Bayou Black

Repetitive Loss Area Analysis

Prepared by
Terrebonne Parish Department of Planning and Zoning
985-873-6569
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Definitions

- *Base flood* means the flood having a one-percent chance of being equaled or exceeded in any given year, as determined by the Federal Emergency Management Agency (FEMA).
- *Elevated building* means a non-basement building:
    - Built, in the case of a building in zones A1-30, AE, A, A99, AO, AH, B, C, X, and D, to have the top of the elevated floor, or in the case of a building in zones V1-30, VE, or V, to have the bottom of the lowest horizontal structural member of the elevated floor elevated above the ground level by means of pilings, columns (posts and piers), or shear walls parallel to the flow of the water; and
    - Adequately anchored so as not to impair the structural integrity of the building during a flood of up to the magnitude of the base flood.
    - In the case of zone A1-30, AE, A, A99, AO, AH, B, C, X, and D, "elevated building" also includes a building elevated by means of fill or solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of floodwaters. In the case of zones V1-30, VE, or V, "elevated building" also includes a building otherwise meeting the definition of "elevated building," even though the lower area is enclosed by means of breakaway walls, if the breakaway walls meet the standards of Section 60.3(e)(5) of the National Flood Insurance Program Regulations.
- *Flood or flooding* means:
    - A general and temporary condition of partial or complete inundation of normally dry land areas from:
        - The overflow of inland or tidal waters;
        - The unusual and rapid accumulation or runoff of surface waters from any source; or
        - Mud slides (i.e. mudflows) which are proximately caused or precipitated by accumulations of water on or under the ground.
    - The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as a flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in subsection (1)(a) of this definition.

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    - Inundation of more than one (1) normally dry land parcel, the second being any land including the road.
- *Flood insurance rate map (FIRM)* means the official maps of both the unincorporated areas of Terrebonne Parish and the City of Houma in which the Federal Emergency Management Agency has delineated both the areas of special flood hazards and the risk premium zones applicable to Terrebonne Parish.
- *Flood protection system* means those physical structural works for which funds have been authorized, appropriated, and expended, and which have been constructed specifically to modify flooding in order to reduce the extent of the areas within a community subject to a "special flood hazard" and the extent of the depths of associated flooding. Such a system typically includes hurricane tidal barriers, dams, reservoirs, levees, or dikes. These specialized flood-modifying works are those constructed in conformance with sound engineering standards.
- *Floodplain* or *flood-prone area* means any land area susceptible to being inundated by water from any source (see definition of flooding).
- *Floodplain management* means the operation of an overall program of corrective and preventive measures for reducing flood damage including, but not limited to, emergency preparedness plans, flood control works and floodplain management regulations.
- *Floodplain management regulations* means zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as a floodplain ordinance, grading ordinance and erosion control ordinances) and other applications of police power. The term describes such state or local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.
- *Floodproofing* means any combination of structural and nonstructural additions, changes, or adjustments to structures which reduces or eliminates flood damage to real estate or improved real property, water and sanitary facilities, structures, and their contents.
- *Levee* means a manmade structure; usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding.
- *Levee system* means a flood protection system which consists of a levee or levees and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.
- *Repetitive loss area analysis* means a mitigation plan for areas that have experienced repetitive losses from flooding.

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- *Repetitive loss property* means any insurable building for which two or more claims of more than $1,000 were paid by the National Flood Insurance Program (NFIP) since 1978 within any rolling ten-year period.
- *Severe repetitive loss property* means any insurable building for which either four or more separate claim payments of more than $5,000 each (including building and contents payments) have been made since 1978; or two or more separate claim payments (building payments only) where the total of the payments made exceeds the current value of the property since 1978.
- *Special flood hazard area* (SFHA) means the land in the floodplain within Terrebonne Parish subject to a one-percent or greater chance of flooding in any given year. The area may be designated as zone A on the flood hazard boundary map. After detailed ratemaking has been completed in preparation for publication of the FIRM, zone A usually is refined into zones A, AE, AO, AH, A1-99, and the V zone refined into VO, VE, or V1-30.
- *Substantial damage* means damage of any origin sustained by a structure whereby the cost of restoring the structure to its "before-damaged-condition" would equal or exceed fifty (50) percent of the market value of the structure before the damage occurred, cumulative substantial damage (CSD) from multiple events over a ten-year period prior to the permit application date, or a "repetitive loss structure" flood damaged on two (2) occasions during a ten-year period in which the cost of repair for each flood event, on the average, equaled or exceeded twenty-five (25) percent of the market value of the building before the damage occurred.
- *Substantial improvement* means any reconstruction, rehabilitation, addition, cumulative substantial improvement (CSI) or other improvement of a structure, the cost of which equals or exceeds fifty (50) percent of the market value of the structure before "start of construction" of the improvement, and shall be a cumulative cost of all previous permitted work and proposed work to the structure in the ten (10) years prior to the permit application date to determine a cumulative substantial improvement. This includes structures which have incurred "substantial damage," regardless of the actual repair work performed. The term does not, however, include either:
    - Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary conditions; or
    - Any alteration of a "historic structure" provided that the alteration will not preclude the structure's continued designation as a "historic structure."

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Executive Summary

In November 2019, the Terrebonne Parish Consolidated Government Planning and Zoning Department elected to conduct a repetitive loss area analysis (RLAA) for the Bayou Black and Gibson areas, in coordination with the 2020 Hazard Mitigation Plan Update. A repetitive loss area analysis is designed to help identify the cause of the flooding impacting these properties, and make recommendations to reduce these impacts.

A repetitive loss area analysis is a multi-step process. The first step is to inform residents in the area about the analysis. The second step is to contact organizations for plans or studies that impact flooding in the area. The third step is to visit each building in the area and collect data, also known as conducting fieldwork. The fourth step is to review mitigation actions to determine what would be effective in reducing flood impacts in the area. The last step is to document the findings, which is what this report aims to do.

The Bayou Black and Gibson areas are located in the northwest part of the parish, in the Chacahoula Basin. Most of the homes in the area are situated along Bayou Black or Chacahoula Bayou, and can be impacted by both bayou and backwater flooding. By analyzing flood insurance claims data over time, the Parish identified three study areas to examine: Lower Bayou Black, Upper Bayou Black, and Deadwood.

This report includes a plan review of existing plans that could impact the area, an analysis of resident feedback, and an analysis of observed structures in each study area. Through these analyses, individual recommendations for better protecting each structure from flooding were identified.

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The table below details each recommendation, who is responsible for accomplishing the recommendation, and the possible funding available for each recommendation. Including this analysis in the 2020 Hazard Mitigation Plan Update will also provide an opportunity for mitigation funding for each recommendation.

Recommendation	Responsibility	Funding	Estimated Completion Date
Levee and pump station improvements, combined with increased stormwater management	Terrebonne Parish	Public Works Terrebonne Levee & Conservation District CPRA	March 2020 - ongoing
Elevation of low areas of the road along North Bayou Black	Terrebonne Parish	Public Works	TBD
Elevate utilities to at least base flood elevation	Residents	Residents	Ongoing
Obtain flood insurance	Residents	Residents	Ongoing
Demolish and reconstruct building to at or above the base flood elevation	Terrebonne Parish Residents	FEMA CDBG	Ongoing
Elevate building to at or above the BFE	Terrebonne Parish Residents	FEMA CDBG ICC	Ongoing
Acquire property	Terrebonne Parish	FEMA CDBG	Ongoing

The following pages detail the analysis, and how these recommendations emerged out of the data, resident feedback, and current conditions of the study areas.

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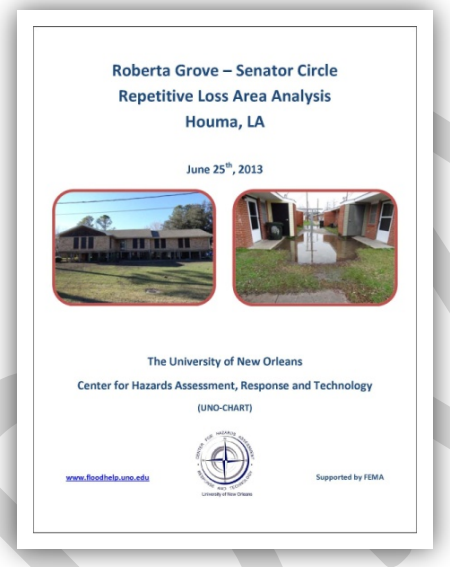
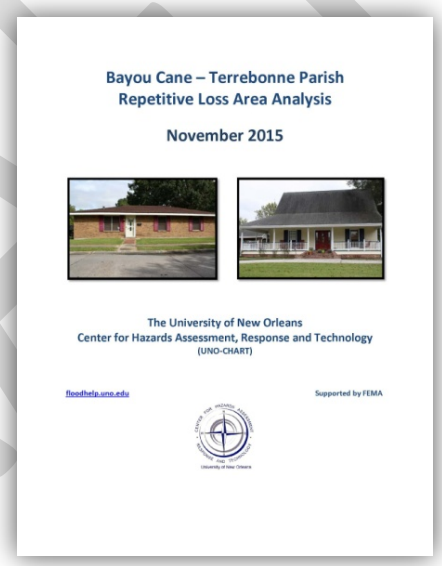
Introduction

In November 2019, the Terrebonne Parish Consolidated Government Planning and Zoning Department elected to conduct a repetitive loss area analysis (RLAA) for the Bayou Black and Gibson areas, in coordination with the 2020 Hazard Mitigation Plan Update. A repetitive loss area analysis is a mini flood mitigation plan for a small area that experiences repetitive flooding. The analysis makes recommendations on how to help reduce flood damages in the area.

This is the third repetitive loss area analysis conducted in the parish. The other two analyses were conducted in the Roberta Grove and Senator Circle area, and the Bayou Cane area. These analyses were completed by the University of New Orleans' Center for Hazards Assessment, Response and Technology in coordination with the Parish, and are located online at floodhelp.uno.edu.





Repetitive loss area analyses are a tool encouraged by the Federal Emergency Management Agency (FEMA). FEMA's goal is to help communities better mitigate, prepare for, respond and recover from hazards and disasters. FEMA also administers the National Flood Insurance Program (NFIP), which aims to reduce the impacts of flooding on communities by offering flood insurance to residents (fema.gov). In order to take advantage of the available flood insurance, communities must enforce certain floodplain regulations.

The Community Rating System (CRS) is another program available to NFIP communities. It is a voluntary incentive program that encourages community floodplain management activities that go above and beyond the minimum NFIP requirements. The goals of the CRS are to reduce

flood damage to property, support the flood insurance program, and promote comprehensive floodplain management practices. Currently, Terrebonne Parish is a class 7 community in the program, which means residents in the Special Flood Hazard Area (SFHA) receive a 15% discount on their flood insurance policies, and residents outside of the SFHA receive a 5% discount on their flood insurance policies. The SFHA is the land in the floodplain subject to a one-percent or greater chance of flooding in any given year.

Through the NFIP, FEMA has identified repetitive loss properties, which are properties that flood repeatedly. Specifically, a repetitive loss property is defined as any insurable building for which two or more claims of more than $1,000 were paid by the NFIP within any rolling ten-year period, since the NFIP started in 1978. There are also identified severe repetitive loss properties, which have flooded even more than repetitive loss properties. A severe repetitive loss property has had four or more separate claim payments of more than $5,000 each (including building and contents payments) since 1978; or two or more separate claim payments (building payments only) where the total of the payments exceeds the current value of the property since 1978.

There are three categories of communities in the Community Rating System. Category A is a community with no repetitive loss properties, Category B is a community with between 1 and 50 unmitigated repetitive loss properties, and Category C is A community with 50 or more unmitigated repetitive loss properties. Terrebonne Parish has more than 50 unmitigated repetitive loss properties, and so is a Category C community.

As a Category C community, to stay in the CRS Terrebonne Parish must prepare and adopt a repetitive loss area analysis (RLAA) for all repetitive loss areas. A repetitive loss area analysis is designed to help identify the cause of the flooding impacting these properties, and make recommendations to reduce these impacts.

The Problem

Terrebonne Parish is 85% water or wetlands, including fresh marsh, brackish marsh and salt marsh with lakes, bays, bayous, and canals. Over time, the bayous brought sediment to the parish, creating ridges of high land throughout the parish. Areas that are not on these ridges, however, experience frequent flooding, including stormwater, bayou, storm surge, or backwater flooding (HMPU 2014, p. 5).

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The Bayou Black and Gibson areas are located in the northwest part of the parish, in the Chacahoula Basin. Most of the homes in the area are situated along Bayou Black or Chacahoula Bayou, and can be impacted by both bayou and backwater flooding. While the area used to be dry marsh, that dry marsh has subsided, resulting in more areas of wet marsh. The area also receives high water draining from other areas of the state, including north of Baton Rouge, east of the Atchafalaya levees, and west of LA 1, which all drains through Terrebonne Parish. There is a drainage levee on the west side of the community, protecting the residents on the west side of the bayou from storm surge from the Intracoastal Canal. The east side of the bayou does not have that protection, however. The area's proximity to water and low elevation, ranging between 0 to 6 feet, exacerbates these flooding impacts. The threat of flooding effects many people in the area, and has the potential to damage many homes. The population of Gibson is 2,484, which includes 1,047 housing units. A total of 920 of these units are occupied, while 127 are vacant. There are 750 owner occupied properties housing 2,048 people, and 170 renter occupied properties housing 436 people (U.S. Census, 2010).

A total of 209 properties in Gibson have flood insurance. Since 1978, there have been 88 insurance claims totaling $811,960. There are 3 repetitive loss properties in the study area, and no severe repetitive loss properties. Recently, backwater flooding has filled backyards in the area at least twice a year with water up to 6 inches high, and the water stays for months at a time. This is primarily due to high water conditions in the Atchafalaya River. This backwater flooding can occur any time, not just during a heavy rainfall. However, when it does rain, the yards flood as well. The flooding kills the grass, making gardening impossible. The water often remains in drainage ditches for months. In addition to their yards, residents' floors are getting damaged from the standing water as well. Many residents flooded up to 9 times in 2019. Residents believe the Bayou Black floodgate causes some of this backwater flooding. This occurred during Tropical Storm Olga on October 26th, while the floodgate was closed, the newly constructed pumps were not yet operational, and the existing gravity drainage could not keep up with the inundation. Some flooding even makes roads in the area impassable, filling the roads with feet of water.

From December 2018 to July 2019, the Chacahoula Basin received over 40 inches of rain. In fact, there were 3 separate rain events that resulted in over 2 inches of rain per hour. Therefore, the Parish implemented temporary mitigation measures to help alleviate flooding in the area. The Parish installed an interim flood protection levee on Geraldine Road to protect the properties on the east side of the bayou.

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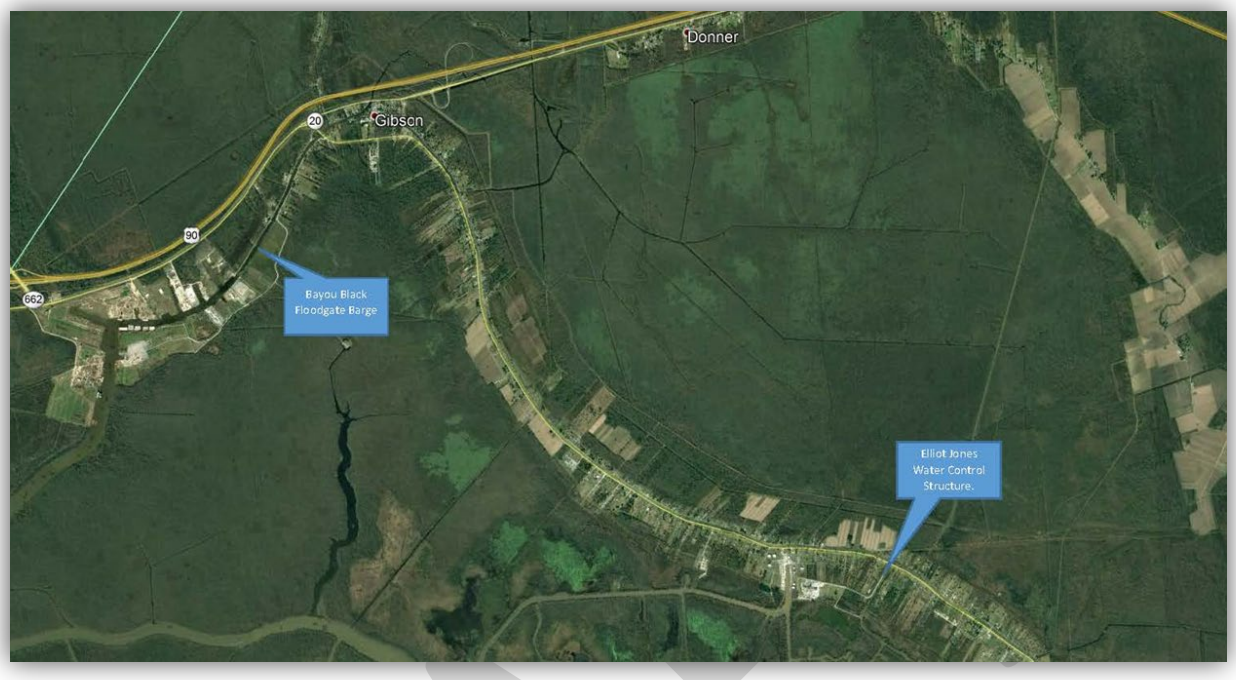
The Parish made use of tiger dams in this instance to protect the non-leveed areas of Gibson, and help prevent the backwater flooding from reaching residents. The photos below show the tiger dams. This measure is effective during times of shallow flooding.

A floodgate barge was placed in Bayou Black, and a water control structure was installed at the Elliot Jones floodgate location. The map below shows the location of these mitigation measures.



The Parish also installed emergency pumps at Old Spanish Trail in Gibson in May 2019, and emergency pumps at Elliot Jones in June 2019. These pumps helped to drain the water out of the area more quickly. The photos below depict the emergency mitigation measures.

Emergency Pumps at Old Spanish Trail May 2019

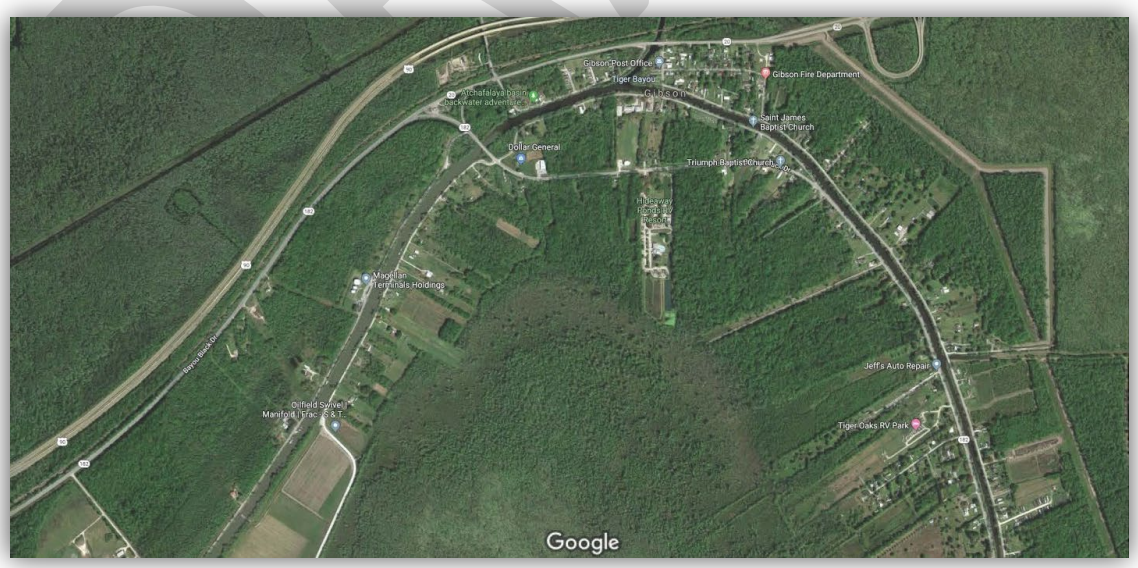
Emergency Pumps at Elliot Jones June

The Study Areas

By analyzing flood insurance claims data over time, three study areas were identified. The first study area, called Lower Bayou Black, includes Bayou Black and North Bayou Black Roads, from Antill Court to Shell E&P Court.

Study Area 1: Lower Bayou Black

The second study area, called Upper Bayou Black, includes Bayou Black and North Bayou Black Road from Oak Forest Drive to Carroll Street.



Study Area 2: North Bayou Black

The third study area, called Deadwood, encompasses all of Deadwood Road above Highway 90. This study area was also chosen due to a history of flood claims, and a resident echoed the need to study this area as well.

Study Area 3: Deadwood

The Department of Planning and Zoning chose these three study areas based on previous flooding, and aimed to identify all of the different causes of flooding in Gibson through the analysis of the three different areas.

Repetitive Loss Area Analysis Process

A repetitive loss area analysis is a multi-step process. The first step is to inform residents in the area about the analysis. The second step is to contact organizations for plans or studies that impact flooding in the area. The third step is to visit each building in the area and collect data, also known as conducting fieldwork. The fourth step is to review mitigation actions to determine what would be effective in reducing flood impacts in the area. The last step is to document the findings, which is what this report aims to do.

Step 1 - Tell residents about the analysis

On November 14th, 2019, the Parish held an informational meeting at Devon Keller Memorial Center from 6:00pm to 8:00pm. The Parish mailed a letter to residents in the area informing them of the meeting, advertised the meeting on the parish website and Facebook page, and

alerted the press about the upcoming meeting. In addition to the letter informing residents about the meeting, the Parish included a data sheet and self addressed stamped envelope. The data sheet asked residents to detail their experiences with flooding. Residents at the meeting were given data sheets as well. An image of the letter that was sent to residents is on the following page. The data sheet sent to the residents is located in Appendix A.

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TERREBONNE PARISH
CONSOLIDATED GOVERNMENT

P.O. BOX 2768 • HOUMA, LOUISIANA 70361
985-868-5050 • WWW.TPCG.ORG

Dear Resident,

The Terrebonne Parish Department of Planning and Zoning is conducting a repetitive loss area analysis for your neighborhood. The intent of the analysis is to understand the flooding issues in the area, and identify ways to help reduce future flooding. The best way to understand these issues is to speak to the residents in the area in addition to technical specialists.

Terrebonne Parish would like to invite you to an informational meeting on November 14, 2019 from 6pm to 8pm at the Devon Keller Memorial Center. At the meeting, we will provide information regarding the methods we will use to conduct the analysis with residents. We will encourage residents to provide feedback on their flood history, their opinions on the causes of the flooding, and their ideas on potential projects to reduce damages.

After the meeting, parish officials will conduct fieldwork. We will drive around a selected portion of the area and take photographs of the exterior of each structure, in order to note the building types and elevations in the neighborhood.

To help us further understand the history of flooding in your area, please fill out the attached data sheet and use the enclosed stamped envelope to send it back.

The Department of Planning and Zoning will hold another meeting presenting the finalized analysis at a later date, and will send a mailing notifying residents of that meeting as well.

Thank you for your participation in this study, and please call or email Tara Lambeth if you have any questions or concerns.

Sincerely,

Tara Lambeth
Assistant Director, Planning & Zoning
985-873-6567
tlambeth@tpcg.org

A total of 20 residents attended the meeting. At the meeting, Dr. Tara Lambeth, Assistant Director of Planning and Zoning, and Jennifer Gerbasi, Recovery Planner, provided information regarding the methods used to conduct the analysis. They also encouraged residents to provide feedback on their flood history, their opinions on the causes of the flooding, and their ideas on potential projects to reduce damages. Oneil Marlborough, Senior Vice President in Coastal Design for GIS Engineering, provided information on the pump station projects planned for the area. There are three pump stations and a stormwater management retention area planned for Gibson, which will be discussed in the following section.

After a short presentation, the residents shared their experiences with flooding. Five residents reported flooding in their yards, and one resident reported the water was making her floors soft. Another resident reported flooding in her yard 9 different times in 2019. The residents stated that the water stays for months, and that their yards have only really been dry for 2 months this year. This could be caused by backwater flooding, which occurs when downstream conditions cause upstream flooding. In addition to the backwater flooding, their yards flood every time it rains as well. The water in their yards can reach up to a foot in depth, and remains in their drainage ditches for months as well. Residents believed the cause of flooding to be backwater flooding, from drainage or pumping issues. A resident reported driving through 2 feet of water on the way to Savanne Road. Many residents pointed out that they have flooded without a recent rainfall event. The residents at the meeting further pointed out that the marsh used to be dry, and they used to be able to walk all the way to Bull Run Road. Now, however, the marsh stays wet year-round. Some residents felt that the flooding was the Parish's fault, and that they should be compensated by the Parish for losses/damages. They stated that the work in the rest of the parish implemented to help with drainage is backing up into Gibson.

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The residents had some ideas on how to reduce flood impacts in the area. They stated that flood insurance is prohibitively expensive. However, they did suggest pumping the waterway next to Savanne Road down in advance of a rain event, preparing pumps before a rain event is imminent, and installing levees. Mr. Malbrough stated that a barge system was implemented in the past to protect the area from backwater flooding in 1973, 2011 and 2019. This included a sunken barge in Bayou Chene, and closing the Bayou Black, Eliot Jones, Hanson, and Minors Canal gates. The Parish has tried to put up levees between the waterways, but it is a regulatory issue due to the amount of wetlands in the area. The Army Corps of Engineers has numerous regulations regarding the protection of wetlands. The Parish held a meeting to discuss the plans to improve drainage in Gibson in July 2017, but all of the plans have not been implemented as of yet. The following section details the plans and projects in progress for the area.

Step 2 - Contact organizations for plans

The next step in the analysis was to gather relevant plans from the Parish, State, and Army Corps of Engineers. The Hazard Mitigation Plan Update steering committee provided plans, and other parish departments shared their plans as well. The plans collected included:

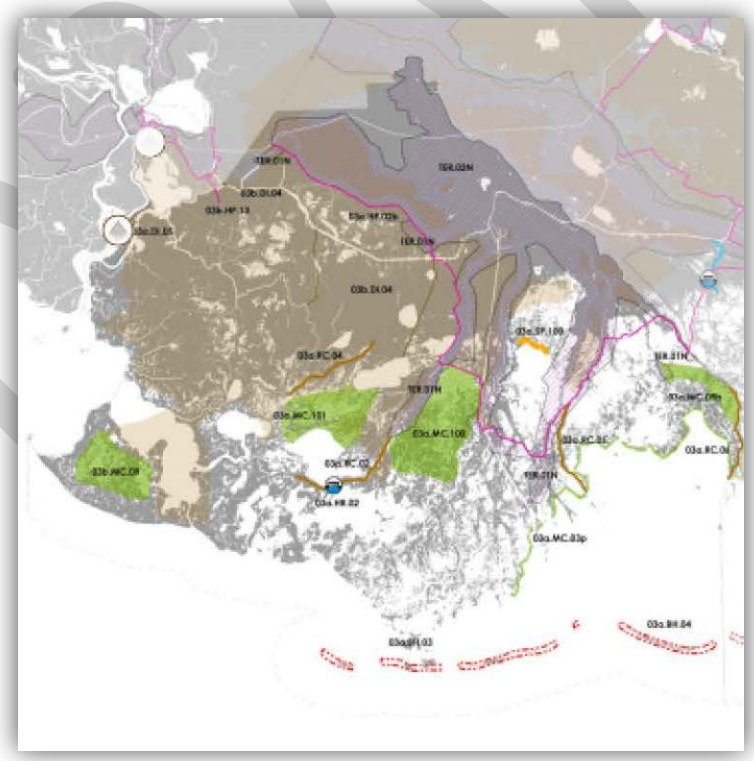
- Army Corps of Engineers studies
- Coastal Protection and Restoration Authority (CPRA) Coastal Master Plan
- Terrebonne Parish Adaptation Plan
- Louisiana Watershed Initiative
- Terrebonne Parish Comprehensive Master Plan Vision 2030
- Terrebonne Parish Hazard Mitigation Plan Update 2014
- Terrebonne Levee and Conservation District (TLCD) Morganza to the Gulf Hurricane Protection Project
- Terrebonne Parish Department of Public Works projects
- Terrebonne Parish Floodplain Management programs (Code of Ordinances, Flood maps)
- Historic rain and flood events

Army Corps of Engineers Studies

The Army Corps of Engineers (USACE) has spearheaded a series of studies of the parish over the years. Beginning in 1986, the USACE began a comprehensive study and Environmental Impact Study for a Hurricane Protection System in the parish. In 1992, the USACE began a Reconnaissance Study. Then in 1995, the USACE started a Feasibility Study, in conjunction with the state, which would become the

Morganza to the Gulf levee system. The report was completed in 2002 and submitted to Congress. In 2004, Congress authorized reach J-1 of the Morganza to the Gulf system. Congress authorized the full system in 2007, but the USACE determined the project had to be studied again due to the high cost. In 2009, the USACE began another study, a Post-Authorization Change Study, to reexamine the project. In 2013, the Senate approved the Army Corp's Water Resources Act bill, which included the reauthorization of the Morganza to the Gulf system. In 2013, the USACE submitted the final draft of the Post-Authorization Change Report for review. The report included 98 miles of 9-15 foot earthen levees running from Highway 90 in Gibson to Highway 1 in Lockport, bordering the Gulf of Mexico to the south of the parish. The plan also included 22 floodgates, 23 water control structures, a lock on the Houma Navigation Canal, 9 road gates, and 4 pump stations. In 2014, Congress authorized the Morganza to the Gulf Hurricane Protection Project. The USACE has contributed $72 million towards feasibility studies for the system. As of 2019, $48 million in Community Development Block Grant (CDBG) funding has been allocated to portions of the levee system, and the Parish has made use of state and local funds to construct much of the project as well (Morganza.org).

Coastal Protection and Restoration Authority (CPRA) Coastal Master Plan



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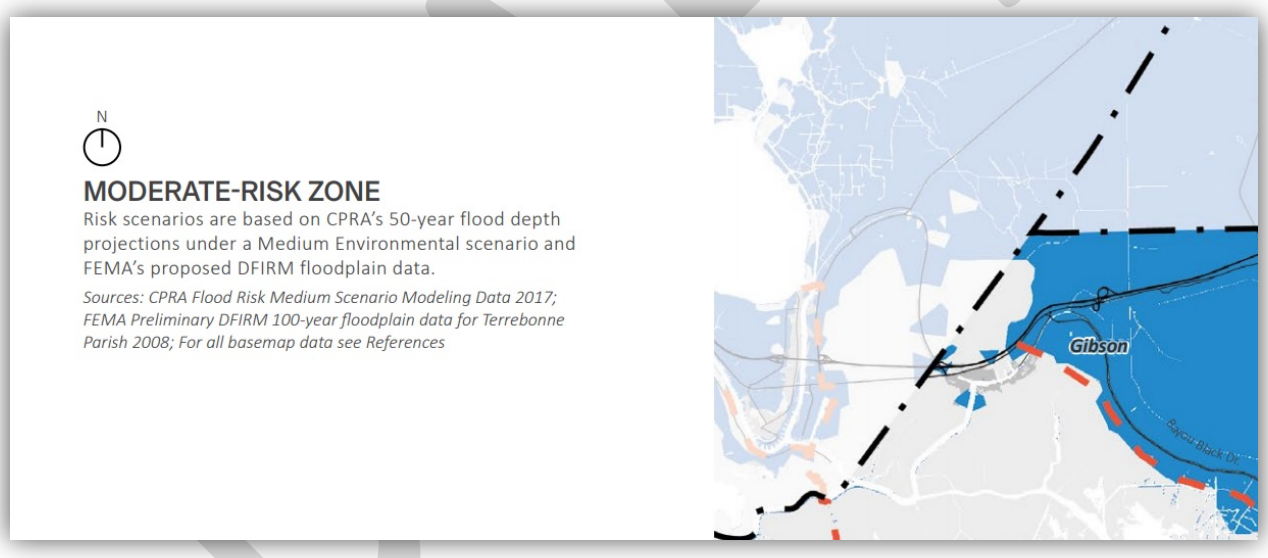
The Coastal Protection and Restoration Authority (CPRA) provides comprehensive coastal protection and restoration for the state of Louisiana. In 2008, CPRA contributed $130 million to the Morganza to the Gulf Hurricane Protection Project, spurring construction on reach H-3 of the system in 2009. In addition to providing funding for Morganza, CPRA also has a project in the engineering and design phase that will increase the flow of the Atchafalaya to Terrebonne Parish. This will be accomplished using a river diversion to restore freshwater in the Terrebonne Basin, and build wetlands in the parish. CPRA states that the project will result in a 13,000 acre reduction in wetland loss in the parish (coastal.la.gov). CPRA is currently drafting the 2023 Coastal Master Plan, and asking for proposals for mitigation projects. The proposals are due February 14, 2020, and can include both structural and nonstructural projects. Structural projects include levees and walls, while nonstructural projects include elevating or relocating homes.

Terrebonne Parish Adaptation Plan (April 2019, LA SAFE)

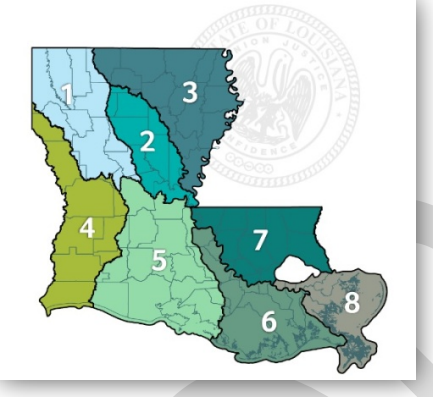


In 2017 and 2018, the State of Louisiana's Office of Community Development, in partnership with the Foundation for Louisiana, led a six parish planning effort called Louisiana's Strategic Adaptations for Future Environments (LA SAFE). The goal of the planning process was to work with residents to identify ways to adapt to environmental change in each parish. Terrebonne Parish was a part of this planning process, and a meeting was held in Gray to solicit resident feedback and ideas for the planning effort. The residents at that meeting pointed out that stormwater management was the biggest issue for the area, which experiences backwater flooding. They stated that water retention areas and rain gardens are needed to help improve

stormwater management. They also underlined the importance of including green infrastructure in the development of new subdivisions, and the need for a regional stormwater management strategy between parishes (lasafe.la.gov).

The completed plan identified Gibson as a moderate risk area, which includes projected storm surge depths of 0 to 6 feet. The plan explains that a moderate risk zone includes areas that can continue to develop. The plan also notes that Gibson has higher elevations than the southern parts of the parish, the soil is less susceptible to subsidence, and there is a lot of available open space, as well as an industrial area, in the town. The 50 year vision described in the plan includes a completed levee and the use of open space for stormwater management and water storage.

Louisiana Watershed Initiative



The State of Louisiana Office of Community Development is also leading a Watershed Initiative for the entire state. The initiative aims to model the watersheds throughout the state, and use the modeling to create regional watershed plans and programs for more sustainable statewide floodplain management. Terrebonne Parish is included in Region 6. The state is currently accepting applications in order to begin comprehensive regional floodplain management programs for each region. The initiative submitted an action plan for public comment in November 2019. The Parish intends to submit the Elliot Jones pump Station as part of the pre-application process in December 2019.

Comprehensive Master Plan Vision 2030

The Terrebonne Parish Comprehensive Plan Update declares, “by 2030, Terrebonne Parish will be a safe, secure and resilient coastal community that is well-protected by a completed hurricane protection network; a community that provides expanded and diverse job opportunities in technologically-oriented industries supported by adequate infrastructure and an effective transportation system; a community that embraces and promotes its unique culture through

efficient use of its land resources; a community that protects and sustains its physical environment through the effective enforcement of sensible regulations; and a community filled with opportunity such that its youth will choose to remain in the parish to continue to build and enjoy the 'Good Earth,' preserving it for future generations" (Terrebonne Parish Comprehensive Plan update, 2012, p. 1-2). The goals of the plan include a sense of place and connectedness, a safe and efficient transportation system, efficient and attractively varied land uses, a sustainable community through avoidance of hazards, nuisances, and environmental degradation, high-quality infill projects and redevelopment throughout the parish, and effective public services and facilities.

The plan notes that Terrebonne Parish is dependent upon a natural environment that is vulnerable to hazards and disasters, and therefore should mitigate for these hazards by implementing sustainable development, such as elevating homes in vulnerable areas. The plan further points out that any development in the parish is potentially at risk and that nonstructural risk reduction measures need to be implemented in addition to the large-scale structural levee and diversion projects already underway. The plan highlights a number of strategies to help improve the resilience of Terrebonne Parish, including integrating restoration projects, land use, and regional infrastructure; improving development using risk management, levee and storm protection, building code enforcement, and wetlands restoration; focusing new developments in low-risk areas; educating residents in high-risk areas; managing watersheds; and purchasing high-risk environmentally sensitive land through conservation easements. The plan also identifies updates to improve drainage in the parish, including completing the Morganza to the Gulf system; completing a new drainage study to take future conditions into account; acquiring land for stormwater retention; controlling new sewer lines; removing all septic tanks and helping residents connect to sewer systems; improving the Public Safety Complex that helps control flooding; and improving roads and thoroughfares.

Terrebonne Parish Hazard Mitigation Plan Update 2014

The Terrebonne Parish Hazard Mitigation Plan was updated in 2014 and adopted in 2015. The plan states that 90% of the parish is in the Special Flood Hazard Area, and 5.6% of the parish is urban, while 94.6% of the parish is forest, wetlands, or water. The plan calls flooding the "most prevalent and most frequent hazard in the parish" (Terrebonne Parish

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Hazard Mitigation Plan Update, 2014, p. 35). The plan identifies 4 categories of flooding in the parish – riverine, backwater, stormwater, and storm surge. The top hazards in the parish relevant to this analysis are levee failure (number 1), flooding (number 2), hurricanes/tropical storms (number 3), and subsidence (number 6).

The plan has a number of goals to help mitigate the hazards in the parish. The first goal is to identify and pursue preventative measures that will reduce future damages from hazards. These preventative measures include building and infrastructure updates, hazards warning and response, community preparedness outreach, subsidence reduction and coastal restoration, land use controls, and historic preservation. The second goal is to enhance public awareness and understanding of disaster preparedness, through educating the public using outreach materials and community meetings. The third goal, extremely relevant to this analysis, is to reduce repetitive flood losses in the parish using drainage improvements, new flood control structures, elevation or acquisition of repetitive loss properties, elevation of sensitive equipment, flood proofing public buildings, and increasing levee and hurricane protection. The fourth goal is to facilitate sound development in the parish to reduce or eliminate potential impacts of hazards. This will be accomplished using land use and building codes to restrict development that increases hazards, floodplain management, preservation and conservation efforts, participation in the NFIP, resident outreach, and flood risk reduction.

The purpose of the Hazard Mitigation Plan is to identify projects for potential funding that will help to achieve these goals and objectives. The plan predicts that the Gibson area will decrease by up to 87.1% over the next twenty years due to flooding impacts and the availability of less vulnerable land in other areas of the parish. However, the plan does identify projects to help reduce the vulnerability of the Gibson area. One project, called Gibson to Houma Hurricane Protection, aims to provide levee protection between Gibson and Houma. Another project, which is labeled as a priority project, aims to add 8.4 miles of 6.5 foot levees in Big Bayou Black and Gibson. On the nonstructural side, the plan lists elevation, reconstruction, floodproofing, or acquisition of repetitive loss properties throughout the parish.

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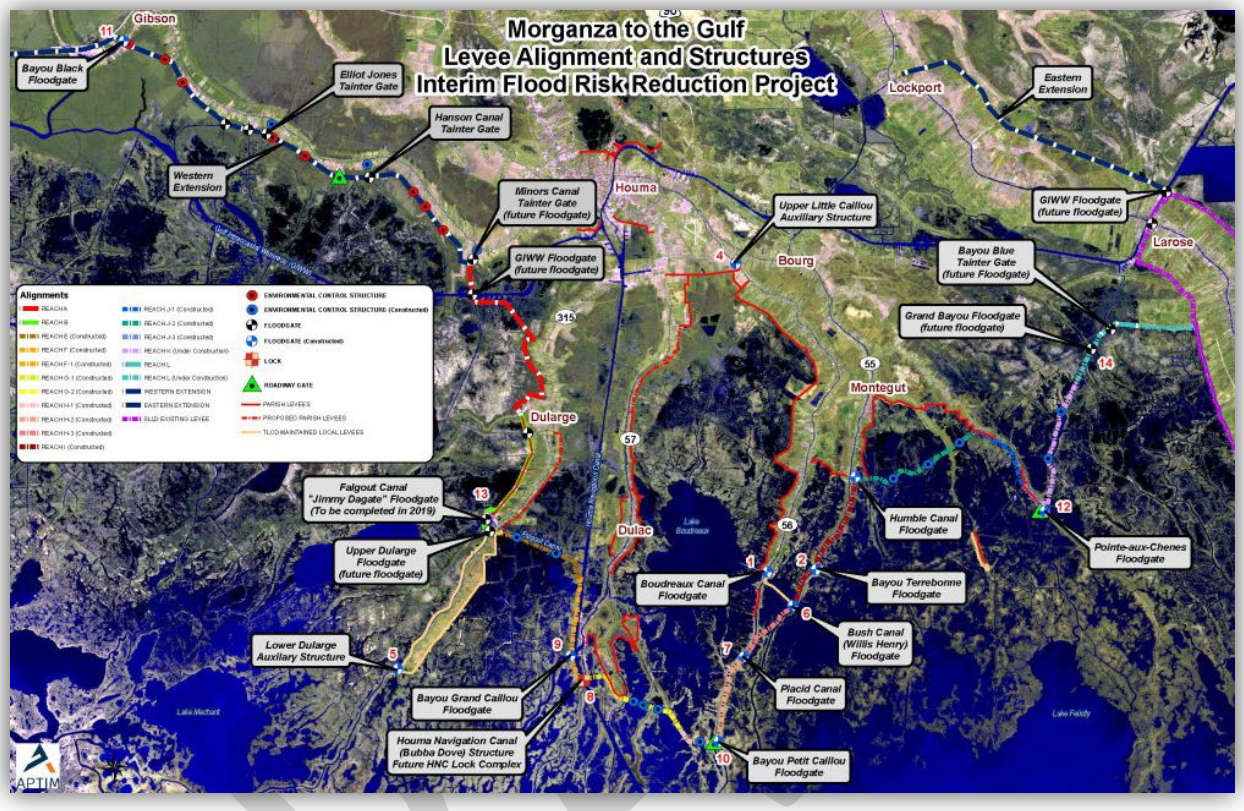
Terrebonne Levee and Conservation District (TLCD) Morganza to the Gulf Hurricane Protection Project



In 1986, the South Terrebonne Tidewater Management and Conservation District was created to handle flooding in the southern portion of Terrebonne Parish, south of the Gulf Intracoastal Waterway. Later, the levee district name was changed to the Terrebonne Levee and Conservation District (TLCD), and it manages and maintains the flood protection systems throughout Terrebonne Parish, including the Morganza to the Gulf Hurricane Protection Project. While the USACE is the federal sponsor of the project, the Louisiana Department of Transportation and Development and the TLCD are the local sponsors. TLCD also manages operations and maintenance of the system.

The purpose of the system is to protect property and wetlands from storm surge exacerbated by saltwater intrusion, subsidence, and lack of sediment. When the system is complete, it will be made up of 72 miles of earthen levee, 12 floodgate structures, and a lock structure in the Houma Navigational Canal. The system will “provide flood protection, drainage, and environmental benefits, while allowing navigational passage” in the parish (tlcd.org). From 2009 to now, TLCD constructed Reaches H-2, H-1, G-1, G-2, J-2, J-3, E, and F; the Bush Canal

Floodgate; the Placid Canal Floodgate; the Bayou Grand Caillou Floodgate; and the Houma Navigational Canal Floodgate using local and state funding. In December 2012, Terrebonne Parish voters approved a half-cent sales tax which will be used to provide local funding towards completing the system. Currently, 62 of 98 miles of the levee system are complete, including 30 floodgates and 60 sluice gates.

The Morganza system includes levees and pump stations in the Gibson area. There are three pump stations planned for the area – the Hanson Canal Pump Station, the Bayou Black Pump Station, and the Elliot Jones pump station. With one pump station, it will take 27 days to pump the water down, with 2 pump stations, it will take 13.5 days, and it will take less than that with a third. The goal of the pump stations is to get the water out in conjunction with the rainfall. All 3 pump stations will mitigate water levels in Gibson, Bayou Black, Schriever, Deadwood, Sugarwood, Manchester, the Lakes, and Savanne Road. The pumps will include floodgates, and every time the pumps are turned on, the gates will be closed to protect the residents. The Parish has tide gauges now to monitor water levels, and a new gauge will be installed on Highway 20 to report when the water is rising above the 1 foot level. The Parish will set the gauge at Highway 24 to 1 foot so the water will be lower in Gibson. The USACE does not allow the Parish to pump lower than a 0.9 to 1 foot elevation in the bayou, because pumping lower than that will drain the marsh. The waterways will need to be dredged once all 3 pumps are installed to help with the flow of the water. After the pump stations are online, the Geraldine Road levee will only have to be 2 to 3 feet tall to protect nearby properties. The images on the following pages illustrate the pump stations and other planned flood protection projects for the Chacahoula Basin that will benefit the Bayou Black and Gibson areas.

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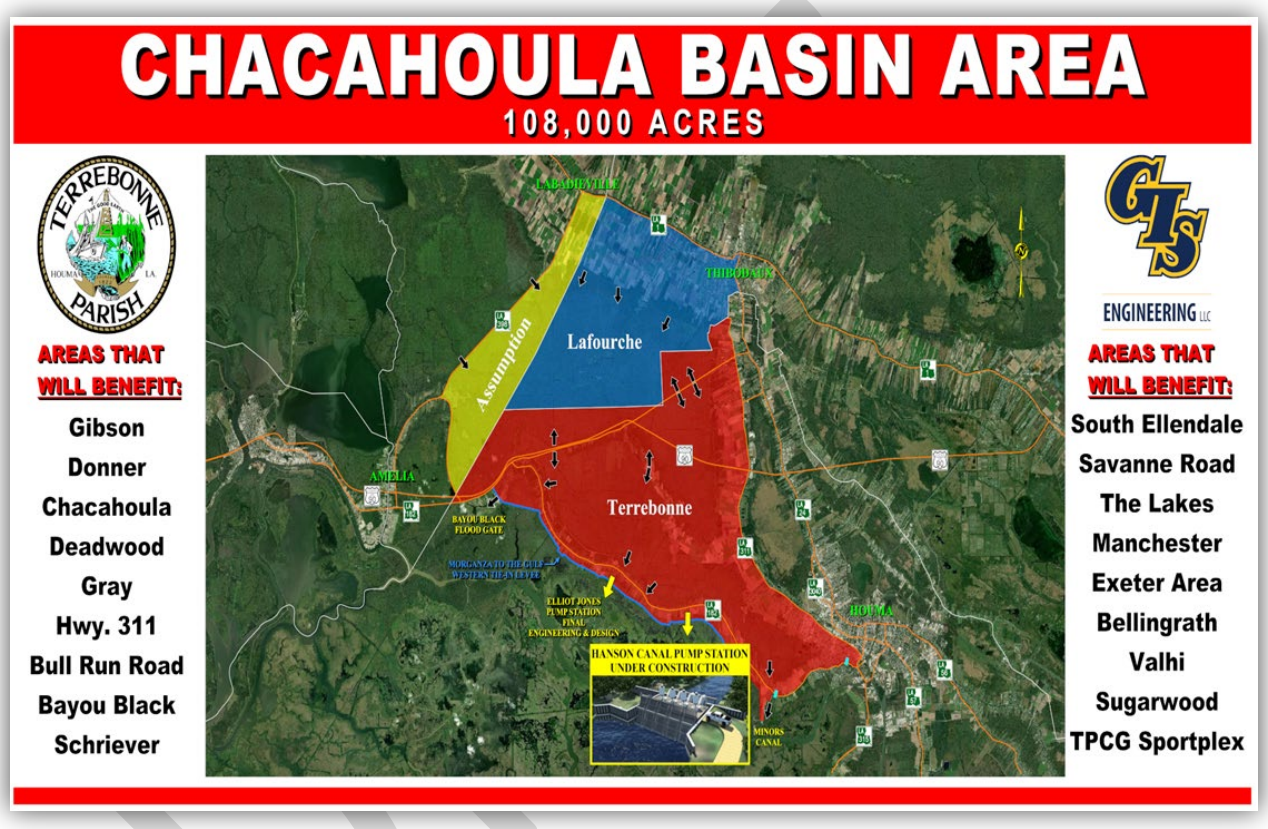
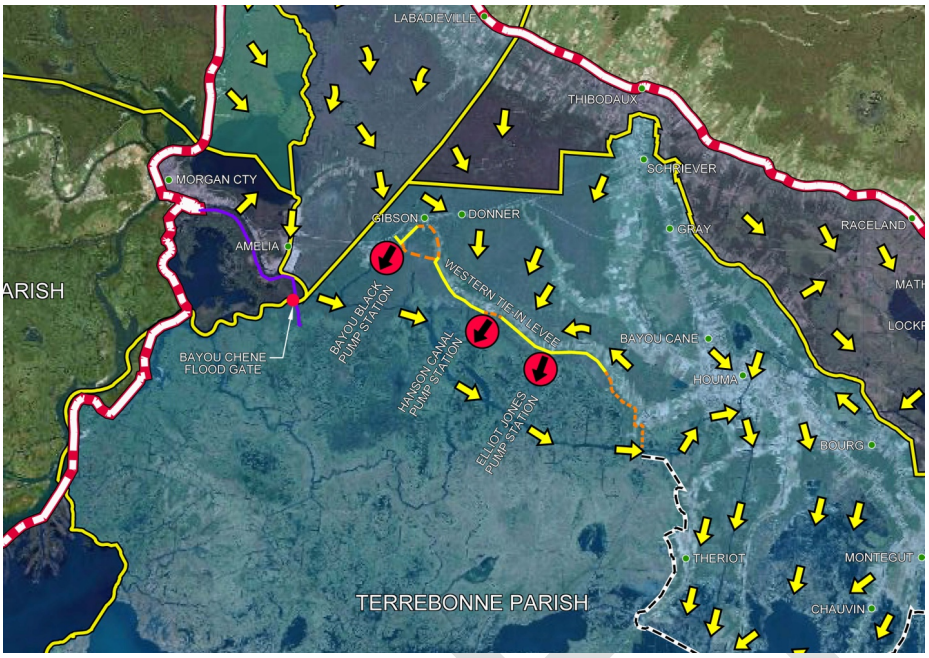
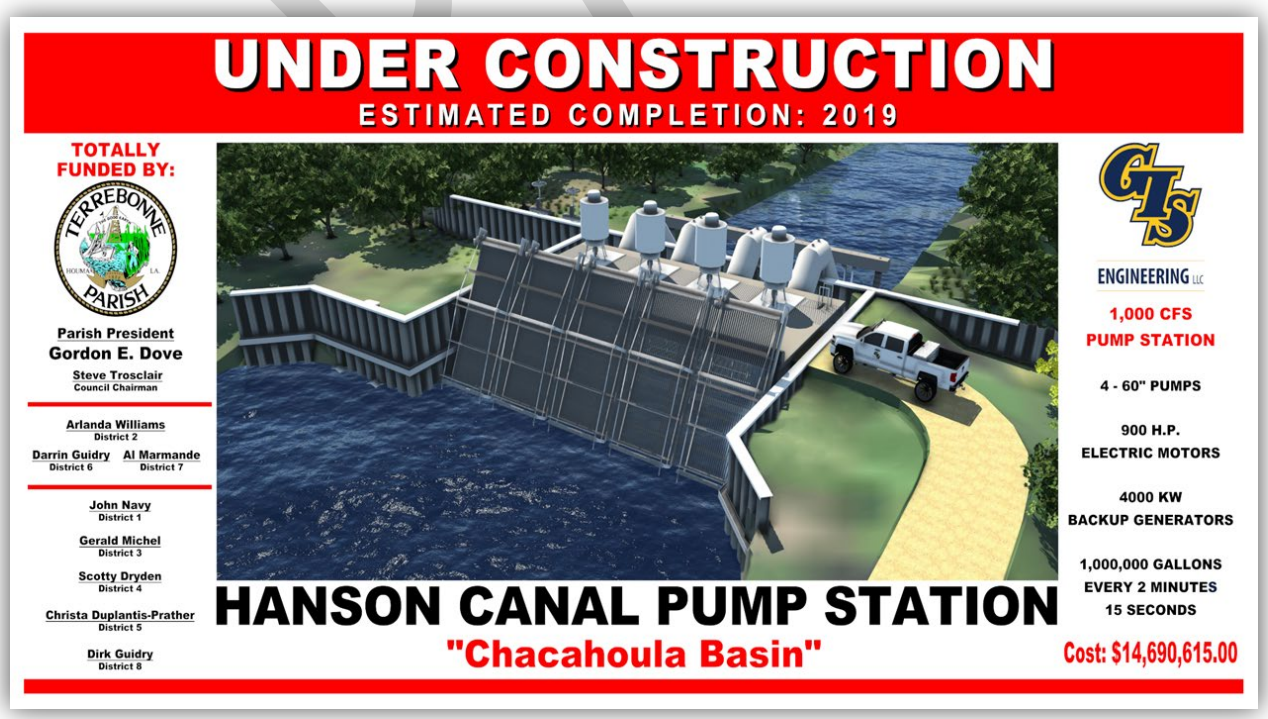
The image below depicts the planned projects for the Chacahoula Basin. The projects will benefit Gibson, Donnor, Chacahoula, Deadwood, Gray, Highway 311, Bull Run Road, Bayou Black, Schriever, South Ellendale, Savanne Road, the Lakes, Manchester, Exeter, Bellingrath, Valhi, Sugarwood, the TPCG Sportplex, and all portions of western Terrebonne Parish southwest of Highway 311 and west of Minors Canal (north of the existing levee).



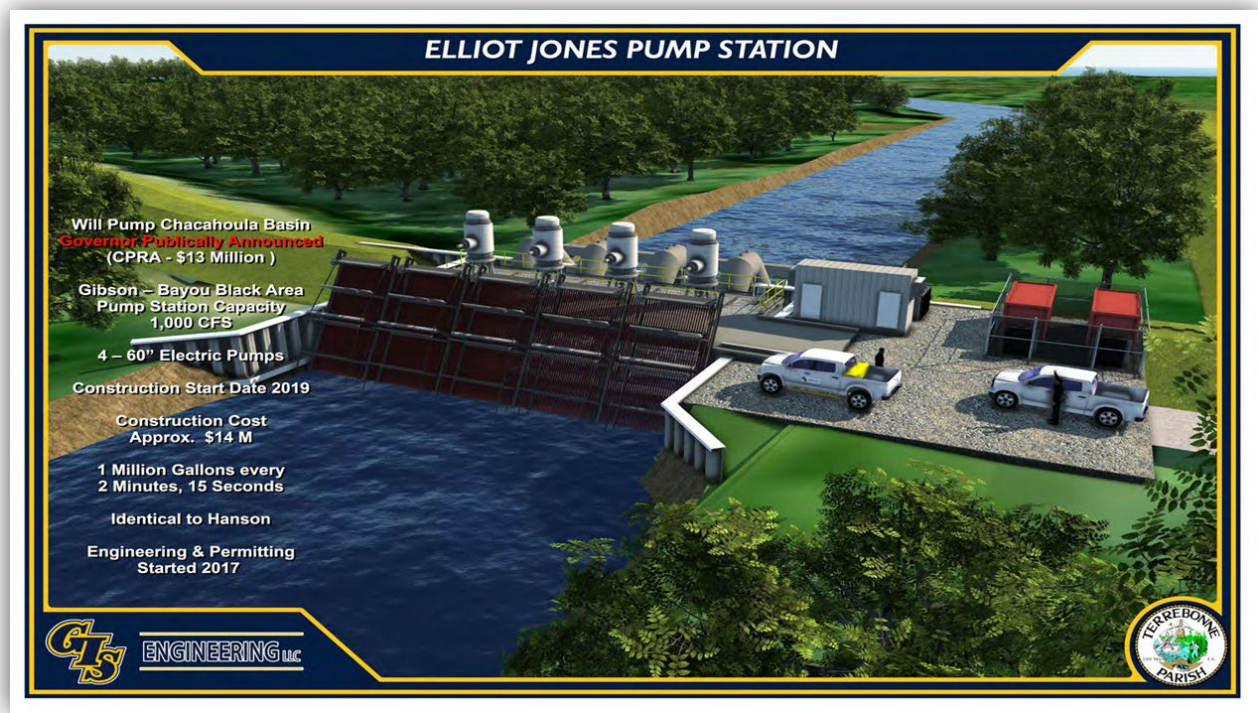
The image on the following page depicts the flow of water through the watershed, and how the pump stations will help direct the flow of water to the lower parts of the parish. These pump stations include the Hanson Canal Pump Station, the Eliot Jones Pump Station, and the Bayou Black Pump Station. A floodgate and stormwater management area will further help to manage the water in the area.



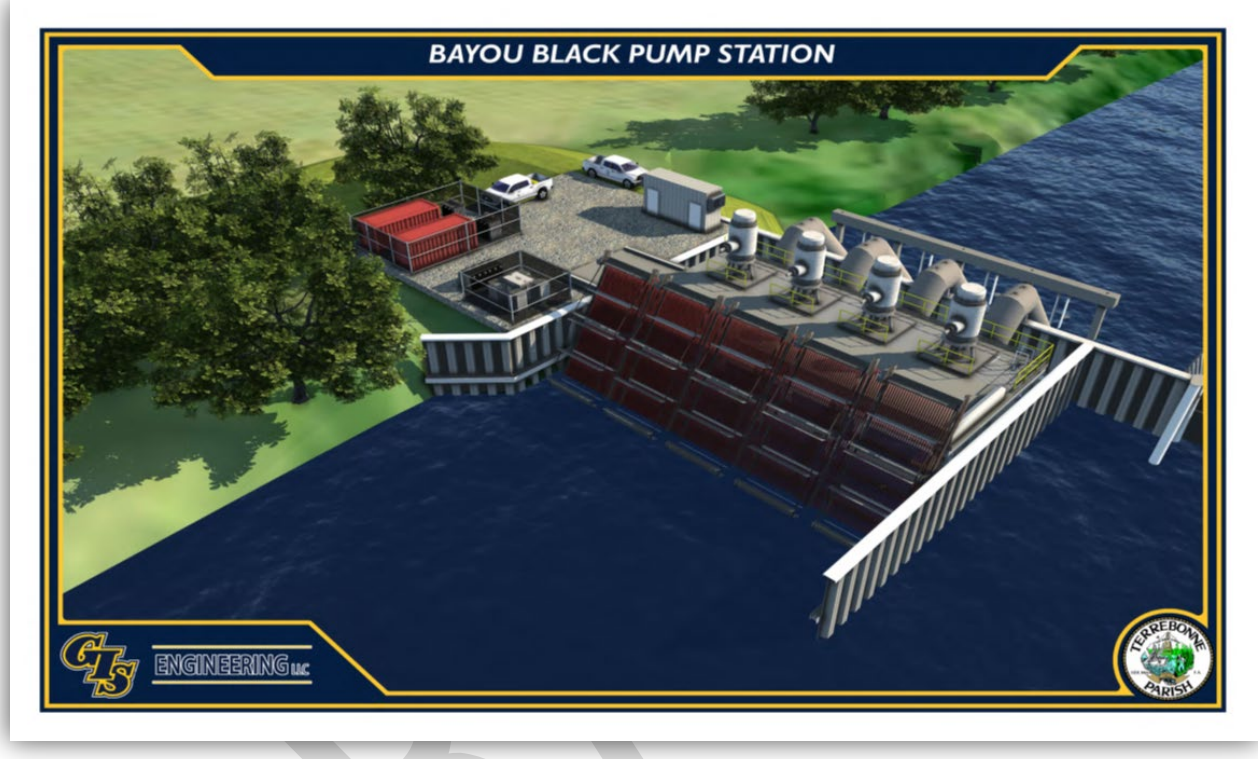
The Hanson Canal Pump Station is currently under construction, and will be operable in December or early 2020. It includes 4 60” pumps, 900 horsepower electric motors, and 4,000 kilowatt backup generators. The pump station costs $14.6 million, and will pump 1,000 cubic feet of water per second. This adds up to 1,000,000 gallons every 2 minutes and 15 seconds.



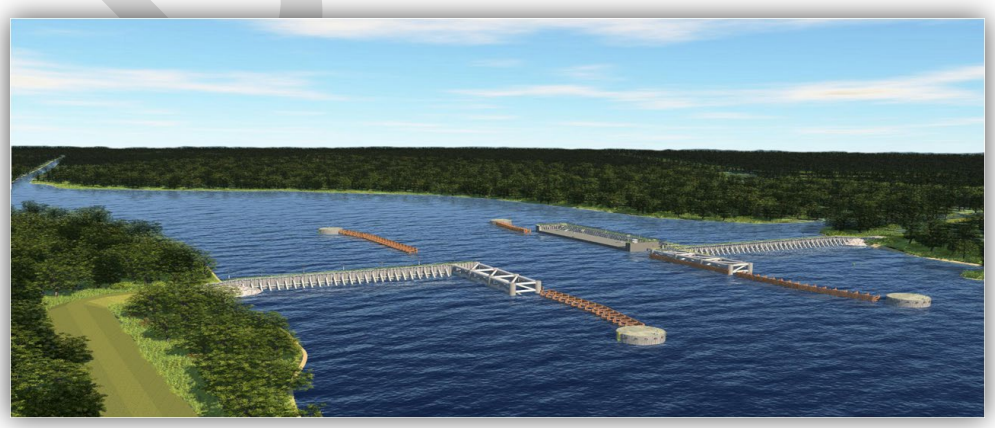
The Elliot Jones Pump Station is funded and engineering will be completed around March of 2020. The state will provide $13 million, and the Parish will contribute $2.5 million towards the project. Construction will start on the pump station when the permit from the Army Corps of Engineers is received. The construction of the pump station is expected to be completed in the fall of 2021.



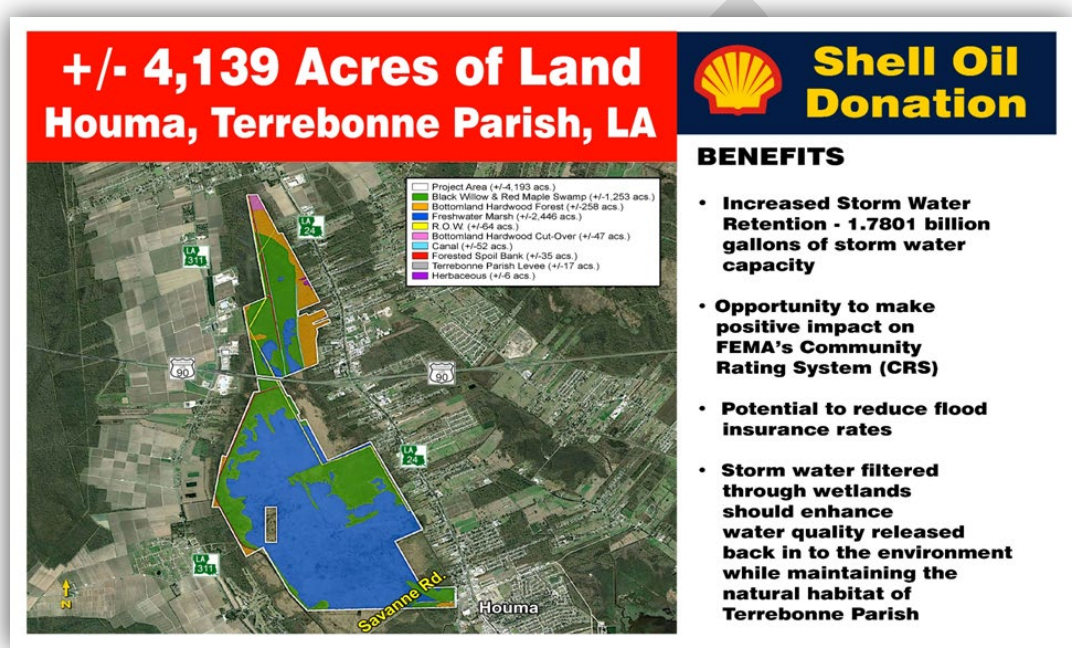
The Bayou Black Pump Station will be installed where the floodgate already exists. It is an upgrade, and not an entirely new installation. The Bayou Black Pump Station is in engineering, but not funded for construction at this time.



The West Bayou Chene Flood Control Structure is in the design and engineering phase. The floodgate will help to combat the backwater flooding from the Atchafalaya River via the Intracoastal Waterway.



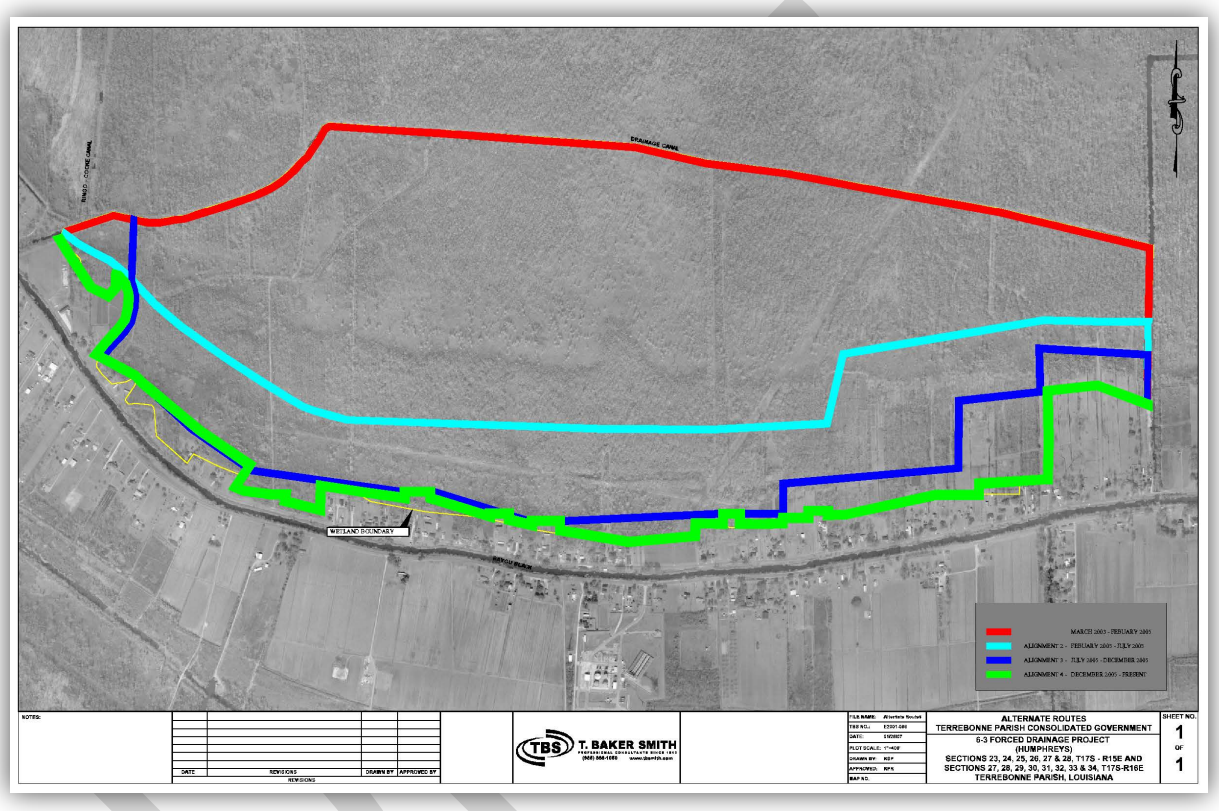
The Shell Oil Company just donated 4,139 acres of land to the Parish to help with stormwater management and retention. The land can hold 1.7801 billion gallons of stormwater, and filter the stormwater through wetlands to help improve water quality. The Parish will pump excess water from Bayou Cane into the Shell retention area, and then allow the water to drain through the Ouiski Bayou drainage system. This will drain the Shell retention area as the system catches up with the rainfall event and facilitate the stormwater management and drainage process.



TPCG Public Works

The Parish designed a forced drainage system for the area as well, called the Humphrey's Forced Drainage System. In 1997 or 1998, the Parish applied for state funding to create the Forced Drainage System from Hanson Canal north to the Ringo Cocke Canal. The plan was approved, and the Parish was awarded $1.4 million to construct a system to protect 130 to 140 parcels of land, or about 150 structures. The red line in the below image represents the first proposed drainage levee. This first levee was found to be cost prohibitive in 2003 because it included mitigating 1,000 acres of wetlands. The Parish designed a second alignment in 2005, which is the teal line in the image below. This was still cost prohibitive, and the Parish also received pushback from community members who did not want a levee running through their property. The Parish then designed a third alignment later in 2005, which is the blue line in the image below. This alignment met the budget constraints, but the Parish still received pushback from residents, and was not granted land rights to build it. At the end of the year in 2005, the

Parish designed a 4th alignment, the green line in the image below. The project required 60% to 75% of community support to be implemented, but it only received 13% of community support. The project was shelved, and the backwater flooding in 2019 underlined the need for flood control on that side of the bayou. The Parish still has money available, but the costs to build the project have gone up. The Parish also hopes to lift the road 6” in the low sections along North Bayou Black to help reduce flooding from the bayou.



Floodplain Management (Code of Ordinances, Flood Insurance Rate Maps (FIRMs), Advisory Base Flood Elevations (ABFEs))

Chapter 9 of the Terrebonne Parish Code of Ordinances includes the methods the Parish uses towards comprehensive floodplain management. The chapter finds that:

(a) The flood hazard areas of the parish are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, and extraordinary public expenditures for flood protection and relief, all of which adversely affect the public health, safety, and general welfare.

(b) These flood losses are created by the cumulative effect of obstructions in floodplains which cause an increase in flood heights and velocities, and by the occupancy of flood hazard areas by uses vulnerable to floods and hazardous to other lands because they are inadequately elevated, floodproofed, or otherwise protected from flood damage.

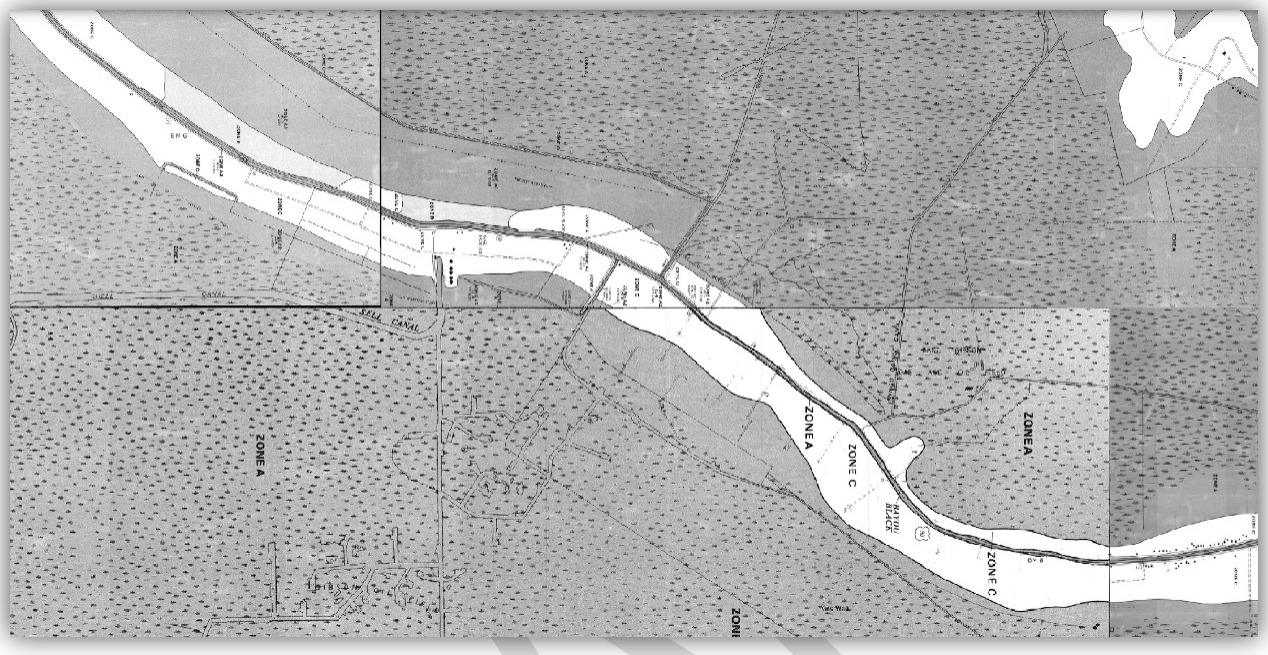
The goals of the chapter are to promote health, safety and welfare, and minimize flood loss, by protecting human life and health, minimizing expenditure of public money for costly flood control projects, minimizing the need for rescue and relief efforts associated with flooding, minimizing prolonged business interruptions, minimizing damage to public facilities and utilities, helping maintain a stable tax base by providing for the sound use and development of flood-prone areas, and ensuring that potential buyers are notified that property is in a flood area.

The ordinance accomplishes these goals through restricting uses that are dangerous to health, safety, or property in times of flood, requiring that uses vulnerable to floods be protected against flood damage at the time of initial construction, controlling the alteration of natural floodplains, stream channels, and natural protective barriers, controlling filling, grading, dredging, and other development that may increase flood damage, and preventing or regulating the construction of flood barriers which may increase flood hazards to other lands.

The ordinance requires that structures be adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, constructed by methods and practices that minimize flood damage, constructed with materials resistant to flood damage, constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment located to prevent water from entering or accumulating, designed with water supply systems that minimize or eliminate infiltration of floodwaters, designed with sanitary sewage systems that minimize or eliminate infiltration of floodwaters and discharge of systems into floodwaters, and designed with waste disposal systems located to avoid impairment or contamination. The ordinance also prohibits new sanitary landfills and hazardous waste sites. The ordinance applies to new construction and substantial improvement in the Special Flood Hazard Area (SFHA). The Parish makes use of cumulative substantial damage and improvement, so that structures that are 50% or greater improved or damaged over time must come into compliance as well.

The following images depict the Flood Insurance Rate Maps (FIRMs) for Study Area 1. In the effective FIRM, which the Parish uses for flood insurance purposes, the land on the ridges of the bayou is not in the Special Flood Hazard Area (SFHA), but the land further back from the bayou

is in the SFHA. As a reminder, the SFHA is the land in the floodplain within Terrebonne Parish subject to a one-percent or greater chance of flooding in any given year.



In the Advisory Base Flood Elevation (ABFE) map, which the Parish uses to determine the height of new buildings built in the floodplain, Study Area 1 is not in the SFHA next to the bayou until Shell E& P Road, when the flood zone changes to the SFHA, and the base flood elevation becomes 4 or 5 feet. The base flood elevation is the predicted height of a flood with a one-percent chance of being equaled or exceeded in any given year.

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In the preliminary DFIRMs, which the Parish has not adopted, the entire study area is in the SFHA, with base flood elevations ranging from 3 to 6 feet on the east side of the bayou, and 7 to 8 feet on the west side of the bayou.

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Similarly, in Study Area 2, the effective FIRM shows the areas next to the bayou outside of the SFHA, with areas further out from the bayou in the SFHA.

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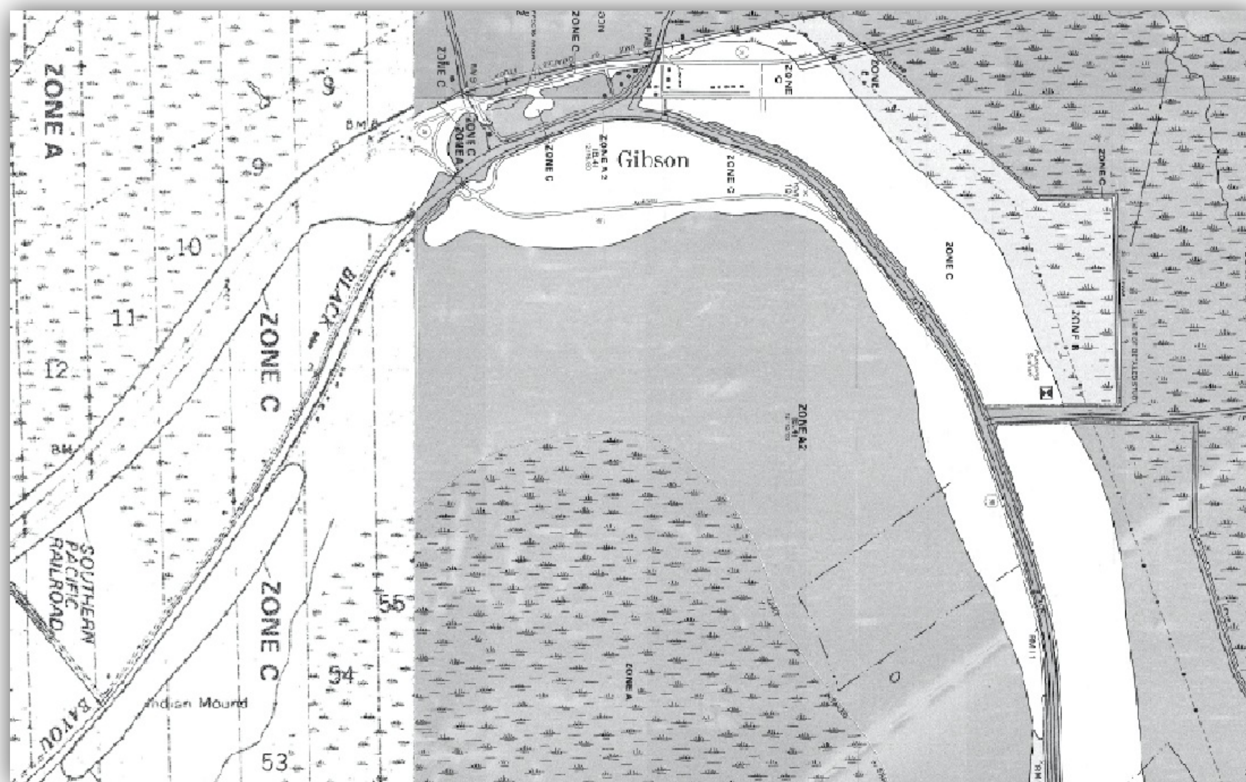

The ABFE map labels both the east and west side of the bayou with base flood elevations ranging from 5 to 6 feet.

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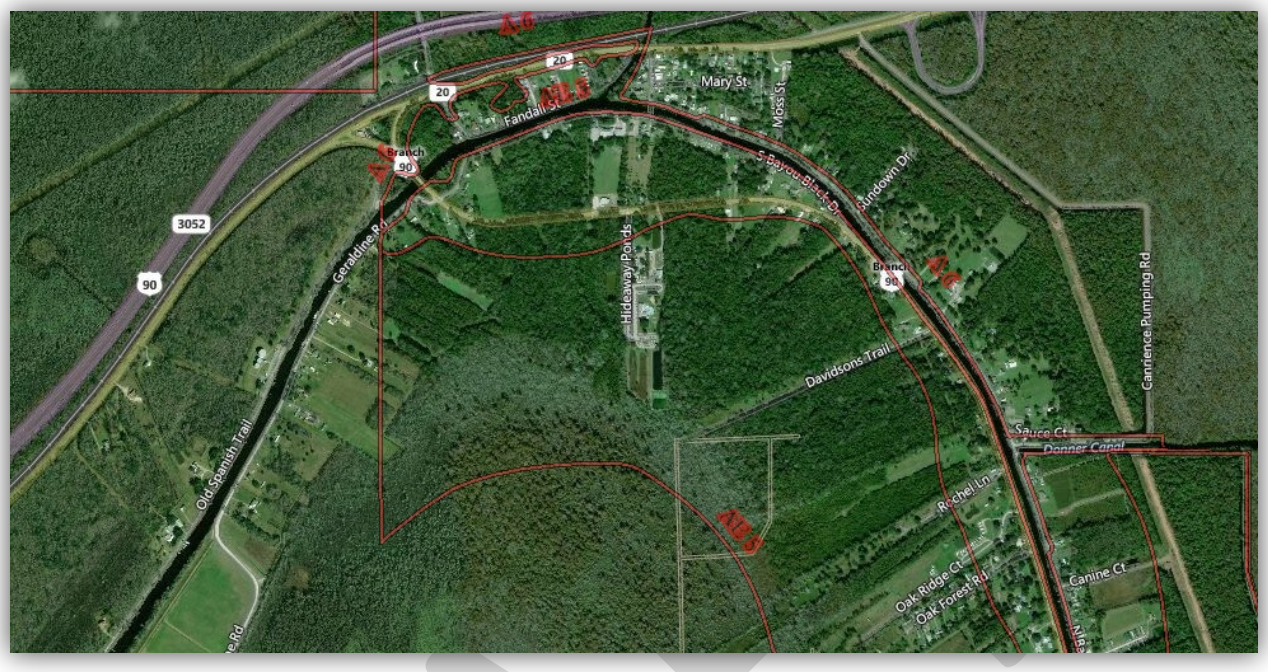

The preliminary DFIRMs also identify base flood elevations ranging from 5 to 6 feet in Study Area 2.

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In Study Area 3, the effective FIRM places the entire study area in Zone A, which is in the SFHA.

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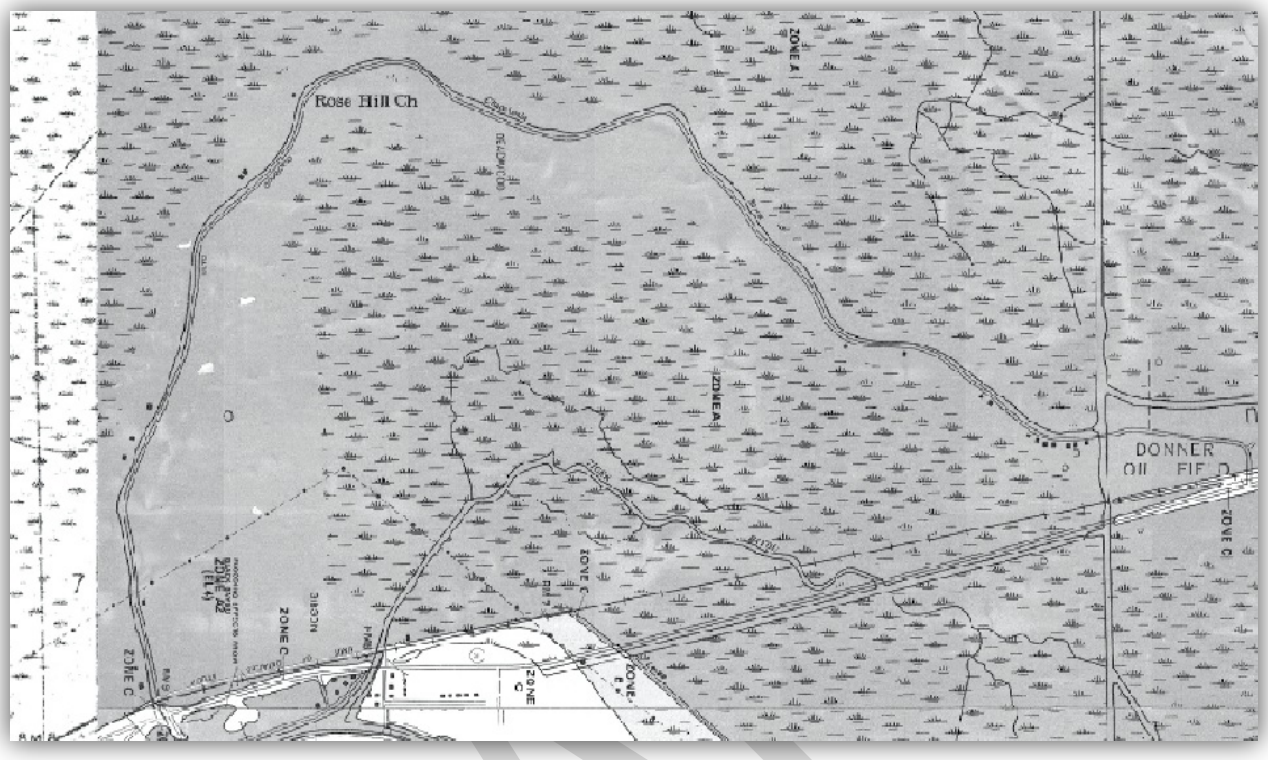

The ABFE map keeps the area in Zone A, and identifies the base flood elevation as 6 feet.

The preliminary DFIRM map reduces this base flood elevation to 5 feet.

When the Parish received the DFIRMs, FEMA was asked to provide updated flood maps that take the levee system into account. A preliminary map produced in 2019 by this process shows a base flood elevation ranging from 6 to 7 feet in Study Area 1, from 4 to 8 feet in Study Area 2, and 4 feet in Study Area 3, although some areas of Study Area 3 have been removed from the SFHA in that map.

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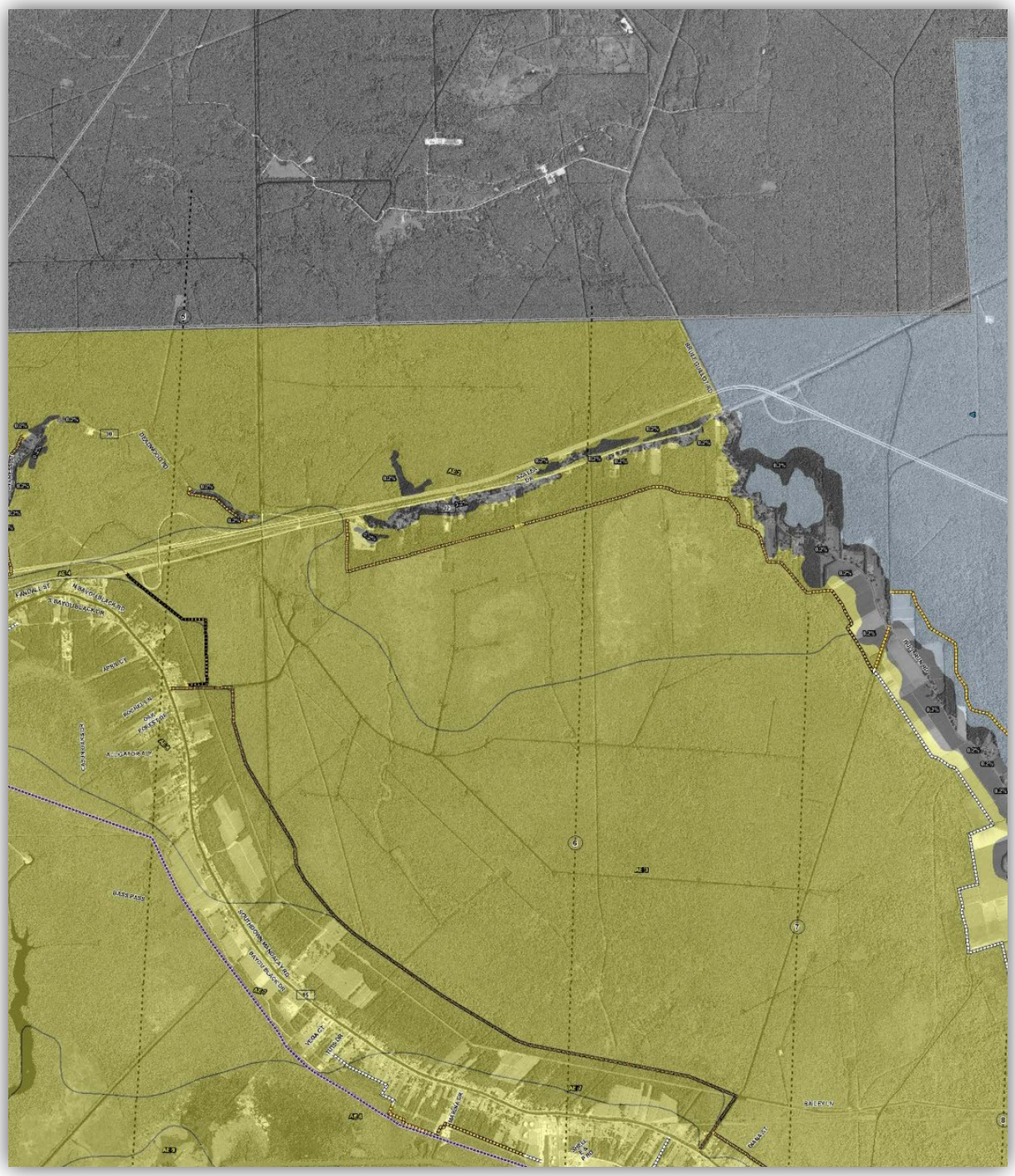

While the effective FIRM identifies land outside of the SFHA near the bayou, the more recent flood maps show a base flood elevation ranging from 3 to 8 feet in all 3 study areas except for some parts of Study Area 3.

Rain and flood events

The chart above details hurricanes, tropical storms, and severe storms and flooding that have impacted the Parish from 1980 to 2019. The chart also shows flood claims in the Gibson/Bayou Black areas. The hurricanes, tropical storms and severe storms in the table are storms that received emergency declarations by FEMA. The Gibson-specific events are events that residents of the area reported flooding, but were not declared emergencies.

Date	Month/Day	Event	Inches	Claims	Claim Amount
2019	October 26th	TS Olga	7.36		
2019	August 19th	Rain Event	5.96		
2019	April 5th	Rain Event	3.90		
2019	February 27th	Rain Event	2.29		
2019	February 5th	Rain Event	2.40		
2018	December 28th	Rain Event	5.99		
2018	November 1st	Rain Event	2.40		
2018	September 2nd	Rain Event	2.17		
2018	July 7th	Gibson-Specific Event	1.80	1	$0
2017	August 28th	Hurricane Harvey	2.20-3.09		
2017	August 3rd	Rain Event	3.75		
2017	June 25th	TS Cindy	2.29		
2017	June 21st	Rain Event	2.24		
2017	June 6th	Rain Event	3.05		
2017	May 22nd	Rain Event	2.67		
2017	May 4th	Rain Event	4.12		
2017	January 7th	Rain Event	2.27		
2016	September 17th	Rain Event	2.58		
2016	August 12th	Severe Storms & Flooding	10.50		
2016	June 19th	Rain Event	2.95		
2016	June 5th	Rain Event	2.95		
2016	May 29th	Rain Event	2.68		
2016	May 1st	Rain Event	2.26		
2016	April 14th	Rain Event	2.89		
2016	April 2nd	Severe Storms & Flooding	4.33		
2016	March 19th	Severe Storms & Flooding	3.42		

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2016	March 10th	Severe Storms & Flooding	1.69		
2015	November 18th	Rain Event	2.13		
2015	November 8th	Rain Event	2.44		
2015	November 1st	Rain Event	2.33		
2015	October 25th	Rain Event	6.30		
2015	September 30th	Rain Event	2.41		
2015	April 27th	Severe Storms & Flooding	2.63		
2015	April 14th	Rain Event	3.96		
2015	October 26th	Rain Event	5.95		
2015	January 23rd	Rain Event	3.47		
2014	December 24th	Rain Event	2.70		
2014	July 19th	Rain Event	2.41		
2013	October 12th	Rain Event	2.39		
2013	May 11th	Rain Event	6.44		
2013	April 29th	Rain Event	2.91		
2013	April 14th	Rain Event	2.57		
2013	April 3rd	Rain Event	2.41		
2013	February 7th	Rain Event	2.03		
2013	January 11th	Severe Storms & Flooding	2.38		
2013	January 9th	Severe Storms & Flooding	5.17		
2012	August 28th	Gibson-Specific Event	T	1	$605
2012	August 20th	Rain Event	2.79		
2012	August 19th	Rain Event	2.47		
2012	July 21st	Rain Event	3.88		
2012	June 10th	Rain Event	3.22		
2012	April 5th	Rain Event	2.18		
2012	April 3rd	Rain Event	2.64		
2012	March 23rd	Rain Event	4.53		
2012	March 22nd	Rain Event	3.22		
2012	February 19th	Rain Event	2.38		
2011	September 3rd	Tropical Storm Lee	2.22-6.43		
2011	July 29th	Gibson-Specific Event	0.06	1	$1,000
2011	July 19th	Rain Event	2.22		
2011	July 17th	Rain Event	2.48		
2011	July 16th	Rain Event	2.29		
2011	May 19th/25th	Gibson-Specific Event	0	2	$1,000

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2010	June 29th	Rain Event	2.79		
2010	June 3rd	Rain Event	2.05		
2010	February 5th	Rain Event	2.05		
2009	December 18th	Rain Event	2.18		
2009	December 15th	Rain Event	7.66		
2009	December 13th	Rain Event	2.59		
2009	December 8th	Rain Event	2.16		
2009	December 2nd	Rain Event	2.71		
2009	October 2nd	Rain Event	3.17		
2009	May 17th	Rain Event	2.14		
2009	May 5th	Rain Event	2.07		
2009	March 27th	Rain Event	9.33		
2008	September 5th	Hurricane Gustav	3.59	16	$286,226
2008	August 25th	Rain Event	2.64		
2008	August 18th	Rain Event	2.02		
2008	August 9th	Rain Event	2.74		
2008	July 10th	Rain Event	2.39		
2008	May 23rd	Rain Event	3.60		
2007	February 12th	Severe Storms & Flooding	Pre-gauge		
2006	October 16th	Severe Storms & Flooding	Pre-gauge		
2005	September	Hurricane Rita	Pre-gauge	4	$13,936
2005	August	Hurricane Katrina	Pre-gauge	6	$68,221
2005	July	TS Cindy	Pre-gauge		
2004	September 13th	Hurricane Ivan	Pre-gauge		
2004	May 12th	Severe Storms & Flooding	Pre-gauge		
2002	October 1st	Hurricane Lili	Pre-gauge	2	$0
2002	September 21st	TS Isidore	Pre-gauge		
2001	June 5th	TS Allison	Pre-gauge	5	$21,346
1999	April 3rd	Severe Storms & Flooding	Pre-gauge		
1998	September 9th	TS Frances/Hurricane Georges	Pre-gauge	2	$12,979
1997	April 13th	Gibson-Specific Event	Pre-gauge	2	$1,997
1995	May 8th	Severe Storms & Flooding	Pre-gauge	3	$2,579
1993	April 30th	Gibson-Specific Event	Pre-gauge	1	$1,899
1993	January 20th	Severe Storms & Flooding	Pre-gauge		
1992	August 25th	Hurricane Andrew	Pre-gauge	4	$15,661
1991	May 9th	Gibson-Specific Event	Pre-gauge	1	$28,540

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1991	April 27th	Severe Storms & Flooding	Pre-gauge	25	$252,879
1991	April 12th	Severe Storm	Pre-gauge		
1991	January 29th	Gibson-Specific Event	Pre-gauge	6	$75,582
1990	December 2nd	Gibson-Specific Event	Pre-gauge	2	$1,431
1989	November 7th	Severe Storms & Flooding	Pre-gauge		
1989	June 25th	Severe Storms & Flooding	Pre-gauge		
1989	June 7th	Severe Storms & Flooding	Pre-gauge		
1989	May 4th	Severe Storms & Flooding	Pre-gauge		
1988	March 29th	Gibson-Specific Event	Pre-gauge	1	$1,924
1987	November 15th	Tornadoes & Flooding	Pre-gauge		
1985	October 26th	Hurricane Juan	Pre-gauge		
1984	October 31st	Severe Storms & Flooding	Pre-gauge		
1984	May 15th	Severe Storms & Tornadoes	Pre-gauge		
1983	April 20th	Severe Storms & Flooding	Pre-gauge		
1983	January 11th	Severe Storms & Flooding	Pre-gauge		
1980	May 21st	Severe Storms & Flooding	Pre-gauge		
1980	April 9th	Severe Storms & Flooding	Pre-gauge	5	$24,155
		Total Gibson-Specific		18	$113,978
		Total Hurricane/TS		39	$418,369
		Total Severe Storm		33	$279,613
		Grand Total		88	$811,960

T= trace amounts

The events with the most claims and the highest claim amounts were hurricanes and tropical storms that were declared emergencies for the entire parish. The study areas had 39 claims during those events with a total claim amount of $418,369. There were also severe storms in the parish that impacted the study areas – a total of 33 claims with a total claim amount of $279,613. Additionally, 18 separate events caused flooding in the study areas with total flood claims amounting to $113,978. These could have been backwater or rainwater flooding events that did not impact the entire parish, but still caused some flooding for the study areas. During the most recent declared emergency, Hurricane Barry, study area residents only reported wind damage. However, residents reported standing water on Edward Porche Court during the backwater flooding event of 2019.

Step 3 - Data collection and fieldwork

The Parish collected information from data sheets mailed to each resident in the three study areas. The residents were asked about their flood history, their thoughts on the cause of flooding, and their ideas and experiences with mitigating flooding. The results from each study area are detailed below.

Study Area 1 Data Sheets

Study Area 1 residents returned 12 data sheets describing their experience with flooding in the area. The first question asked residents how long they have lived in their home. Answers range from 13 years to life.

Number of Years	Number of Residents
0-15	3
16-30	4
31-45	2
46 and over	2

Residents were also asked about their foundation type. A total of 5 residents live in slab on grade homes, 3 residents are elevated on piles or piers, 2 residents have crawlspaces, and 1 resident listed their foundation as other.

Foundation Type	Number of Residents
Slab	5
Piles or Piers	3
Crawlspace	2
Other	1

When asked if they have flood insurance, 7 residents said yes, while 5 residents said no.

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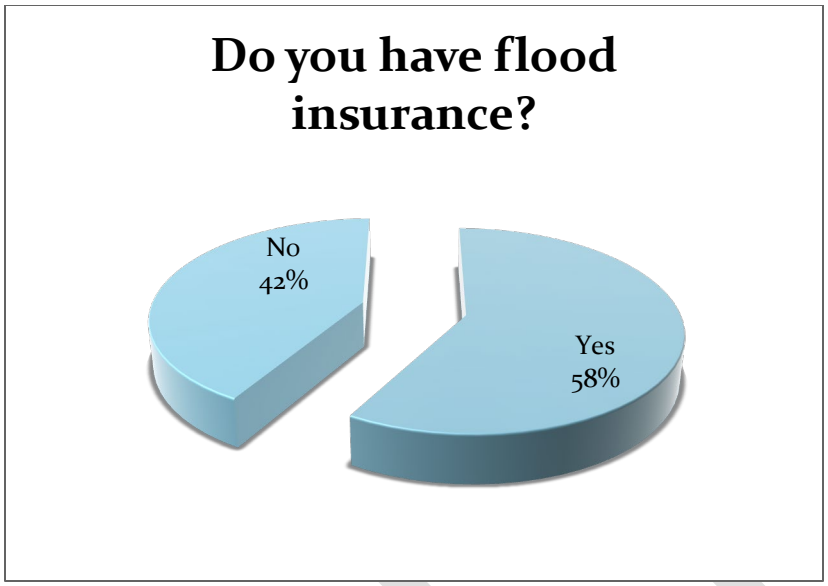


Residents were asked how many times they have experienced flooding. A total of 2 residents stated they had never flooded, 6 stated they have flooded between 1 and 5 times, and 2 residents said they flooded more than 5 times. One resident said they experience flooding every time the water is high, one resident said they had flooded once when the bayou was higher than their property, and one resident stated the flooding occurs in the back of their property by the drainage ditch. Residents were also asked if they made a claim when they flooded, and only one respondent said yes.

Flood Frequency	Number of Residents
0	2
1-5 times	6
Over 5 times	2

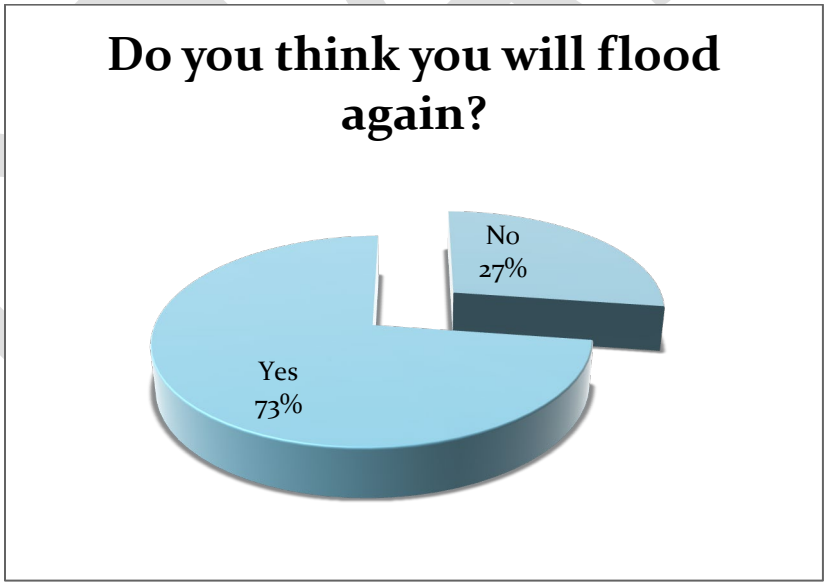
Residents were further asked how deep the water got when it flooded. All of the residents stated they had only experienced floodwaters in their yards, one resident experienced 4" of water, one saw 6-8", one measured 18" of water, two experienced up to 3 feet of water, and one saw 4 feet of water. Two residents stated that the water stayed for weeks and months. Three of the residents reported this flooding occurred in 2019, while one resident experienced flooding in 2008.

When asked what caused the flooding, 3 residents stated it was from the low elevation, 3 said it was the nearby waterway, 3 thought it was from a clogged drainage ditch, 2 pointed to drainage from nearby properties, and 1 responded that it was drainage from the street.

Residents also noted that the flooding occurred without rain, one thought a levee was breached, and one flooded from tidal surge from Ike. Residents were allowed to choose multiple answers to this question.

Cause of Flooding	Number of Residents
Low elevation	3
Nearby waterway	3
Clogged/undersized drainage ditch	3
Drainage from nearby properties	2
Drainage from street	1

The data sheet also asked residents if they thought they would flood again. A total of 73% of the respondents said yes, while only 27% said no. The residents who said yes believe that the flooding will be caused by land subsidence, unusual rain events, backwater flooding from new pumps, and high water in the bayou. The residents who said no pointed out that they now have a levee.



Residents were asked if they have done anything to protect their property from flooding. A total of 4 residents said they used sandbags, 2 residents said the question was not applicable to them, 1 resident said they created a pathway in their yard using wooden pallets, 1 resident moved the contents of their home to a higher level, and 1 resident mentioned that only their

yard was flooded so protection was not necessary. A follow up question asked residents when they installed the protection method. Only 4 residents answered this question: one said they used the measure in 2005, while another said they used it in 2019. One resident said they use sandbags every time the water rises, and one resident said this question was not applicable to them. Residents were asked if the flood protection methods worked. A total of 3 residents said yes, 2 said no, and 1 said the question was not applicable to them. When asked why it did not work, 1 resident said "cause I still flooded;" while another said "I don't know." Only 2 residents answered this question.

Flood Protection Method	Number of Residents
Sandbags	4
N/A	2
Created pathway with wooden pallets	1
Moved contents to a higher level	1
Only yard was flooded	1

The data sheet asked residents if they had considered any mitigation methods to protect their home. A total of 2 residents said their home was already elevated, 1 resident said they would want to elevate, 1 said they would like to add fill, and 1 said they would like to sell their home but they have not listed it for sale yet. Only 1 resident has participated in a mitigation funding program, and that was the HMGP program. Finally, residents were asked if they have had any difficulty with a mitigation method. Only 2 residents answered this question, and they both said no.

Mitigation Method	Number of Residents
Already elevated	2
Elevate the house	1
Adding fill	1
Selling the house	1

Study Area 2 Data Sheets

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Study Area 2 residents returned 6 data sheets describing their experience with flooding in the area. The first question asked residents how long they have lived in their home. Answers range from 11 to 58 years.

Number of Years	Number of Residents
0-15	1
16-30	2
31-45	2
46 and over	1

Residents were also asked what type of foundation their property has. A total of 3 residents live in slab on grade homes, 2 residents are elevated on piles, piers, or blocks, and 1 resident has a crawlspace.

Foundation Type	Number of Residents
Slab	3
Piles or Piers	2
Crawlspace	1

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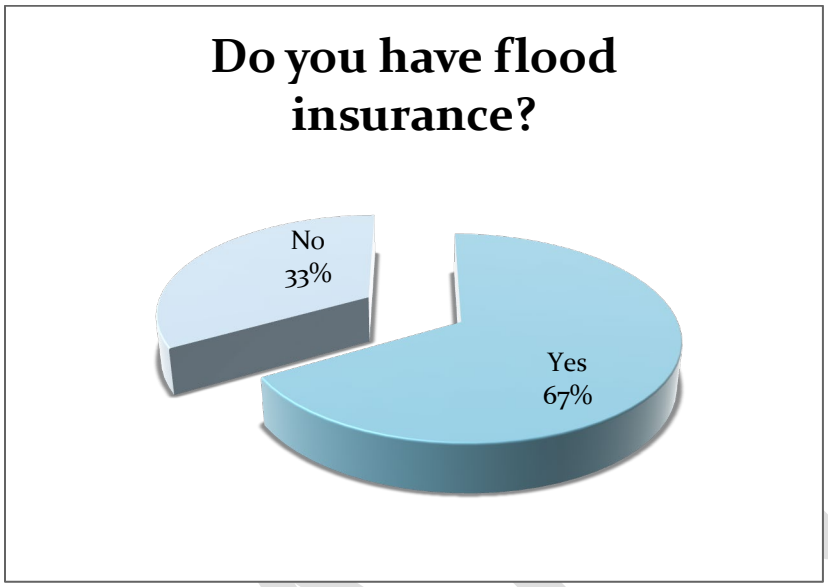
When asked if they have flood insurance, 4 residents said yes, while 2 residents said no. One of the residents that said no stated that they were unable to afford the insurance premium.



Residents were asked how many times they have experienced flooding. Only 4 residents answered this question. Two residents said 3 times, one said 2 times, and one said they had never flooded. Residents were also asked if they made a claim when they flooded, and only one respondent said yes.

Flood Frequency	Number of Residents
0	1
1-5 times	3

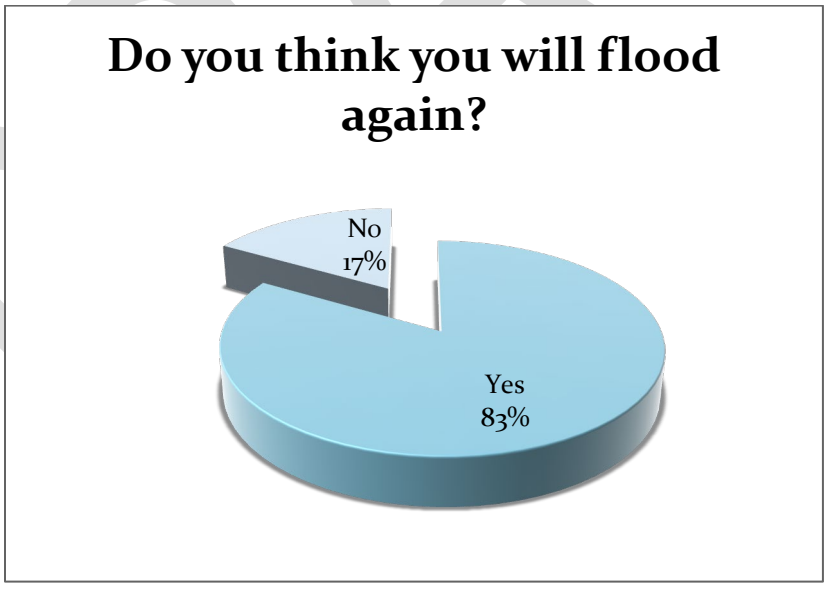
Residents were further asked how deep the water got when it flooded. Again, only 4 residents answered this question. Three residents said they had experienced water 6 inches to 1 foot of water in their yards only. One resident experienced 12” of water, but kept it out of their home using sandbags. The resident who experienced 12 inches of water said it stayed for 1 day, while another resident that experienced yard flooding said it stayed for 2 months. A total of 3 residents said this flooding occurred in 2019.

When asked what caused the flooding, 3 residents stated it was from the low elevation, 3 said it was the nearby waterway, 2 thought it was from a clogged drainage ditch, 2 said there was a blockage, 1 pointed to drainage from nearby properties, 1 responded that it was drainage from

the street, 1 said it was caused by pumps, and another said it was caused by rain. Residents were allowed to choose multiple answers to this question.

Cause of Flooding	Number of Residents
Low elevation	3
Nearby waterway	3
Clogged/undersized drainage ditch	2
Other: Blocked	2
Drainage from nearby properties	1
Drainage from street	1
Other: Pumps	1
Other: Rain	1

The data sheet also asked residents if they thought they would flood again. A total of 5 of the respondents said yes, while only 1 said no. The residents who said yes believe that the flooding will be caused by nonworking pumps, poor drainage, extreme rainfall, and a blocked culvert.



Residents were asked if they have done anything to protect their property from flooding. A total of 2 residents said they used sandbags, 1 resident said they regarded the yard, and 1 resident said they elevated their utilities. A follow up question asked residents when they installed the protection method. Only 2 residents answered this question: 1 said they used the

measure in the last time the Morganza was opened before 2019, while another said they used it in 2019. Residents were asked if the flood protection methods worked. A total of 2 residents said no, one of whom said it was because their home did not flood due to the barge dropped in Bayou Chene and so the method was not needed, and 1 resident said yes. Only 3 residents answered this question.

Flood Protection Method	Number of Residents
Sandbags	2
Regraded the yard	1
Elevated utilities	1

The data sheet asked residents if they had considered any mitigation methods to protect their home. Only 2 residents answered this question: 1 stated they would like to elevate the house or wet floodproof, and 1 resident just said no. Finally, residents were asked if they have had any difficulty with a mitigation method. Only 2 residents answered this question, one said yes due to lack of funding, and one said no.

Mitigation Method	Number of Residents
Elevate the house	1
Wet floodproofing	1

Study Area 3 Data Sheets

Study Area 3 residents returned 4 data sheets describing their experience with flooding in the area. The first question asked residents how long they have lived in their home. Answers range from 8 to 50 years.

Number of Years	Number of Residents
0-15	1
16-30	2
46 and over	1

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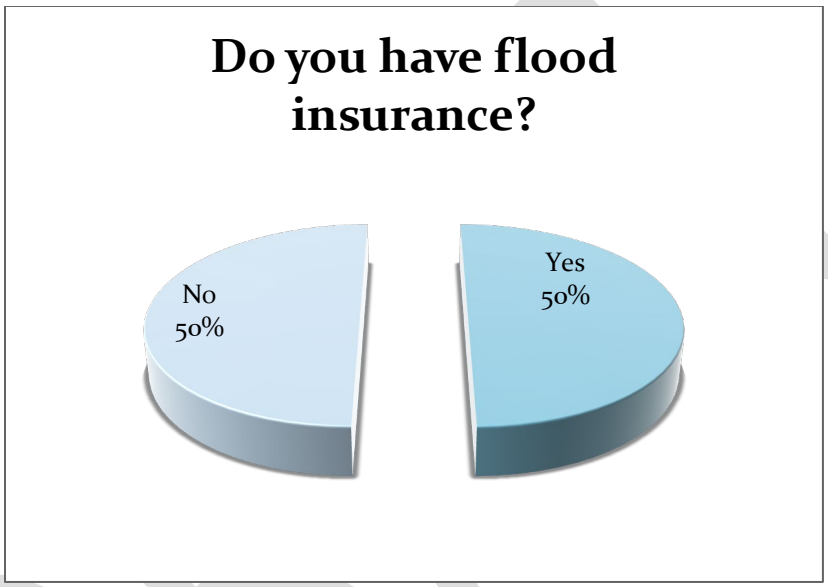
Residents were also asked what type of foundation their property has. A total of 3 residents are elevated on piles, piers, or blocks, and 1 resident has a slab on grade foundation.

Foundation Type	Number of Residents
Piles or Piers	3
Slab	1

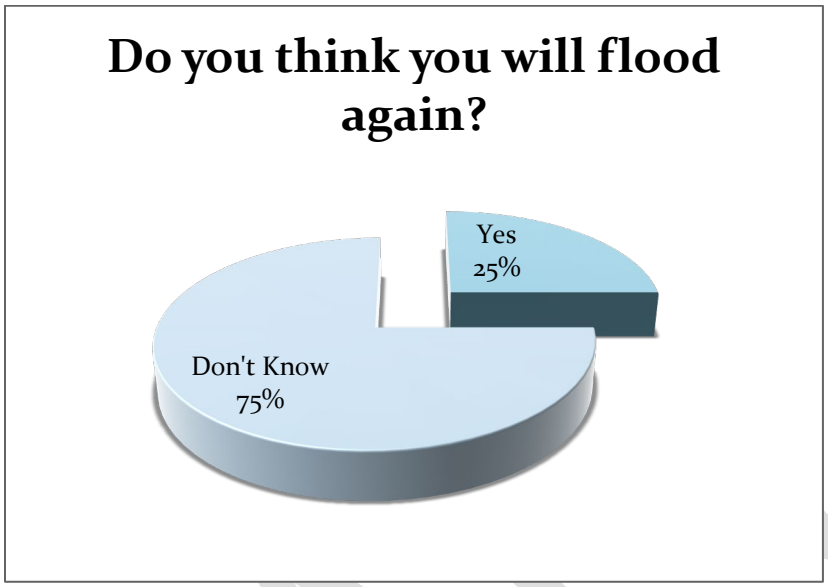
When asked if they have flood insurance, 2 residents said yes, while 2 residents said no.



Residents were asked how many times they have experienced flooding. Only 3 residents answered this question, and they all said they had never flooded, and therefore had never made a flood insurance claim.

Flood Frequency	Number of Residents
0	3

The data sheet also asked residents if they thought they would flood again. A total of 3 residents said they do not know, and 1 said yes.



Residents were asked if they have done anything to protect their property from flooding. Only 2 residents answered this question: one stated they had elevated the building, and one said the question was not applicable to them. Residents were asked if the flood protection methods worked. The resident who elevated said that yes, it had worked.

Flood Protection Method	Number of Residents
Elevated the building	1
N/A	1

The data sheet asked residents if they had considered any mitigation methods to protect their home. All 4 residents answered this question: 2 stated they would like to elevate the house, 1 stated their home was already elevated, and 1 resident said the question was not applicable. Finally, residents were asked if they have had any difficulty with a mitigation method. Only 1 resident answered this question, and stated it was not applicable to them.

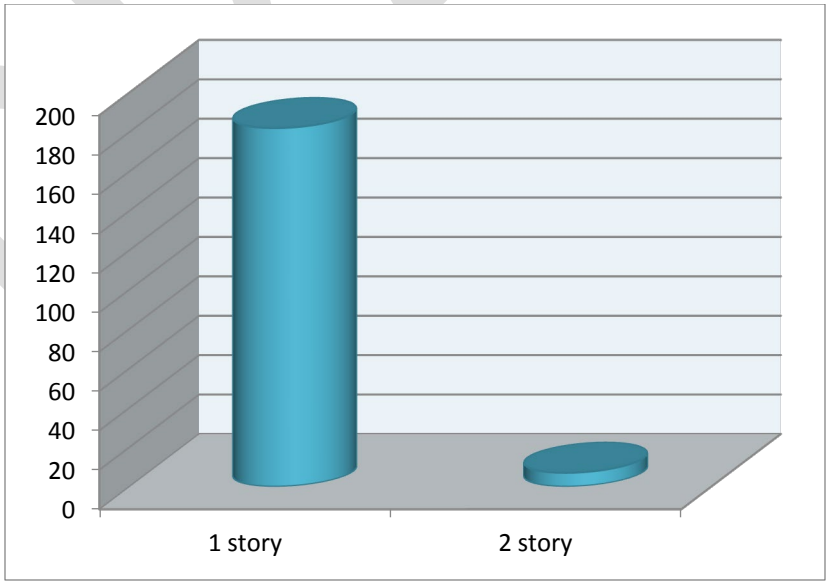
Mitigation Method	Number of Residents
Elevate the house	2
Already elevated	1
N/A	1

Fieldwork

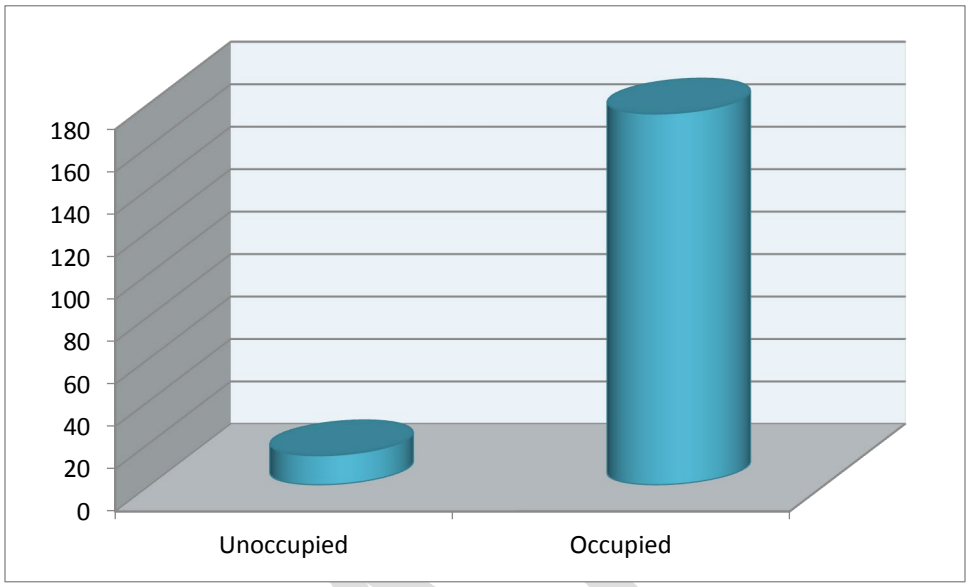
In addition to collecting data sheets, the Parish visited each building in each study area, noting the height and condition of the buildings in order to make individual recommendations for each structure. The results from the fieldwork data collection are detailed below.

Study Area 1

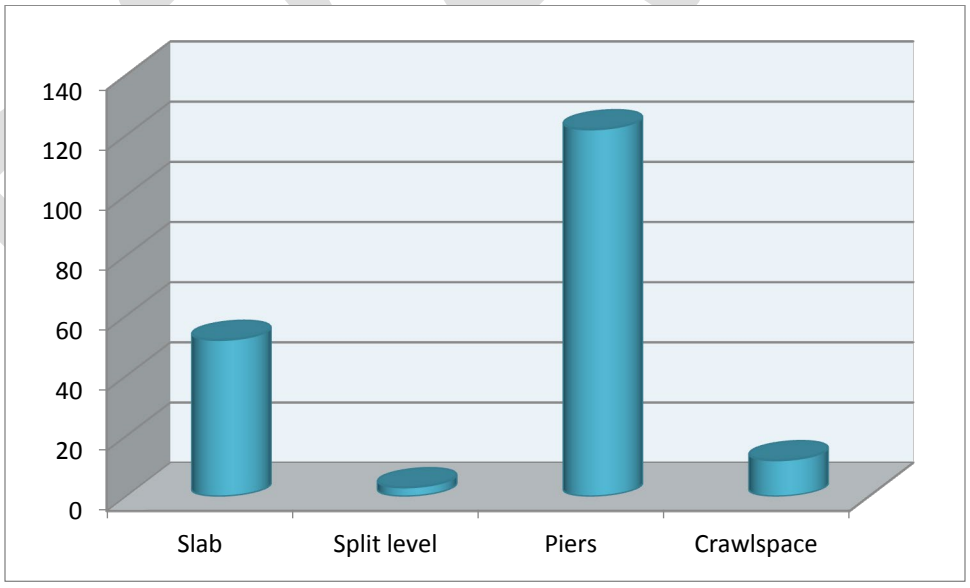
In Study Area 1, Lower Bayou Black, the Parish surveyed 189 homes. A majority of the homes were one story. There were a total of 182 one story homes and 7 two story homes.



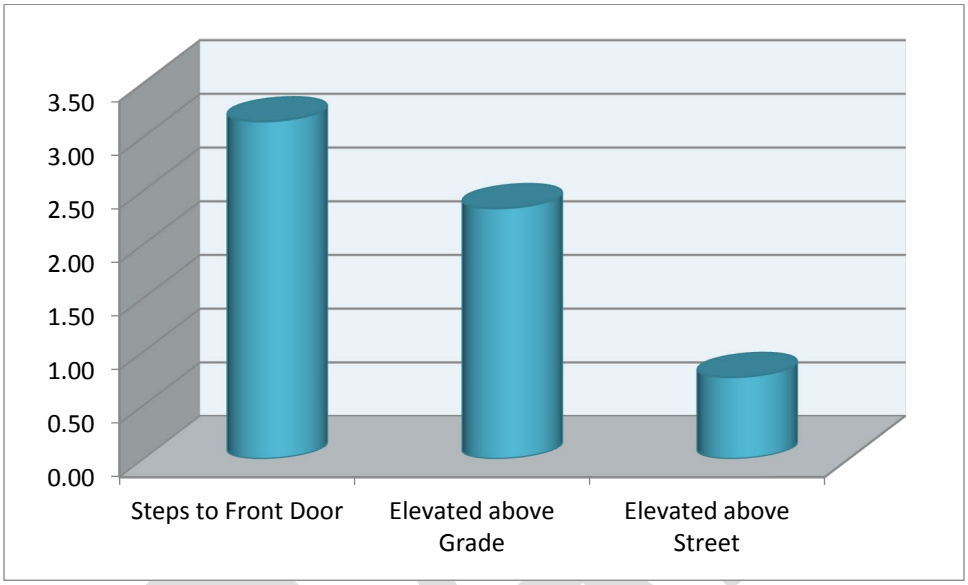
Most of the homes in the study area were occupied, with only 14 unoccupied homes compared to 175 occupied homes.



The majority of the homes were on piers, and less than half were on slab. There were a few split level homes in the area, and over 10 homes were elevated on a crawlspace.

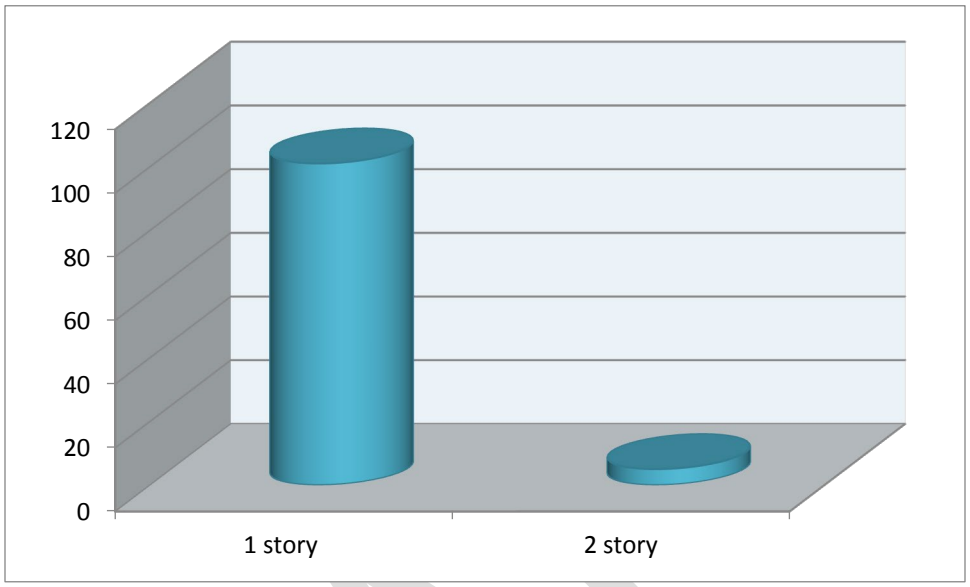


For the analysis, the steps to the front door, elevation above the ground and elevation about the street were recorded to determine the elevation of the structure. The average steps to the front door in the study area are 3.14, the average elevation above grade is 2.33 feet, and the average elevation above the street is 0.76. The detailed elevation information is located in Appendix B.

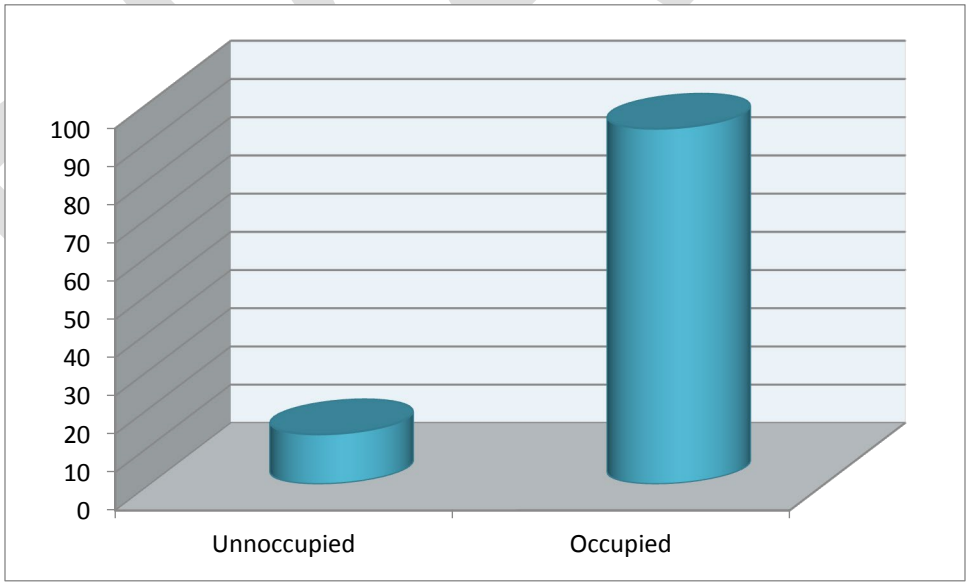


Study Area 2

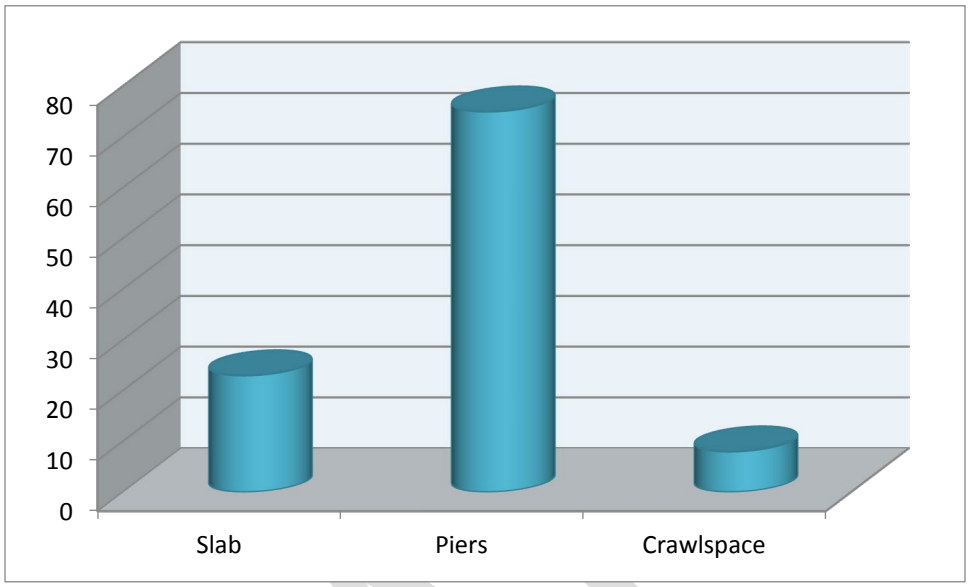
In Study Area 2, North Bayou Black, the Parish surveyed 106 homes. A majority of the homes were one story as well. A total of 101 homes were one story, compared to 5 two story homes.



Again, a majority of the homes were occupied – a total of 93, with only 13 unoccupied homes in the area.



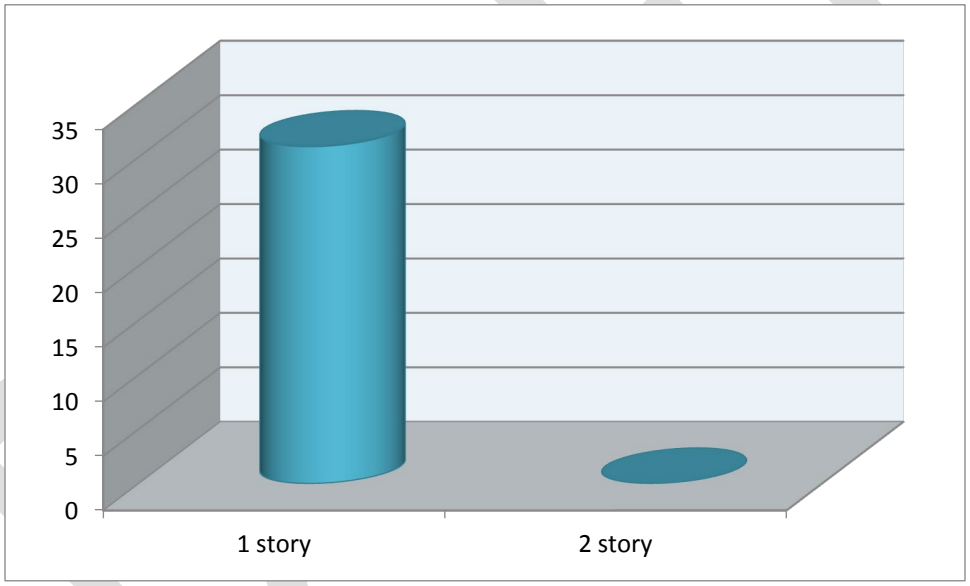
Similar to Study Area 1, the majority of the homes were on piers. A total of 75 homes were on piers, 23 homes were slab on grade, and 8 homes were elevated on a crawlspace.



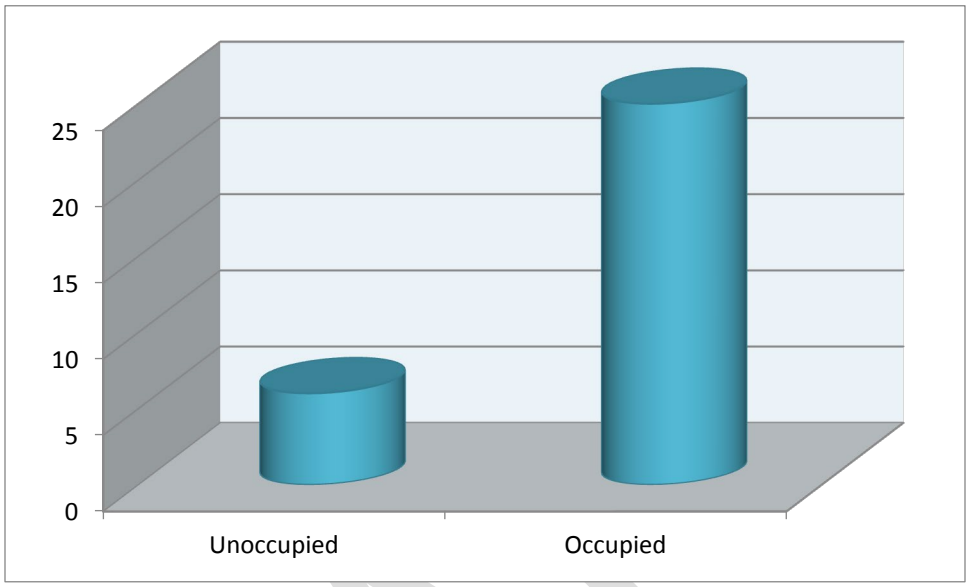
The steps to the front door, elevation above grade, and elevation above the street were measured to determine the general elevation of each building. The average steps to the door were 2.88, the average elevation above grade was 1.97, and the average elevation above the street was 0.52.

Study Area 3

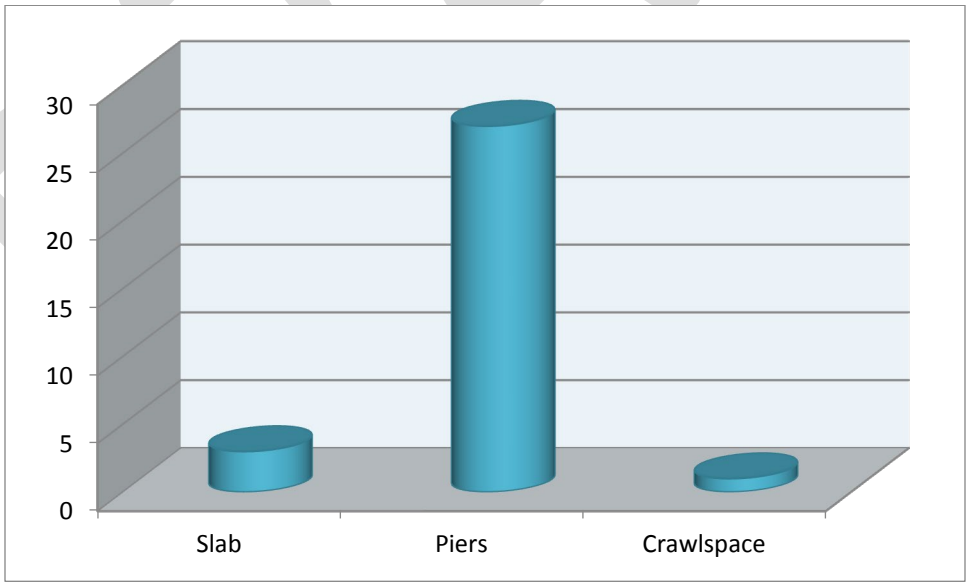
In Study Area 3, Deadwood Drive, the Parish surveyed 31 structures. All of the structures in that area were one story.



Similar to the other two study areas, most of the homes were occupied, with a total of 6 unoccupied and 25 occupied homes.

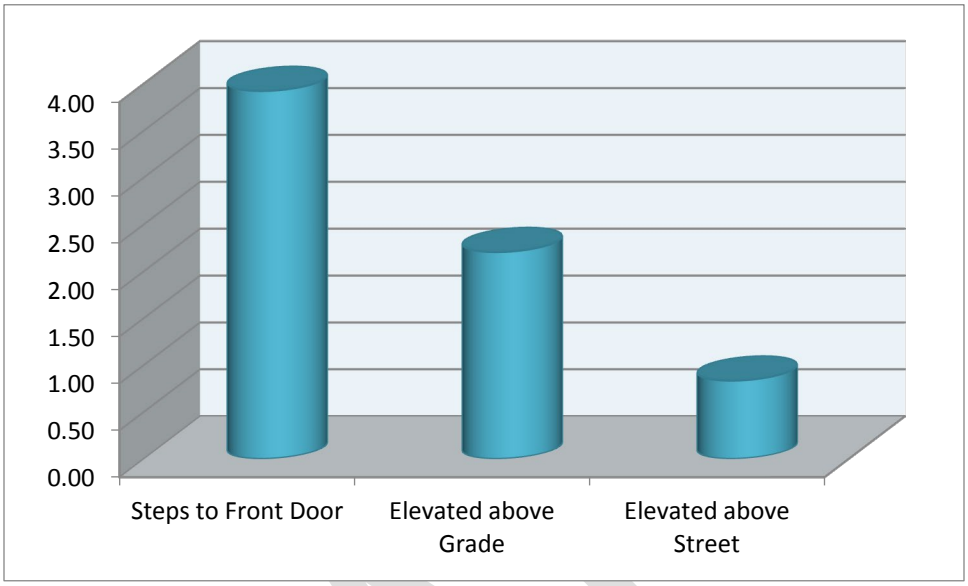


Also similar to the other two study areas, most of the structures were on piers. A total of 27 homes were on piers, 3 were slab on grade, and 1 was elevated on a crawlspace.



Like the other areas, the steps to the front door, elevation above grade, and elevation above the street were measured to understand the relative elevation of the structure. The average steps to the front door were 3.92, the average elevation above grade was 2.2, and the average

elevation above the street was 0.83. The detailed elevation details of each structure are located in Appendix B.



Fieldwork Conclusion

The observations from the fieldwork revealed that most of the homes are one story and on piers. This can make the process of elevation more efficient. Furthermore, most of the homes were occupied, while the homes that are unoccupied and in disrepair could be demolished and reconstructed in a way that better protects the home from water. The elevations of each structure, in addition to the predicted base flood elevations in each area, revealed that there may be a need to elevate structures above the ground and above the street to better protect the homes as well. The proposed mitigation actions for the structures are discussed in the following section.

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Step 4 - Review mitigation actions

After analyzing the studies and the data collected, the Parish reviewed mitigation actions for each individual structure in the three study areas. These mitigation actions include levees and pump stations, elevation, elevated utilities, flood insurance, demolition and reconstruction, and acquisition. The mitigation actions are listed below in no particular order, each one is a possibility. The individual recommendations for each structure are located in Appendix B.

LEVEE and FLOODWALL PROTECTION

Levees, in conjunction with pump stations, can help with the shallow backwater flooding that can occur in the area. All of the structures in each study area could benefit from this protection. Due to the low and level ground in each study area, forced drainage improvements will be more effective than gravity drainage. When the three planned pump stations and the Geraldine Road levee are complete, the area will be better protected from backwater flooding and rainfall events, and drain more efficiently. Once drained, the Shell Oil land will function to retain the water. All of these actions will be put into place as funding is available.

Many homes in the area are slab on grade, or only elevated a few feet above the ground. In addition, there are some homes that are lower than the street. This can result in shallow flooding of yards during rainfall and flood events, and could even flood homes in a poor drainage situation. Therefore, elevating the structures could help protect homes from the water. A majority of the homes are already on piers, so elevation can be completed more easily compared to houses on slabs.

ELEVATION

The house elevation should be based upon the base flood elevation (BFE) in each study area – 6 to 7 feet in Study Area 1, between 4 and 8 feet in Study Area 2, and from 0 to 4 feet in Study Area 3. It is also becoming more common to use freeboard, or an additional elevated height, such as 1 to 2 feet, to protect structures from flooding. Adding freeboard could help protect homes that are in areas with a low or no BFE, such as in Study Area 3, but still experience shallow flooding from rainfall and poor drainage events. Therefore, the individual recommendations for each structure include elevation for the properties that are below the

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BFE to above the BFE plus one foot. The permit office can provide information about base flood elevations for individual properties – please call 985-873-6567.

Some homes in the study areas have elevated utilities to prevent flood damage. This analysis recommends that all residents in the areas consider raising their utilities to at least the BFE.

Obtaining flood insurance is a good idea as well. If a resident has flood insurance, they not only can receive money for building or contents damage, but can qualify for funding to elevate or otherwise mitigate their home if it is damaged at greater than 50% of its value.

In some cases, if the structure is in disrepair or the foundation is in poor condition, it may be more effective to demolish and reconstruct the house to a higher elevation. Again, this elevation should be based on the BFE, and could include freeboard to better protect the structure from flooding. FEMA provides funding for demolition and reconstruction as well.

DEMOLITION and RECONSTRUCTION

RELOCATION

Finally, acquisition and relocation may be an option for some structures in the study areas. FEMA provides funding for acquisition and relocation, and it could be necessary for homes that are located on the lowest part of a lot, or too close to body of water. While the high land in the area is the land closest to the bayou, there are homes located near canals or low open areas that experience backwater flooding. In addition, there are some unoccupied and abandoned properties that could be acquired for stormwater management

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Funding

The Federal Emergency Management Agency (FEMA) provides funding for home elevation through the Flood Mitigation Assistance (FMA) and Pre-Disaster Mitigation Grant Program (PDM). Starting in 2020, FEMA will offer funding through the Building Resilient Infrastructure and Communities (BRIC) program. This program will include a consistent 6% allocation of disaster mitigation funding each year, and the first year will include $130 million dollars in funding. FEMA expects $300 to $500 million to be available each year for the program. The program will include 7 lifelines for mitigation: safety and security, food, water and sheltering, health and medical, energy, communications, transportation, and hazardous material. The food, water, and sheltering lifeline will include funding for the recommended mitigation actions in this analysis. The Department of Housing and Urban Development (HUD) also provides funding for mitigation projects through Community Development Block Grants. At the state level, the Coastal Protection and Restoration Authority provides mitigation funding as well.

Step 5 – Findings and Recommendations

Including this analysis in the 2020 Hazard Mitigation Plan Update will make all of the recommendations available for FEMA funding. In addition, the Hazard Mitigation Plan Update includes both upgrading drainage infrastructure, constructing new flood control structures and levees, and elevating and acquiring structures as actions under the objective designed to reduce flood damage to structures in the parish.

This analysis provides a recommendation for each structure in each study area. The recommendations include Levees and Pump Stations (L), Elevation (E), Acquisition (A), Demolition and Reconstruction (D), Flood Insurance (I) and Elevated Utilities (U). Many structures have multiple recommendations. The recommendations for each study area are depicted on the following pages, and the recommendations for each individual structure are located in Appendix B. The recommendations are detailed on the following pages in no particular order, each one is a possibility.

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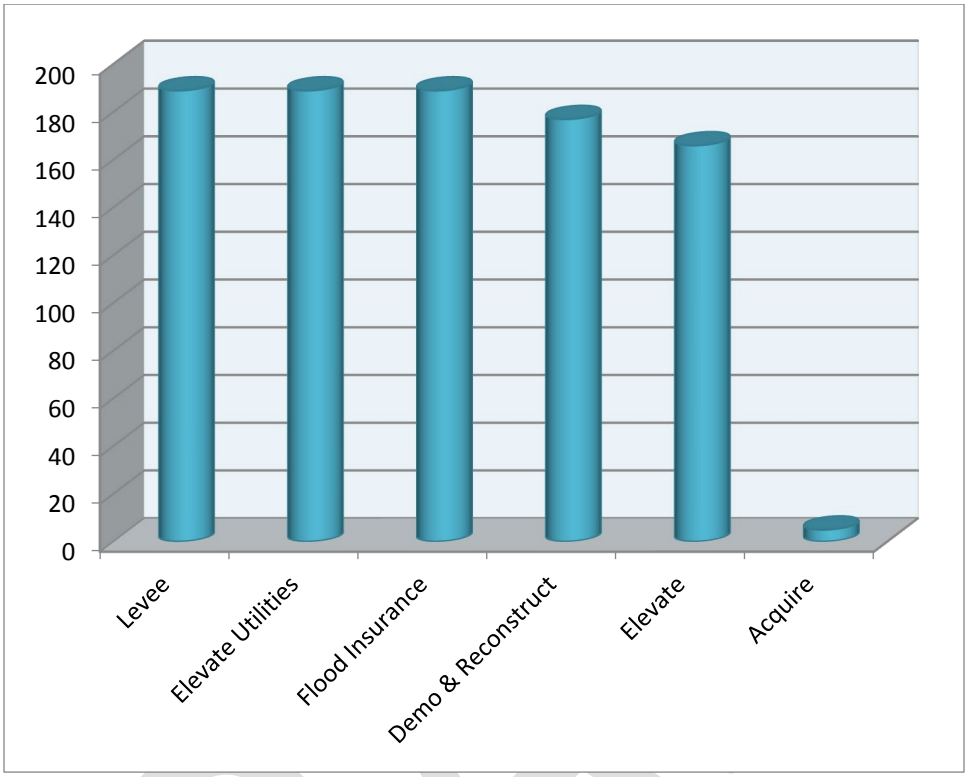
Study Area 1 Recommendations



In Study Area 1, all structures would benefit from levee and pump station improvements, to protect both the property and the structure from excess water. In addition, all structures in the study area would benefit from flood insurance as well as elevating utilities above the base flood elevation. In the case where elevation is too costly, the demolition and reconstruction method could be used, and is recommended as a possibility for 177 structures. A total of 166 structures are recommended to be elevated, based on the condition of the foundations. This elevation could be minimal, and would be based upon the base flood elevation for the particular property. Again, the individual recommendations for each structure include elevation for the properties that are below the BFE to above the BFE plus one foot. Acquisition is recommended for only 5 structures, which appear to have been abandoned and left in disrepair.

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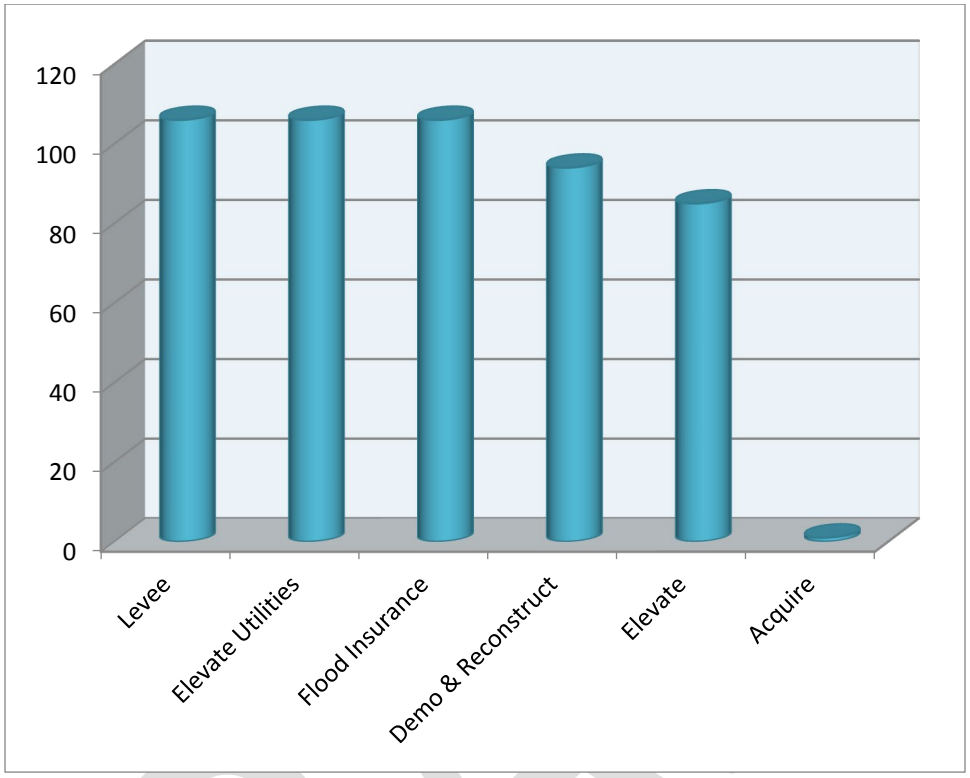
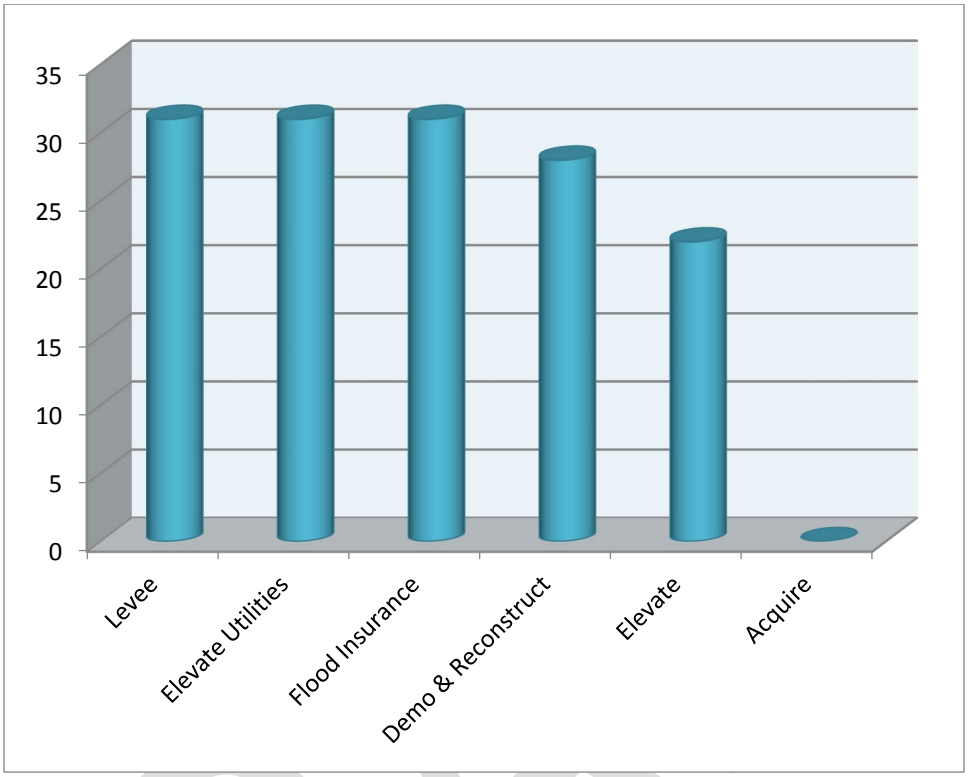
Study Area 2 Recommendations



In Study Area 2, all structures would benefit from levee and pump station improvements, to protect both the property and the structure from excess water. In addition, all structures in the study area would benefit from flood insurance as well as elevating utilities above the base flood elevation. In the case where elevation is too costly, the demolition and reconstruction method could be used, and is recommended as a possibility for 94 structures. A total of 85 structures are recommended to be elevated, based on the condition of the foundations. This elevation could be minimal, and would be based upon the base flood elevation for the particular property. Again, the individual recommendations for each structure include elevation for the properties that are below the BFE to above the BFE plus one foot. Acquisition is recommended for only 1 structure, which appears to have been abandoned and left in disrepair.

Study Area 3 Recommendations



In Study Area 3, all structures would benefit from levee and pump station improvements, to protect both the property and the structure from excess water. In addition, all structures in the study area would benefit from flood insurance as well as elevating utilities above the base flood elevation. In the case where elevation is too costly, the demolition and reconstruction method could be used, and is recommended as a possibility for 28 structures. A total of 22 structures are recommended to be elevated, based on the condition of the foundations. This elevation could be minimal, and would be based upon the base flood elevation for the particular property. Again, the individual recommendations for each structure include elevation for the properties that are below the BFE to above the BFE plus one foot. Acquisition is not recommended for any structure in the study area.

Recommendation Conclusion

The table below details each recommendation, who is responsible for accomplishing the recommendation, and the possible funding available for each recommendation. Including this analysis in the 2020 Hazard Mitigation Plan Update will also provide an opportunity for mitigation funding for each recommendation.

Recommendation	Responsibility	Funding	Estimated Completion Date
Levee and pump station improvements, combined with increased stormwater management	Terrebonne Parish	Public Works Terrebonne Levee & Conservation District CPRA	March 2020 - ongoing
Elevation of low areas of the road along North Bayou Black	Terrebonne Parish	Public Works	TBD
Elevate utilities to at least base flood elevation	Residents	Residents	Ongoing
Obtain flood insurance	Residents	Residents	Ongoing
Demolish and reconstruct building to at or above the base flood elevation	Terrebonne Parish Residents	FEMA CDBG	Ongoing
Elevate building to at or above the BFE	Terrebonne Parish Residents	FEMA CDBG ICC	Ongoing
Acquire property	Terrebonne Parish	FEMA CDBG	Ongoing

Public Meeting

The Parish presented the findings and recommendations at a virtual public meeting on April 23rd.

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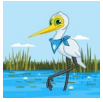

Bayou Black Area Analysis- Resident Data Sheet

Name:
Address:

1. How long have you lived at this property? _____

2. What type of foundation does your property have?
   - ☐ Slab
   - ☐ Piles or Piers
   - ☐ Crawlspace
   - ☐ Other_____

3. Do you have flood insurance?
   - ☐ Yes If yes, how long have you had flood insurance? _____
   - ☐ No

4. How many times has your property flooded? _____
   Did you make flood insurance claims?
   - ☐ Yes
   - ☐ No

   Did you receive flood insurance payments?
   - ☐ Yes
   - ☐ No

5. If your property flooded, how deep did the water get?
   - ☐ Over first floor _____ deep, in _____ (month/year).
   - ☐ Over second floor_____ deep, in _____ (month/year).
   - ☐ In yard only _____ deep, in _____ (month/year).
   - ☐ We kept water out by sandbagging or using another protective measure.

   What is the longest amount of time water stayed in your home? _____
   What month/year was this? _____

6. What do you think caused the flooding? Check all that apply.
   - ☐ Storm sewer backup
   - ☐ Sanitary sewer backup
   - ☐ Clogged/undersized drainage ditch
   - ☐ Drainage from nearby properties
   - ☐ Drainage from street
   - ☐ Low elevation
   - ☐ Nearby waterway
   - ☐ Other _____

7. Do you think you will flood again?
   - ☐ Yes
   - ☐ No

   Please explain _____

8. Have you done anything to protect your home from flooding?
   - ☐ Sandbagged
   - ☐ Regraded the yard
   - ☐ Moved contents to a higher level
   - ☐ Installed drains or pipes to help with drainage
   - ☐ Elevated utilities
   - ☐ Elevated the building
   - ☐ Built a flood wall

   In what month(s)/year(s) did you install or use the above? _____

9. Did the above methods help protect your home from flooding?
   - ☐ Yes
   - ☐ No

   If no, why do you think it did not work? _____

10. Have you participated in any of the following mitigation grant programs?
    - ☐ Terrebonne Parish Hazard Mitigation Grant Program (HMGP)
    - ☐ Terrebonne Parish Severe Repetitive Loss Program (SRL)
    - ☐ Terrebonne Parish Flood Mitigation Assistance Program (FMA)
    - ☐ Terrebonne Parish Pre-Disaster Mitigation Program (PDM)
    - ☐ State HMGP through Office of Community Development/Road Home
    - ☐ Increased Cost of Compliance (ICC) coverage
    - ☐ Other _____

11. Have you considered any of the following ways to reduce your risk of flooding?
    - ☐ Elevate the house
    - ☐ Demolish and rebuild in the same place
    - ☐ Selling the house. If yes, have you listed it for sale? _____
    - ☐ Wet floodproofing (installing building materials that can get wet without damage)
    - ☐ Dry floodproofing (sealing the foundation and walls so water cannot get in)
    - ☐ Green infrastructure (rain gardens or ponds to hold storm water)
    - ☐ Other _____

12. Have you had any problems trying to install a risk reduction measure?
    - ☐ Yes
    - ☐ No

    If yes, what problems? _____
    _____

If you have any comments or questions, please contact Tara Lambeth at tlambeth@tpcg.org or 985-873-6567.

Thank you for your help!

Number	Lot	Street	Photo	Occupied (Y/N)	EC Digram	Structure Type	Foundation Type	Foundation Condition	# of Stories	Steps to Front Door	Elevated above Grade	Elevated above Street	Recommendations					
													Levee	*Elevate*	*Acquire*	*Demo & Reconstruct*	*Flood Insurance*	*Elevate Utilities*
4705		BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	3	2	-1	☑	☑			☑	☑
4715		BAYOU BLACK		Y	1A	House (brick)	Slab	Good	1	0	0.5	-3	☑	☑		☑	☑	☑
4721		BAYOU BLACK		Y	1A	House (wood)	Slab	Good	1	0	0.5	-1	☑	☑		☑	☑	☑
4723		BAYOU BLACK		Y	1A	House (brick)	Slab	Good	1	0	0.5	-2	☑	☑		☑	☑	☑
4739		BAYOU BLACK		Y	5	House (wood)	Crawlspace	Fair	1	4	2.5	-0.5	☑	☑			☑	☑
4741		BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	3	2.5	0	☑	☑			☑	☑
4745		BAYOU BLACK		N	1A	House	Slab	Poor	1	0	0.5	-2	☑			☑	☑	☑
4749		BAYOU BLACK		Y	1A	House (brick)	Slab	Good	1	0	0.5	-1	☑	☑		☑	☑	☑
4755		BAYOU BLACK		Y	1A	House (brick)	Slab	Good	1	0	0.5	-1	☑	☑		☑	☑	☑
4779		BAYOU BLACK		N	5	Mobile home	Piers	Poor	1	5	4	0.5	☑			☑	☑	☑
4779	A	BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	5	3	-0.5	☑	☑			☑	☑
4811		BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	4	3.5	0	☑	☑			☑	☑
4815		BAYOU BLACK		Y	1A	House (brick)	Slab	Good	1	0	0.5	-1.5	☑	☑		☑	☑	☑
4817		BAYOU BLACK		Y	1A	Office (cinder block)	Slab	Good	1	0	2	0	☑	☑		☑	☑	☑
4831		BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	3	2	-0.5	☑	☑		☑	☑	☑
4839		BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	4	2.5	-1	☑	☑		☑	☑	☑
4843		BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	4	3	-0.5	☑	☑		☑	☑	☑
4851		BAYOU BLACK		Y	1A	House (wood)	Slab	Good	1	3	2	1	☑	☑		☑	☑	☑
4853		BAYOU BLACK		Y	8	House (wood)	Crawlspace	Good	2	3	2.5	-0.5	☑	☑		☑	☑	☑
4855		BAYOU BLACK		Y	1A	House (brick)	Slab	Good	2	0	0.5	-1	☑	☑		☑	☑	☑
4859		BAYOU BLACK		Y	1B	House (concrete)	Slab	Good	1	3	1.5	0	☑	☑		☑	☑	☑
4861		BAYOU BLACK		Y	1B	House (concrete)	Slab	Good	2	2	1.5	-1	☑	☑		☑	☑	☑
4863		BAYOU BLACK		Y	8	House (wood)	Crawlspace	Good	1	2	1.5	0	☑	☑		☑	☑	☑
4865		BAYOU BLACK		Y	1A	House (wood)	Slab	Good	1	1	1	0	☑	☑		☑	☑	☑
4901		BAYOU BLACK		Y	3	House (wood)	Slab	Good	1	0	0	-1	☑	☑		☑	☑	☑
4903		BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	2	2	0	☑	☑		☑	☑	☑
4905	A	BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	5	4	1	☑	☑		☑	☑	☑
4905	B	BAYOU BLACK		Y	1A	Warehouse (metal)	Slab	Good	1	0	0	0	☑	☑		☑	☑	☑
4913		BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	3	2.5	1	☑	☑		☑	☑	☑
4917		BAYOU BLACK		N	5	Mobile home	Piers	Fair	1	3	2.5	0	☑	☑	☑	☑	☑	☑
4923		BAYOU BLACK		Y	8	Mobile home	Crawlspace	Good	1	5	3.5	2	☑	☑		☑	☑	☑
4927		BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	4	3	2	☑	☑		☑	☑	☑
4935		BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	4	2.5	1	☑	☑		☑	☑	☑
4937	A	BAYOU BLACK		N	5	Mobile home	Piers	Fair	1	4	3	1	☑	☑	☑	☑	☑	☑
4937		BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	4	3	1	☑	☑		☑	☑	☑
4949		BAYOU BLACK		Y	1A	House (wood)	Slab	Fair	1	0	0.5	0	☑	☑		☑	☑	☑
4949	A	BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	3	2.5	0.5	☑	☑		☑	☑	☑
4951	B	BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	4	2.5	1	☑	☑		☑	☑	☑
4955	A	BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	5	3	1	☑	☑		☑	☑	☑
4955		BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	5	3	1	☑	☑		☑	☑	☑
4955	B	BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	5	3	1	☑	☑		☑	☑	☑
4957		BAYOU BLACK		Y	8	House (wood)	Crawlspace	Good	2	5	4	2	☑	☑		☑	☑	☑
4963	C	BAYOU BLACK		Y	1A	Shed	Slab	Good	1	0	0	-0.5	☑	☑		☑	☑	☑
4963	B	BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	4	3	0.5	☑	☑		☑	☑	☑
4963	A	BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	4	3	0.5	☑	☑		☑	☑	☑
4983		BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	5	3.5	2	☑	☑		☑	☑	☑
4985		BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	5	3	2	☑	☑		☑	☑	☑
4985	A	BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	4	3.5	0	☑	☑		☑	☑	☑
4987		BAYOU BLACK		Y	1A	Garage/home (wood)	Slab	Good	1	0	0.5	-0.5	☑	☑		☑	☑	☑
4989		BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	5	4.5	2	☑	☑		☑	☑	☑
4991		BAYOU BLACK		Y	1A	House (wood)	Slab	Good	2	0	2.5	0	☑	☑		☑	☑	☑
4995		BAYOU BLACK		Y	1A	School (brick)	Slab	Good	1	1	1	-0.5	☑	☑		☑	☑	☑
5005		BAYOU BLACK		Y	1A	House (cinder block)	Slab	Fair	1	0	0.5	-0.5	☑	☑		☑	☑	☑
5005	A	BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	5	3.5	1	☑	☑		☑	☑	☑

5007	BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	6	4	2	☑	☑	☑	☑	☑
5007 C	BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	4	3	1.5	☑	☑	☑	☑	☑
5009	BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	3	2.5	1.5	☑	☑	☑	☑	☑
5013	BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	3	2	1.5	☑	☑	☑	☑	☑
5015	BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	5	3.5	3	☑	☑	☑	☑	☑
5019	BAYOU BLACK		Y	8	House (wood)	Crawlspace	Good	1	2	1.5	1	☑	☑	☑	☑	☑
5021	BAYOU BLACK		Y	1A	House (wood)	Slab	Good	1	0	0.5	0	☑	☑	☑	☑	☑
5025	BAYOU BLACK		Y	8	House (wood)	Crawlspace	Good	1	4	2.5	2	☑	☑	☑	☑	☑
5027 A	BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	7	5	2	☑			☑	☑
5027 B	BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	7	5	2	☑			☑	☑
5055	BAYOU BLACK		Y	8	House (wood)	Crawlspace	Fair	1	4	3	1	☑	☑	☑	☑	☑
5059	BAYOU BLACK		Y	1A	House (metal)	Slab	Poor	1	0	0	-1	☑		☑	☑	☑
5101 A	BAYOU BLACK		Y	5	Mobile home	Piers	Poor	1	4	4	2	☑		☑	☑	☑
5101 B	BAYOU BLACK		Y	5	Mobile home	Piers	Poor	1	5	3.5	1	☑		☑	☑	☑
5111	BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	4	2.5	0	☑	☑	☑	☑	☑
5113	BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	5	3	1.5	☑	☑	☑	☑	☑
5113 A	BAYOU BLACK		N	5	Mobile home	Piers	Poor	1	4	2.5	-0.5	☑		☑	☑	☑
5117	BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	5	3	0.5	☑	☑	☑	☑	☑
5117 A	BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	5	3	0.5	☑	☑	☑	☑	☑
5119	BAYOU BLACK		Y	1A	Home (wood)	Slab	Good	1	0	0.5	-0.5	☑	☑	☑	☑	☑
5121 LOT	BAYOU BLACK		Y	1A	Home (wood)	Slab	Good	1	1	1	0	☑	☑	☑	☑	☑
5121	BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	4	3	0	☑	☑	☑	☑	☑
5123	BAYOU BLACK		Y	1A	House (brick)	Slab	Good	1	1	0.5	-0.5	☑	☑	☑	☑	☑
5129	BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	7	5	2.5	☑			☑	☑
5133	BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	3	2.5	0	☑	☑	☑	☑	☑
5141	BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	5	3.5	1.5	☑	☑	☑	☑	☑
5143	BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	5	3	0	☑	☑	☑	☑	☑
5145	BAYOU BLACK		Y	8	House (wood)	Crawlspace	Good	1	4	2.5	0	☑	☑	☑	☑	☑
5191	BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	5	3.5	1	☑	☑	☑	☑	☑
5138	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	3	2.5	-0.5	☑	☑	☑	☑	☑
5136	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	6	3.5	0.5	☑	☑	☑	☑	☑
5136 A	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	6	4	1	☑	☑	☑	☑	☑
5134	NORTH BAYOU BLACK		Y	1A	House (brick)	Slab	Good	1	0	0.5	-1	☑	☑	☑	☑	☑
5132	NORTH BAYOU BLACK		Y	1A	Church (brick)	Slab	Good	1	0	0	-1	☑	☑	☑	☑	☑
5126	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	5	2.5	0	☑	☑	☑	☑	☑
5118	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	5	3.5	2	☑	☑	☑	☑	☑
5108 A	NORTH BAYOU BLACK		Y	1A	House (wood)	Slab	Good	1	0	0	-1	☑	☑	☑	☑	☑
5104	NORTH BAYOU BLACK		Y	1B	House (brick)	Slab	Good	1	2	2.5	0.5	☑	☑	☑	☑	☑
5100	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	4	3	0	☑	☑	☑	☑	☑
5090	NORTH BAYOU BLACK		Y	1A	House (wood)	Slab	Good	1	2	4	1	☑	☑	☑	☑	☑
5086	NORTH BAYOU BLACK		Y	1A	Mobile home	Piers	Fair	1	5	3.5	1.5	☑	☑	☑	☑	☑
5084	NORTH BAYOU BLACK		Y	1A	Shed (metal)	Slab	Good	1	0	0	-0.5	☑	☑	☑	☑	☑
5078	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	4	3	2	☑	☑	☑	☑	☑
5076	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	4	2.5	1	☑	☑	☑	☑	☑
5074	NORTH BAYOU BLACK		Y	1A	House (brick)	Slab	Good	1	0	0.5	0	☑	☑	☑	☑	☑
5072	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	6	4	1.5	☑	☑	☑	☑	☑
5070	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	5	3	2	☑	☑	☑	☑	☑
5064	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	5	3	1.5	☑	☑	☑	☑	☑
5058	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	10	6	6	☑			☑	☑
5056	NORTH BAYOU BLACK		Y	1A	Metal warehouse	Slab	Good	1	0	1	0.5	☑	☑	☑	☑	☑
5054	NORTH BAYOU BLACK		Y	1A	Metal warehouse	Slab	Good	1	0	1	0.5	☑	☑	☑	☑	☑
5050	NORTH BAYOU BLACK		Y	1A	Home (wood)	Slab	Good	1	0	0.5	0	☑	☑	☑	☑	☑
5048	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	6	3	2	☑	☑	☑	☑	☑
5046	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	6	3	1.5	☑	☑	☑	☑	☑
5044	NORTH BAYOU BLACK		Y	1A	Home (wood)	Slab	Fair	1	0	0.5	0	☑	☑	☑	☑	☑
5038	NORTH BAYOU BLACK		Y	8	House (wood)	Crawlspace	Good	1	11	6.5	6	☑			☑	☑
5036	NORTH BAYOU BLACK		Y	5	Mobile home	Pier	Fair	1	6	3.5	1.5	☑	☑	☑	☑	☑

5032	NORTH BAYOU BLACK		Y	5	Mobile home	Pier	Good	1	5	3.5	2	☑	☑		☑	☑	☑
5030	NORTH BAYOU BLACK		Y	5	Mobile home	Pier	Poor	1	4	2.5	1	☑			☑	☑	☑
5026	NORTH BAYOU BLACK		Y	5	Mobile home	Pier	Fair	1	7	3.5	2.5	☑	☑		☑	☑	☑
5022	NORTH BAYOU BLACK		N	5	Mobile home	Pier	Poor	1	3	2.5	1	☑			☑	☑	☑
5022 A	NORTH BAYOU BLACK		Y	5	Mobile home	Pier	Poor	1	5	3	1	☑			☑	☑	☑
5018	NORTH BAYOU BLACK		Y	5	Mobile home	Pier	Fair	1	4	3	1.5	☑	☑		☑	☑	☑
5016	NORTH BAYOU BLACK		Y	5	Mobile home	Pier	Good	1	5	4.5	2	☑	☑		☑	☑	☑
5010	NORTH BAYOU BLACK		Y	5	Mobile home	Pier	Good	1	4	3	0.5	☑	☑		☑	☑	☑
5008	NORTH BAYOU BLACK		Y	1A	Church (wood)	Slab	Good	1	1	0.5	-1	☑	☑		☑	☑	☑
4990	NORTH BAYOU BLACK		Y	1A	House (wood)	Slab	Good	1	2	1.5	0	☑	☑		☑	☑	☑
4988 A	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	5	3	0.5	☑	☑		☑	☑	☑
4988 B	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	5	3	0.5	☑	☑		☑	☑	☑
4984	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	5	3.5	1	☑	☑		☑	☑	☑
4976	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	5	4	1	☑	☑		☑	☑	☑
4972	NORTH BAYOU BLACK		Y	1B	House (wood)	Slab	Good	1	2	1.5	0.5	☑	☑		☑	☑	☑
4970	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	6	4	2.5	☑	☑		☑	☑	☑
4968	NORTH BAYOU BLACK		Y	8	House(wood)	Crawlspace	Good	1	3	2	1	☑	☑		☑	☑	☑
4962	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Fair	2	5	3	1.5	☑	☑		☑	☑	☑
4960	NORTH BAYOU BLACK		Y	1A	House (brick)	Slab	Good	1	2	5	3	☑				☑	☑
4958	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	4	2.5	1.5	☑	☑		☑	☑	☑
4956	NORTH BAYOU BLACK		Y	1A	House (brick)	Slab	Good	2	0	1.5	0	☑	☑		☑	☑	☑
4956 A	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	5	3	1.5	☑	☑		☑	☑	☑
4954	NORTH BAYOU BLACK		N	5	House (wood)	Piers	Poor	1	4	3	1	☑			☑	☑	☑
4952	NORTH BAYOU BLACK		Y	5	Mobile home	Piers		1			0	☑	☑			☑	☑
4950	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	4	2.5	0	☑	☑		☑	☑	☑
4948	NORTH BAYOU BLACK		Y	8	House (wood)	Crawlspace	Poor	1	6	3.5	0.5	☑			☑	☑	☑
4928	NORTH BAYOU BLACK		Y	1B	Church (wood/brick)	Slab	Good	1	0	0.5	0	☑	☑		☑	☑	☑
4922	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	8	5	6	☑				☑	☑
4920	NORTH BAYOU BLACK		N	5	Mobile home	Piers	Fair	1	4	3	3	☑	☑	☑	☑	☑	☑
4914	NORTH BAYOU BLACK		N	5	Mobile home	Piers	Poor	1		2.5	2	☑			☑	☑	☑
4882	NORTH BAYOU BLACK		Y	1A	House (brick)	Slab	Good	1	0	0.5	1	☑	☑		☑	☑	☑
4880	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	2	1	1	☑	☑		☑	☑	☑
4872	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	2	2	1	☑	☑		☑	☑	☑
4820	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	3	2.5	2	☑	☑		☑	☑	☑
4818	NORTH BAYOU BLACK		N	5	House (wood)	Piers	Poor	1	2	2	1	☑			☑	☑	☑
4816	NORTH BAYOU BLACK		Y	1A	House (brick)	Slab	Good	1	0	0.5	0	☑	☑		☑	☑	☑
4814	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	4	2.5	1	☑	☑		☑	☑	☑
4812	NORTH BAYOU BLACK		Y	1A	House (brick)	Slab	Good	1	0	0.5	-0.5	☑	☑		☑	☑	☑
4810	NORTH BAYOU BLACK		Y	1A	House (wood)	Slab	Good	2	0	0.5	0.25	☑	☑		☑	☑	☑
4808	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	4	2	1.5	☑	☑		☑	☑	☑
4806	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	4	2.5	2	☑	☑		☑	☑	☑
4804	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Poor	1	2	1.5	1	☑			☑	☑	☑
4800	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	3	2.5	1.5	☑	☑		☑	☑	☑
4801	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	3	1.5	0.5	☑	☑		☑	☑	☑
4794	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	2	1.5	1	☑	☑		☑	☑	☑
4790	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	3	2	1.5	☑	☑		☑	☑	☑
4790 A	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	5	3.5	2.5	☑	☑		☑	☑	☑
4788	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	5	3.5	3	☑	☑		☑	☑	☑
4788 A	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	7	4	3	☑	☑		☑	☑	☑
4786	NORTH BAYOU BLACK		N	5	House (wood)	Piers	Fair	1	3	1.5	0	☑	☑	☑	☑	☑	☑
4780	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	4	3	1.5	☑	☑		☑	☑	☑
4778	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Poor	1	4	2.5	0.5	☑			☑	☑	☑
4776	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	3	2	0.5	☑	☑		☑	☑	☑
4774	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	5	3	1	☑	☑		☑	☑	☑
4772	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	4	2.5	1	☑	☑		☑	☑	☑
4768	NORTH BAYOU BLACK		N	5	House (wood)	Piers	Poor	1	2	1.5	0.5	☑			☑	☑	☑
4766 B	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Good	1			-0.5	☑	☑		☑	☑	☑

4766	NORTH BAYOU BLACK		Y	1B	House (wood)	Slab	Good	1	0	0.5	0.5	☑	☑		☑	☑	☑
4764	NORTH BAYOU BLACK		Y	1A	House (metal)	Slab	Good	1	0	3	2.5	☑	☑		☑	☑	☑
4762	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	3	2.5	2.5	☑	☑		☑	☑	☑
4760	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	4	3	1.5	☑	☑		☑	☑	☑
4758	NORTH BAYOU BLACK		Y	1A	House (wood)	Slab	Fair	1	0	0	0	☑	☑		☑	☑	☑
4752	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	3	1.5	1	☑	☑		☑	☑	☑
4750	NORTH BAYOU BLACK		Y	8	House (brick)	Crawlspace	Good	1	3	2.5	2.5	☑	☑		☑	☑	☑
4748	NORTH BAYOU BLACK		Y	3	House (wood)	Split level	Fair	1	3	2.5	2.5	☑	☑		☑	☑	☑
4746	NORTH BAYOU BLACK		Y	5	House (stucco)	Piers	Good	1	3	2.5	2.5	☑	☑		☑	☑	☑
4744	NORTH BAYOU BLACK		N	1A	Bar (concrete)	Slab	Fair	1	0	0	-0.5	☑	☑	☑	☑	☑	☑
4742	NORTH BAYOU BLACK		N	3	House (wood)	Split level	Poor	1	2	1.5	0.5	☑			☑	☑	☑
4740	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Fair	1	4	3.5	1	☑	☑		☑	☑	☑
4739	NORTH BAYOU BLACK		Y	5	Mobile home	Piers	Poor	1		3	1	☑			☑	☑	☑
4726	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	2	1.5	0	☑	☑		☑	☑	☑
4727	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	2	1.5	-0.5	☑	☑		☑	☑	☑
4724	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	1	1	-0.5	☑	☑		☑	☑	☑
4722	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	2	1.5	0.5	☑	☑		☑	☑	☑
4720	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	2	1.5	1	☑	☑		☑	☑	☑
4718	NORTH BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	2	1.5	0.5	☑	☑		☑	☑	☑
4716	NORTH BAYOU BLACK		Y	3	House (wood)	Split level	Good	1	0	0	-0.5	☑	☑		☑	☑	☑
4702	NORTH BAYOU BLACK		Y	1A	Warehouse (metal)	Slab	Good	1	0	2	0.5	☑	☑		☑	☑	☑

Number	Street	Photo	Occupied (Y/N)	EC Digram	Structure Type	Foundation Type	Foundation Condition	# of Stories	Steps to Front Door	Elevated above Grade	Elevated above Street	Recommendations					
												Levee	*Elevate*	*Acquire*	*Demo & Reconstruct*	*Flood Insurance*	*Elevate Utilities*
6107	BAYOU BLACK		N	5	House (wood)	Cinder blocks	Fair	1	3	1	1.5	☑	☑		☑	☑	☑
6115	BAYOU BLACK		Y	5	House (wood)	Cinder blocks	Fair	1	4	2.5	2.5	☑	☑		☑	☑	☑
@Rochel	BAYOU BLACK		Y	5	House (wood)	Cinder blocks	Fair	1	4	2	1	☑	☑		☑	☑	☑
6128	BAYOU BLACK		Y	5	House (wood)	Cinder blocks	Fair	1	4	2	1.5	☑	☑		☑	☑	☑
6129	BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	4	2	1	☑	☑		☑	☑	☑
6133	BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	3	2	1	☑	☑		☑	☑	☑
6135	BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	4	2	1	☑	☑		☑	☑	☑
6139	BAYOU BLACK		N	5	House (wood)	Cinder blocks	Good	1	3	2	0.5	☑	☑		☑	☑	☑
6143	BAYOU BLACK		N	5	House (wood)	Cinder blocks	Poor	1	N/A	1	0.5	☑			☑	☑	☑
6153	BAYOU BLACK		Y	5	Mobile home	Cinder blocks	Good	1	5	3	2	☑				☑	☑
6153	BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	3	1.5	0.5	☑	☑		☑	☑	☑
6157	BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	6	3.5	2.5	☑				☑	☑
6159	BAYOU BLACK		N	5	Mobile home	Cinder blocks	Fair	1	4	3	2.5	☑				☑	☑
6161	BAYOU BLACK		Y	5	Lodge (wood)	Piers	Fair	2	3	2	1	☑	☑		☑	☑	☑
6169	BAYOU BLACK		Y	5	Mobile home	Cinder blocks	Fair	1	4	2.5	1.5	☑	☑		☑	☑	☑
6179	BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	3	2	0.5	☑	☑		☑	☑	☑
6183	BAYOU BLACK		Y	1A	House(brick)	Slab	Excellent	1	0	0.5	1	☑	☑		☑	☑	☑
6213	BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	3	1.5	0.5	☑	☑		☑	☑	☑
6215	BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	5	3	2.5	☑				☑	☑
6217	BAYOU BLACK		Y	1A	House (wood)	Slab/Piers	Good	1	0	0.5	-0.5	☑			☑	☑	☑
6219	BAYOU BLACK		Y	5	Mobile home	Piers	Good	1	5	3.5	2.5	☑				☑	☑
6225	BAYOU BLACK		Y	1A	House (wood)	Slab/Piers	Fair	1	0	0.25	-0.5	☑	☑		☑	☑	☑
6225	BAYOU BLACK		N	5	House (wood)	Piers	Fair	1		1	0.5	☑	☑		☑	☑	☑
6229	BAYOU BLACK		N	5	Mobile home	Cinder blocks	Poor	1	4	2.5	1.5	☑			☑	☑	☑
6231	BAYOU BLACK		N	5	House (wood)	Piers	Poor	1	3	2	0	☑			☑	☑	☑
6235	BAYOU BLACK		Y	1A	House (concrete)	Slab	Fair	1	0	0.25	-2	☑	☑		☑	☑	☑
6307	BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	2	2	-2	☑	☑		☑	☑	☑
6309	BAYOU BLACK		Y	5	Mobile home	Piers	Good	1		3.5	2	☑				☑	☑
6313	BAYOU BLACK		Y	1A	Church (cinder blo	Slab	Good	1	1	1	-1.5	☑	☑		☑	☑	☑
6321	BAYOU BLACK		Y	8	House (brick)	Crawlspace	Good	1	6	3.5	1	☑				☑	☑
6323	BAYOU BLACK		Y	8	House (wood)	Crawlspace	Good	1	5	4	0	☑				☑	☑
6334	BAYOU BLACK		Y	1B	House (wood)	Slab	Good	1	4	2	0	☑	☑		☑	☑	☑
6335	BAYOU BLACK		Y	8	House(brick)	Crawlspace	Good	1	0	1	-1	☑	☑		☑	☑	☑
6338	BAYOU BLACK		Y	1A	House (wood)	Slab	Good	2	0	0.5	-1.5	☑	☑		☑	☑	☑
6339	BAYOU BLACK		Y	8	House (wood)	Crawlspace	Good	1	3	2.5	0	☑	☑		☑	☑	☑
6342	BAYOU BLACK		Y	1A	House (brick)	Slab	Good	1	0	0	-0.5	☑	☑		☑	☑	☑
6366	BAYOU BLACK		Y	5	House (wood)	Piers	Fair	1	3	2	-0.5	☑	☑		☑	☑	☑
6368	BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	3	2	0	☑	☑		☑	☑	☑
6370	BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	4	2	-0.5	☑	☑		☑	☑	☑
6372	BAYOU BLACK		Y	5	House (wood)	Piers	Good	1	3	1	0	☑	☑		☑	☑	☑
6400	BAYOU BLACK		Y	1A	Library	Fill	Excellent	1	0	4	1.5	☑				☑	☑
6407	BAYOU BLACK		Y	5	House (wood)	Piers (brick veneer)	Good	1	4	2.5	0.5	☑	☑		☑	☑	☑
6433	BAYOU BLACK		Y	5	Mobile home	Cinder blocks	Good	1	5	4	1	☑				☑	☑
6434	BAYOU BLACK		Y	1A	Dollar General	Slab	Excellent	1	1	6	2	☑				☑	☑
6447	BAYOU BLACK		Y	5	Mobile home	Piers (skirting)	Good	1	6	3.5	0	☑				☑	☑
6431	SOUTH BAYOU BLAC		Y	5	House (wood)	Piers (skirting)	Good	1	3	2	-1.5	☑	☑		☑	☑	☑
6429	SOUTH BAYOU BLAC		Y	5	House (wood)	Piers (skirting)	Fair	1	3	1	-0.5	☑	☑		☑	☑	☑
6427	SOUTH BAYOU BLAC		Y	5	House (wood)	Piers (skirting)	Fair	1	3	2	-0.5	☑	☑		☑	☑	☑
6421	SOUTH BAYOU BLAC		N	5	House (wood)	Piers	Good	1	3	2	-0.5	☑	☑		☑	☑	☑
6381	SouTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	1	5	3	0.5	☑	☑		☑	☑	☑

6375	SouTH BAYOU BLAC		Y	5	House (wood)	Piers	Fair	1	3	2.5	0	☑	☑		☑	☑	☑
6371	SoUTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	1	2	2	0	☑	☑		☑	☑	☑
6363	SouTH BAYOU BLAC		Y	1A	Library/School	Slab	Good	2	0	0	-0.5	☑	☑		☑	☑	☑
6353	SOUTH BAYOU BLAC		Y	1A	Post office	Slab	Good	1	0	1	0	☑	☑		☑	☑	☑
6349	SOUTH BAYOU BLAC		Y	5	House (wood)	Cinder block	Good	2	4	2.5	0.5	☑	☑		☑	☑	☑
	SOUTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	1	4	2.5	0	☑	☑		☑	☑	☑
6345	SOUTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	1	4	2	0	☑	☑		☑	☑	☑
	SOUTH BAYOU BLAC		Y	5	Mobile home	Cinder block	Good	1	4	2.5	0.5	☑	☑		☑	☑	☑
6333	SOUTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	1	3	2	0	☑	☑		☑	☑	☑
6331	SOUTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	1	3	2	0	☑	☑		☑	☑	☑
	SOUTH BAYOU BLAC		N	5	Church	Piers	Fair	1	3	2	0	☑	☑	☑	☑	☑	☑
	SOUTH BAYOU BLAC		Y	8	Church	Crawlspace	Good	1	2	1	0	☑	☑		☑	☑	☑
6317	SOUTH BAYOU BLAC		Y	1A	House (brick)	Slab	Good	1	1	1.5	0	☑	☑		☑	☑	☑
6313	SOUTH BAYOU BLAC		Y	1A	House (brick)	Slab	Good	1	1	1.5	0.5	☑	☑		☑	☑	☑
6311	SOUTH BAYOU BLAC		Y	5	House (wood)	Cinder block	Poor	1	3	1	0	☑			☑	☑	☑
6332	NORTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	2	4	2.5	2.5	☑	☑		☑	☑	☑
6326	NORTH BAYOU BLAC		Y	1B	House (concrete)	Slab	Good	1	2	1.5	1.5	☑	☑		☑	☑	☑
6324	NORTH BAYOU BLAC		Y	5	House (concrete)	Slab	Good	1	3	2	1.5	☑	☑		☑	☑	☑
6322	NORTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	1	4	2.5	1	☑	☑		☑	☑	☑
6320	NORTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	1	3	2	1	☑	☑		☑	☑	☑
6318	NORTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	1	4	2.5	1.5	☑	☑		☑	☑	☑
6314	NORTH BAYOU BLAC		Y	1A	House (wood)	Slab	Good	1	0	0	-0.5	☑	☑		☑	☑	☑
6310	NORTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	1	4	2.5	1.5	☑	☑		☑	☑	☑
6308	NORTH BAYOU BLAC		Y	5	Mobile home	Piers	Fair	1	ramp	3	1.5	☑	☑		☑	☑	☑
6306	NORTH BAYOU BLAC		Y	5	Mobile home	Piers	Fair	1	5	3	2.5	☑	☑		☑	☑	☑
6274	NORTH BAYOU BLAC		Y	5	House (wood)	Piers	Fair	1	0	0	0	☑	☑		☑	☑	☑
6270	NORTH BAYOU BLAC		Y	1A	House (wood)	Slab	Fair	1	0	0	0	☑	☑		☑	☑	☑
6268	NORTH BAYOU BLAC		Y	5	Mobile home	Piers	Good	1	4	3	3	☑	☑		☑	☑	☑
6266	NORTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	1	3	2	1	☑	☑		☑	☑	☑
6262	NORTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	1	3	2.5	1.5	☑	☑		☑	☑	☑
6260	NORTH BAYOU BLAC		Y	5	House (wood)	Cinder blocks	Good	1	5	3	3	☑	☑		☑	☑	☑
6252	NORTH BAYOU BLAC		Y	5	Mobile home	Piers	Good	1	5	3	2	☑	☑		☑	☑	☑
6248	NORTH BAYOU BLAC		N	5	House (wood)	Piers	Poor	1	3	1	0.5	☑			☑	☑	☑
6246	NORTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	1	3	2.5	0.5	☑	☑		☑	☑	☑
6240	NORTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	1	4	2.5	1	☑	☑		☑	☑	☑
6230	NORTH BAYOU BLAC		Y	5	House (wood)	Piers	Poor	1		2	0.5	☑	☑		☑	☑	☑
6222	NORTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	1	4	3	1	☑	☑		☑	☑	☑
6218	NORTH BAYOU BLAC		N	5	House (wood)	Piers	Poor	1	3	1	0	☑			☑	☑	☑
6212	NORTH BAYOU BLAC		Y	1A	House (brick)	Slab	Good	1	0	0.5	0	☑	☑		☑	☑	☑
6210	NORTH BAYOU BLAC		Y	1A	House (wood)	Slab	Good	1	0	0.5	0	☑	☑		☑	☑	☑
6208	NORTH BAYOU BLAC		Y	8	House (wood)	Crawlspace	Good	1	5	3	2	☑	☑		☑	☑	☑
6206	NORTH BAYOU BLAC		Y	1A	House(brick)	Slab	Good	1	0	0	-0.5	☑			☑	☑	☑
6176	NORTH BAYOU BLAC		N	5	House (wood)	Piers	Poor	1	2	2	0	☑	☑		☑	☑	☑
6172	NORTH BAYOU BLAC		Y	5	Mobile home	Piers	Good	1	6	3.5	1	☑	☑		☑	☑	☑
6166	NORTH BAYOU BLAC		Y	8	House (wood)	Crawlspace	Good	1	5	3.5	2	☑	☑		☑	☑	☑
6162	NORTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	1	4	3	1	☑	☑		☑	☑	☑
6160	NORTH BAYOU BLAC		Y	5	House (wood)	Piers	Good	1	3	2.5	0.5	☑	☑		☑	☑	☑
6156	NORTH BAYOU BLAC		Y	5	House (wood)	Piers	Fair	1	3	2.5	0.5	☑	☑		☑	☑	☑
6152	NORTH BAYOU BLAC		Y	1A	House (wood)	Slab	Good	0	0	0		☑	☑		☑	☑	☑
6148	NORTH BAYOU BLAC		Y	1A	House (brick)	Slab	Good	1	0	0	-1	☑	☑		☑	☑	☑
6144	NORTH BAYOU BLAC		N	5	House (wood)	Piers	Poor	1	2	1.5	0	☑			☑	☑	☑
6142	NORTH BAYOU BLAC		Y	5	Mobile home	Piers	Poor	1	1	0.5	-4	☑			☑	☑	☑
6136	NORTH BAYOU BLAC		Y	5	House (wood)	Piers	Fair	1	3	2	0	☑	☑		☑	☑	☑
6134	NORTH BAYOU BLAC		Y	5	House (wood)	Piers	Fair	1	3	1.5	0.5	☑	☑		☑	☑	☑
6128	NORTH BAYOU BLAC		Y	1A	House (brick)	Slab	Good	1	0	0	-1	☑	☑		☑	☑	☑

6124	NORTH BAYOU BLA		Y	5	Mobile home	Piers	Good	1	7	3	0.5	☑	☑		☑	☑	☑

Study Area 3 Deadwood

Number	Street	Photo	Occupied (Y/N)	EC Digram	Structure Type	Foundation Type	Foundation Condition	# of Stories	Steps to Front Door	Elevated above Grade	Elevated above Street	Recommendations					
												Levee	*Elevate*	*Acquire*	*Demo & Reconstruct*	*Flood Insurance*	*Elevate Utilities*
203	DEADWOOD		Y	5	House (wood siding)	Cinder block	Fair	1	3	1.5	-1	☑	☑		☑	☑	☑
207	DEADWOOD		Y	5	Mobile home	Cinder block	Fair	1	8	4	3	☑	☑		☑	☑	☑
209	DEADWOOD		Y	5	House (wood siding)	Piers	Good	1	ramp	2	0	☑	☑		☑	☑	☑
211	DEADWOOD		N	5	Mobile home with addition	Cinder block	Poor	1	3	1.5	0	☑			☑	☑	☑
217	DEADWOOD		Y	5	House (wood siding)	Cinder block	Fair	1	ramp	1	-2	☑	☑		☑	☑	☑
221	DEADWOOD		Y	5	House (wood siding)	Piers	Fair	1	2	0.5	-2	☑	☑		☑	☑	☑
223	DEADWOOD		N	5	Mobile home	Piers	Poor	1	3	1	0	☑			☑	☑	☑
237	DEADWOOD		N	5	House (wood siding)	Piers	Fair	1	3	1	0.5	☑	☑		☑	☑	☑
241	DEADWOOD		N	5	house (wood siding)	Piers	Poor	1	2	1)		☑			☑	☑	☑
243	DEADWOOD		Y	5	Mobile home	Piers with skirting	Poor	1	4	3	1	☑			☑	☑	☑
243B	DEADWOOD		Y	5	Mobile home	Piers with skirting	Good	1		4	2	☑	☑		☑	☑	☑
263	DEADWOOD		N	5	House (wood siding)	Piers	Poor	1	3	1	0	☑			☑	☑	☑
281	DEADWOOD		Y	6	House (wood siding)	Posts	Good	1	12	7	6	☑				☑	☑
283	DEADWOOD		Y	5	House (wood siding)	Piers	Good	1	2	1	-0.5	☑	☑		☑	☑	☑
415	DEADWOOD		Y	5	Church (wood)	Piers	Fair	1	2	1	-1	☑	☑		☑	☑	☑
423	DEADWOOD		Y	5	Mobile home	Piers	Good	1	ramp	3	1	☑	☑		☑	☑	☑
502	DEADWOOD		Y	1A	House (brick)	Slab	Good	1	1	0.5	0	☑	☑		☑	☑	☑
506	DEADWOOD		Y	5	House (wood)	Brick columns	Good	1	4	3	0	☑	☑		☑	☑	☑
512	DEADWOOD		Y	5	House (wood)	Piers	Good	1	3	2.5	0	☑	☑		☑	☑	☑
514	DEADWOOD		Y	5	House (wood)	Piers	Good	1	4	1	1	☑	☑		☑	☑	☑
518	DEADWOOD		Y	1A	House (brick)	Slab	Good	1	0	0.25	0	☑	☑		☑	☑	☑
718	DEADWOOD		Y	5	House (wood)	Posts	Good	1	7	4	3	☑	☑		☑	☑	☑
734	DEADWOOD		Y	5	Mobile home	Cinder blocks	Fair	1	5	3	2	☑	☑		☑	☑	☑
755	DEADWOOD		Y	5	Mobile home	Piers	Fair	1	5	3	0.5	☑	☑		☑	☑	☑
756	DEADWOOD		Y	5	Mobile home	Piers	Fair	1	2	0.5	0.5	☑	☑		☑	☑	☑
765	DEADWOOD		N	5	Mobile home	Piers	Poor	1		2	1	☑			☑	☑	☑
767	DEADWOOD		Y	5	Mobile home	Cinder blocks	Good	1	9	6	3	☑				☑	☑
769	DEADWOOD		Y	5	Mobile home	Piers	Good	1	5	3	0	☑	☑		☑	☑	☑
775	DEADWOOD		Y	5	Mobile home	Skirting	Good	1	4	2.5	1	☑	☑		☑	☑	☑
824	DEADWOOD		Y	1A	House (brick)	Slab	Good	1	0	0.6	0	☑	☑		☑	☑	☑
824	DEADWOOD		Y	8	House (brick)	Crawlspace	Excellent	1	6	3	6	☑				☑	☑