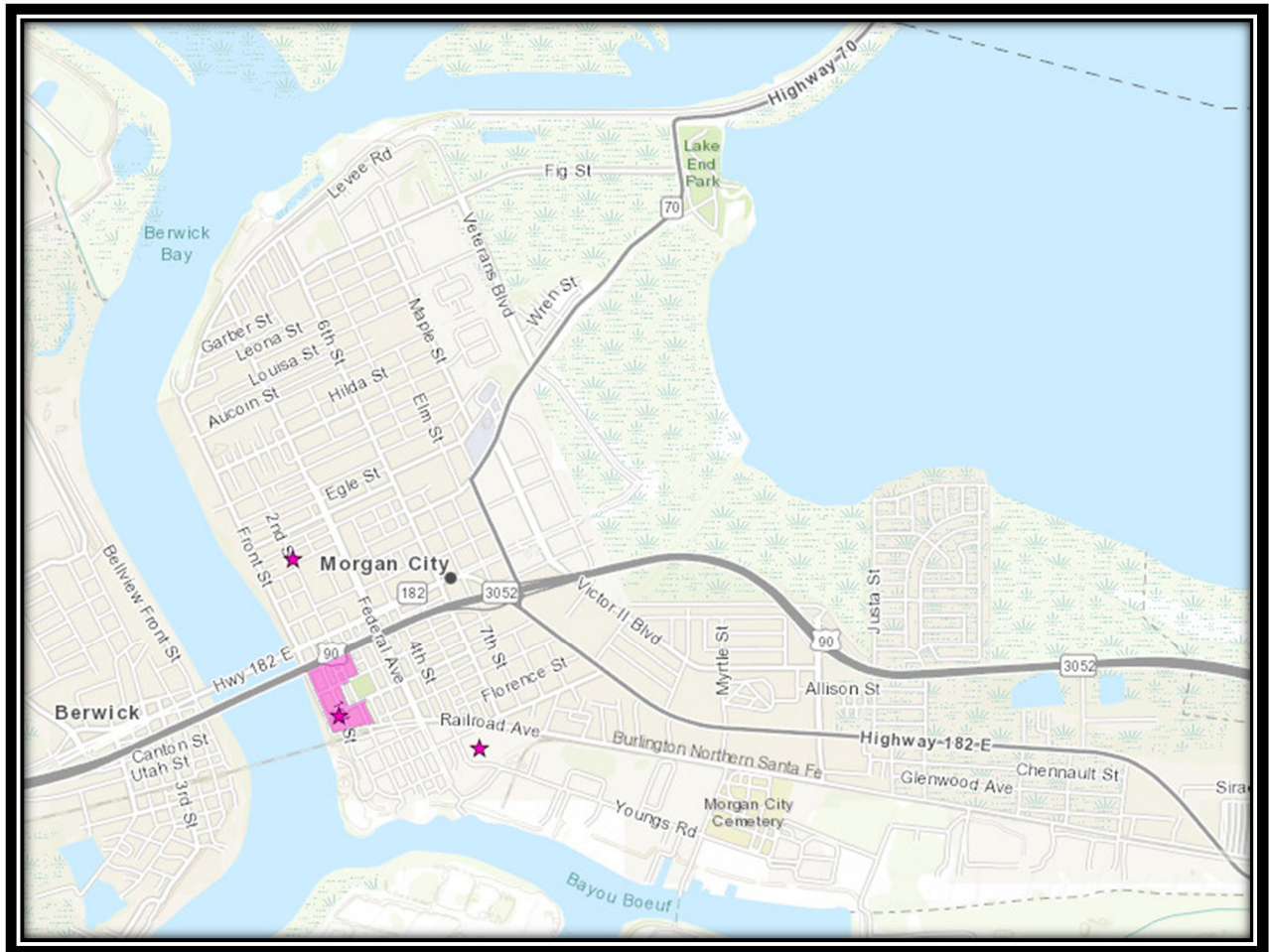
Portions of the project are within existing floodplains, but they will not be impacted by the proposed project since necessary erosion control measures will be taken.



Source: <https://msc.fema.gov/portal/home>

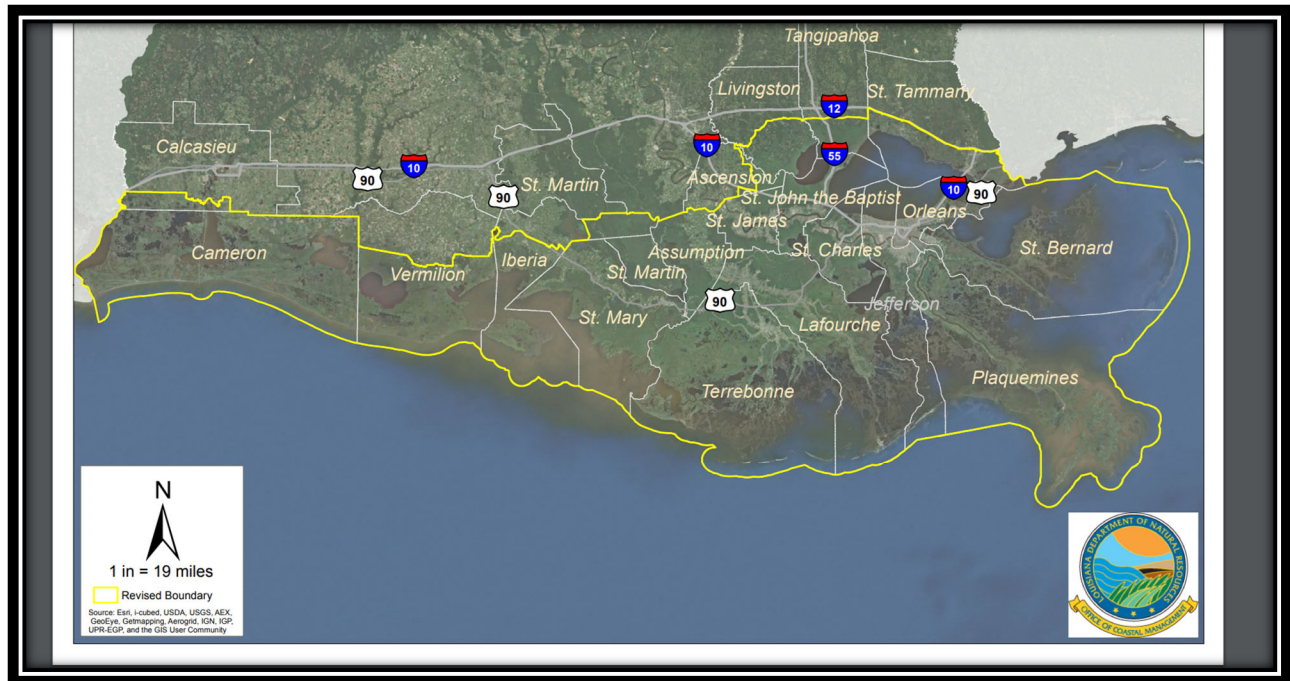
Historic Properties

According to [Louisiana National Register \(arcgis.com\)](https://arcgis.com), there are several historic properties located within Morgan City. The proposed construction activities will have no impact on these properties.



Coastal Areas

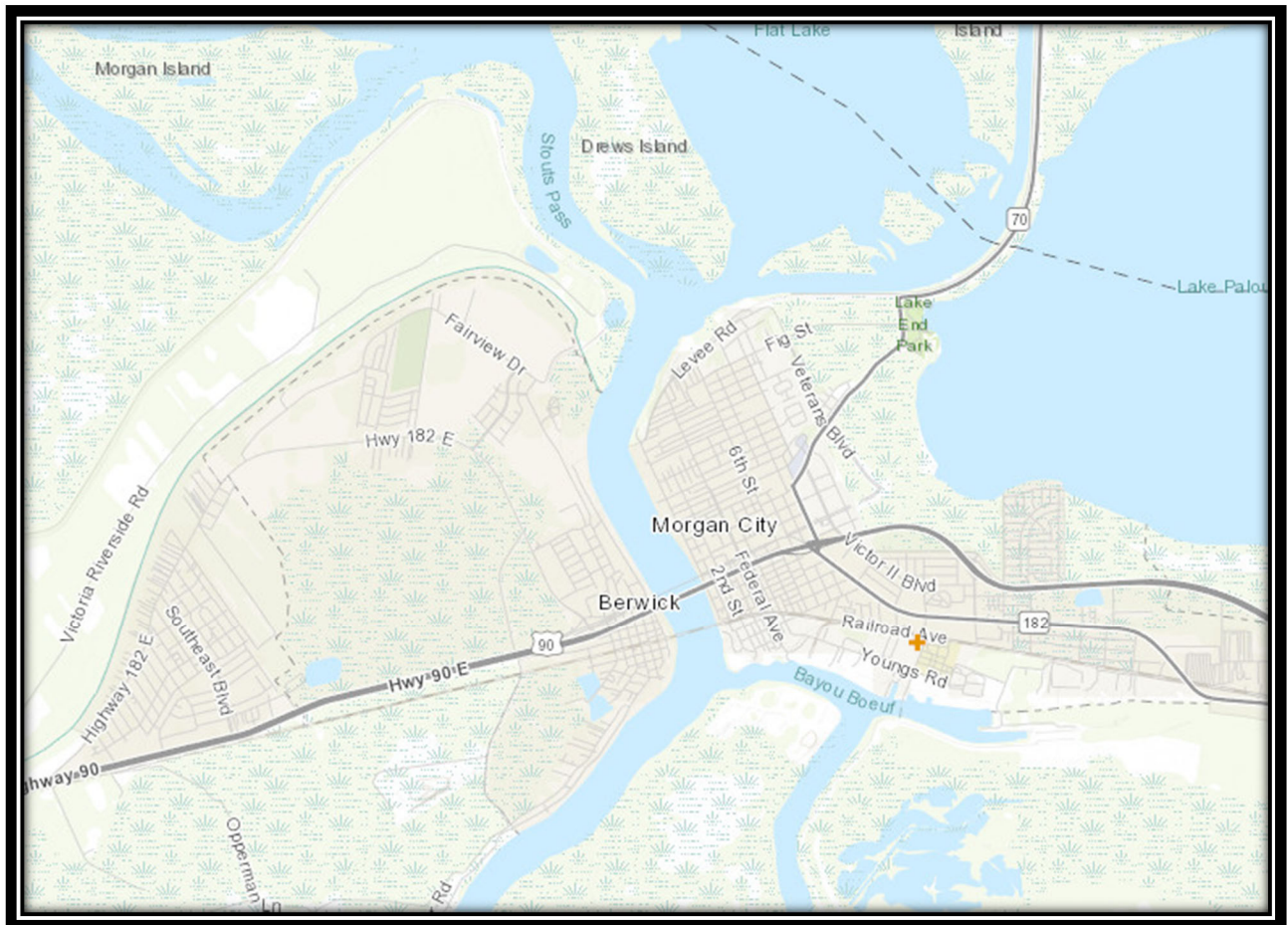
The [Louisiana Coastal Management Program](#), approved by NOAA in 1980, is administered by the Department of Natural Resources through the Office of Coastal Management. The primary authority for the coastal management program is the State and Local Coastal Resources Management Act of 1978. The [Louisiana coastal zone](#), which varies from 16 to 32 miles inland from the Gulf coast, is a 10 million-acre area that includes 40 percent of the nation's coastal wetlands. According to http://www.dnr.louisiana.gov/assets/OCM/CoastalZoneBoundary/CZB2012/maps/Overview_of_Revised_CZB.pdf, Morgan City is within the Coastal Zone; however, all work is taking place in completed developed areas and will have no negative impact.



Brownsfields

According to

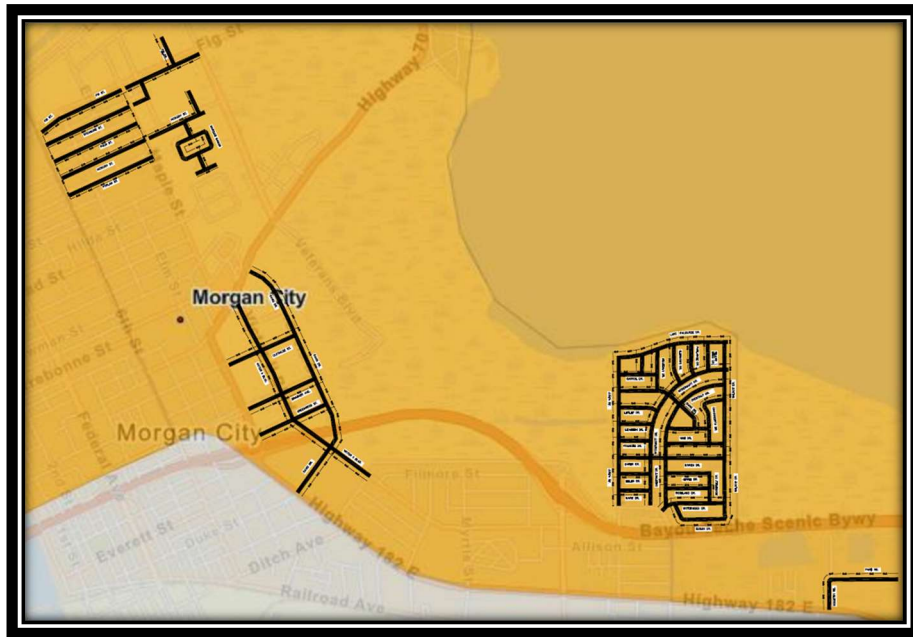
[https://ordspub.epa.gov/ords/cimc/f?p=CIMC:73::::73:P71_WELSEARCH:70723%7CZipcode%7C%7C%7C%7Ctrue%7Cfalse%7Cfalse%7Cfalse%7Cfalse%7Cfalse%7Cfalse%7C\(BF_ASSESS_IND%3D%27Y%27\)OR\(BF_ASSESS_PILOT_IND%3D%27Y%27\)OR\(BF_CLEANUP_IND%3D%27Y%27\)OR\(BF_RLF_GRANT_IND%3D%27Y%27\)OR\(BF_RLF_PILOT_IND%3D%27Y%27\)OR\(BF_128A_IND%3D%27Y%27\)OR\(BF_TBA_IND%3D%27Y%27\)%7C-1%7Csites%7CN%7Cbasic](https://ordspub.epa.gov/ords/cimc/f?p=CIMC:73::::73:P71_WELSEARCH:70723%7CZipcode%7C%7C%7C%7Ctrue%7Cfalse%7Cfalse%7Cfalse%7Cfalse%7Cfalse%7Cfalse%7C(BF_ASSESS_IND%3D%27Y%27)OR(BF_ASSESS_PILOT_IND%3D%27Y%27)OR(BF_CLEANUP_IND%3D%27Y%27)OR(BF_RLF_GRANT_IND%3D%27Y%27)OR(BF_RLF_PILOT_IND%3D%27Y%27)OR(BF_128A_IND%3D%27Y%27)OR(BF_TBA_IND%3D%27Y%27)%7C-1%7Csites%7CN%7Cbasic) there is one Brownsfield site located within Morgan City, but it is not within the project limits.



Areas Affected by Project

The proposed project includes four project areas within Morgan City, Louisiana. The City of Morgan City is located in southeast Louisiana, within St. Mary Parish. The four project areas are shown below and overlaid on the U.S. DOT Disadvantaged Communities reference map found at: [Transportation Disadvantaged Census Tracts \(arcgis.com\)](https://arcgis.com)

As shown, all of the project areas are within Transportation Disadvantage Census Tracts.



Streets included within project areas:

- Brashear Avenue
- Carrol Drive
- Chatsworth Drive
- Chestnut Drive
- Clothilde Street
- David Drive
- Diane Drive
- East Garner Drive
- Fig Street
- Fir Drive
- Francis Drive
- Glenmont Drive
- Greenwood Street
- Helen Drive
- Hickory Street
- Jennie Drive
- Justa Street
- Karen Drive
- Kimberly Drive
- Lake Palourde Drive
- Lesley Drive
- Lizabeth Drive
- Mark Drive
- Marquis Manor
- Mcdermott Drive
- North Prescott Drive
- Palm Street
- Parlange Drive
- Popular Street
- Ridgeway Drive
- Roselawn Drive
- South Prescott Drive
- Susan Drive
- Sycamore Street
- Victor II Boulevard
- Vine Drive
- Walnut Drive
- West Garner Drive
- Willow Bend Drive
- Witchwood Drive