

Association of Levee Boards of Louisiana



Ed Knight, P.E.
Deputy Assistant Secretary

December 4, 2024

Today's Discussion

- Levee Safety Program
- Dam Safety Program
- Louisiana Watershed Initiative
- Statewide Flood Control Program
- Floodplain Management

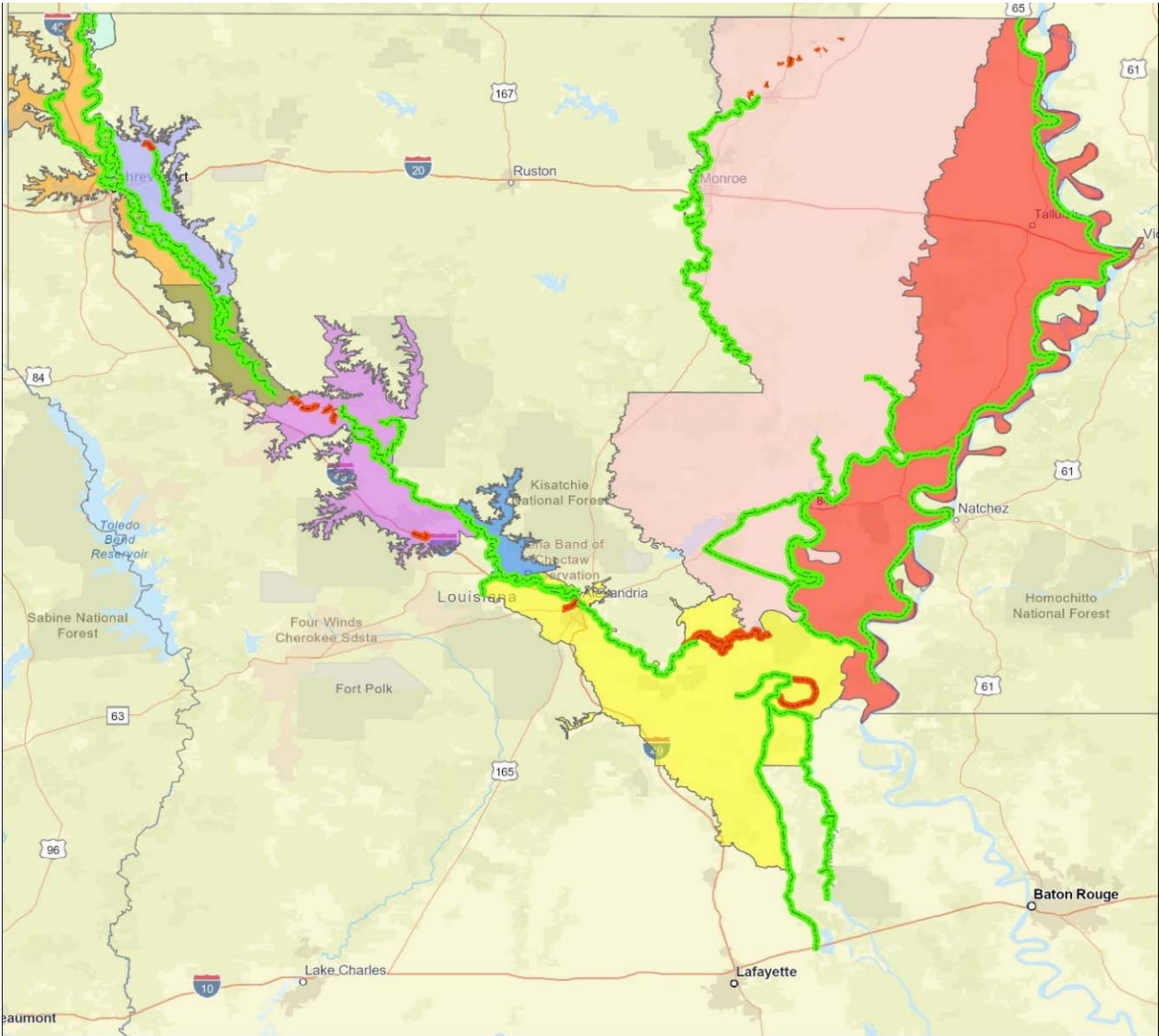


DOTD – Public Works and Water Resources

➤ Mission:

The mission of Public Works is to develop the potential of Louisiana's water related resources by administering programs and implementing infrastructure projects relating to controlling, developing, conserving and protecting all aspects of the resources.

Levee Safety Program



Non-Coastal Levee Districts (9)

Bossier LD	Federal	65.1
	Non- Federal	4.3
Caddo LD	Federal	116.7
Fifth LA LD	Federal	306.3
Nineteenth LA LD	Federal	26.2
Natchitoches L&DD	Federal	69.3
	Non- Federal	17.5
North Bossier LD	Federal	3.4
Red River L&DD	Federal	51.7
RRABB LD	Federal	196.7
	Non- Federal	55.2
Tensas LD	Federal	249.9
	Non- Federal	4.7

Levee Type

- Federal
- Non-Federal

Levee Safety Program

Current Services

- Inspections
 - Assist Levee Districts with their Inspections
 - Provide Semi-Annual Inspection Reports
 - Provide Recommendations/Options for Corrective Actions
 - Flood Inspections/Flood Monitoring
- Inventory/Mapping
 - Inventory Levee Assets
 - Survey Support
 - Develop GIS Maps



Levee Safety Program


Additional Services

- Regulatory Support
 - Levee Permit Database
 - Coordination for certifications
 - Stakeholder meetings with USACE
- Strategic Planning
 - Review of USACE and FEMA guidance documents to identify upcoming requirements
 - Interface with resources to determine if legislative activity should be considered
- Training Compliance
 - Online training for levee inspectors

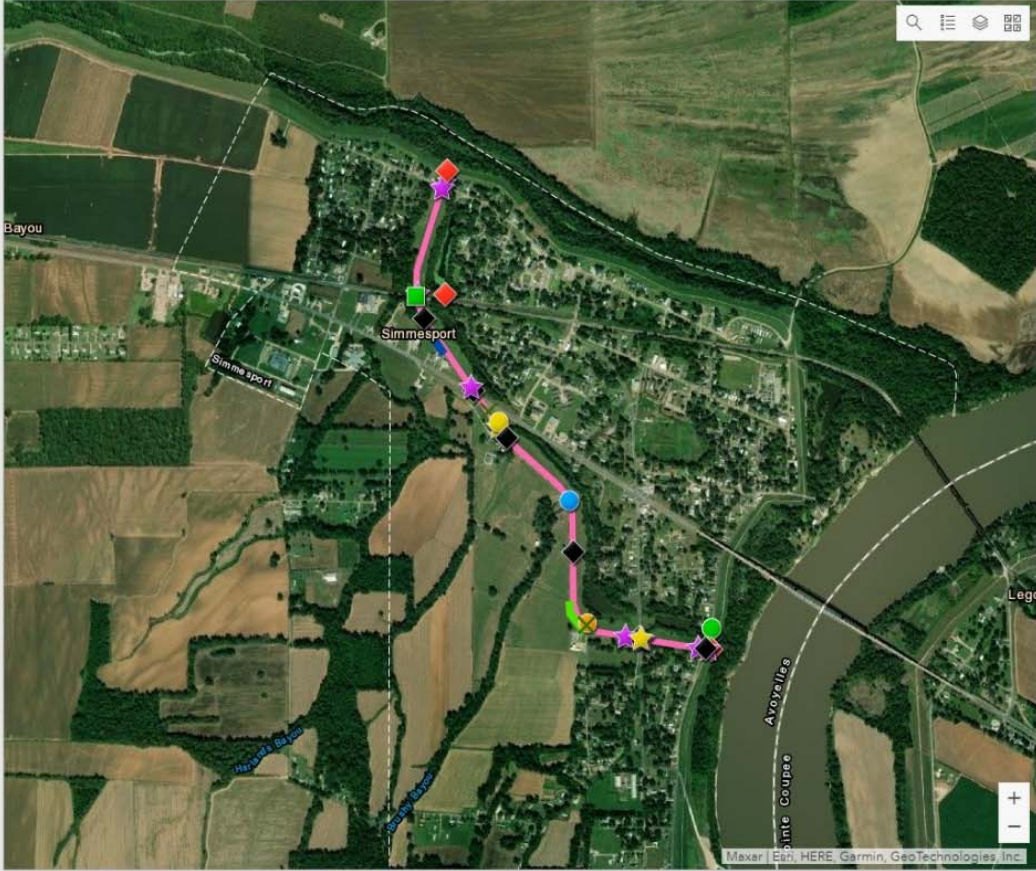


Levee Safety Program Inspection Software

Levee District: All Districts | Inspection Segment: Simmesport Levee | Rated Item: All Rated Items | Status: All



Levee Inspection Dashboard



Simmesport Levee Inspection Segment
0000000e, Begin Simmesport Ring Levee
Rated Item: Inventory
Feature: Levee Crown
Status: Typical Conditions

Simmesport Levee Inspection Segment
0000150i, Overhead Utility Crossing
Rated Item: Overhead Utility Crossing
Feature: Levee Slope and Crown
Status: Typical Conditions

Simmesport Levee Inspection Segment
0000175i, Road Crossing
Rated Item: Ramp / Road / Railroad
Feature: Levee Slope and Crown
Status: Typical Conditions

Simmesport Levee Inspection Segment
0000200i, Fence Crossing Levee
Rated Item: Fence Crossing Levee
Feature: Levee Slope and Crown
Status: Typical Conditions

Simmesport Levee Inspection Segment
0000201i, Overhead Utility Crossing
Rated Item: Overhead Utility Crossing
Feature: Levee Slope and Crown
Status: Typical Conditions

Simmesport Levee Inspection Segment
0001600i, Access to Simmesport Ring Levee - dangerous
Rated Item: Inventory
Feature:
Status: Typical Conditions

Simmesport Levee Inspection Segment
0001600i, Fence Crossing Levee
Rated Item: Fence Crossing Levee
Feature:
Status: Typical Conditions

Observation Points

29

Observation Lines

2

Levee Observation Points

- ★ Buried Utilities
- Drainage Structure
- Encroachments
- ✕ Fence Crossing Levee
- Fence Parallels Levee
- ◆ Ramp / Road / Railroad
- ★ Overhead Utility Crossing
- ◆ Inventory
- Closure Structure

Unresolved Status

Observation Points

4

13.8% Unresolved

Observation Lines

1

50% Unresolved

Simmesport Levee Documentation

Attachments

[Simmesport Pre-Flood Summary Report 2022 \(Final\).pdf](#)

RRABB Levee District
DOTD Pre-Flood Levee Inspection Summary Report

Krotz Springs Levee

Date of Inspection: May 16, 2022

Description of Project: This segment of levee is within the RRABB Levee District area of responsibility. It protects the city of Krotz Springs from backwater flooding from the Atchafalaya River and the Half Moon Bayou. The levee segment begins to the north of Krotz Springs where it connects to the West Atchafalaya River Levee and encircles the town to the train tracks on the southern side of town within Avoyelles Parish. The segment is approximately 1.7 miles in length.

Inspection Summary:

The following deficiencies were found during the inspection and should be addressed by the levee district in a timely fashion

1. Unwanted Vegetation Growth:

No areas of unwanted vegetation were noted during this inspection.

2. Sod Cover:

No areas of poor sod cover were noted during this inspection.

3(a). Encroachments - General:

No significant encroachments (general) were noted during this inspection.

3(b). Encroachments - Crossing Utilities:

No utility crossing problems were noted during this inspection.

3(c). Encroachments - Parallel Utilities:

No parallel utility problems were noted during this inspection.

3(d). Encroachments - Fence Crossings:

No fence crossing problems were noted during this inspection.

3(e). Encroachments - Parallel Fences:

No parallel fence problems were noted during this inspection.

4. Closure Structures (Stop Log, Earthen Closures, Gates or Sandbag Closures):

No closure structures on this levee segment.

5. Slope Stability:

No slides or slope stability problems were noted during this inspection.

6(a). Erosion - General:

Erosion (general) problems were identified during the inspection at the following locations:

Rated Item	Latitude	Longitude	Comments
Erosion	30.5450	-91.7678	Erosion along fence crossing on the flood side slope.
Erosion	30.5410	-91.7772	Erosion along fence crossing on flood and protected side slopes.

6(b). Erosion/ Bank Caving:

No bank caving or significant bank erosion was noted during this inspection.

Levee Safety Program Inspection Reports

Levee Inspection Report Generator

This app allows you to generate reports for Levee Inspections. Select the inspection segment from the list. Once you click the 'Run' button, you can access the report in the report repository.


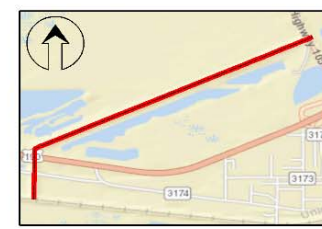
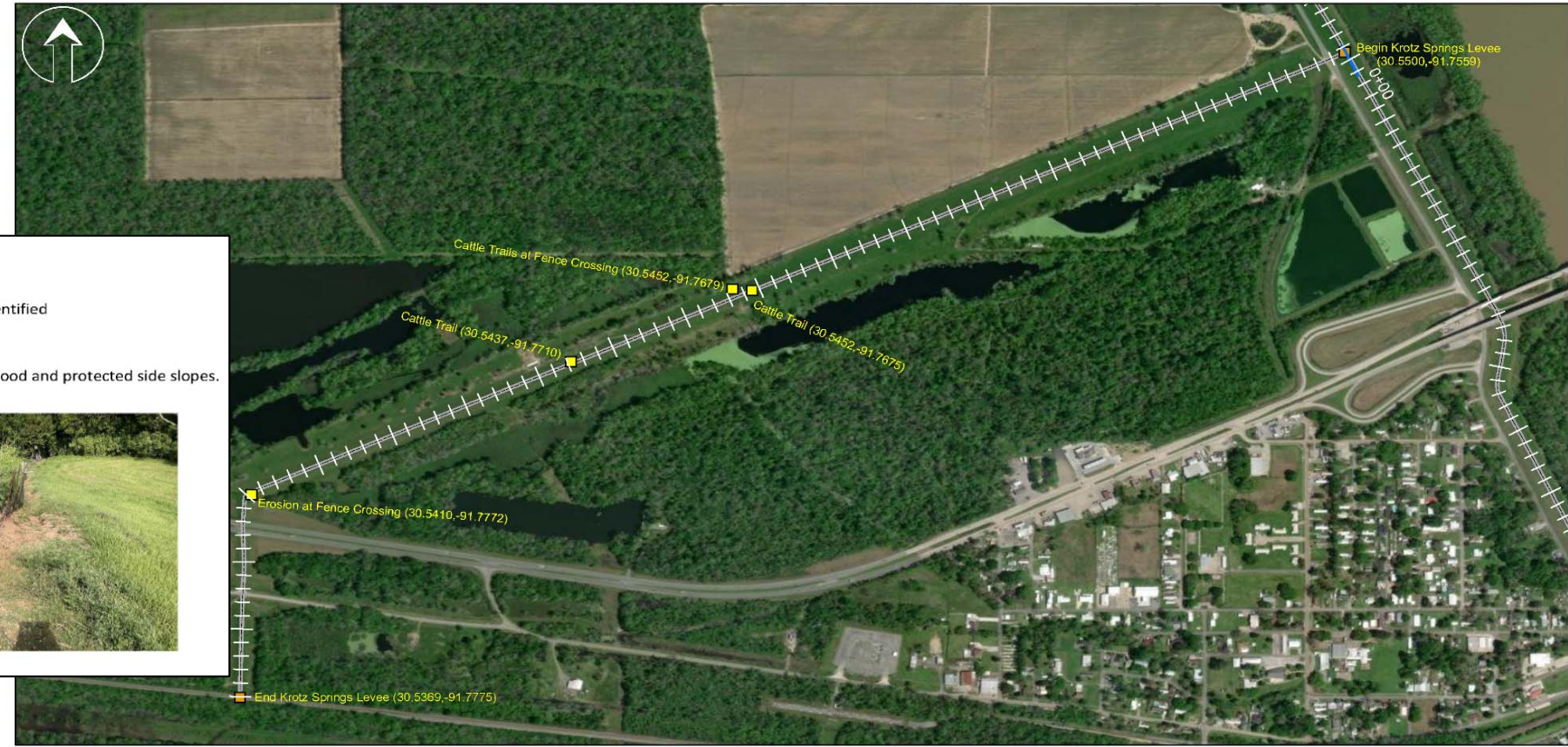
Select Inspection Segment	Krotz Springs
Select Inspection Type	All
Show Corrective Actions and Observation Comments	No
Show Stations	Yes

OK

Levee Safety Program

0007476p, Erosion at Fence Crossing
 LOCATION: Levee Slope - Both Sides
 RATED ITEM: Erosion
 BEGIN STATION: 74+75 (30.5410, -91.7772)
 MAINTENANCE REQUIRED: Yes
 ADDITIONAL COMMENTS: Erosion 6 to 12 inches deep along fence crossing on flood and protected side slopes.

RATING: Problem Identified

Legend

<p>Ramps/Road Crossings</p> <ul style="list-style-type: none"> ● No Problem Identified / Good ● Problem Identified ● Not Applicable <p>Drainage Structures</p> <ul style="list-style-type: none"> ● No Problem Identified / Good ● Problem Identified ● Not Applicable 	<p>Fence Crossings</p> <ul style="list-style-type: none"> ✕ No Problem Identified / Good ✕ Problem Identified ✕ Not Applicable <p>Buried Utilities</p> <ul style="list-style-type: none"> ● No Problem Identified / Good ● Problem Identified ● Not Applicable 	<p>Encroachment Points</p> <ul style="list-style-type: none"> ● No Problem Identified / Good ● Problem Identified ● Not Applicable <p>Overhead Utilities</p> <ul style="list-style-type: none"> ▲ No Problem Identified / Good ▲ Problem Identified ▲ Not Applicable 	<p>Observation Points</p> <ul style="list-style-type: none"> ■ No Problem Identified / Good ■ Problem Identified ■ Not Applicable <p>Fence Parallels Levee</p> <ul style="list-style-type: none"> ✕ No Problem Identified / Good ✕ Problem Identified ✕ Not Applicable 	<p>Parallel Overhead Utilities</p> <ul style="list-style-type: none"> — No Problem Identified / Good — Problem Identified — Not Applicable <p>Encroachment Lines</p> <ul style="list-style-type: none"> — No Problem Identified / Good — Problem Identified — Not Applicable 	<p>Observation Lines</p> <ul style="list-style-type: none"> — No Problem Identified / Good — Problem Identified — Not Applicable <p>— Levee Segment: Krotz Springs</p>
--	--	--	--	--	---



Note: The distance between major hatch lines shown on the centerline are at 500 feet apart and the minor hatch lines are at 100 feet apart. Stations shown on sheets with a blue hatch mark are being provided for the reference of geographical location along centerline.

RRABB Levee District
 Krotz Springs Ring Levee
 Problem and Resolved
 Observation Map

Levee Safety Program Inspection Reports



0091725p, Tree at Toe

LOCATION: Levee Toe - Protected Side

RATED ITEM: Unwanted Vegetation

RATING: Problem Identified

BEGIN STATION: 917+25 (31.2779, -91.8218)

MAINTENANCE REQUIRED: Yes

ADDITIONAL COMMENTS: 36 inch diameter tree within 3 feet of protected side toe.



Levee Safety Program

Survey Support

- Tensas Basin Levee District Centerline Surveys
 - Cooperative effort between DOTD & TBLD to have matching, true, and actionable data with regard to these levee systems.
 - 7 Levee Segments
 - **Columbia (± 1 mi.): delivered 3/7/24**
 - **West Monroe (± 7 mi.): delivered 10/25/24**
 - **Bawcomville (± 3 mi.): delivered 11/4/24**
 - **Jonesville Protection Works (± 4.4 mi.): collection underway**
 - Larto Lake to Jonesville (± 62 mi.)
 - Ouachita East Bank (± 99 mi.)
 - **Sicily Island (± 57.5 mi.): collection beginning soon**



Levee Safety Program Permit Database

RECEIVED
MAR -4 2024
Red River, Atchafalaya & Bayou Boeuf Levee District

Red River, Atchafalaya & Bayou Boeuf Levee District
Fence Permit Request

NAME AND ADDRESS OF APPLICANT				
Name	Part of Krotz Springs			
Address	P.O. Box 155 Krotz Springs, LA 70750			
Email Address	tiger-mon464@yahoo.com			
Phone #	Alternate/Cell Phone#	Fax #	Date	
337-666-8867	337-308-0314	337-566-8889	3/4/2024	
DETAIL DESCRIPTION				
Part of Krotz Springs would like to install a small cattle guard on top of the levee by 93 acres of property owned by the Port located on Highway 105 N. of Krotz Springs, Ark, replace an existing cattle guard to correct property line.				
Location of Construction				
Address:				
Parish	Section	Township	Range	GPS Coordinates <i>(Must include topo/aerial map with GPS Coordinates)</i>
St. Landry	7	T-5-S	R-7-E	See Attached Map
Name of Levee		Name of Professional Engineer/Architect		
RRABB Levee District - WARRL		N/A		
Please attach check for:				
<input type="checkbox"/> \$75.00 Individuals		<input checked="" type="checkbox"/> Small Cattle Guard (10' x 12') \$1,250		
<input type="checkbox"/> \$250.00 All Others (excluding Governmental)		<input type="checkbox"/> Large Cattle Guard (10' x 20') \$2,500		
I hereby jointly and severally guarantee the full and prompt performance of any of the conditions included in the Permit Request Application issue to me, including all Exhibits, without any additional notice, together with any expenses and/or fees actually incurred by the RRABB Levee District in enforcing compliance or canceling the Permit Request. I also affirm that I have read the terms and conditions of Exhibit A and Exhibit B and accept all of its terms and conditions:				
By:		Cindy Stelly, Executive Director		
	Applicant Signature	Print Name		

See attached Exhibits:

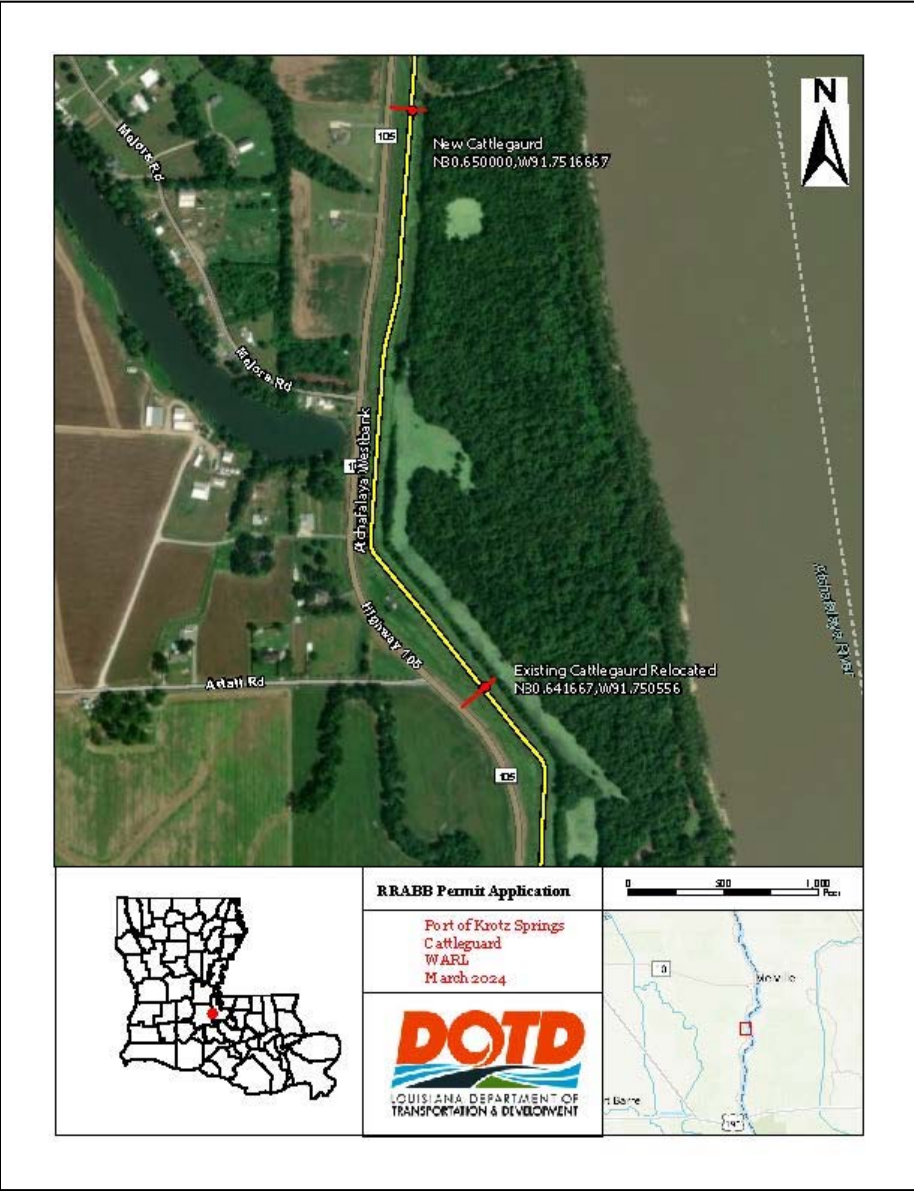
- Exhibit A: General Guidelines for Fences, Gates and Cattle Guards
- Exhibit B: Terms and Conditions for RRABB Levee District Permit Application

Permit Request should be mailed or email to RRABB. RRABB will forward to the U.S. Army Corps of Engineers and Louisiana Department of Transportation and Development for review/recommendation.

RRABB Levee District
10 Calvert Drive
Alexandria, LA 71303

Phone (318) 443-9646
Fax: (318) 443-9650
Email: eburke@rabb.net

Revised 10-4-2018 www.rabb.net Page 1 of 4



RRABB Permit Application

Port of Krotz Springs
Cattle guard
WARRL
March 2024



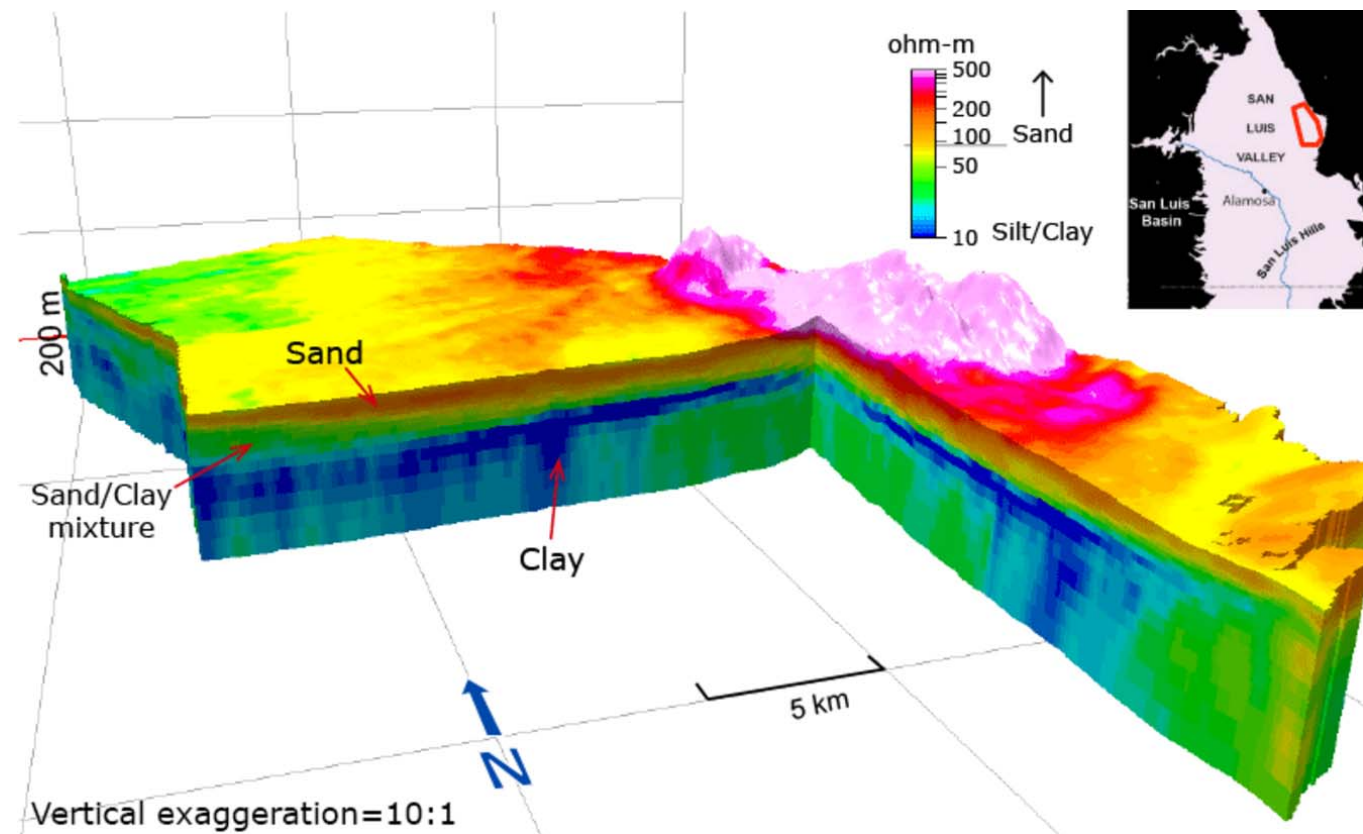
0 300 1,000 Feet



Levee Safety Program

Into the Future

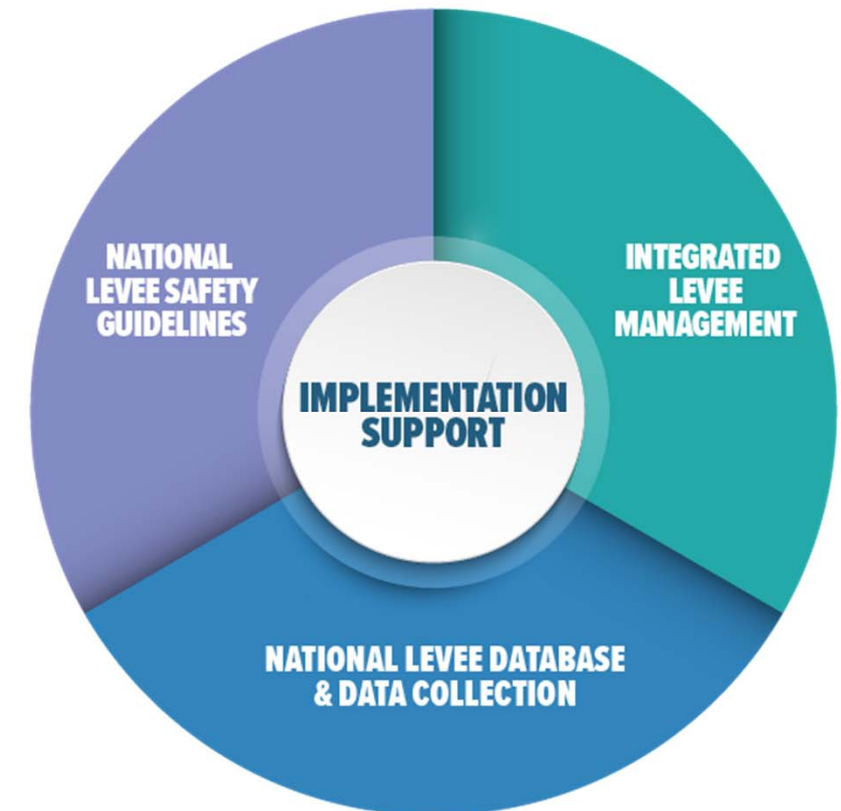
- Levee Centerline Surveys
- Evaluation of Electromagnetic Geophysics
 - \$876,000
 - Partnership with USGS for ongoing collection
 - Identification of Potential Seepage Locations
- Integration of Drones, Crawlers, and USVs



Levee Safety Program

National Levee Safety Program

- Redesigned National Levee Database
- New National Levee Safety Guidelines
- Integrated Levee Management
 1. clarifying roles and responsibilities to improve coordination and implementation in order to be more complimentary, streamlined, and effective in managing all levees in the Nation; and
 2. promoting and encouraging formal levee safety programs at the state level to serve as key integrators with other entities that have levee responsibilities.
- Implementation Support

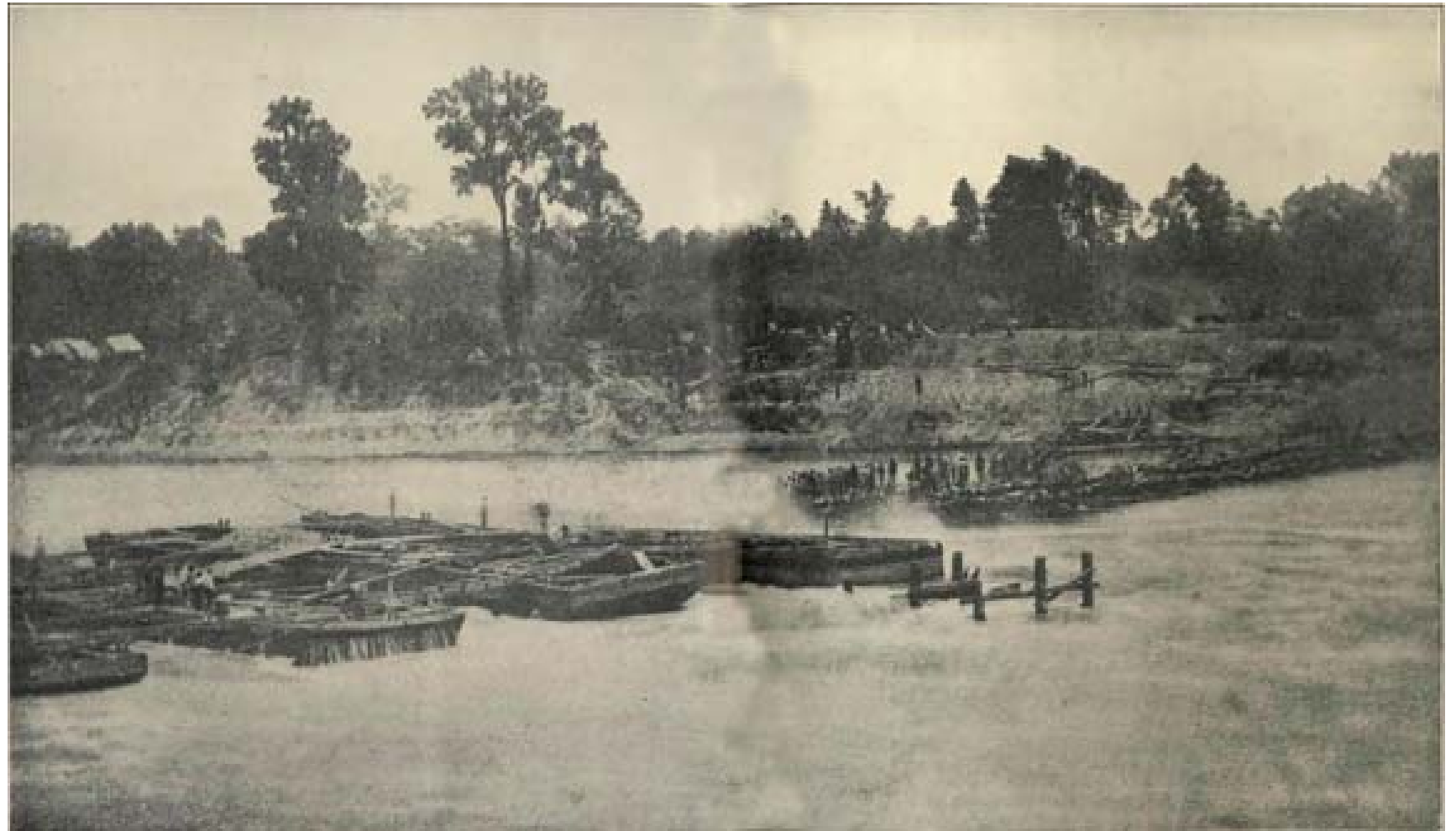


National Levee Safety Program

Levee Review Coordination

- Participated in Levee Risk Screening on Brouillete Levee (RRABB) in January 2024
- Levee Review Report
- Coordinating with USACE to conduct additional levee reviews, both inland and coastal

Dam Safety in Louisiana



Bailey's Dam Under Construction, Red River, May 1864

Dam Safety Program

685 Regulated Dams

(As of November 13, 2024)

- 43 High Hazard
- 67 Significant Hazard
- 575 Low Hazard
- 23 Under Investigation

Impact Classification	Potential Loss of Life	Potential Economic Loss	Inspection Frequency
High	Likely	Excessive	Annually
Significant	Possible	Appreciable	3 years
Low	Not Likely	Minimal	5 years

It is the responsibility of the owner/applicant to establish impact classification, and all dams will be considered to be of High Impact potential until demonstrated to be otherwise by a documented analysis provided by the applicant.

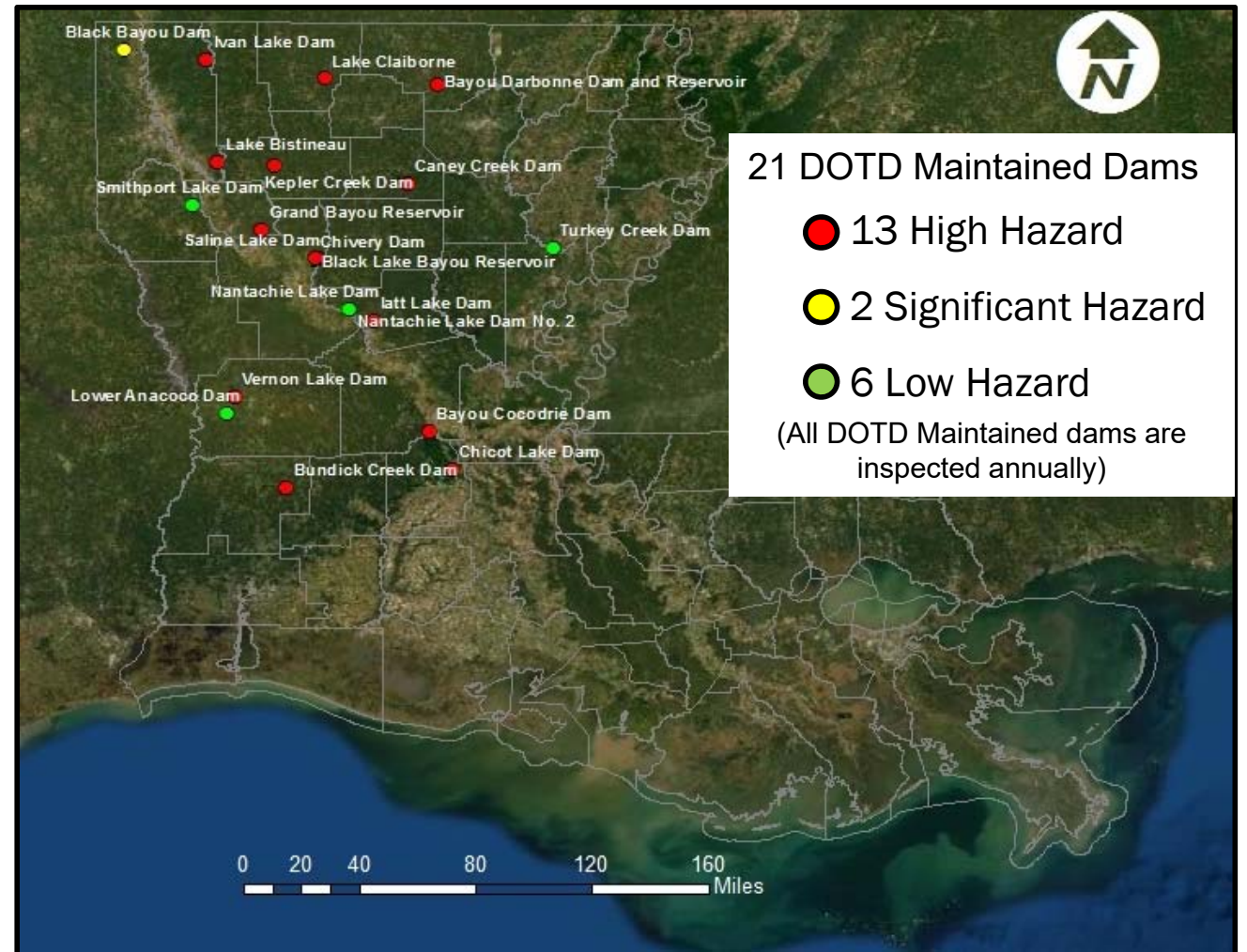
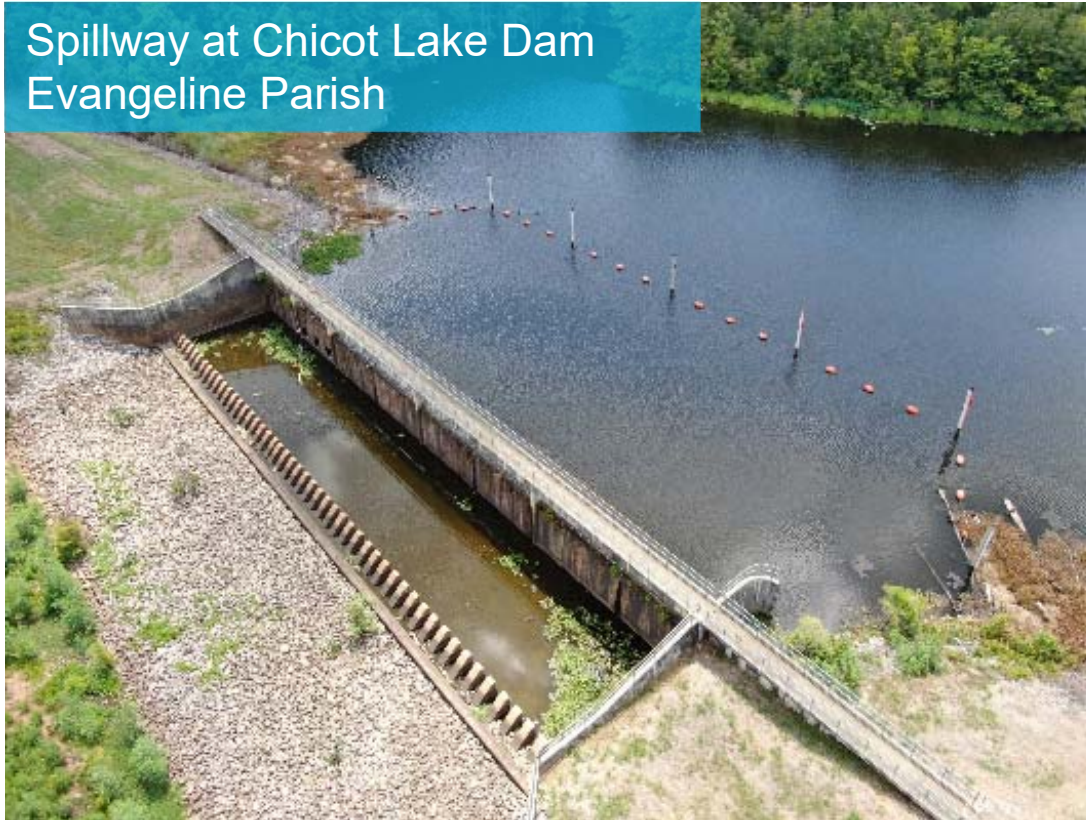


Spillway at Bayou D'Arbonne Dam
Union Parish

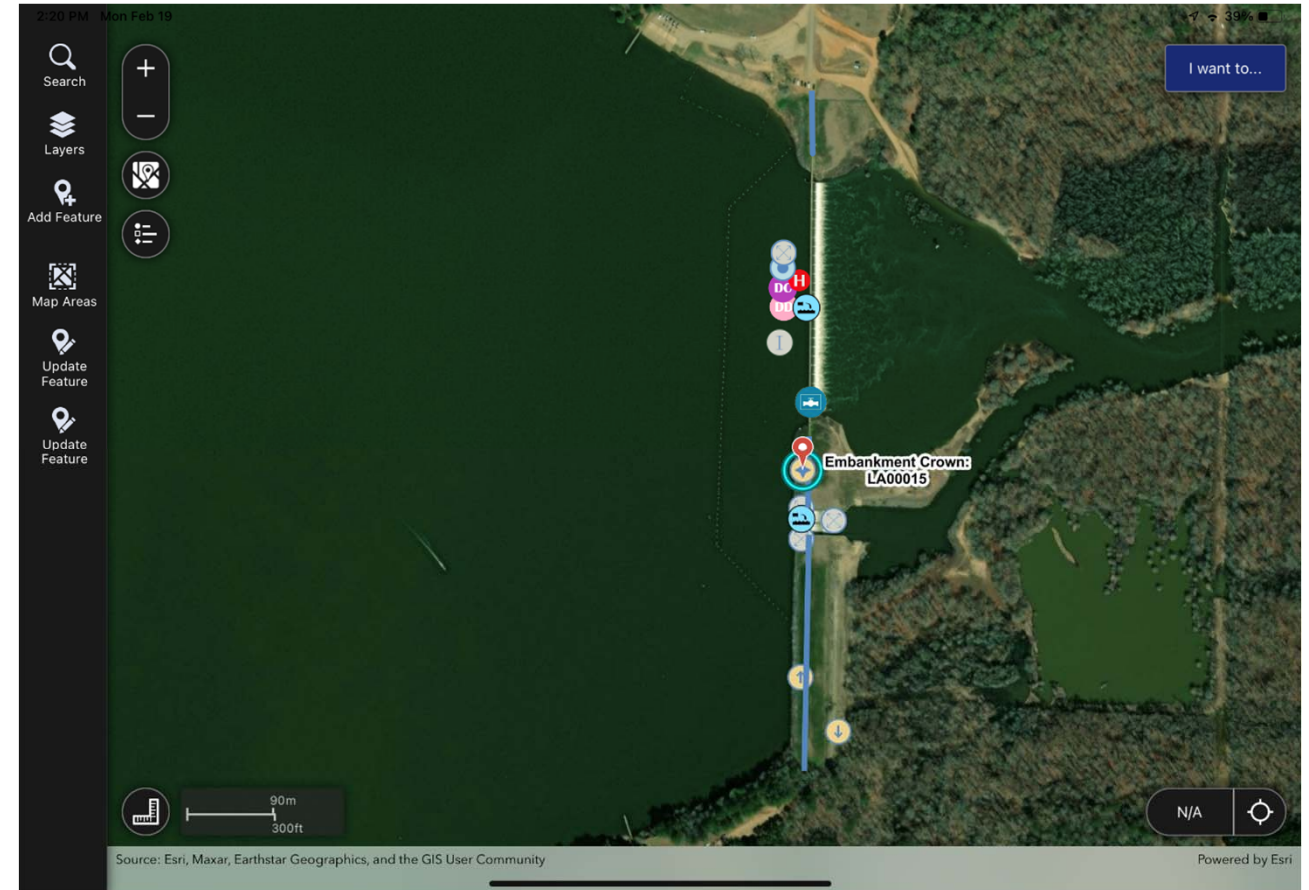
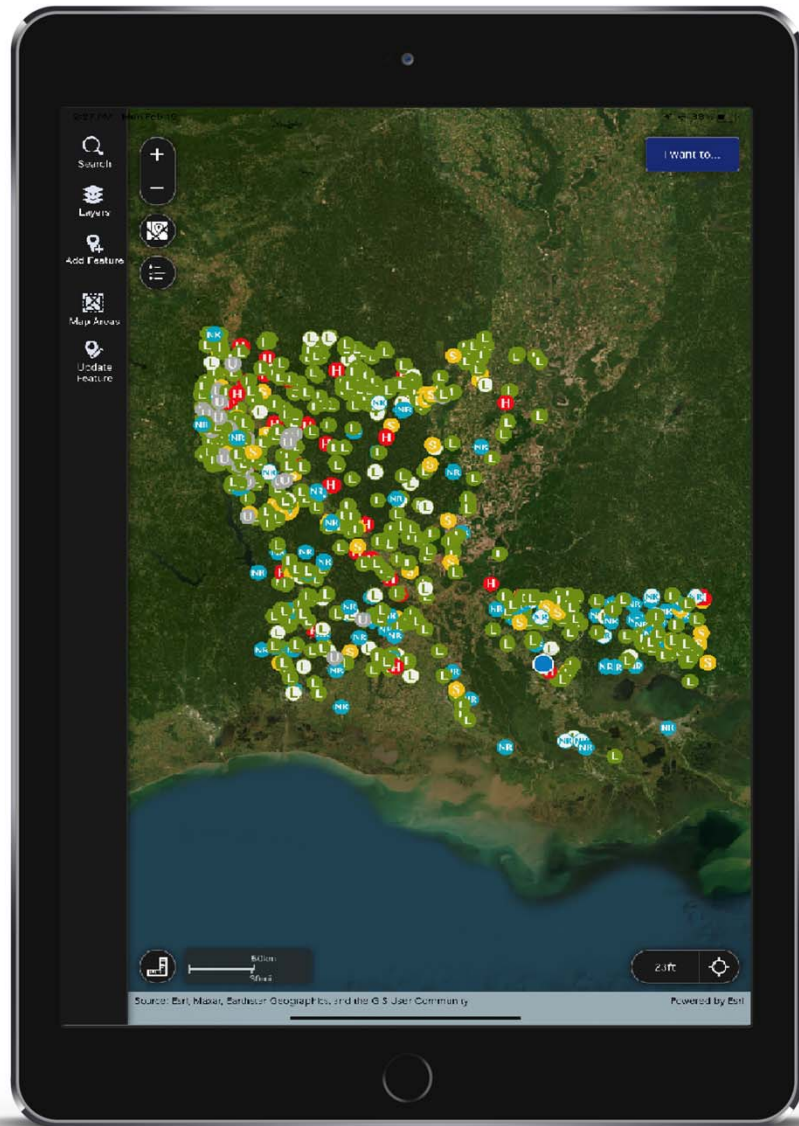
Dam Safety Program

R.S. 38:26: State-Maintained Dams

Spillway at Chicot Lake Dam
Evangeline Parish



Mobile Dam Inspection App

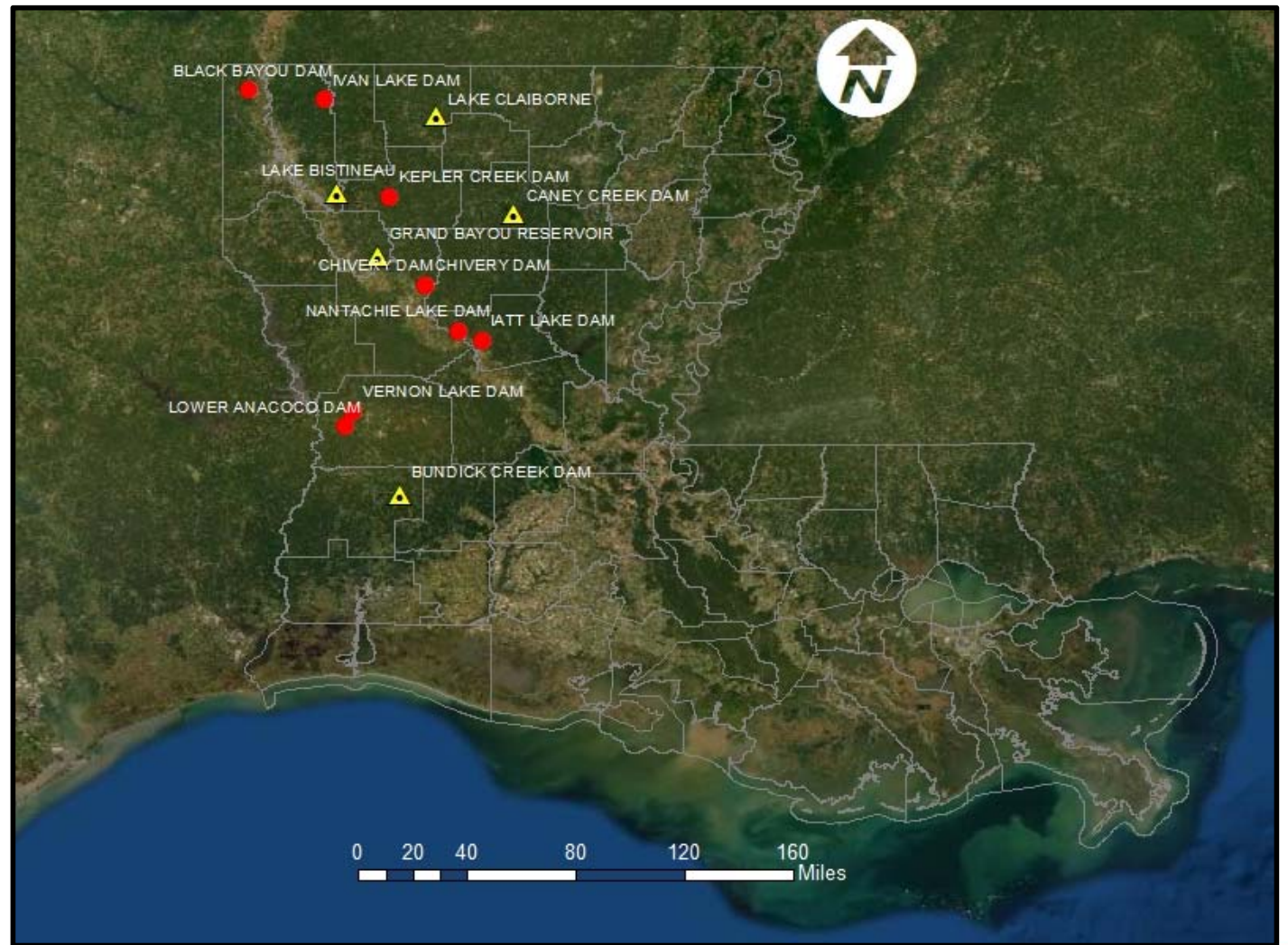


Dam Safety Program

State Maintained Dams – Capital Outlay Projects (13)

- Safety Measures Only (8)
(signs, boat barriers, fences)
- ▲ Gate Rehab/Maintenance &
Safety Measures (5 Projects)

➤ Total Projects = \$2.5 Million



Dam Safety Program

State-Maintained Dams – Drawdowns & Data Collection

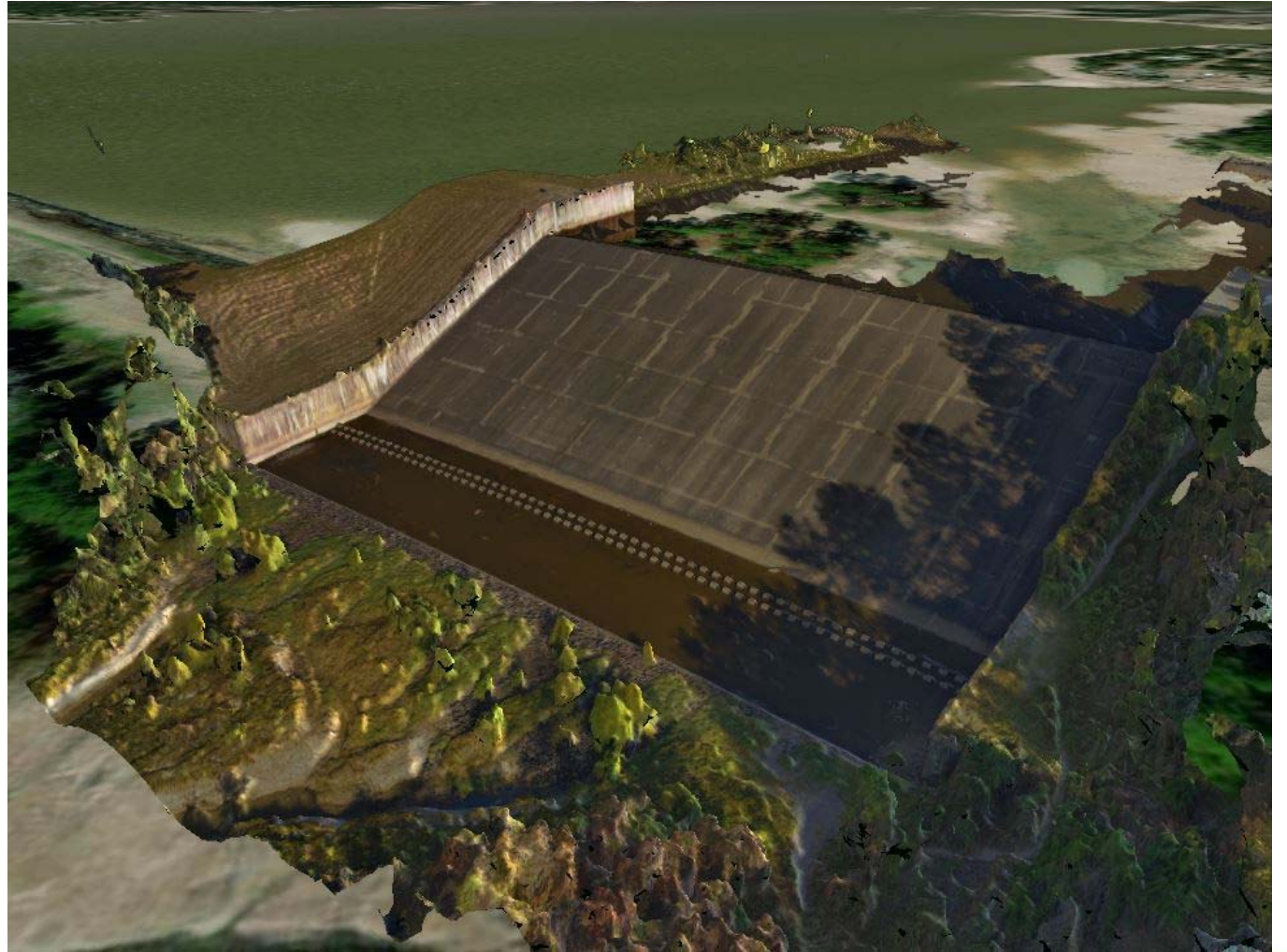
- Coordination and collection of LiDAR during drawdowns
- Drone imagery for photogrammetry



Dam Safety Program

Drone Program

- Since January 2023
- Skydio X2E
 - Photogrammetry
 - Thermal Imaging
- Limitations:
 - 1 Drone
 - 2 Pilots
 - No LiDAR sensor
 - Data Volumes

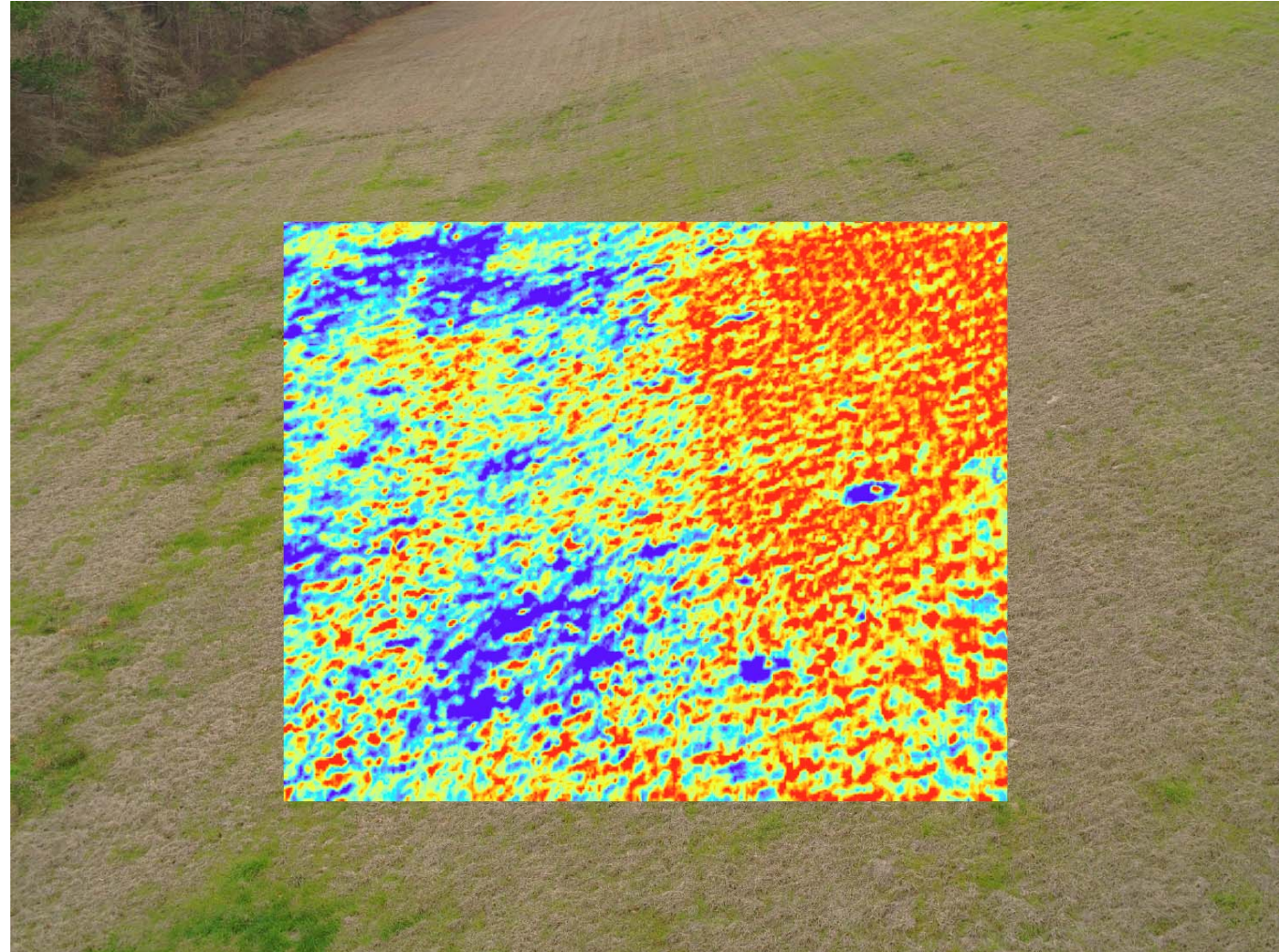


Dam Safety Program

Drone Program

➤ Thermal Evaluation

- Seepage
- Voids



Dam Safety Program

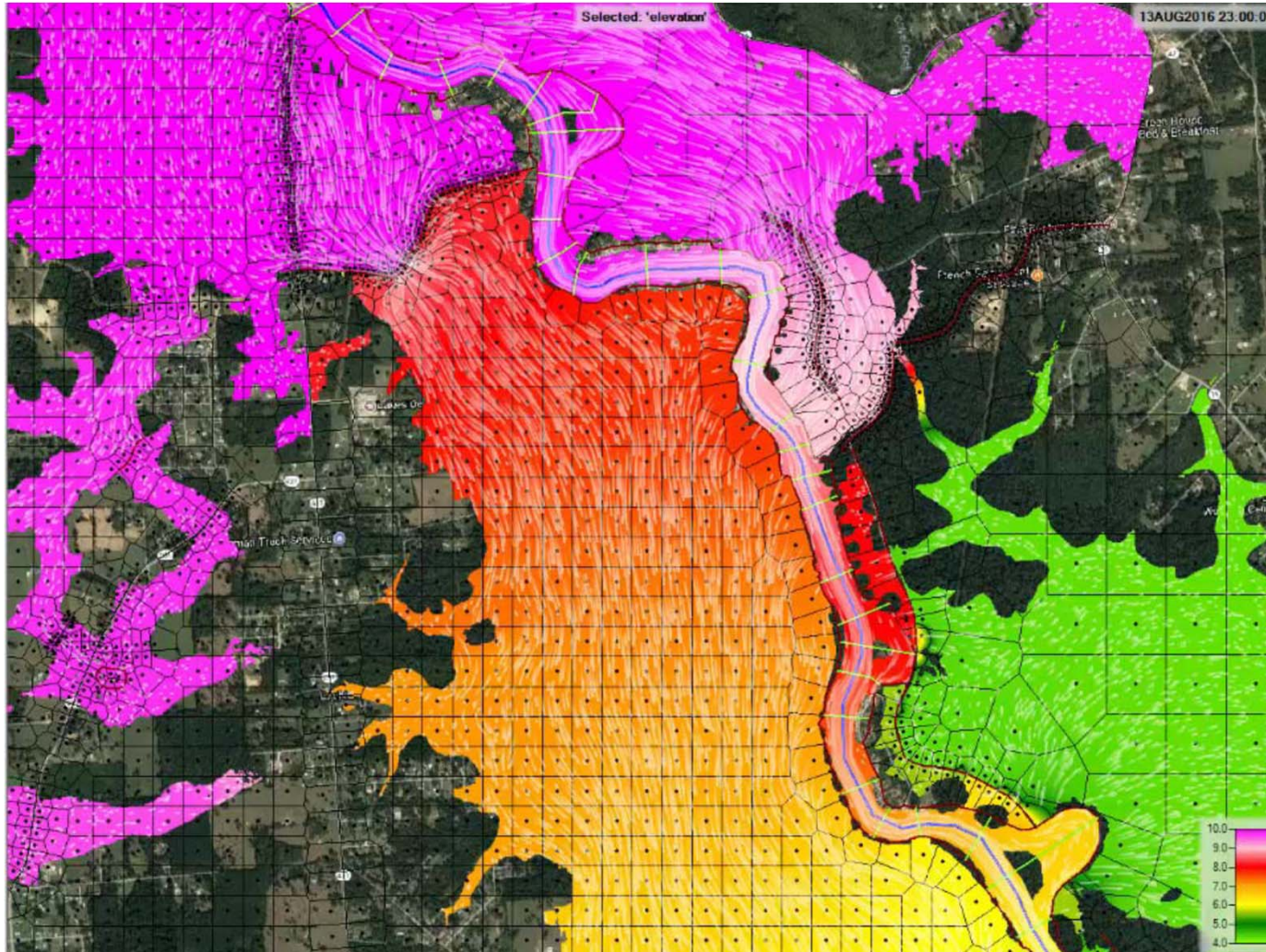
Remote Monitoring, Data Collection, and Controls

- Remote Monitoring and Data Collection
 - Data Loggers
 - Automated Piezometers
 - Remote Water Level Sensors
- Control Structure Actuators



Louisiana Watershed Initiative

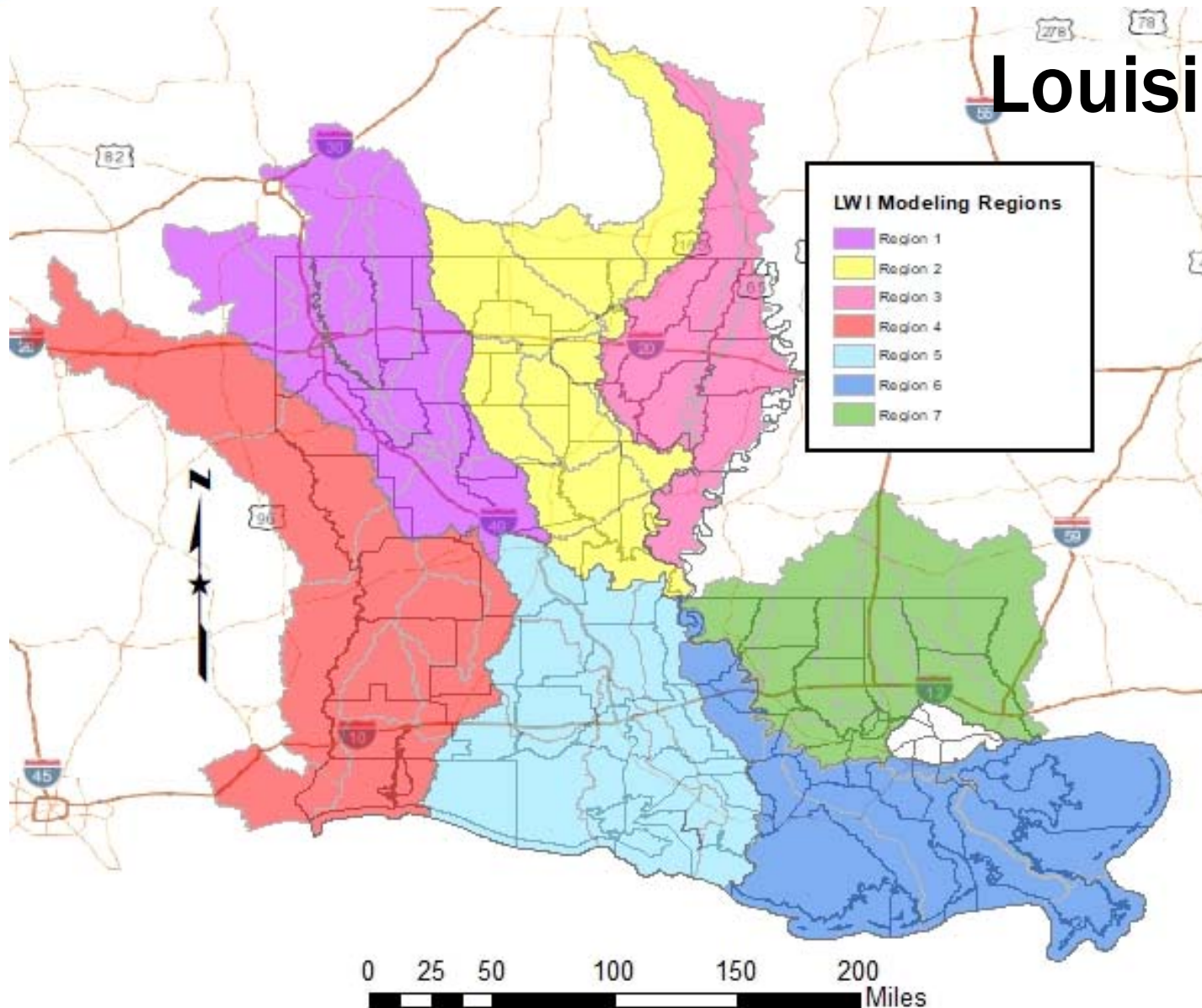
Statewide Watershed Modeling



- \$94M (Modeling Budget)
- HUC8 Models (48 total)
- Coupled 1D/2D or Full 2D
- Tiered Approach Factors
 - Population
 - Complexity
 - Known Risk

Louisiana Watershed Initiative

Statewide Watershed Modeling



- Calibration/Validation - Complete
- Design Storm Development
- Consequence Model Development
- Proof of Concept Evaluation
 - Watershed-scale projects
 - Complex problems
 - Project suites

Louisiana Watershed Initiative

State Projects Program (SPP)



- \$63.7M (CDBG-DR MIT)
- 6 Projects
 - 6 dams
 - Vernon & Lower Anacoco combined
 - 1 ring levee
- 2 Consultant Contracts:
 - **Group 1: Michael Baker International**
 - **Group 2: Freese & Nichols**
- Feasibility Reports under final review
- 5-year project timeline

Statewide Flood Control Program

- Created by Act 351 of the 1982 Regular Session
- Primary goal is to reduce existing flood damages through an active, innovative approach that considers both structural and non-structural solutions
- Funded **entirely** by Louisiana Transportation Trust Fund
 - \$20M in total annual program funding
- Project applications and funding amounts are approved by the Joint Transportation Committee

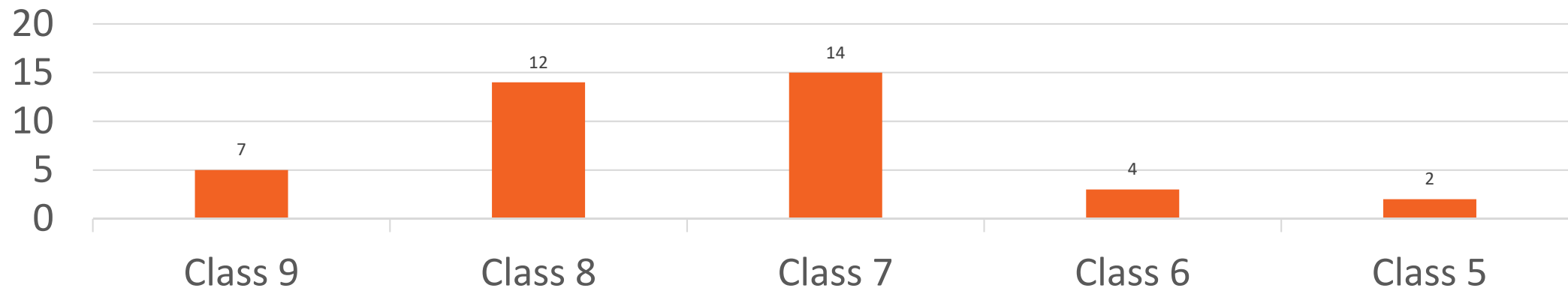
Floodplain Management

- Community Assistance Visits:
 - Assess floodplain activities of 318 NFIP communities
 - Inspect SFHA (over 50% of state) (#1)
 - Meet with community officials to determine any assistance they need
- Disasters:
 - Respond to Presidentially declared disasters
 - Assist FEMA helping communities comply with post disaster regulations



Floodplain Management Community Rating System (CRS)

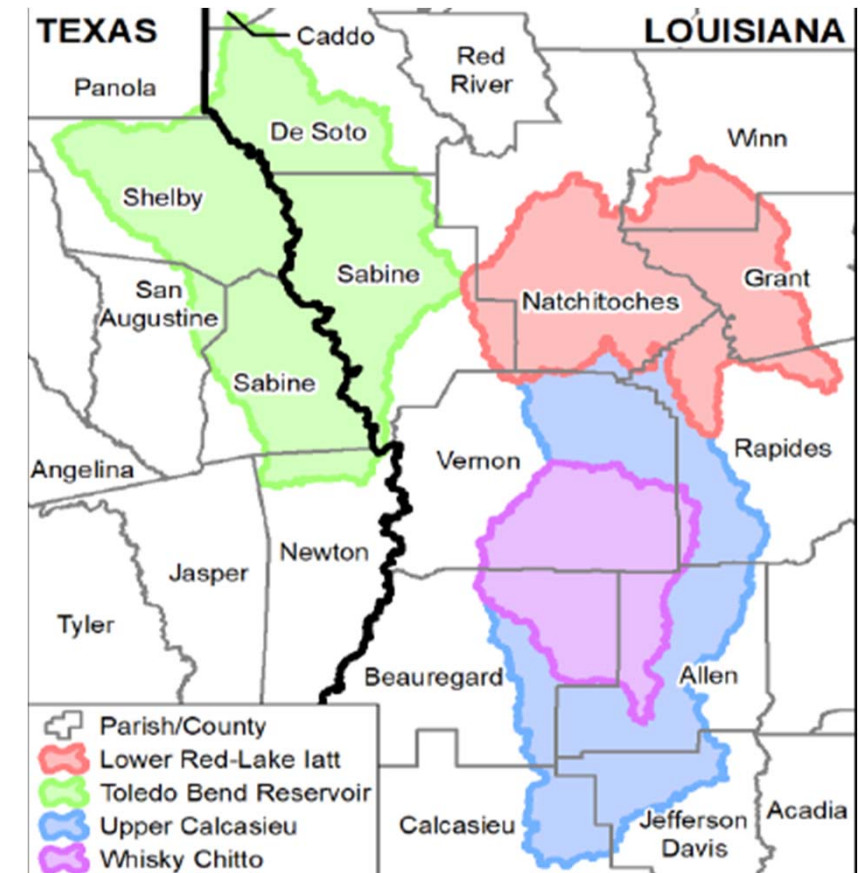
- Voluntary program that credits community efforts to go above minimum requirements
 - Flood insurance premium reductions from 5% to 45%
- 39 communities currently receive a discount
 - Over 273,000 (79%) of Louisiana's Flood Insurance Policies are in CRS Communities
 - Over \$30M in premium savings annual



Floodplain Management

Cooperating Technical Partners (CTP)

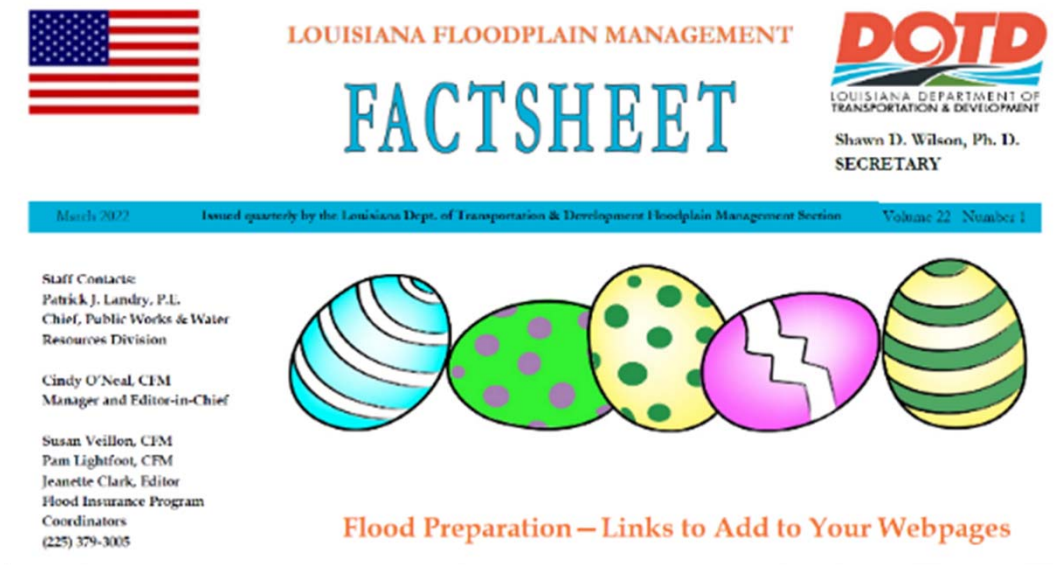
- Works with FEMA to release updated flood risk information to communities
 - Could lead to updated Insurance Rate Maps
- Currently under contract with two consulting firms to assist with CTP/NFIP task orders
 - Discoveries in 7 watersheds recently completed
 - Discoveries in 8 watersheds near completion
 - Phase 2: Risk Analysis and Mapping in Rapides Parish



Floodplain Management

Training and Outreach

- Training & Workshops:
 - Assists multiple agencies with various workshops and classes
 - L273 Managing Floodplain Development
January 27-30, 2025
- Outreach:
 - Publish a quarterly newsletter – the Floodplain Management Factsheet distributed to all 318 NFIP communities, lending institutions, insurance agents, realtors, engineers, etc.



Questions ?

FLOOD CONTROL IN LOUISIANA



**A Report of Flood Problem Areas and
Damage Reduction Measures**

FLOOD CONTROL IN LOUISIANA

A Report of Flood Problem Areas and Damage Reduction Measures

Submitted to the
JOINT COMMITTEE ON TRANSPORTATION, HIGHWAYS, AND PUBLIC WORKS

by the
LOUISIANA STATEWIDE FLOOD CONTROL PROGRAM'S PROJECT EVALUATION COMMITTEE

Department of Transportation and Development
Robert G. Graves, SECRETARY

Louisiana Geological Survey
Charles G. Groat, DIRECTOR
A. Todd Davison, NATURAL RESOURCE SPECIALIST

Office of Public Works
Marty J. Chabert, ASSISTANT SECRETARY
Arthur R. Theis, DEPUTY CHIEF ENGINEER
Curtis G. Patterson, ASSISTANT CHIEF ENGINEER
D. J. Webre, Jr., PROJECT SUPPORT
Dorothy D. McConnell, COORDINATOR OF THE STATEWIDE FLOOD
CONTROL PROGRAM

State Planning Office
L. A. Henagan, DIRECTOR
Glen Daigre, PLANNER

Edwin W. Edwards, GOVERNOR

Report Prepared by

GULF SOUTH RESEARCH INSTITUTE
Resources Planning and Management Division

Baton Rouge, Louisiana

1986

GULF SOUTH RESEARCH INSTITUTE PROJECT STAFF

Donald W. Ator, Jr., *Project Director*
Jan Magette, *Staff Assistant*
Shelton W. Perry, *Study Manager*
Terry A. Macaluso, *Research Analyst*
James G. Hoover, *Research Analyst*
Kay D. Latimer, *Research Analyst*
Ann S. Guissing, *Research Analyst*
William M. Colton, *Research Analyst*
Christopher J. Ingram, *Research Analyst*
Jacques D. Bagur, *Research Analyst*
Annette M. Jordan, *Research Analyst*
Charles E. Hinton, *Senior Technical Advisor*
James F. Coerver, *Senior Technical Advisor*
Bobbie F. Young, *Cartography Team Director*
James O. Young, Jr., *Principal Cartographer*
Susan S. Birnbaum, *Principal Cartographer*
C. Greg Evans, *Cartographic Assistant*
Nancy C. Shaw, *Report Coordinator*
Leigh Ann Daniels, *Clerical Assistant*

CONTRIBUTORS

The Pikes Peak Lithographing Company, Colorado Springs, Colorado, served as technical advisor on the map production
Marshall J. David, Franklin Printing Company, Inc., New Orleans, Louisiana, served as technical advisor on the report format
John I. Snead, Cartographer, Louisiana Geological Survey, Baton Rouge, Louisiana, shared his experience with producing maps of similar complexity with the Project Evaluation Committee during the final stages of the production effort

TECHNICAL ASSISTANCE

Department of the Interior, U.S. Geological Survey, Eastern Mapping Center, Reston, Virginia, provided the base maps for the study basins
Champion Map Corporation, Daytona, Florida, provided the base maps for the cities of Lake Charles, Shreveport, and Bossier City
Rand McNally, St. Petersburg, Florida, provided the base maps for the city of New Orleans and the Jefferson Parish urban area
San Antonio Cartographic Services, Inc., San Antonio, Texas, provided the base map for the Baton Rouge urban area
Target Marketing, Beaumont, Texas, provided the base maps for the cities of Alexandria, Lafayette, and Monroe
Franklin Press, Inc., Baton Rouge, Louisiana, typeset the manuscript

ACKNOWLEDGMENTS

This report was prepared under the authority of R.S. 38:90.1 et. seq. pursuant to the establishment of a statewide flood control program in Louisiana.

This landmark study of flooding problems and damage reduction measures in Louisiana owes its existence to the tireless efforts of many conscientious and dedicated individuals. The report was prepared by a project research team under the overall supervision of Donald W. Ator, Jr., project director and Associate Director of the Resources Planning and Management Division, Gulf South Research Institute (GSRI). Shelton W. Perry, GSRI's Program Manager for Water Resources Planning, was study manager and coordinated this massive effort with a sense of purpose founded on good judgment.

Data collection, analysis, and narrative preparation were incisively performed by several project team members at GSRI. Special thanks are therefore due Terry A. Macaluso, James G. Hoover, Kay D. Latimer, Ann S. Guissing, William M. Colton, Christopher J. Ingram, Jacques D. Bagur, and Annette M. Jordan. Charles E. Hinton and James F. Coerver proved to be invaluable resources as senior technical advisors, and their sage advice earned the admiration and gratitude of everyone involved. The responsibility of typing the numerous drafts of the manuscript rested with Nancy Shaw who was ably assisted by Leigh Ann Daniels. Both deserve a great deal of thanks for their patience and understanding.

The massive graphic requirements were handled masterfully by one of the small businesses in GSRI's incubation center, Mapping/Graphics, under the skillful direction of its owner, Bobbie F. Young. Mrs. Young was assisted by James O. Young, Jr., Susan S. Birnbaum, and C. Greg Evans. All of their contributions are especially appreciated. Certainly a debt of gratitude is owed Jan Magette for her valuable contribution to facilitating the success of the many meetings that were required.

Graphic and narrative elements of the report were checked and rechecked by the Louisiana Statewide Flood Control Program's Project Evaluation Committee, whose distinguished members served as an advisory group throughout the study. Specifically, the members of the Committee are Curtis G. Patterson, Assistant Chief Engineer, D.J. Weber, Project Support; Dot McConnell, Coordinator of the Statewide Flood Control Program with the Department of Transportation and Development; Glen Daire of the State

Planning Office, and A. Todd Davison, Natural Resources Specialist of the Louisiana Geological Survey. The members of the Project Evaluation Committee all earned a great measure of appreciation for their major contributions to the study.

In addition, a seemingly endless number of people gave freely of their time and expertise during each phase of the study, because they believed that the result would prove worthwhile. The project has benefitted from, indeed was made possible by, the assistance of public servants in numerous agencies at the Federal, state, and local level. In addition to the cooperation generously extended by the employees of the U.S. Army Corps of Engineers and the U.S. Department of Agriculture Soil Conservation Service, many local agencies proved to be of critical importance during the course of the project.

Finally, the deepest gratitude is extended to the families and friends of the staff members who worked on the project, without whose patience and support during the long hours required, the project could not have been completed.