

# Flood Risk Report

## Bayou Cocodrie, Black, and Lower Red Watersheds

HUC 08040306, 08040305, 08040301

*Post-Discovery, December 2020*



# FEMA

# Flood Risk Report History

Version Number	Version Date	Summary
1	12/29/2020	Initial report creation after the Discovery meeting

## Preface

The Department of Homeland Security, Federal Emergency Management Agency's (FEMA) Risk Mapping, Assessment, and Planning (Risk MAP) program provides States, Tribes, and local communities with flood risk information, datasets, risk assessments, and tools that they can use to increase their resilience to flooding and better protect their residents. By pairing accurate floodplain maps with risk assessment tools and planning and outreach support, Risk MAP transforms the traditional flood mapping efforts into an integrated process of identifying, assessing, communicating, planning for, and mitigating flood-related risks.

This Flood and Natural Hazard Risk Report provides datasets for floods and other natural hazards to help local or Tribal officials, floodplain managers, planners, emergency managers, and others better understand their flood risk, take steps to mitigate those risks, and communicate those risks to their residents and local businesses. Flood risk often extends beyond community limits. This report provides flood risk data for the Bayou Cocodrie, Black, and Lower Red Watersheds.

Flood risk is always changing, and studies, reports, or other sources may be available that provide more comprehensive information. This report is not intended to be regulatory or the final authoritative source of all flood risk data in the project area. Rather, it should be used in conjunction with other data sources to provide a comprehensive picture of flood risk within the project area.

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## Executive Summary

The Federal Emergency Management Agency's (FEMA) Risk Mapping, Assessment, and Planning (Risk MAP) program provides communities with flood information to help them understand their current flood risk and make informed decisions about taking action to become stronger and more resilient in the face of future risk. The Risk MAP process provides communities with new or improved information about their flood risk based on watershed models that use information from local, regional, State, and Federal sources. Communities can use the resulting tools and data to enhance mitigation plans and better protect their residents.

This report is one such tool for communities impacted from an updated flood hazard analysis of the Bayou Cocodrie, Black, and Lower Red Watersheds. The Flood Risk Report has two goals: (1) **inform communities of their risks** related to certain natural hazards, and (2) **enable communities to act** to reduce their risk. It is intended to assist Federal, State, and local officials with the following:

- Update local hazard mitigation plans and community comprehensive plans
- Update emergency operations and response plans
- Communicate risk
- Inform the modification of development standards
- Identify mitigation projects

During this phase of the process, communities are encouraged to review the flood hazard changes closely and provide feedback to FEMA Region VI, based on their local knowledge and any additional data available.

### About the Bayou Cocodrie, Black, and Lower Red Watersheds

The study area covers 7 parishes (Avoyelles, Catahoula, Concordia, LaSalle, Pointe Coupee, Rapides, and Tensas) and 9 communities (Alexandria, Clayton, Ferriday, Jonesville, Mansura, Marksville, Pineville, Ridgecrest, and Vidalia). The first FEMA maps for the study area were released over 40 years ago. Since then, there have been a few updates to these maps. The most recent update was in 2005. The Bayou Cocodrie watershed is to the west of the Mississippi River and the Mississippi-Louisiana border. The Black watershed is sandwiched between the Lower Red and Bayou Cocodrie.



Figure 1: Flooding in Vidalia, May 2011

## About the Risk MAP Project

Much of the information garnered for the Risk MAP project originates from the careful leverage of pre-existing resources. The information relating to the demographics of the watershed is derived from the 2000 and 2010 censuses. Additionally, local community and parish governments provided further, locally obtained flooding information. Utilizing that pre-existing information allows the Risk MAP Project to increase its overall scope and detail without increasing the cost or length of the project.

FEMA, through its contractor Compass, completed the collection and creation of Base Level Engineering (BLE) for the Bayou Cocodrie, Black, and Lower Red Watersheds in December 2018. The Base Level Engineering analysis was performed to support the overall Risk MAP program and to perform a validation of the effective Zone A Special Flood Hazard Areas (SFHAs) in the watershed.

In April 2020 the Louisiana Department of Transportation and Development (LA DOTD) with support from FEMA Region 6, initiated the Phase 1 Discovery phase of this project. The goal of Discovery is to gain a more holistic picture of the flood hazards within a watershed, to collect data to validate the flood risks, identify opportunities to facilitate migration planning, and aid local communities in identifying further actions to reduce flood risk. Furthermore, because flood risks change over time, this Discovery project will help identify areas for future flood risk identification and assessment. The Discovery process is designed to open lines of communication and relies on local involvement for productive discussions. For additional information on the Discovery portion of this project see the section of this report titled “Phase 1: Discovery.”

For more information about ways your community can take action or take advantage of available resources, please review the attached appendices.

## Introduction

### Flood Risk

Floods are naturally occurring phenomena that can and do happen almost anywhere. In its most basic form, a flood is an accumulation of water over normally dry areas. Floods become hazardous to people and property when they inundate an area where development has occurred, causing losses. Mild flood losses may have little impact on people or property, such as damage to landscaping or the accumulation of unwanted debris. Severe flood losses can destroy buildings and crops and cause severe injuries or death.

#### Calculating Flood Risk

It is not enough to simply identify where flooding may occur. Even if people know where a flood might occur, they may not know the risk of flooding in that area. The most common method for determining flood risk, also referred to as vulnerability, is to identify both the probability and the consequences of flooding:

**Flood Risk** (or Vulnerability) = **Probability x Consequences**; where

**Probability** = the likelihood of occurrence

**Consequences** = the **estimated** impacts associated with the occurrence

The probability of a flood is the likelihood that it will occur. The probability of flooding can change based on physical, environmental, and/or engineering factors. Factors that affect the probability of flood will have an impact on the area that range from changing weather patterns to the existence of mitigation projects. The ability to assess the probability of a flood, and the level of accuracy for that assessment, are also influenced by modeling methodology advancements, better knowledge, and longer periods of record for the water body in question.

The consequences of a flood are the estimated impacts associated with its occurrence. Consequences relate to human activities within an area and how a flood affects the natural and built environment.

The Flood Risk Report has two goals: (1) inform communities of their risks related to certain natural hazards and (2) enable communities to act to reduce their risk. The information within this Risk Report is intended to assist Federal, State and local officials to:

- **Communicate risk** – Local officials can use the information in this report to communicate with property owners, business owners, and other residents about risks and areas of mitigation interest.
- **Update local hazard mitigation plans and community comprehensive plans** – Planners can use risk information to develop and/or update hazard mitigation plans, comprehensive plans, future land use maps, and zoning regulations. For example, zoning codes can be changed to provide for more appropriate land uses in high-hazard areas.
- **Update emergency operations and response plans** – Emergency managers can identify high-risk areas for potential evacuation and low-risk areas for sheltering. Risk assessment information may show vulnerable areas, facilities, and infrastructure for which continuity of operations plans, continuity of government plans, and emergency operations plans would be essential.

- **Inform the modification of development standards** – Planners and public works officials can use information in this report to support the adjustment of development standards for certain locations.
- **Identify mitigation projects** – Planners and emergency managers can use this risk assessment to determine specific mitigation projects of interest. For example, a floodplain manager may identify critical facilities that need to be elevated or removed from the floodplain.

This report showcases risk assessments, which analyze how a hazard affects the built environment, population, and local economy, to identify mitigation actions and develop mitigation strategies.

The information in this report should be used to identify areas for mitigation projects as well as for additional efforts to educate residents on the hazards that may affect them. The areas of greatest hazard impact are identified in the Areas of Mitigation Interest section of this report, which can serve as a starting point for identifying and prioritizing actions a community, can take to reduce its risks.

### Watershed Basics

The Bayou Cocodrie, Black, and Lower Red watersheds are made up of a series of streams and rivers varying in size. The Bayou Cocodrie watershed begins in the southern part of Tensas Parish and travels south all the way through Concordia Parish. The watershed is bounded by the Mississippi River levee system to the east. The main waterway is Bayou Cocodrie, which is a state designated scenic river. In the 1970's, a lot of area in the watershed was cleared of its forested wetlands to be converted to soybean farming. This has led to an increase in runoff.

The main tributary of the Lower Red watershed is the Red River. The Red River begins in the Texas Panhandle and flows east, forming the border between Texas and Oklahoma. It then enters Arkansas and then it flows south into Louisiana, near Ida. It then travels in a south easterly direction across the state. The Red River in the Lower Red watershed begins in Rapides Parish, where it then flows across into Avoyelles, where it then forms the border between Avoyelles and Catahoula, and Avoyelles and Concordia. It then empties into the Atchafalaya.

The Black Watershed is between the Bayou Cocodrie and the Lower Red Watersheds. The main tributary is the Black River, which bisects the watershed. The Black River starts at the confluence of the Little, Ouachita, and Tensas Rivers. It eventually joins the Red River.

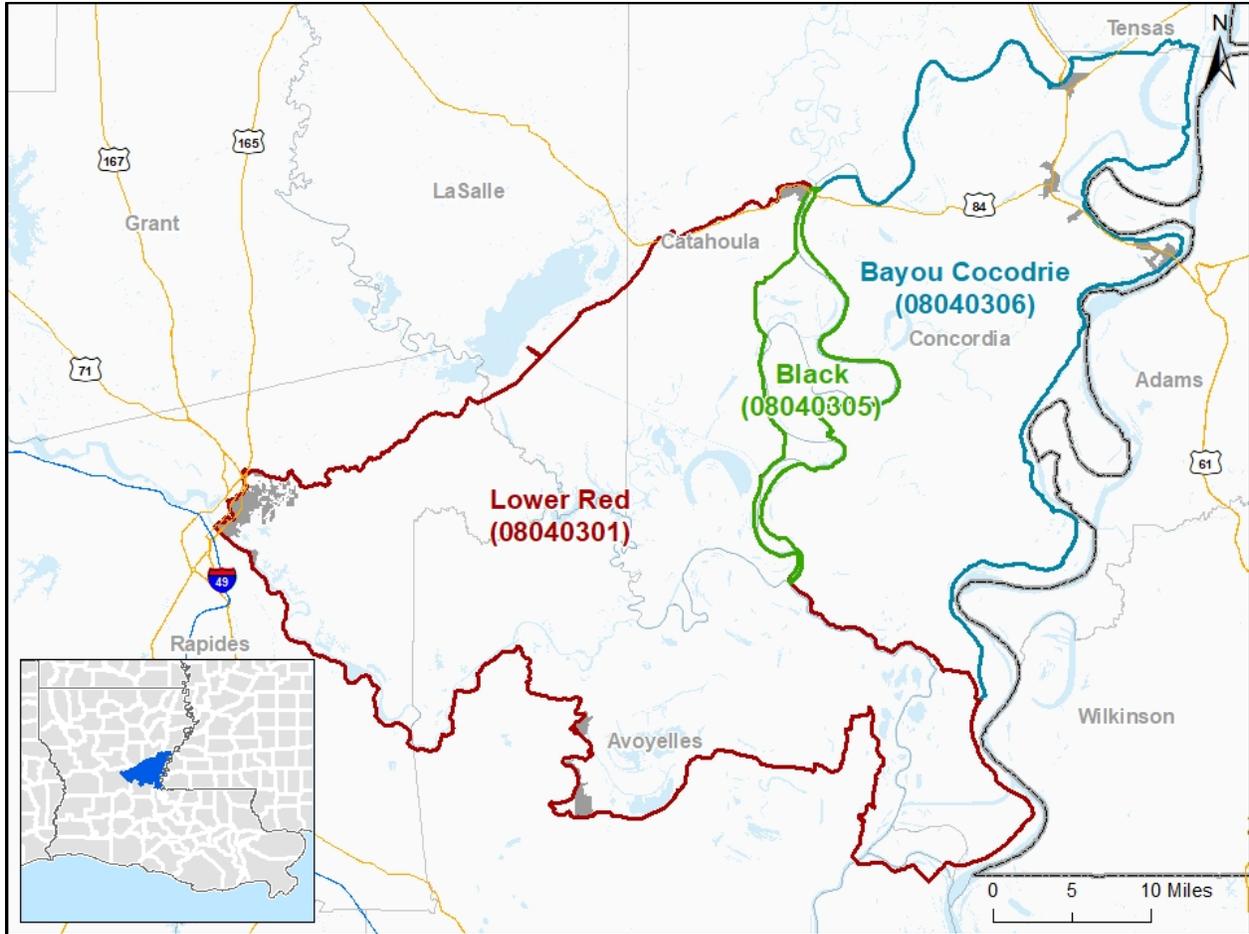


Figure 2: Overview map for the Bayou Cocodrie, Black, and Lower Red Watersheds

Most of the parishes within the 3 watersheds have seen a slight decrease in population over recent years. Table 1 below shows the population characteristics for the watersheds.

Table 1: Population and Area Characteristics <sup>1</sup>

Risk MAP Project	Total Population	Annual Population Growth/Yr (2010-2018)	Predicted Population (by 2023)	Land Area
Bayou Cocodrie Watershed	25,714	-0.08	24,935	557 sq. mi.
Black Watershed	30,771	-0.27	29,697	73 sq. mi.
Lower Red Watershed	239,449	0.25	246,112	907 sq. mi.

<sup>1</sup> Data obtained from the U.S. Census Bureau; ESRI Demographic 5-year Projections; and National Land Cover Database

To help mitigate the risk to areas where increased population and development are expected, communities can adopt (or exceed) the minimum standards of the National Flood Insurance Program (NFIP). This is recommended as a proactive strategy to manage construction within the floodplain and avoid negative impacts to existing and future development.

To increase mitigation efforts and community flood awareness through potentially discounted premium rates, an NFIP community that has adopted more stringent ordinances or is actively completing mitigation and outreach activities is encouraged to consider joining the Community Rating System (CRS). The CRS program is a voluntary incentive-based program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions.

Communities can review their current ordinances and reflect potential flood hazard changes by adopting updated ordinances early. This action can reduce future flood losses by affecting how substantial improvements or new construction are regulated. Table 2 depicts NFIP and CRS participation status and provides an overview of the effective flood data availability.

Table 2: NFIP and CRS Participation <sup>2</sup>

Risk MAP Project	Participating NFIP Communities/ Total Communities	Number of CRS Communities	CRS Rating Class Range	Average Years since FIRM Update	Level of Regulations (44 CFR 60.3)
Bayou Cocodrie Watershed	6/6	0	-	34	60.3(d)
Black Watershed	3/3	0	-	20	60.3(d)
Lower Red Watershed	11/11	0	-	23	60.3(c), 60.3(d)

The number of dams impacting the watersheds are shown in table 3 below. The Bayou Cocodrie watershed has 1 dam, the Black has 2 dams, and the Lower Red has 8 dams.

Table 3: Risk MAP Project Dam Characteristics<sup>3</sup>

Risk MAP Project	Total Number of Identified Dams	Number of Dams Requiring EAP	Percentage of Dams without EAP	Average Years since Inspection	Average Storage (acre-feet)
Bayou Cocodrie Watershed	1	0	100%	6	240

<sup>2</sup> Data obtained from FEMA Community Information Systems.

<sup>3</sup> Data obtained from USACE National Inventory of Dams (June 2020)

Risk MAP Project	Total Number of Identified Dams	Number of Dams Requiring EAP	Percentage of Dams without EAP	Average Years since Inspection	Average Storage (acre-feet)
Black Watershed	1	1	0%	10	123,700
Lower Red Watershed	8	1	100%	9	15,923

There are numerous levees throughout the three watersheds. These are shown below in Table 4. Levees can reduce the risk of flooding, however there is still a risk

Table 4: Risk Map Project Levee Characteristics

NLD System ID	Levee Name	Levee Length	Parish	Levee System Accreditation Status on Effective FIRM
5905000001	AR-LA MS River	359 mi.	Avoyelles, Catahoula, Concordia, LaSalle, Rapides, Tensas	PAL
1605205004	Brouillette System	19 mi.	Avoyelles	Accredited
5905000057	Jonesville Local Protection	4 mi.	Catahoula	Accredited
5905000023	Larto-Jonesville LA	65 mi.	Catahoula, LaSalle	Accredited
1605022586	Louisiana Delta Plantation Levee	17 mi.	Avoyelles, Catahoula	Non-Accredited
4405000523	Mississippi River West Bank - Above Morganza	56 mi.	Pointe Coupee	Accredited
4405000515	Mississippi River West Bank - Above Old River	16 mi.	Avoyelles, Catahoula, Concordia, LaSalle, Pointe Coupee, Rapides	Accredited
1605205003	Moncla-Johnson System	4 mi.	Avoyelles	Accredited
1605995101	Old River Control Structure Lateral Levee 2	3 mi.	Concordia	Non-Accredited
1605215002	Old River North Levee System	6 mi.	Concordia	Non-Accredited
5905000038	Pineville La	1 mi.	Rapides	Accredited
1605240001	Red River - South Bank System	3 mi.	Rapides	Accredited
5905000022	Red River BW LA	93 mi.	Catahoula, Concordia, Tensas	Accredited
1605205001	Vick System	10 mi.	Avoyelles	Accredited
1605200003	West Atchafalaya Basin Protection Levee System	15 mi.	Avoyelles	Accredited
4405000516	West of Atchafalaya Basin	163 mi.	Avoyelles, Rapides	Accredited

## Project Phases and Map Maintenance

### Background

FEMA manages several risk analysis programs, including Flood Hazard Mapping, National Dam Safety, Earthquake Safety Program, Multi-Hazard Mitigation Planning, and Risk Assessment Program, that assess the impact of natural hazards and lead to effective strategies for reducing risk. These programs support the Department of Homeland Security’s objective to “strengthen nationwide preparedness and mitigation against natural disasters.”

FEMA manages the NFIP, which is the cornerstone of the national strategy for preparing American communities for flood hazards. In the Nation’s comprehensive emergency management framework, the analysis and awareness of natural hazard risk remains challenging. For communities to make informed risk management decisions and take action to mitigate risk, a consistent risk-based approach to assessing potential vulnerabilities and losses is needed, as well as tools to communicate the message. Flood hazard mapping remains a basic and critical component for a prepared and disaster-resilient Nation.

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*Flood-related damage between 1980 and 2013 totaled \$260 billion, but the total impact to our Nation was far greater—more people lose their lives annually from flooding than any other natural hazard.*

*FEMA, “Federal Flood Risk Management Standard (FFRMS)” (2015)*

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In Fiscal Year 2009, FEMA’s Risk MAP program began to synergize the efforts of Federal, State, and local partners to create timely, viable, and credible information identifying natural hazard risks. The intent of the Risk MAP program is to share resources to identify the natural hazard risks a community faces and ascertain possible approaches to minimizing them. Risk MAP aims to provide technically sound flood hazard information to be used in the following ways:

- To update the regulatory flood hazard inventory depicted on FIRMs and the National Flood Hazard Layer
- To provide broad releases of data to expand the identification of flood risk (flood depth grids, water surface elevation grids, etc.)
- To support sound local floodplain management decisions
- To identify opportunities to mitigate long-term risk across the Nation’s watersheds

## How are FEMA’s Flood Hazard Maps Maintained?

FEMA’s flood hazard inventory is updated through several types of revisions.

**Community-submitted Letters of Map Change.** First and foremost, FEMA relies heavily on the local communities that participate in the NFIP to carry out the program’s minimum requirements. These requirements include the obligation for communities to notify FEMA of changing flood hazard information and to submit the technical support data needed to update the FIRMs.

Although revisions may be requested at any time to change information on a FIRM, FEMA generally will not revise an effective map unless the changes involve modifications to SFHAs. Be aware that the best floodplain management practices and proper assessments of risk result when the flood hazard maps present information that accurately reflects current conditions.

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*Under the current minimum NFIP regulations, a participating community commits to notifying FEMA if changes take place that will affect an effective FIRM no later than 6 months after project completion.*

*Section 65.3, Code of Federal Regulations*

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**Letters of Map Amendment (LOMA).** The scale of an effective FIRM does not always provide the information required for a site-specific analysis of a property’s flood risk. FEMA’s LOMA process provides homeowners with an official determination on the relation of their lot or structure to the SFHA. Requesting a LOMA requires a homeowner to work with a surveyor or engineering professional to collect site-specific information related to the structure’s elevation; it may also require the determination of a site-specific Base Flood Elevation (BFE). Fees are associated with collecting the survey data and developing a site-specific BFE. Local survey and engineering professionals usually provide an Elevation Certificate to the homeowner, who can use it to request a LOMA. A successful LOMA may remove the Federal mandatory purchase requirement for flood insurance, but lending companies may still require flood insurance if they believe the structure is at risk.

**FEMA-Initiated Flood Risk Project.** Each year, FEMA initiates a number of Flood Risk Projects to create or revise flood hazard maps. Because of funding constraints, FEMA can study or restudy only a limited number of communities, counties, or watersheds. As a result, FEMA prioritizes study needs based on a cost-benefit approach whereby the highest priority is given to studies of areas where development has increased and the existing flood hazard data has been superseded by information based on newer technology or changes to the flooding extent. FEMA understands communities require products that reflect current flood hazard conditions to best communicate risk and implement effective floodplain management.

Flood Risk Projects may be delivered by FEMA or one of its Cooperating Technical Partners (CTPs). The CTP initiative is an innovative program created to foster partnerships between FEMA and participating NFIP communities, as well as regional and State agencies. Qualified partners collaborate in maintaining up-to-date flood maps. In Region 6, CTPs are generally state-wide agencies that house the State Floodplain Administrator. However, some Region 6 CTPs are also large River Authority or Flood Control Districts. They provide enhanced coordination with local, State, and Federal entities, engage community officials and technical staff, and provide updated technical information that informs updates to the national flood hazard inventory.

Risk MAP has modified FEMA’s project investment strategy from a single investment by fiscal year to a multi-year phased investment, which allows the Agency to be more flexible and responsive to the findings of the project as it moves through the project lifecycle. Flood Risk Projects are funded and completed in phases.

## General Flood Risk Project Phases

Each phase of the Flood Risk Project provides both FEMA and its partner communities an opportunity to discuss the data that has been collected to determine a path forward. Local engagement throughout each phase of the project enhances the opportunities for partnership and discussion about current and future risk, as well as offering the opportunity to identify projects and activities that local communities may pursue to reduce their long-term natural hazard risk.

Flood Risk Projects may be funded for one or more the following phases:

- Phase Zero – Investment
- Phase One – Discovery
- Phase Two – Risk Identification and Assessment
- Phase Three – Regulatory Product Update

Local input is critical throughout each phase of a Flood Risk Project. More detail about the tasks and objectives of each phase are included below.

### Phase Zero: Investment

Phase Zero of a Flood Risk Project initiates FEMA’s review and assessment of the inventories of flood hazards and other natural hazards within a watershed area. During the Investment Phase, FEMA reviews the availability of information to assess the current flood plain inventory. FEMA maintains several data systems to perform watershed assessments and selects watersheds for a deeper review of available data and potential investment tasks, based on the following factors:

**Availability of High-Quality Ground Elevation.** FEMA reviews readily available and recently acquired ground elevation data. This information helps identify development and earth-moving activities near streams and rivers. Where necessary, FEMA may partner with local, State, and other Federal entities to collect necessary ground elevation information within a watershed.



If [high-quality ground elevation](#) is both available for a watershed area and compliant with FEMA’s quality requirements, FEMA and its mapping partners may prepare engineering data to assess, revise, replace, or add to the current flood hazard inventory.

**Mile Validation Status within Coordinated Needs Management Strategy (CNMS).** FEMA uses the CNMS database to track the validity of the flood hazard information prepared for the NFIP. The CNMS database reviews 17 criteria to determine whether the flood hazard information shown on the current FIRM is still valid.



Communities may also inform and request a review or update of the inventory through the CNMS website at <https://msc.fema.gov/cnms/>. The [CNMS Tool Tutorial](#) provides an overview of the online tool and explains how to submit requests.

**Local Hazard Mitigation Plans.** Reviewing current and historic hazard mitigation plans provides an understanding of a community’s comprehension of its flood risk and other natural hazard risks. The mitigation strategies within a local hazard mitigation plan provide a lens to local opportunities and underscore a potential for local adoption of higher standards related to development or other actions to reduce long-term risk.

**Cooperating Technical Partner State Business Plans.** In some States, a CTP generates an annual State business plan that identifies future Flood Risk Project areas that are of interest to the state. Within the Bayou Cocodrie, Black, and Lower Red, the Louisiana Department of Transportation & Development and the Louisiana Governor’s Homeland Security and Emergency Preparedness provided both information and insight. In this project area, FEMA has worked closely with both entities to develop the project scope and determine the necessary project tasks.



Communities that have identified local issues are encouraged to indicate their data needs and revision requests to the State CTP so that they can be prioritized and included in the State Business Plans.

**Possible Investment Tasks.** After a review of the data available within a watershed, FEMA may choose to (1) purchase ground elevation and/or (2) create some initial engineering modeling against which to compare the current inventory. This type of modeling is known as Base-Level Engineering.

## Phase One: Discovery

Phase One, Discovery is the current phase of this study of the Mermentau Headwaters watershed.

Phase One, the Discovery Phase, provides opportunities both internally (between the State and FEMA) and externally (with communities and other partners interested in flood potential) to discuss local issues with flooding and examine possibilities for mitigation action. This effort is made to determine where communities currently are with their examination of natural hazard risk throughout their community and to identify how State and Federal support can assist communities in achieving their goals.



The Discovery process includes an opportunity for local communities to provide information about their concerns related to natural hazard risks. Communities may continue to inform the project identification effort by providing previously prepared survey data, as-built stream crossing information, and engineering information.

For a holistic community approach to risk identification and mapping, FEMA relies heavily on the information and data provided at a local level. Flood Risk Projects are focused on identifying (1) areas where the current flood hazard inventory does not provide adequate detail to support local floodplain management activities, (2) areas of mitigation interest that may require more detailed engineering information than is current available, and (3) community intent to reduce the risk throughout the watershed to assist FEMA’s future investment in these project areas. Watersheds are selected for Discovery based on these evaluations of flood risk, data needs, availability of elevation data, regional knowledge of technical issues, identification of a community-supported mitigation project, and input from Federal, State, and local partners.

**Possible Discovery Tasks.** Discovery may include a mix of interactive webinars sessions, conference calls, informational tutorials, and in-person meetings to reach out to and engage with communities for input. Data collection, interviews and interaction with community staff, and data-mining activities provide the

basis for watershed-, community- and stream-level reviews to determine potential projects that may benefit the communities. A range of analysis approaches are available to determine the extent of flood risk along streams of concern. FEMA and its mapping partners will work closely with communities to determine the appropriate analysis approach, based on the data needs throughout the community. These potential projects may include local training sessions, data development activities, outreach support to local communities wanting to step up their efforts, or the development of flood risk datasets within areas of concern, to allow a more in-depth discussion of risk.

## Phase Two: Risk Identification and Assessment

Phase Two (Risk Identification and Assessment) continues the risk awareness discussion with communities through watershed analysis and assessment. Analyses are prepared to review the effects of physical and meteorological changes within the project watershed. The new or updated analysis provides an opportunity to identify how development within a watershed has affected the amount of stormwater generated during a range of storm probabilities and shows how effectively stormwater is transported through communities in the watershed.



Coordination with a community's technical staff during engineering and model development allows FEMA and its mapping partners to include local knowledge, based on actual on-the-ground experience, when selecting modeling parameters.

The information prepared and released during Phase Two is intended to promote better local understanding of the existing flood risk by allowing community officials to review the variability of the risk throughout their community. As FEMA strives to support community-identified mitigation actions, it also looks to increase the effectiveness of community floodplain management and planning practices, including local hazard mitigation planning, participation in the NFIP, use of actions identified in the CRS Manual, risk reduction strategies for repetitive loss and severe repetitive loss properties, and the adoption of stricter standards and building codes.



FEMA is eager to work closely with communities and technical staff to determine the current flood risk in the watershed. During the Risk Identification and Assessment phase, FEMA would like to be alerted to any community concerns related to the floodplain mapping and analysis approaches being taken. During this phase, FEMA can engage with communities and review the analysis and results in depth.

**Possible Risk Identification and Assessment Tasks.** Phase Two may include a mixture of interactive webinars, conference calls, informational tutorials, and in-person meetings to reach out to and engage with communities for input. Flood Risk Project tasks may include hydrologic or hydraulic engineering analysis and modeling, floodplain mapping, risk assessments using Hazus software, and preparation of flood risk datasets (water surface elevation, flood depth, or other analysis grids). Additionally, projects may include local training sessions, data development activities, outreach support to local communities that want to step up their efforts, or the development of flood risk datasets within areas of concern, to allow a more in-depth discussion of risk.

## Phase Three: Regulatory Products Update

If the analysis prepared in the previous Flood Risk Project phases indicate that physical or meteorological changes in the watershed have significantly changed the flood risk since the last FIRM

was printed, FEMA will initiate the update of the regulatory products that communities use for local floodplain management and NFIP activities.

Delivery of the preliminary FIRMs and FIS reports begins another period of coordination between community officials and FEMA to discuss the required statutory and regulatory steps both parties will perform before the preliminary FIRM and FIS reports can become effective. As in the previous phases, FEMA and its mapping partners will engage with communities through a variety of conference calls, webinars, and in-person meetings.



Once the preliminary FIRMs are prepared and released to communities, FEMA will initiate the statutory portions of the regulatory product update. FEMA will coordinate a Consultation Coordination Officer (CCO) meeting and initiate a 90-day comment and appeal period. During this appeal period, local developers and residents may coordinate the submittal of their comments and appeals through their community officials to FEMA for review and consideration.

FEMA welcomes this information because additional proven scientific and technical information increases the accuracy of the mapping products and better reflects the community's flood risks identified on the FIRMs.



Communities may host or hold Open House meetings for the public. The Open House layout allows attendees to move at their own pace through several stations, collecting information in their own time. This format allows residents to receive one-on-one assistance and ask questions pertinent to their situation or their interest in risk or flood insurance information.

All appeals and comments received during the statutory 90-day Appeal Period, including the community's written opinion, will be reviewed by FEMA to determine the validity of the appeal. Once FEMA issues the appeal resolution, the associated community and all appellants will receive an appeal resolution letter and FEMA will make any revisions to the FIRM as appropriate. A 30-day period is provided for review and comment on successful appeals. Once all appeals and comments are resolved, the flood map is ready to be finalized.



After the Appeal Period, FEMA will send community leaders a Letter of Final Determination (LFD) stating that the preliminary FIRM will become effective in six months. The letter also discusses the actions each affected community participating in the NFIP must take to remain in good standing in the NFIP.

After the preceding steps are complete and the six-month compliance period ends, the FIRMs are considered effective maps and new building and flood insurance requirements become effective.

That is a brief general overview of a flood risk project. Next, the Flood Risk Report will provide details on the efforts in Bayou Cocodrie, Black, and Lower Red Watersheds.

## Phase One: Discovery

### Overview

The Louisiana Department of Transportation and Development (LA DOTD) in conjunction with FEMA Region 6 elected to pursue a Phase 1 Discovery project in the Bayou Cocodrie, Black, and Lower Red Watersheds during Fiscal Year 2019. This was a natural progression given the completion of the BLE analysis in December 2018 and the results of its assessment and validation.

The Discovery process provides an opportunity not only to collect additional information that can be used to further refine areas of interest, but more importantly offers opportunities to work directly with communities within the watershed to discuss local issues which may not be apparent from the BLE analysis and research.

During Discovery the project team has contacted the communities through a variety of means to not only let them know that the project is underway, but to actively engage them so as to open lines of communication and make the resulting discussion more productive.

The following sections are a summary of the information gathered and a discussion of how that information may inform the discussion of future investments. The information that follows comes from FEMA, other Federal agencies, and the states and communities that make up the watershed.

### Watershed Information and Review

The following section will explore data from a number of sources to develop a better understanding of the level of risk that the watershed communities face. This will include, but not be limited to, information on the number of flood insurance policies, the number of claims, past disaster declarations, information about hazard mitigation plans, and NFIP engagement with both FEMA and state representatives.

#### **National Flood Insurance Program (NFIP) Information.**

All of the communities within the watershed participate in the National Flood Insurance Program. Table 5 shows community CRS ratings, the date and status of their effective maps, and the estimated 2018 population. Please note that the population figures represent the population for the entire community and not just the portion in the watershed.

*Table 5: NFIP Information<sup>4</sup>*

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<sup>4</sup> FEMA Community Information System (July 2020)

Community Name	CID	NFIP Participant	CRS Rating	FIRM Date	FIRM Status	Population (2018 ACS Estimate)
City of Alexandria	220146	Y	-	9/3/1997		47,539
Avoyelles Parish	220019	Y	-	2/26/1980	No Elevation Determined – All Zone A, C, and X	40,882
Catahoula Parish	220047	Y	-	4/19/2005		9,893
Village of Clayton	220054	Y	-	6/2/1994	No SFHA – All Zone C	569
Concordia Parish	220053	Y	-	6/2/1994		20,021
Town of Ferriday	220055	Y	-	12/15/1977		3,326
Town of Jonesville	220049	Y	-	2/19/2005		857
LaSalle Parish	220112	Y	-	8/19/2020		14,949
Town of Mansura	220255	Y	-	6/25/1976	No Elevation Determined – All Zone A, C, and X	1,759
Town of Marksville	220022	Y	-	7/16/1980		5,476
City of Pineville	220151	Y	-	9/5/1984		14,313
Pointe Coupee Parish	220140	Y	-	11/16/1985		22,158
Rapides Parish	220145	Y	-	6/2/1999		131,546
Town of Ridgcrest	220056	Y	-	4/3/1978		929
Tensas Parish	220215	Y	-	4/3/1978		4,666
Town of Vidalia	220057	Y	-	1/5/1982		4.041

Table 6 includes both the number of flood insurance policies in each community but the coverage of those policies.

Table 6: NFIP Policy Information<sup>5</sup>

Community Name	CID	Policies in Force	Insurance in Force
City of Alexandria	220146	1,668	\$403,618,200.00
Avoyelles Parish	220019	746	\$120,764,600.00
Catahoula Parish	220047	591	\$77,485,900.00
Village of Clayton	220054	14	\$2,824,100.00
Concordia Parish	220053	919	\$248,118,000.00
Town of Ferriday	220055	59	\$18,728,400.00
Town of Jonesville	220049	54	\$13,563,500.00
LaSalle Parish	220112	77	\$12,405,800.00
Town of Mansura	220255	8	\$1,687,000.00
Town of Marksville	220022	40	\$7,456,100.00
City of Pineville	220151	136	\$27,333,900.00
Pointe Coupee Parish	220140	1,195	\$298,099,300.00
Rapides Parish	220145	1,477	\$332,425,000.00
Town of Ridgcrest	220056	23	\$5,040,000.00
Tensas Parish	220215	311	\$83,986,100.00

<sup>5</sup> FEMA Community Information System (July 2020)

Community Name	CID	Policies in Force	Insurance in Force
Town of Vidalia	220057	415	\$109,773,200.00

Table 7 shows the total number of flood insurance claims and the total amount paid out for those claims for each community since 1978.

*Table 7: NFIP Claims Information<sup>6</sup>*

Community Name	CID	Losses	Losses Paid
City of Alexandria	220146	1,314	\$24,015,052.73
Avoyelles Parish	220019	1,672	\$10,406,049.45
Catahoula Parish	220047	2,701	\$20,848,145.02
Village of Clayton	220054	23	\$144,700.00
Concordia Parish	220053	1,344	\$12,976,953.50
Town of Ferriday	220055	14	\$136,536.71
Town of Jonesville	220049	62	\$569,065.20
LaSalle Parish	220112	782	\$6,282,000.08
Town of Mansura	220255	4	\$4,521.39
Town of Marksville	220022	56	\$781,738.28
City of Pineville	220151	213	\$3,278,433.88
Pointe Coupee Parish	220140	2,763	\$28,628,219.39
Rapides Parish	220145	1,416	\$18,231,494.29
Town of Ridgecrest	220056	6	\$257,641.05
Tensas Parish	220215	210	\$2,944,296.85
Town of Vidalia	220057	86	\$489,528.84

Table 8 shows the total number of properties that have repetitive flood claims, the total number of claims made for those properties, the total amount paid out for those claims, and the number of severe repetitive loss properties. Repetitive loss and severe repetitive loss properties are good targets for mitigation as they are certainly in a location that has a higher proclivity for flooding. Mitigation actions may include elevating the structure or a property buyout. Decisions on the best approach will likely be based on the depth and frequency of floods affecting the property.

*Table 8: Repetitive Loss Property Information<sup>7</sup>*

Community Name	Total Properties	Total Claims	Total Paid Losses	Severe Repetitive Loss Properties
City of Alexandria	182	544	\$13,973,064.78	35
Avoyelles Parish	176	523	\$5,117,548.30	40
Catahoula Parish	323	1,247	\$16,375,166.23	120
Village of Clayton	-	-	-	-

<sup>6</sup> Information obtained from FEMA Region 6 (June 2020)

<sup>7</sup> Information obtained from FEMA Region 6 (June 2020)

Community Name	Total Properties	Total Claims	Total Paid Losses	Severe Repetitive Loss Properties
Concordia Parish	183	794	\$9,899,700.04	85
Town of Ferriday	1	2	\$84,309.08	0
Town of Jonesville	7	15	\$260,308.89	0
LaSalle Parish	79	314	\$3,173,671.85	35
Town of Mansura	-	-	-	-
Town of Marksville	7	19	\$434,425.45	2
City of Pineville	29	80	\$2,038,568.14	4
Pointe Coupee Parish	342	1,611	\$20,331,863.40	159
Rapides Parish	193	711	\$10,385,856.42	59
Town of Ridgecrest	1	4	\$105,131.72	0
Tensas Parish	37	127	\$1,493,825.58	14
Town of Vidalia	4	11	\$162,631.98	0

### Disaster Declarations

Table 9 lists the Federal Disaster Declaration for the watershed. Disasters are declared at the parish level. In these watersheds Rapides Parish has the largest number of declarations at 34, Pointe Coupee has 33, Catahoula has 32, Avoyelles has 29, LaSalle has 26, Concordia has 25 and Tensas has 16.

Declarations for flood events include 17 for Catahoula, 13 for both LaSalle and Rapides, 11 for both Concordia and Pointe Coupee, 10 for Avoyelles, and 5 for Tensas.

Table 9: Disaster Declarations in the Watershed<sup>8</sup>

Date	Title	Avoyelles Parish	Catahoula Parish	Concordia Parish	LaSalle Parish	Pointe Coupee Parish	Rapides Parish	Tensas Parish
9/10/1965	HURRICANE BETSY	x	x			x	x	
10/13/1971	HURRICANE EDITH					x		
4/27/1973	SEVERE STORMS & FLOODING	x	x	x	x	x	x	x
2/23/1974	FLOODING		x	x	x			
4/12/1975	HEAVY RAINS & FLOODING	x	x	x	x		x	
6/6/1975	HEAVY RAINS, TORNADOES & FLOODING	x	x	x	x		x	
2/22/1977	DROUGHT & FREEZING	x			x	x	x	
5/2/1979	SEVERE STORMS & FLOODING		x		x	x		
9/25/1979	SEVERE STORMS & FLOODING						x	
5/21/1980	SEVERE STORMS & FLOODING					x		
1/11/1983	SEVERE STORMS AND FLOODING	x	x		x		x	

<sup>8</sup> FEMA <https://www.fema.gov/openfema-dataset-disaster-declarations-summaries-v1>, (June 2020)

Date	Title	Avoyelles Parish	Catahoula Parish	Concordia Parish	LaSalle Parish	Pointe Coupee Parish	Rapides Parish	Tensas Parish
4/20/1983	SEVERE STORMS AND FLOODING					x		
11/30/1987	TORNADOES & FLOODING	x	x		x		x	
5/20/1989	SEVERE STORMS & FLOODING				x			
7/17/1989	TROPICAL STORM ALLISON					x	x	
4/23/1991	SEVERE STORMS & FLOODING		x				x	
5/3/1991	SEVERE STORMS, TORNADOES & FLOODING	x	x	x	x		x	x
8/26/1992	HURRICANE ANDREW	x				x	x	
1/21/1999	SEVERE ICE STORM		x					
6/11/2001	TROPICAL STORM ALLISON					x		
10/3/2002	HURRICANE LILI	x	x		x	x	X	
2/1/2003	LOSS OF SPACE SHUTTLE COLUMBIA	x				x	x	
6/8/2004	SEVERE STORMS AND FLOODING					x		
9/15/2004	HURRICANE IVAN	x		x			x	
8/27/2005	HURRICANE KATRINA	x	x	x	x	x	x	X
8/29/2005	HURRICANE KATRINA	x	x	x	x	x	x	X
9/21/2005	HURRICANE RITA	x	x	x	x	x	x	X
9/24/2005	HURRICANE RITA	x	x	x	x	x	x	X
11/2/2006	SEVERE STORMS AND FLOODING		x		x		x	x
8/29/2008	HURRICANE GUSTAV	x	x	x	x	x	x	X
9/2/2008	HURRICANE GUSTAV	x	x	x	x	x	x	X
9/13/2008	HURRICANE IKE			x				
12/10/2009	SEVERE STORMS, TORNADOES, AND FLOODING		X					
5/6/2011	FLOODING	x	x	x	x	x		x
8/18/2011	FLOODING	x	x	x	x	x		X
8/27/2012	TROPICAL STORM ISAAC	x				x	X	
8/29/2012	HURRICANE ISAAC	x	x	x	x	x	x	X
2/22/2013	SEVERE STORMS AND FLOODING		x	X				
7/13/2015	SEVERE STORMS AND FLOODING						X	
2/5/2016	FLOODING			x		X		
3/13/2016	SEVERE STORMS AND FLOODING	x	x		x		X	
8/14/2016	SEVERE STORMS AND FLOODING	x				X		
8/28/2017	TROPICAL STORM HARVEY						X	
10/16/2017	TROPICAL STORM HARVEY						X	
5/29/2019	FLOODING		x	x		x	x	

Date	Title	Avoyelles Parish	Catahoula Parish	Concordia Parish	LaSalle Parish	Pointe Coupee Parish	Rapides Parish	Tensas Parish
7/11/2019	TROPICAL STORM BARRY	x	x	x		x	x	
8/27/2019	HURRICANE BARRY					x		
9/19/2019	FLOODING		x	x		x	x	
8/28/2020	HURRICANE LAURA	x	x	x	x	x	x	x
10/7/2020	HURRICANE DELTA	x	x	x	x	x	x	x
10/27/2020	TROPICAL STORM ZETA	x	x	x	x	x	x	x

### Hazard Mitigation Plan Review

Table 10 lists the status of hazard mitigation plans for the communities in the watershed. It should be noted that most communities participate in multi-jurisdiction plans that cover entire parishes.

Table 10: Hazard Mitigation Plan Status

Plan	Date Plan Approved	Plan Expiration Date
Avoyelles Parish Hazard Mitigation	In Review	
Catahoula Parish Hazard Mitigation Update - 2016	5/26/2016	5/26/2021
Concordia Parish Hazard Mitigation Update - 2016	1/24/2018	1/24/2023
LaSalle Parish Hazard Mitigation Update - 2016	5/16/2016	5/16/2021
Pointe Coupee Parish Hazard Mitigation Update - 2016	2/23/2017	2/21/2022
Rapides Parish Hazard Mitigation Update - 2016	5/4/2016	5/4/2021
Tensas Parish Hazard Mitigation Update - 2016	7/8/2016	7/8/2021

### Catahoula Parish

The Catahoula Parish Hazard Mitigation Update (2016) is a multi-jurisdictional plan, which includes the Village of Harrisonburg, Town of Jonesville, and Village of Sicily Island. Mitigation actions identified within the plan are organized by four goals identified by the steering committee.

- Goal 1 – Preventative measures that will reduce future damages from hazards
  - Develop master drainage plan
  - Implement localized interior drainage projects
- Goal 2 – Enhance public awareness and understanding of disaster preparedness
  - Upgrade communication systems
  - Distribute information for public awareness of hazards
  - Promote the purchase of flood insurance
- Goal 3 – Reduce repetitive flood losses

- Inform public of elevation, acquisition, and flood proofing projects to reduce repetitive flooding
- Elevation or acquisition/demolition of repetitive and severe repetitive loss structures
- Goal 4- Facilitate sound development to reduce or eliminate the impact of hazards
  - Harden critical facilities
  - Elevate roads in locations prone to flooding
  - Install generators at critical facilities, shelters, and government buildings
  - Construction of a safe room for first responders

### *Concordia Parish*

The Concordia Parish Hazard Mitigation Update (2016) is a multi-jurisdictional plan, which includes the Town of Clayton, Town of Ferriday, Town of Ridgcrest, and City of Vidalia. Mitigation actions identified within the plan are organized by four goals identified by the steering committee.

- Goal 1 – Improve education and outreach efforts regarding impacts of hazards and identification of measures to reduce impact
  - Upgrade/update public warning system
  - Promote the purchase of flood insurance
- Goal 2 – Improve data collection, use, and sharing to reduce impacts of hazards
  - Creation of a working group to assess the effects of possible dam and levee failure
- Goal 3 – Plan and implement hazard mitigation projects, programs, and activities
  - Retrofit the shell of public buildings so that they may be used before and after events
  - Improve drainage
  - Construct safe room for first responders
  - Install generators at public facilities
- Goal 4 – Mitigate repetitive and severe repetitive loss properties
  - Elevation or acquisition/demolition of repetitive and severe repetitive loss structures
  - Construction of a retaining wall along the riverfront of the Mississippi

### *LaSalle Parish*

The LaSalle Parish Hazard Mitigation Update (2016) is a multi-jurisdictional plan, which includes the Town of Jena, Town of Olla, Town of Urania, Town of Tullos, and the Jena Band of Choctaw Indians. Mitigation actions identified within the plan are organized by four goals identified by the steering committee.

- Goal 1 – Preventative measures that will reduce future damages from hazards
  - Retrofit the shell of public buildings so that they may be used before and after events
  - Construction of a safe room for first responders
  - Install generators at critical facilities for continued operations during events
  - Install lighting rods and surge protectors in public buildings
- Goal 2 – Enhance public awareness and understanding of disaster preparedness
  - Enhance public outreach programs
  - Upgrade communications systems, including Auto call out and a public notification system
- Goal 3 – Reduce repetitive flood losses

- Improve drainage
- Elevation or acquisition/demolition of repetitive and severe repetitive loss structures
- Goal 4 – Facilitate sound development to reduce or eliminate the impact of hazards
  - Procurement of mobile morgue trailers
  - Adopt current International Building Codes and set ordinances to regulate new development

### *Pointe Coupee Parish*

The Pointe Coupee Parish Hazard Mitigation Update (2016) is a multi-jurisdictional plan, which includes the Town of Fordoche, Town of Livonia, Village of Morganza, and City of New Roads. Mitigation actions identified within the plan are organized by four goals identified by the steering committee.

- Goal 1 – Increase public awareness of hazards and encourage responsibility for mitigating hazard risks
  - Enhance public outreach programs
  - Update/upgrade public warning systems. Install audible and/or reverse 911 warning system
  - Promote the purchase of flood insurance
- Goal 2 – Improve hazard response capability and improve effectiveness of hazard mitigation actions
  - Construction of a safe room for first responders
  - Install generators at critical facilities for continued operations during events
- Goal 3 – Protect population, buildings, and critical facilities through mitigation actions
  - Retrofit the shell of public buildings so that they may be used before and after events
  - Install lightning rods and surge protectors in public buildings
  - Create redundancy of potable water
  - Creation of a working group to assess the effects of possible dam and levee failure
- Goal 4 – Reduce economic impacts from natural hazards
  - Improve drainage
  - Elevation or acquisition/demolition of repetitive and severe repetitive loss structures

### *Rapides Parish*

The Rapides Parish Hazard Mitigation Update (2016) is a multi-jurisdictional plan, which includes the City of Alexandria, Town of Boyce, Town of Cheneyville, Village of Forest Hill, Town of Glenmora, Town of Lecompte, Village of McNary, and Town of Woodworth. Mitigation actions identified within the plan are organized by four goals identified by the steering committee.

- Goal 1 – Preventative measures that will reduce future damages from hazards
  - Retrofit the shell of public buildings so that they may be used before and after events
  - Construction of a safe room for first responders
  - Construct a public shelter for extreme weather
  - Redundancy of potable water at critical facilities
  - Install generators at critical facilities for continued operations during events
- Goal 2 – Enhance public awareness and understanding of disaster preparedness
  - Enhance public outreach programs
  - Provide information on high risk areas

- Install reverse 911 system
- Goal 3 – Reduce repetitive flood losses
  - Improve drainage
  - Elevation or acquisition/demolition of repetitive and severe repetitive loss structures
- Goal 4 – Facilitate sound development to reduce or eliminate the impact of hazards

### *Tensas Parish*

The Tensas Parish Hazard Mitigation Update (2016) is a multi-jurisdictional plan, which includes the Town of Newelton, Town of St. Joseph, and Town of Waterproof. Mitigation actions identified within the plan are organized by four goals identified by the steering committee.

- Goal 1 – Improve education and outreach efforts regarding impacts of hazards and identification of measures to reduce impact
  - Upgrade/update public warning system. Install reverse 911 system.
  - Promote the purchase of flood insurance
  - Enhance public outreach programs
- Goal 2 – Improve data collection, use, and sharing to reduce impacts of hazards
  - Creation of a working group to assess the effects of possible dam and levee failure
- Goal 3 – Plan and implement hazard mitigation projects, programs, and activities
  - Retrofit the shell of public buildings so that they may be used before and after events
  - Improve drainage
  - Construct safe room for first responders
  - Install generators at public facilities for continued use before, during, and after events
  - Redundancy of potable water at critical facilities
- Goal 4 – Mitigate repetitive and severe repetitive loss properties
  - Elevation or acquisition/demolition of repetitive and severe repetitive loss structures
  - Relocation incentives to current flood hazard area residents

### **Ordinances and Regulations Review**

A review of development regulations helps shed light on how a community tries to limit their exposure to damages from disasters by guiding development away from floodplains or insuring flood proofing strategies are utilized. The following section will review the ordinances, development regulations, and any additional guidelines as they are related to development activities, or renovations, within flood zones or areas affected by flooding.

### *Avoyelles Parish*

Chapter 8.5 of the Avoyelles Parish code of ordinances addresses flood damage prevention. This chapter of the ordinance establishes the need and purpose to prevent flood damage and then provides a framework for ensuring that purpose is fulfilled. Specifically, the ordinance creates the floodplain administrator position and assigns their duties and responsibilities, and also outlines the need for and processes related to development permits, including procedures for obtaining variances.

Section 8.5- 8-11 states the provisions for flood hazard reduction. There are four sections general standards, specific standards, standards for subdivision proposals, and standards for areas of shallow flooding (AO/AH zones). General standards include proper anchoring to prevent the structure from

floatation, using construction methods that minimize flood damage, the use of construction materials that are resistant to flood damage, locating service facilities where flood damage will be minimized, and water supply and sanitary sewage systems will minimize or eliminate infiltration of floodwaters and the discharge into floodwaters. Specific standards require that the lowest floor is elevated to or above the base flood elevation, that mobile homes are elevated and anchored and restrictions on the placement of recreational vehicles. The subdivision standards require compliance with the previous standards. The standards for shallow flooding state that the lowest floor is elevated at least two feet or at least as high as the depth number specified on the FIRM, adequate drainage paths to guide floodwaters around and away, and that a registered professional engineer submits certification to the floodplain administrator.

The Avoyelles Parish Code of Ordinances can be found here:

[https://library.municode.com/la/avoyelles\\_parish\\_police\\_jury/codes/code\\_of\\_ordinances](https://library.municode.com/la/avoyelles_parish_police_jury/codes/code_of_ordinances)

### *Concordia Parish*

Chapter 9, article V of the Concordia Parish code of ordinances addresses flood hazard areas. This chapter of the ordinance establishes the need and purpose to prevent flood damage and then provides a framework for ensuring that purpose is fulfilled. Specifically, the ordinance creates the floodplain administrator position and assigns their duties and responsibilities, and also outlines the need for and processes related to development permits, including procedures for obtaining variances.

Division 3 states the provisions for flood hazard reduction. There are five sections general standards, specific standards, standards for subdivision proposals, standards for areas of shallow flooding (AO/AH zones), and floodways. General standards include proper anchoring to prevent the structure from floatation, using construction methods that minimize flood damage, the use of construction materials that are resistant to flood damage, locating service facilities where flood damage will be minimized, and water supply and sanitary sewage systems will minimize or eliminate infiltration of floodwaters and the discharge into floodwaters. Specific standards require that the lowest floor is elevated to or above the base flood elevation, enclosures designed to allow the movement of floodwater, that mobile homes are elevated and anchored and restrictions on the placement of recreational vehicles. The subdivision standards require compliance with the previous standards. The standards for areas of shallow flooding add the requirement that the elevation of structures and facilities be above the highest adjacent grade at least as high as the depth number on the FIRM, that drainage paths be provided around structures on slopes to guide flood waters around and away from the structure, and that a professional engineer provide certification to the floodplain administrator that these standards are met. The floodway standards prohibit encroachments on the floodway, including fill new construction, substantial improvements and other development within the floodway unless it is certified by a professional registered engineer providing that the encroachment will not increase flood levels.

The Concordia Parish Code of Ordinances can be found here:

[https://library.municode.com/la/concordia\\_parish\\_police\\_jury/codes/code\\_of\\_ordinances](https://library.municode.com/la/concordia_parish_police_jury/codes/code_of_ordinances)

### *LaSalle Parish*

Chapter 9, article V of the Concordia Parish code of ordinances addresses flood hazard areas. This chapter of the ordinance establishes the need and purpose to prevent flood damage and then provides a framework for ensuring that purpose is fulfilled. Specifically, the ordinance creates the floodplain

administrator position and assigns their duties and responsibilities, and also outlines the need for and processes related to development permits, including procedures for obtaining variances.

Division 3 states the provisions for flood hazard reduction. There are five sections general standards, specific standards, standards for subdivision proposals, standards for areas of shallow flooding (AO/AH zones), and floodways. General standards include proper anchoring to prevent the structure from floatation, using construction methods that minimize flood damage, the use of construction materials that are resistant to flood damage, locating service facilities where flood damage will be minimized, and water supply and sanitary sewage systems will minimize or eliminate infiltration of floodwaters and the discharge into floodwaters. Specific standards require that the lowest floor is elevated to or above the base flood elevation, enclosures designed to allow the movement of floodwater, that mobile homes are elevated and anchored and restrictions on the placement of recreational vehicles. The subdivision standards require compliance with the previous standards. The standards for areas of shallow flooding add the requirement that the elevation of structures and facilities be above the highest adjacent grade at least as high as the depth number on the FIRM, that drainage paths be provided around structures on slopes to guide flood waters around and away from the structure, and that a professional engineer provide certification to the floodplain administrator that these standards are met. The floodway standards prohibit encroachments on the floodway, including fill new construction, substantial improvements and other development within the floodway unless it is certified by a professional registered engineer providing that the encroachment will not increase flood levels.

#### *Pointe Coupee Parish*

Chapter 8 of the Pointe Coupee Parish code of ordinances addresses drainage and flood control. Article II of this chapter in the ordinance establishes the need and purpose to prevent flood damage and then provides a framework for ensuring that purpose is fulfilled. Specifically, the ordinance creates the floodplain administrator position and assigns their duties and responsibilities, and also outlines the need for and processes related to development permits, including procedures for obtaining variances.

Section 8-19 states the provisions for flood hazard reduction. There are five sections general standards, specific standards, standards for subdivision proposals, standards for areas of shallow flooding (AO/AH zones), and floodways. General standards include proper anchoring to prevent the structure from floatation, using construction methods that minimize flood damage, the use of construction materials that are resistant to flood damage, locating service facilities where flood damage will be minimized, and water supply and sanitary sewage systems will minimize or eliminate infiltration of floodwaters and the discharge into floodwaters. Specific standards require that the lowest floor is elevated to or above the base flood elevation, enclosures designed to allow the movement of floodwater, that mobile homes are elevated and anchored and restrictions on the placement of recreational vehicles. The subdivision standards require compliance with the previous standards. The standards for shallow flooding state that the lowest floor is elevated at least two feet or at least as high as the depth number specified on the FIRM, adequate drainage paths to guide floodwaters around and away, and that a registered professional engineer submits certification to the floodplain administrator. The floodway standards prohibit encroachments on the floodway, including fill new construction, substantial improvements and other development within the floodway unless it is certified by a professional registered engineer providing that the encroachment will not increase flood levels.

The Pointe Coupee Parish Code of Ordinances can be found here:

[https://library.municode.com/la/pointe\\_coupee\\_parish\\_government/codes/code\\_of\\_ordinances](https://library.municode.com/la/pointe_coupee_parish_government/codes/code_of_ordinances)

### *Tensas Parish*

Chapter 14 of the Tensas Parish code of ordinances addresses flood damage prevention. This chapter of the ordinance establishes the need and purpose to prevent flood damage and then provides a framework for ensuring that purpose is fulfilled. Specifically, the ordinance creates the floodplain administrator position and assigns their duties and responsibilities, and also outlines the need for and processes related to development permits, including procedures for obtaining variances.

Article V states the provisions for flood hazard reduction. There are five sections general standards, specific standards, standards for subdivision proposals, standards for areas of shallow flooding (AO/AH zones), and floodways. General standards include proper anchoring to prevent the structure from floatation, using construction methods that minimize flood damage, the use of construction materials that are resistant to flood damage, locating service facilities where flood damage will be minimized, and water supply and sanitary sewage systems will minimize or eliminate infiltration of floodwaters and the discharge into floodwaters. Specific standards require that the lowest floor is elevated to or above the base flood elevation, enclosures designed to allow the movement of floodwater, that mobile homes are elevated and anchored, and restrictions on the placement of recreational vehicles. The subdivision standards require compliance with the previous standards. The standards for shallow flooding state that the lowest floor is elevated at least two feet or at least as high as the depth number specified on the FIRM, adequate drainage paths to guide floodwaters around and away, and that a registered professional engineer submits certification to the floodplain administrator. The floodway standards prohibit encroachments on the floodway, including fill new construction, substantial improvements and other development within the floodway unless it is certified by a professional registered engineer providing that the encroachment will not increase flood levels.

The Tensas Parish Code of Ordinances can be found here:

[https://library.municode.com/la/tensas\\_parish\\_police\\_jury/codes/code\\_of\\_ordinances](https://library.municode.com/la/tensas_parish_police_jury/codes/code_of_ordinances)

### *Rapides Parish*

Chapter 10 ½ of the Rapides Parish code of ordinances addresses flood damage prevention. This chapter of the ordinance establishes the need and purpose to prevent flood damage and then provides a framework for ensuring that purpose is fulfilled. Specifically, the ordinance creates the floodplain administrator position and assigns their duties and responsibilities, and also outlines the need for and processes related to development permits, including procedures for obtaining variances.

Section 16 states the provisions for flood hazard reduction. There are five sections general standards, specific standards, standards for subdivision proposals, standards for areas of shallow flooding (AO/AH zones), and floodways. General standards include proper anchoring to prevent the structure from floatation, using construction methods that minimize flood damage, the use of construction materials that are resistant to flood damage, locating service facilities where flood damage will be minimized, and water supply and sanitary sewage systems will minimize or eliminate infiltration of floodwaters and the discharge into floodwaters. Specific standards require that the lowest floor is elevated to or above the base flood elevation, that mobile homes are elevated and anchored and restrictions on the placement of recreational vehicles. The subdivision standards require compliance with the previous standards. The

standards for shallow flooding state that the lowest floor is elevated at least two feet or at least as high as the depth number specified on the FIRM, adequate drainage paths to guide floodwaters around and away, and that a registered professional engineer submits certification to the floodplain administrator. The floodway standards prohibit encroachments on the floodway, including fill new construction, substantial improvements and other development within the floodway unless it is certified by a professional registered engineer providing that the encroachment will not increase flood levels.

The Rapides Parish Code of Ordinances can be found here:

[https://library.municode.com/la/rapides\\_parish\\_police\\_jury/codes/code\\_of\\_ordinances](https://library.municode.com/la/rapides_parish_police_jury/codes/code_of_ordinances)

### Land Use Change

Development in the watersheds has been minimal. Examining National Land Cover Data (<https://www.mrlc.gov/data>) from 2001 to 2016, the latest available, the watersheds have seen some development. From 2001 to 2016, developed land increased by 2 square miles, which is a 0.2% increase. This development is primarily seen in Pineville.

### Letters of Map Change

Letters of Map Change are letters that revise the special flood hazard area on a given map panel or panels. A Letter of Map Amendment, or LOMA usually applies to a single property that is higher than the mapped 1%-annual-chance floodplain, but due to limitations of scale or topographic detail appears to be located within the floodplain on the FIRM panel. A Letter of Map Revision is a letter that revises a FIRM panel or panels usually due to a project designed to reduce flood risk in an area. A Letter of Map Revision Based on Fill, or LOMR-F, revises a FIRM panel of panels due to a property having fill placed on it that raises it above the map flood elevation for an area. The number and types of map revisions in a community can provide insight into measures being taken to reduce or manage flood risk or be an indication that a community’s maps are in need of revision. Communities within the Bayou Cocodrie, Black, and Lower Red Watersheds have a total of 92 Letters of Map Change, consisting of 84 LOMAs and 8 LOMR-Fs. Table 11 below illustrates which communities have Letter of Map Change and their types. Figure 2 below is a map of the LOMA locations.

*Table 11: Letters of Map Change*

Community Name	LOMA	LOMR-F
City of Alexandria		
Avoyelles Parish	18	1
Catahoula Parish	11	1
Village of Clayton	1	-
Concordia Parish	9	-
Town of Ferriday	1	-
Town of Jonesville	-	-
LaSalle Parish	-	-
Town of Mansura	-	-
Town of Marksville	1	-
City of Pineville	10	2
Pointe Coupee Parish	-	-
Rapides Parish	26	4
Town of Ridgecrest	-	-

Community Name	LOMA	LOMR-F
Tensas Parish	-	-
Town of Vidalia	7	-

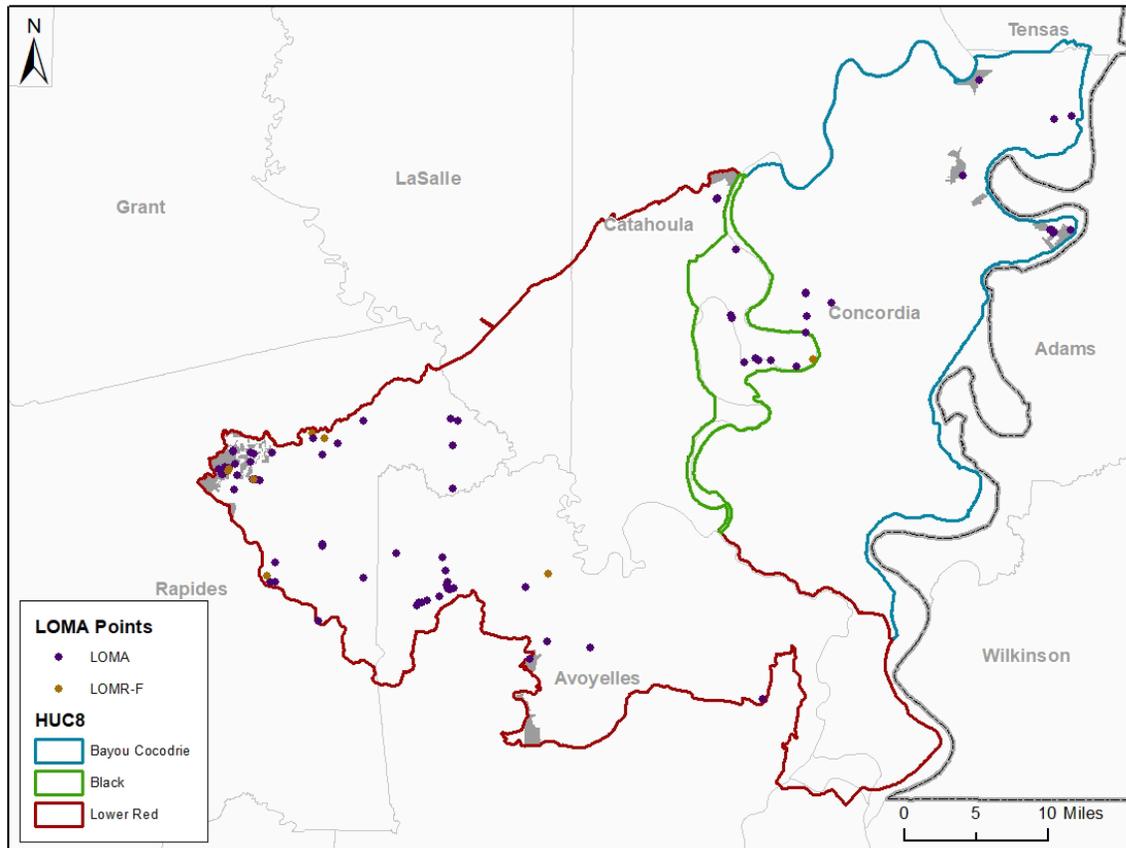


Figure 2: LOMA Locations

### Hydraulics and Floodplain Analysis

The average FIRM age for these watersheds is quite old. The average FIRM age in Bayou Cocodrie is 34 years, 20 years in Black, and 23 years in Lower Red. Figure 3 below shows the FIRM dates for each parish. Due to the age of the FIRMs they may or may not accurately show current flood risk.

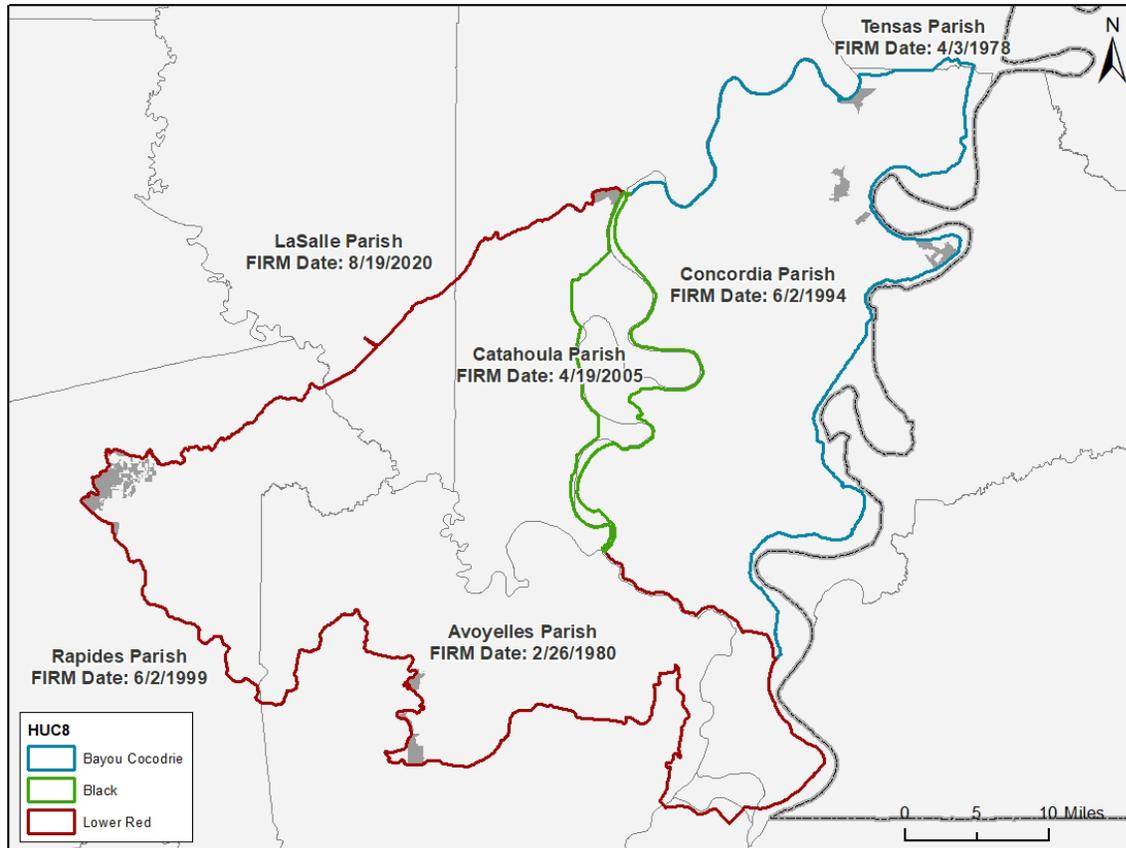


Figure 3: Effective FIRM Dates

Hydraulics, floodplain, and floodways were reviewed based on the FIS reports, available hydraulic models, and FIRMs.

### Avoyelles Parish

Hydraulics, floodplain, and floodways were reviewed based on the FIS reports, available hydraulic models, and FIRMs. Hydraulic modeling data was not available for any streams within the study area.

Avoyelles Parish currently has a Flood Insurance Study (FIS) for the Unincorporated Areas with 12 panels dated February 26, 1980, and six additional FISs for Towns and Villages within the parish. The six incorporated towns are Bunkie, Mansura, Marksville, Moreauville, Plaucheville, Simmesport. Mansura has one panel dated June 1976 with no floodplain shown even though Lacombe Bayou passes through the town.

Marksville has a FIS dated January 1980. In 1978, the Corps of Engineers performed detailed studies on Bayou Perit, Bayou Blanc, Bayou Sauvage, several unnamed bayous, and portions of the Little and Old Rivers. There is a triple 8' x 8' gated structure in the LA Highway 1 embankment Coule des Grues that is closed to prevent backwater flooding from the Red River.

The existing profile for Bayou Perit begins at elevation 59 (NGVD1929) which is four feet lower than the Red River 1% AEP flood elevation. The interior drainage facilities will be checked to confirm they can maintain a lower water level.

There are five stream gages in Avoyelles Parish, however some are affected by backwater or diversions. In addition, the Corps and other entities collected flood profiles in 1973 and other floods that can be used for model calibration.

#### *Catahoula Parish*

Catahoula Parish currently has a Flood Insurance Study (FIS) for the unincorporated areas with 13 panels dated May 4, 2000.

The initial hydrologic and hydraulic analysis of the Unincorporated Area was completed in April 1986 by James M. Montgomery, Consulting Engineers, Inc. This study does not include the Villages of Jonesville or Harrisonburg, Sicily Island or the areas protected by the Jonesville Levee system. This study included detailed analyses of the overflows from the Ouachita, Tensas, Black, Beouf, Bushley Bayou and Little Rivers as well as backwater from the Red and Mississippi Rivers. Approximate studies were performed on South Fork Bayou Dam, Hooter, Haggerty, Sugar, Kennedy, Ford, Salem, Brushy, Lacey, Hawthorne, Rawson, Birds, Stokes, Big, and Little Creeks and Black Bayou.

Preliminary hydrologic analyses were performed to establish the peak discharge-frequency relationship for defining the headwater flooding for the Ouachita River at the upstream limits of the parish. The 1% AEP peak flow at this point was 113,000 cfs. It was determined that the backwater from downstream sources will submerge the headwater flooding throughout the parish. Therefore, hydrologic analyses to establish peak flows were not utilized.

#### *Concordia Parish*

Hydraulics, floodplain, and floodways were reviewed based on the FIS reports, available hydraulic models, and FIRMs. Hydraulic modeling data was not available for any streams within the study area.

Concordia Parish currently has a Flood Insurance Study (FIS) for the Unincorporated Areas with four Panels dated June 2, 1994, and an additional FISs for four Towns and Villages.

The original hydrological and hydraulic analysis for Concordia Parish was performed by the Corps of Engineers in 1976. The H&H was updated in 1990. The 1990 revision included detail study of Black River, Tensas River, Cross Bayou, Turtle Lake, Black Bayou, Vidalia Canal and Crooked Bayou. Approximate method studies were performed on several other streams including Bayou Cocodrie.

The Tensas-Cocodrie levee constructed in the 1950's reduced backwater flooding by approximately 80 percent. Construction of the Tensas-Cocodrie Pumping Plant in 1987 reduced interior drainage flooding. There is also a 4,000 cfs pump station on Wild Cow Bayou installed in 1987.

There are six stream gaging stations in or near Concordia Parish that can be used for calibration. There are also high water profiles of the April 24, 1979, March 18, 1987 and July 4, 1989 events were used to determine the water surface slope between the gages at Bayou Cocodrie pump station and the Bayou Cocodrie at Monterey, LA.

#### *Village of Clayton*

Hydraulics, floodplain, and floodways were reviewed based on the FIS reports, available hydraulic models, and FIRMs. Hydraulic modeling data was not available for any streams within the study area.

The Village of Clayton currently has a Flood Insurance Study (FIS) with one panel dated February 1, 1978.

The Tensas River, Ditch No. 1 and Ditch No. 2 were studied in detail. The 500-year water level for the Red River was also determined.

#### *Town of Ferriday*

Hydraulics, floodplain, and floodways were reviewed based on the FIS reports, available hydraulic models, and FIRMs. Hydraulic modeling data was not available for any streams within the study area.

The Town of Ferriday currently has a Flood Insurance Study (FIS) with one panel dated December 15, 1977.

The H&H for the Town of Ferriday was performed by the Vicksburg District of the Corps of Engineers in 1976 – 77. Detailed analysis was performed on Panola Brake Tributaries No. 1 and 2, Bayou Cocodrie. A stage frequency analysis of the Red River determined the 500-yr water level was approximately 64.7 (NGVD 1929).

Streamgages at Carroll Lake north of Ferriday and Frogmore gage located east of Ferriday have a long period of record that can be used for calibration.

#### *Town of Ridgecrest*

Hydraulics, floodplain, and floodways were reviewed based on the FIS reports, available hydraulic models, and FIRMs. Hydraulic modeling data was not available for any streams within the study area.

The Town of Ridgecrest currently has a Flood Insurance Study (FIS) with two panels dated June 3, 1977.

The H&H for the Town of Ridgecrest was performed by the Vicksburg District of the Corps of Engineers in 1976. Detailed analysis was performed on Canal No. 1 and Canal No. 2.

#### *Town of Vidalia*

Hydraulics, floodplain, and floodways were reviewed based on the FIS reports, available hydraulic models, and FIRMs. Hydraulic modeling data was not available for any streams within the study area.

The Town of Vidalia currently has a Flood Insurance Study (FIS) with two panels dated June 15, 1978.

The H&H for the Town of Vidalia was performed by the Vicksburg District of the Corps of Engineers in 1976 – 77. Detailed analysis was performed on the Mississippi River and Vidalia Canal.

#### *Rapides Parish*

Rapides Parish currently has a Flood Insurance Study (FIS) for the Unincorporated Areas with 31 panels dated June 6, 1999, and an additional FISs for 8 communities.

The original hydrologic and hydraulic analyses for Rapides Parish were completed in June 1982 by the U.S. Army Corps of Engineers, New Orleans District. The Flood Study was revised September 5, 1984 to address annexations by the City of Alexandria, on September 3, 1997 to revise the analyses of Bayou Rapides, Rapides Diversion Channel, Big Bayou, Saline Bayou, Irish Ditch No. 2, Chatlin Lake Canal, Big Creek, Cainey Creek and Bayou Boeuf, and on June 2, 1999 to revise Bayou Boeuf.

### Tensas Parish

Tensas Parish currently has a Flood Insurance Study (FIS) dated June 1977. The Mississippi River was the only flooding source studied with Detailed methods in this study due to lack of concentrated development within the area.

### Flood Risk Assessment

Flood risk assessment data is developed using a FEMA flood loss estimation tool, Hazus. Hazus (<https://www.fema.gov/hazus>) is a standardized risk assessment tool that estimates potential losses from a variety of disaster types. For the Bayou Cocodrie, Black, and Lower Red watersheds Hazus was used in conjunction with the 1-percent-annual-chance depth grid created during the Phase Zero Base Level Engineering analysis to perform a Level 2 analysis for the communities in the watershed. The flood loss estimates that were calculated are expressed in dollar amounts and cover only the portion of the community that falls within the watershed. These estimates should be used to understand relative risk from flood and potential losses. Flood loss estimates provided by this project include asset losses (building and content loss) for residential, commercial, industrial, government, education, and religious uses, as well as business disruption losses. The following section offers a high-level discussion of these losses, however communities can dig into the results further by using data found in the BLE Database that will be available upon the completion of this project. Specific data that communities will find useful include the S\_Cen\_Blck\_Ar feature layer and accompanying L\_RA\_Results table. For additional information on the BLE Database and the data contained within please visit <https://www.fema.gov/media-library/assets/documents/160060>.

#### Losses from the 1% Annual-Chance Flood

The 1%-annual-chance flood is the standard flood used for mapping flood zones on NFIP FIRM Panels. The only community that did not sustain losses during the 1%-annual-chance flood modeled during the BLE analysis was Pointe Coupee Parish. Of the communities that did sustain losses the City of Pineville saw the greatest losses at more than \$191 million while Tensas Parish saw about \$136 thousand. Figures 4, 5 and 6 below show the losses for all of the communities in the watersheds. For specific loss numbers for each community see the "TOT\_LOSSES" column of the L\_RA\_Results table found in the BLE Database.

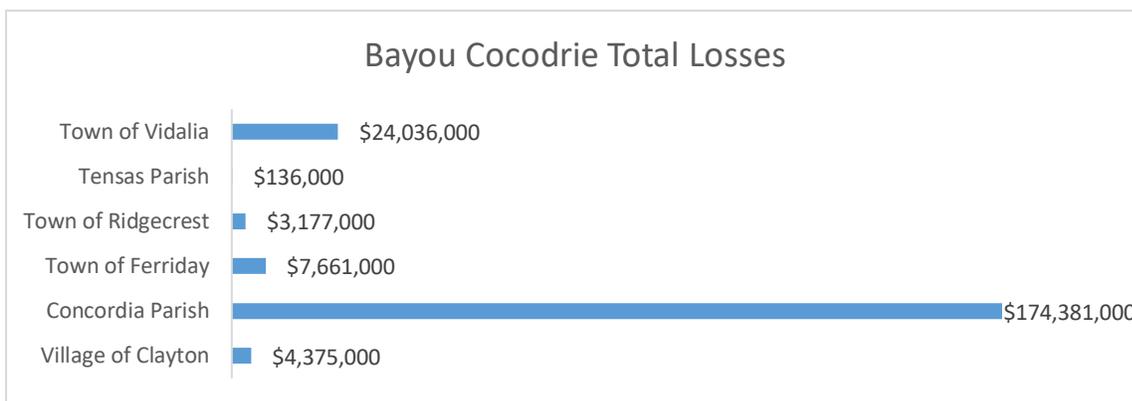


Figure 4: Bayou Cocodrie Total Losses for the 1-Percent-Annual-Chance Flood Event

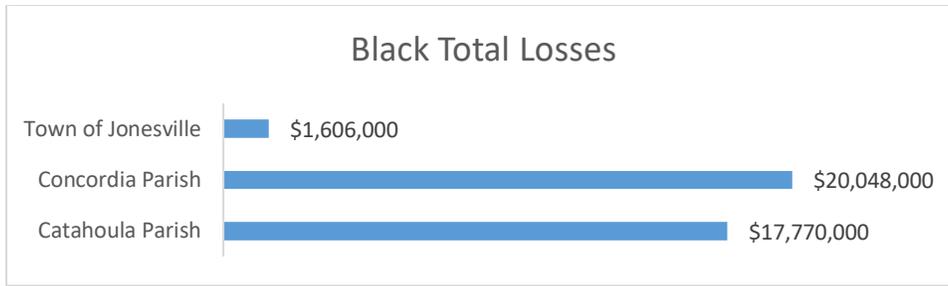


Figure 5: Black Total Losses for the 1-Percent-Annual-Chance Flood Event

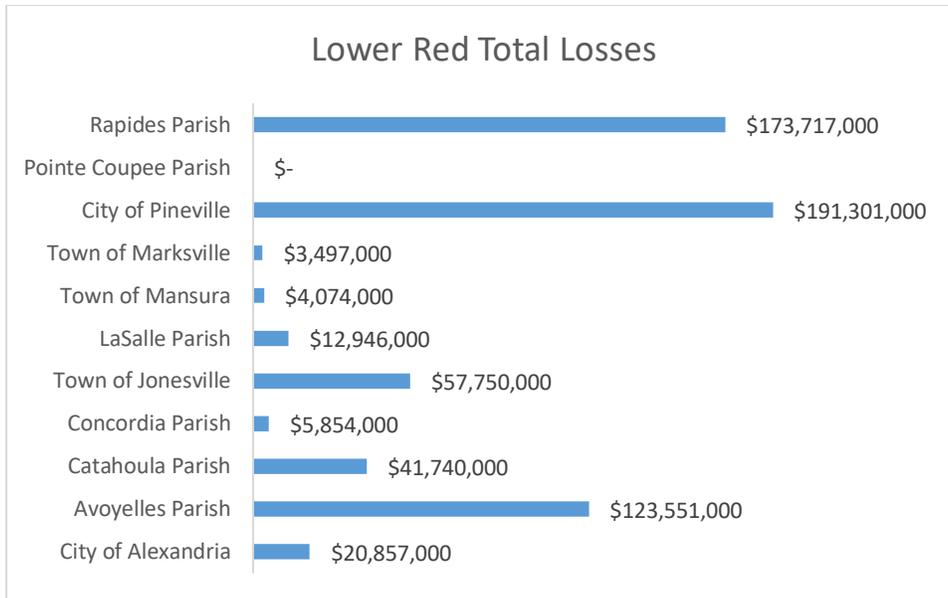


Figure 6: Lower Red Total Losses for the 1-Percent-Annual-Chance Flood Event

### Discovery Outreach and Meeting

In developing a comprehensive analysis of the Bayou Cocodrie, Black, and Lower Red watersheds, several government agencies and departments contributed information. In May 2020 staff of the Louisiana Department of Transportation and Development and Dewberry, the state’s CTP contractor, held a project kickoff meeting. Having finalized a list of community contacts compiled from DOTD information and public sources, the communities within the watershed were first contacted in July 2020 via telephone to inform them on the Discovery Project and to verify contact information. Due to the unprecedented events of COVID-19, the Discovery meeting had to be held virtually. Meeting invites were sent out via email on 11/6/2020. The email discussed the purpose of the Discovery Meeting, stipulated the date, time and virtual meeting location, and asked for any pertinent data to be brought to the meeting. The email also included a link to an ArcGIS webmapping application. This webmap showed relevant geographical information to the watersheds. It also had a feature where the communities could enter in comments on their portion of the watershed. The data remained online for the communities to enter their comments for 30 days. Follow up calls were made to all communities after the Discovery meeting to ensure a thorough understanding of the process and that all comments could be collected. A

conference call was held with Concordia Parish, specifically where the Police Jury Treasurer asked many questions to clarify these efforts from others in the state.

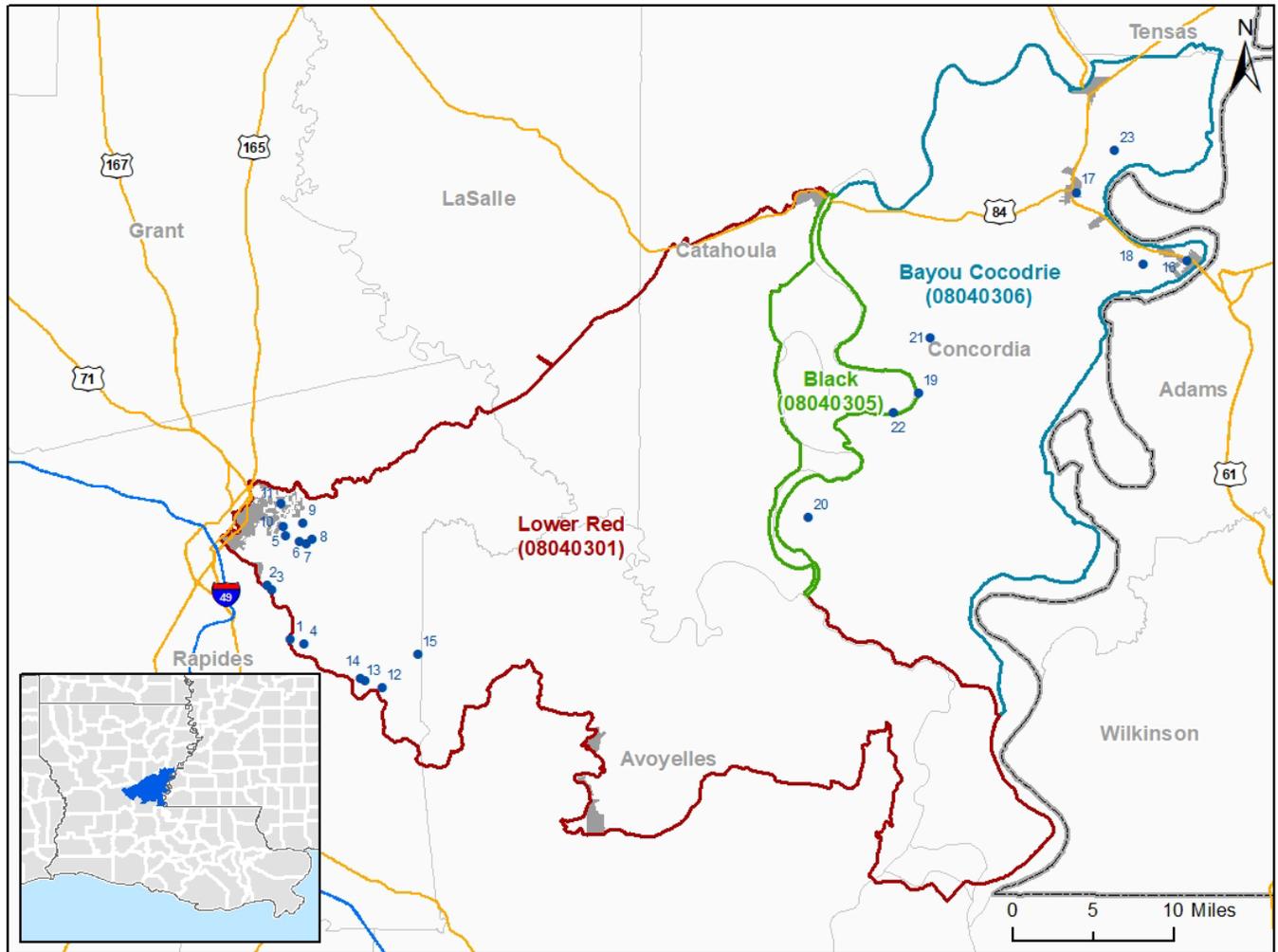


Figure 7: Map of concerns collected at the Discovery Meeting

Table 12: Issues and Concerns Collected During Discovery

Item	Location	Information Provided By	Discovery Workshop Comment Summary
1	Rapides Parish	Community Official	BLE data 88.5 – USACE 82.0
2	Rapides Parish	Community Official	BLE data 94.2’ NAVD -USACE 91’ NGVD. 7535 Hwy 1 South
3	Rapides Parish	Community Official	BLE data 93.3 NAVD - USACE 86’
4	Rapides Parish	Community Official	BLE data 88.4 -USACE 83’. Palmer Chapel Rd area
5	Rapides Parish	Community Official	BLE data 96.5 – Owen & White study 86’
6	Rapides Parish	Community Official	BLE data 96.5’ – Owen & White study 87’ NAVD See Owen & White sheet 6 Brushy Fork
7	Rapides Parish	Community Official	BLE data 96.5’ – Owen & White study 88’ See Owen & White sheet 6 Brushy Fork Trib 9

Item	Location	Information Provided By	Discovery Workshop Comment Summary
8	Rapides Parish	Community Official	Owen & White extends boundary to BFE 108' See Owen & White sheet 6 Brushy Fork Trib 9
9	Rapides Parish	Community Official	BLE data 96.5' – Owen & White study 94' See Owen & White study Brushy Fork
10	City of Pineville	Community Official	Floodplain boundary should extend to BFE 106' See Owen & White study
11	City of Pineville	Community Official	This area repetitively floods, Wildwood Drive, Pineville. Floodplain should cross over Susek Drive.
12	Rapides Parish	Community Official	BLE data 80.5 – Owen & White data 77' BLE data all along Red River does not match Owen & White data
13	Rapides Parish	Community Official	Owen & White study BFE south of Lock N Dam 78', North 79'
14	Rapides Parish	Community Official	Boundary errors
15	Rapides Parish	Community Official	BLE 73' – Owen & White 68' About a 5' difference here (Cow Creek)
16	Concordia Parish/Town of Ferriday	Community Official	BLE elevations are too high
17	Concordia Parish	Community Official	Brushy Bayou project. Report pending.
18	Concordia Parish	Community Official	BLE data is too conservative. This area is in Zone X
19	Concordia Parish	Community Official	BLE data does not show levee. BLE reports shows 16.1 foot depth but in Zone X on FIRM
20	Concordia Parish	Community Official	BLE too conservative. Corp of Eng. Gives 48.0 feet for lake, BLE shows 53.7 feet
22	Concordia Parish	Community Official	BLE too conservative. Corp of Eng. gives BFE of 48.0 feet for lake, BLE shows 53.7 feet for Black River Lake
23	Concordia Parish	Community Official	Lake Concordia BFE from Corp of Eng. 56.0, BLE shows 51.9 feet

## FEMA Investment Decision

As you can see above, it was made known by Rapides Parish that there is a previous study completed by consultant Owen and White and has elevations that differ from the BLE data. Rapides is undergoing an update to their Levee Safety Evaluation Reports for certification of the Red River levees. It is recommended that this study be considered in that process for the levee modeling and evaluation.

Concordia Parish Police Jury members asked for DOTD to assist them through the levee certification process with USACE and FEMA. As indicated from the comments collected online and through discussions, they generally feel that the BLE data is very conservative. It was made known through a discussion with the FEMA BLE PM in these watersheds that the levee was modelled with natural valley methods. It is the hope of the parish that the levees become certified by USACE and therefore Accredited by FEMA so that the modelling can be revised and BLE data updated to reflect this change in status of the levees.

## Appendix I: Resources

### State Partners

Organization/Title	Name	Partner Location	Contact Information
Louisiana Department of Transportation & Development State NFIP Coordinator	Cindy O'Neal, CFM	P.O. Box 94245 Baton Rouge, LA 70804	Phone: 225-379-3005 Email: <a href="mailto:cindy.oneal@la.gov">cindy.oneal@la.gov</a> Web Page: <a href="http://floods.dotd.la.gov">http://floods.dotd.la.gov</a>
Mississippi Emergency Management Agency State NFIP Coordinator	Stacey Ricks, CFM	P.O. Box 5644 Pearl, MS 39288	Phone: 601-933-6610 Email: <a href="mailto:sricks@mema.ms.gov">sricks@mema.ms.gov</a> Web Page: <a href="http://www.msema.org/floodplain-management/">http://www.msema.org/floodplain-management/</a>
Louisiana Governor's Office of Homeland Security and Emergency Preparedness State Hazard Mitigation Officer	Jeffrey Giering, CFM	1201 Capitol Access Rd. Baton Rouge, LA 70802	Phone: 225-379-3005 Email: <a href="mailto:jeffrey.giering@la.gov">jeffrey.giering@la.gov</a> Web Page: <a href="http://gohsep.la.gov">http://gohsep.la.gov</a>
Mississippi Emergency Management Agency State Hazard Mitigation Officer	Jana Henderson, CFM	P.O. Box 5644 Pearl, MS 39288	Phone: 601-933-6636 Email: <a href="mailto:jhenderson@mema.ms.gov">jhenderson@mema.ms.gov</a> Web Page: <a href="http://www.msema.org/">http://www.msema.org/</a>

### Watershed Follow Up Points of Contact

Subject/Topic of Interest	Name	Contact Information
FEMA Project Monitor <i>Project Outreach</i>	Diane Howe Risk Analysis Branch	Phone: 940-898-5171 Email: <a href="mailto:diane.howe@fema.dhs.gov">diane.howe@fema.dhs.gov</a>
<ul style="list-style-type: none"> <li>• Floodplain Management</li> <li>• Floodplain Ordinance</li> <li>• Community Assistance Visits</li> <li>• Higher Standards</li> </ul>	John Miles, Jr.	<a href="tel:840-297-0185">Phone: 840-297-0185</a> <a href="mailto:john.milesjr@fema.dhs.gov">Email: john.milesjr@fema.dhs.gov</a>
<ul style="list-style-type: none"> <li>• Community Rating System</li> <li>• Flood Insurance</li> </ul>	Jonathan Smith	Phone: 228-235-6506 Email: <a href="mailto:jsmith@iso.com">jsmith@iso.com</a>
<ul style="list-style-type: none"> <li>• How to find and read FIRMs</li> <li>• Letters of Map Change and Elevation Certificates</li> <li>• Flood zone disputes</li> <li>• Mandatory insurance purchase guidelines</li> <li>• Map Service Center (MSC) &amp; National Flood Hazard Layer</li> </ul>	FEMA Map Information eXchange	Phone: 877.FEMA.MAP (336.2627) Email: <a href="mailto:FEMAMapSpecialist@riskmapcds.com">FEMAMapSpecialist@riskmapcds.com</a> Live Chat: <a href="https://www.floodmaps.fema.gov/fhm/fmx_main.html">https://www.floodmaps.fema.gov/fhm/fmx_main.html</a>

## Governor's Office of Homeland Security and Emergency Preparedness

<http://gohsep.la.gov/>



Louisiana is a high-risk state for emergency events and disasters. The Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) is the agency responsible for coordinating the state's efforts throughout the emergency management cycle to prepare for, prevent where possible, respond to, recover from, and mitigate against to lessen the effects of man-made or natural disasters that threaten the state. GOHSEP can save lives and reduce property damage by understanding risks and taking action to address those risks, as well as minimizing disaster impacts and increasing the resiliency in our communities, environment, and economy.

### HELPFUL LINKS:

FLOOD INDEX: <http://gohsep.la.gov/ABOUT/LOUISIANA-HAZARDS-THREATS/FLOODING>

GOHSEP CONTACTS: <http://gohsep.la.gov/ABOUT/CONTACT-US/GOHSEP-CONTACTS>

FLOOD MITIGATION ASSISTANCE GRANT PROGRAM: <http://gohsep.la.gov/GRANTS/RECOVERY-GRANTS/Hazard-Mitigation-Assistance>

GOHSEP MITIGATION PLANNING: <http://getagameplan.org/planMitigate.htm>

FEMA ESTIMATED BFE VIEWER: <https://webapps.usgs.gov/infrm/estbfe/>

## Louisiana Department of Transportation and Development <http://floods.dotd.la.gov>

The Louisiana Department of Transportation and Development (DOTD) is the State Coordinating Agency for the NFIP as designated by the Governor. The purpose of the program is to promote local government compliance with NFIP regulations to ensure the availability of low-cost flood insurance, and in doing so, minimize loss of life and property due to catastrophic flooding. This is accomplished through on-site assessments, distribution of a quarterly newsletter, conducting workshops, providing technical assistance on local government ordinance development, and participation in post-disaster Flood Hazard Mitigation activities.



### DOTD FLOOD INFORMATION & RESOURCES

Louisiana Floodplain Management Desk Reference—The Louisiana Floodplain Management Desk Reference is a comprehensive guide that gives detailed information on administering floodplain ordinances at the community level.

### POINTS OF CONTACT:

Cindy O'Neal, CFM  
State NFIP Coordinator  
**Phone:** 225-379-3005  
**Fax:** 225-379-3002

**Email:** [cindy.oneal@la.gov](mailto:cindy.oneal@la.gov)

## Louisiana Floodplain Management Association

Organization	Contact Information	Website
Louisiana Floodplain Management Association (LFMA)	Phone: 318-226-6934	<a href="http://lfma.org">http://lfma.org</a>

## Certified Floodplain Manager (CFM) Certification

The Association of State Floodplain Managers (ASFPM) established a national program for certifying floodplain managers. This program recognizes continuing education and professional development that enhances the knowledge and performance of local, state, federal, and private-sector floodplain management professionals.

The role of the nation's floodplain managers is expanding due to increases in disaster losses, the emphasis on mitigation to alleviate the cycle of damage-rebuild-damage, and a recognized need for professionals to adequately address these issues. This certification program will lay the foundation for ensuring that highly qualified individuals are available to meet the challenge of breaking the damage cycle and stopping its negative drain on the nation's human, financial, and natural resources.

CFM® is a registered trademark and available only to individuals certified and in good standing under the ASFPM Certified Floodplain Manager Program.

For more information, you may want to review these available CFM Awareness Videos:

- [What is the CFM Program?](#)
- [Who can be a CFM?](#)
- [What are the Benefits of a CFM?](#)

Study Materials for those interested in applying for the CFM certification can be found on the ASFPM Website at: <http://www.floods.org/index.asp?menuID=215>

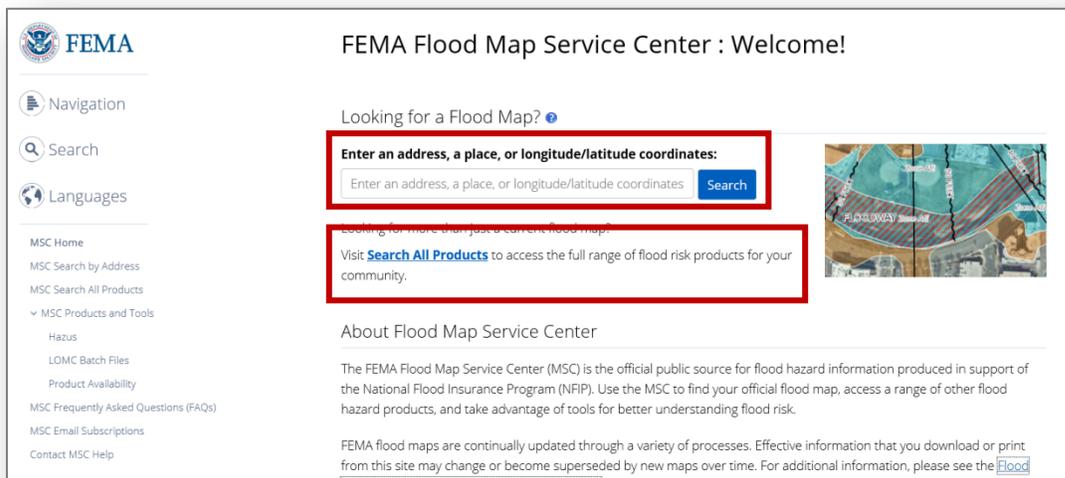
## Map Service Center – Preliminary Map Data

The [FEMA Flood Map Service Center \(MSC\)](#) is the official public source for flood hazard information produced in support of the NFIP. Use the MSC to find your official effective flood map, preliminary flood maps, and access a range of other flood hazard products.

FEMA flood maps are continually updated through a variety of processes. Effective information that you download or print from this site may change or become superseded by new maps over time. For additional information, please see the [Flood Hazard Mapping Updates Overview Fact Sheet](#).

At the Map Service Center, there are two ways to locate flood maps in your vicinity.

1. Enter an address, place name, or latitude/longitude coordinates and click search. This will provide the current effective FIRM panel that the location exists on.
2. Or [Search All Products](#), which will provide access to the full range of flood risk information available.



Visiting the more advanced search option, “Search All Products,” users may access current, preliminary, pending, and historic flood maps. Additionally, GIS data and flood risk products may be accessed through the site with these few steps.