

# Drainage Program Update

Chad Nepveux -  
Public Works Director

Pamela Granger –  
McBade Engineers &  
Consultants



**Lafayette**  
CONSOLIDATED GOVERNMENT



**SOUTHEAST**  
ENGINEERS



**McBADE**  
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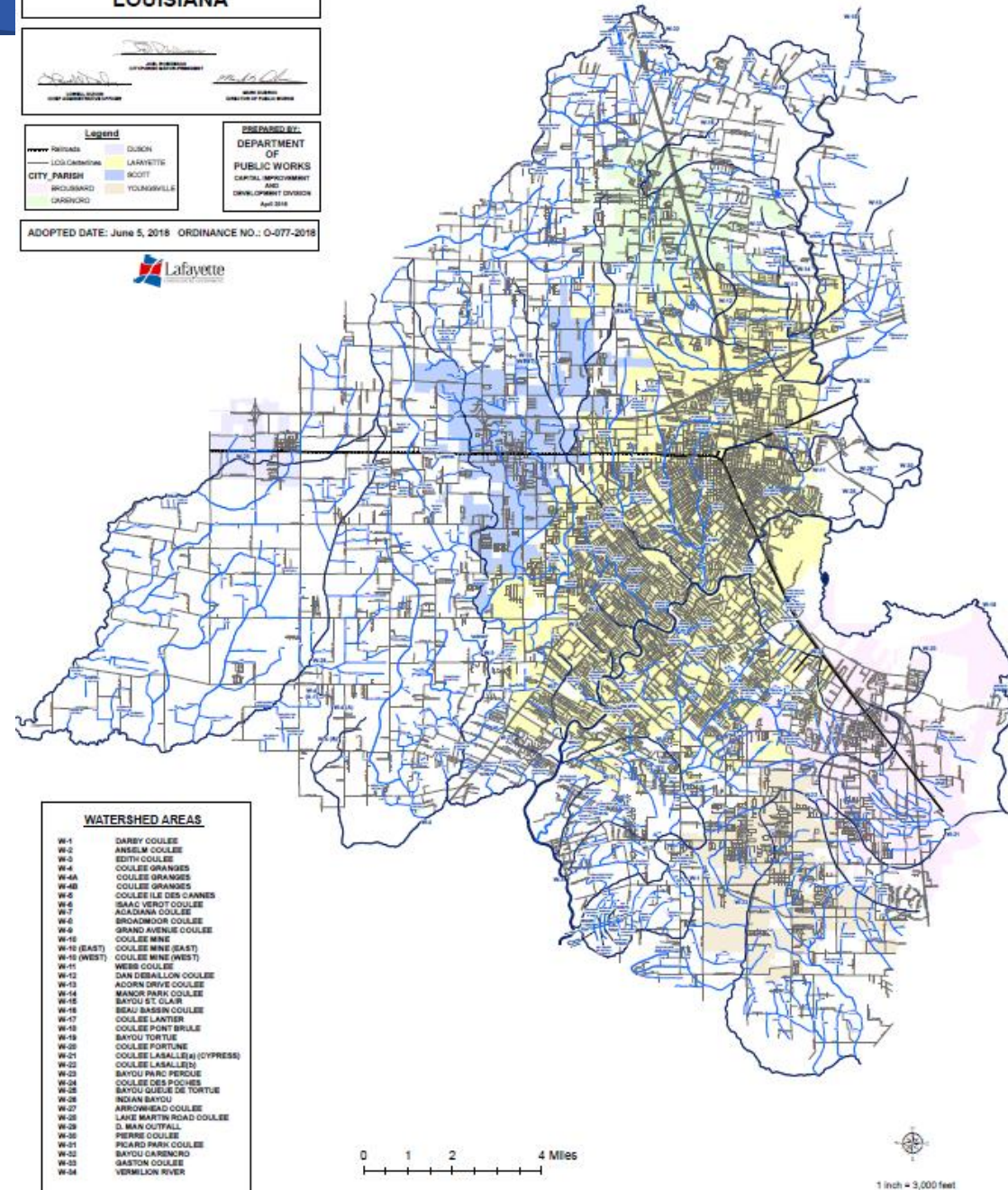
# OFFICIAL DRAINAGE MAP

- 850 miles of earthen channels
- 20 miles of concrete lined channels
- 1,400 miles of roadside ditches
- 300 miles of subsurface drainage
- Over 85% of the Parish drains to Bayou Vermilion (Of which there is limited capacity and we have no jurisdiction over its maintenance and improvements)

**OFFICIAL DRAINAGE MAP  
LAFAYETTE PARISH  
LOUISIANA**

PREPARED BY:  
**DEPARTMENT  
OF  
PUBLIC WORKS  
CAPITAL IMPROVEMENT  
AND  
DEVELOPMENT DIVISION**  
April 2018

ADOPTED DATE: June 5, 2018 ORDINANCE NO.: O-077-2018



- Contains a partial list of potential projects of Parish and Municipalities needs (included public meeting and public comment period)
- Assists in Federal Funding Applications



## LAFAYETTE PARISH

HAZARD MITIGATION UPDATE 2021





# 2016 USACE LAFAYETTE PARISH AREA-WIDE DRAINAGE PLAN

- Was in response to the Memorial Day 2014 rainfall event
- Plan Lafayette Recommendation
- August 2014 meeting with LCG and Municipalities
- Provides a High-level Road Map on “Next Steps”
- Provides guidance on funding mechanisms
- Provides information in Development of Hazard Mitigation Plan

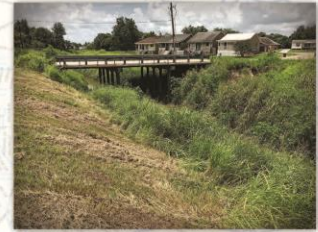


US Army Corps  
of Engineers®

Funded by New Orleans District

State of Louisiana Silver Jackets Interagency  
Pilot Project Program  
W912PS-11-D-0022

## Lafayette Parish Areawide Drainage Plan

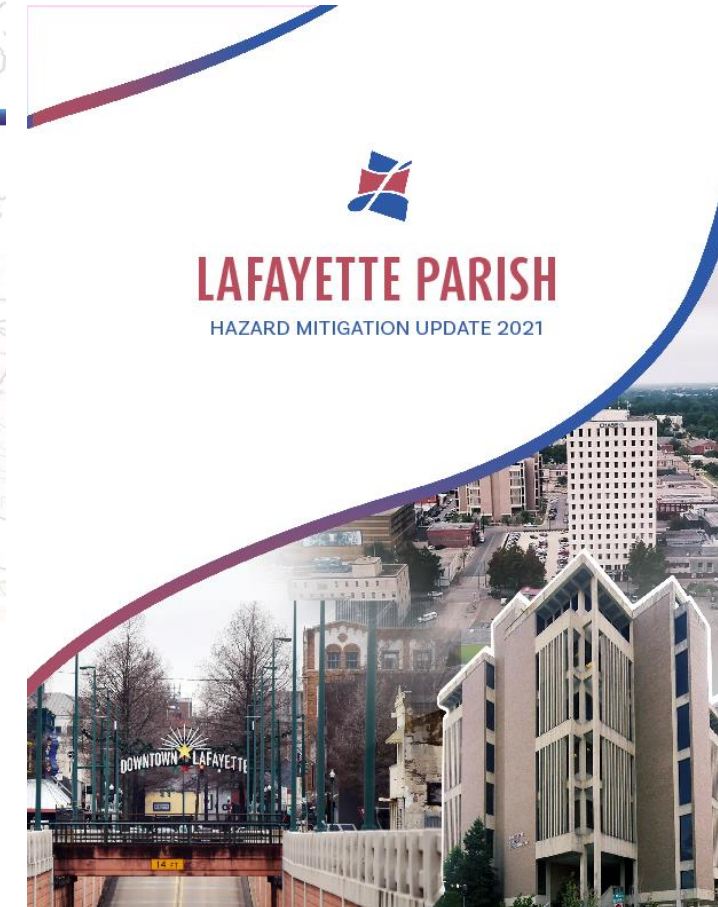
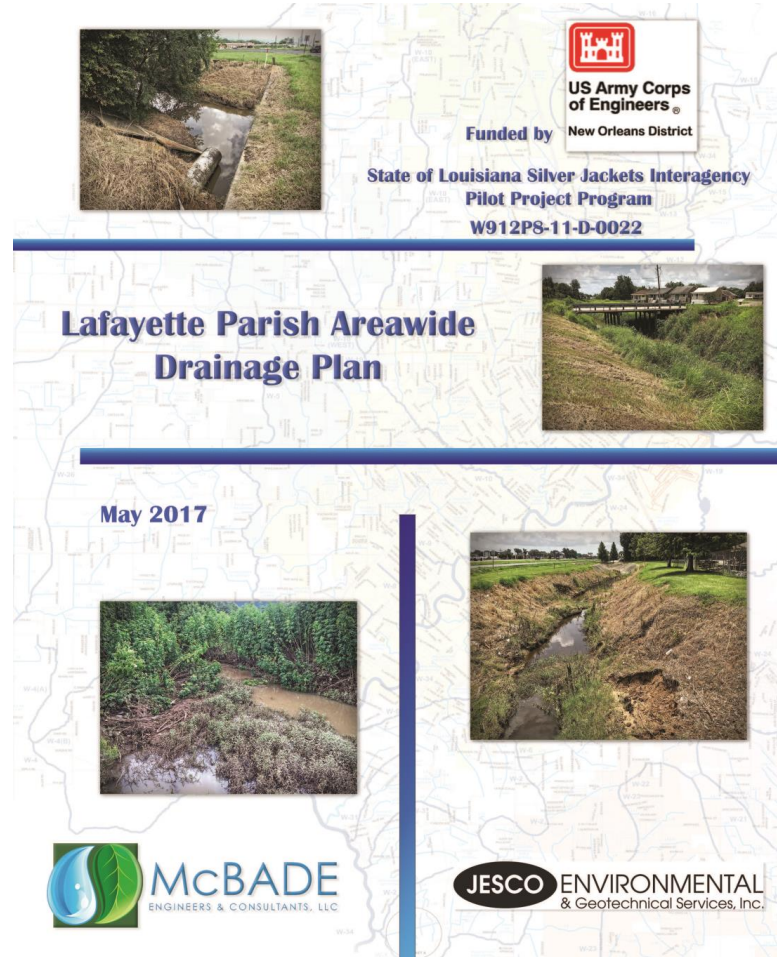


May 2017

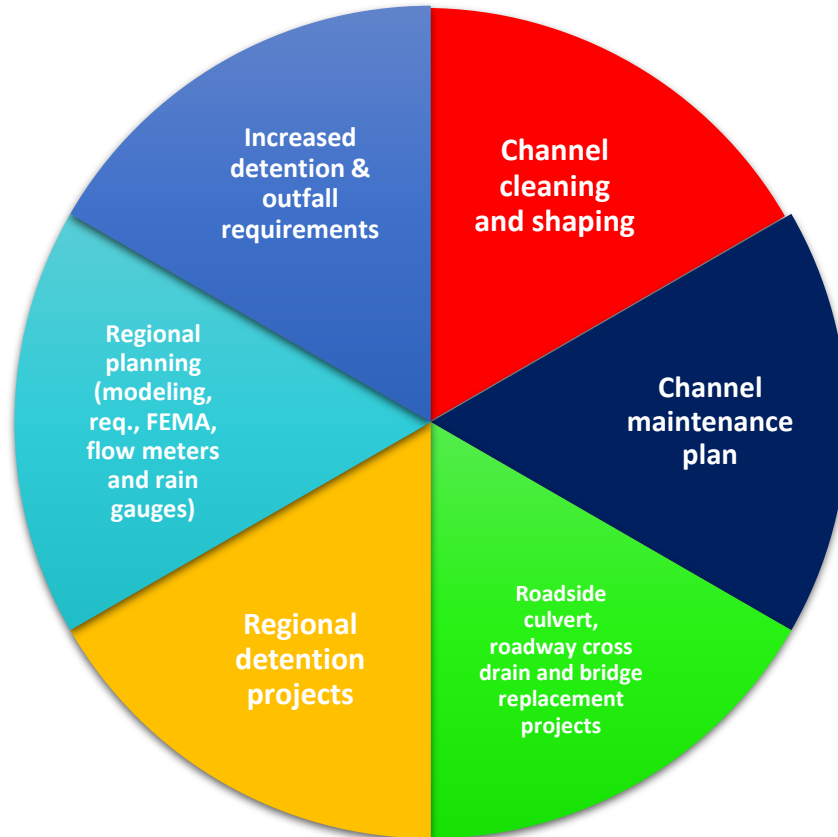


# THESE EXISTING PLANS HAVE BEEN USED TO DEVELOP OUR CURRENT PROGRAM

- Combined, these Plans identify storm event vulnerability
- Identifies near-term and long-term activities to be pursued
- Has been used to aggressively advance our current Flood Risk Reduction Program
- Used for planning and funding applications
- Calls for a detailed Comprehensive Storm Water Management Plan





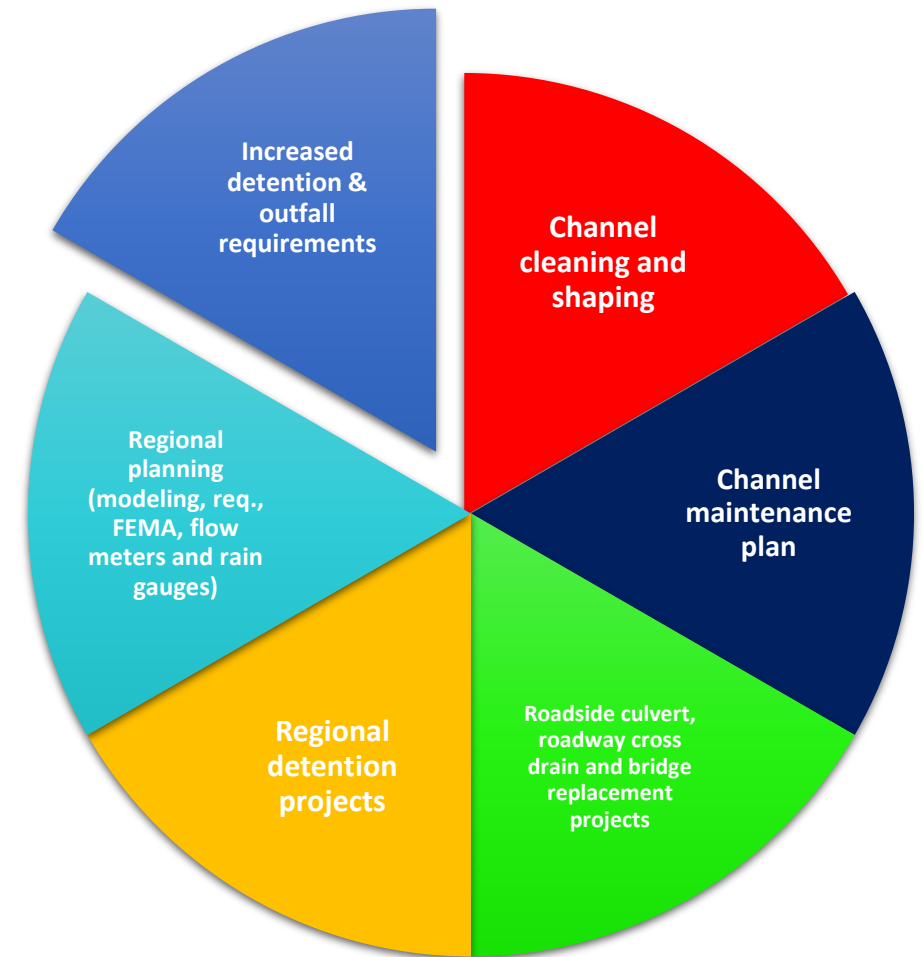


## 6 Categories:

- Increased detention and outfall requirements
- Channel cleaning and shaping
- Channel maintenance plan
- Roadside culvert, roadway cross drain and bridge replacement projects
- Regional detention projects
- Regional planning

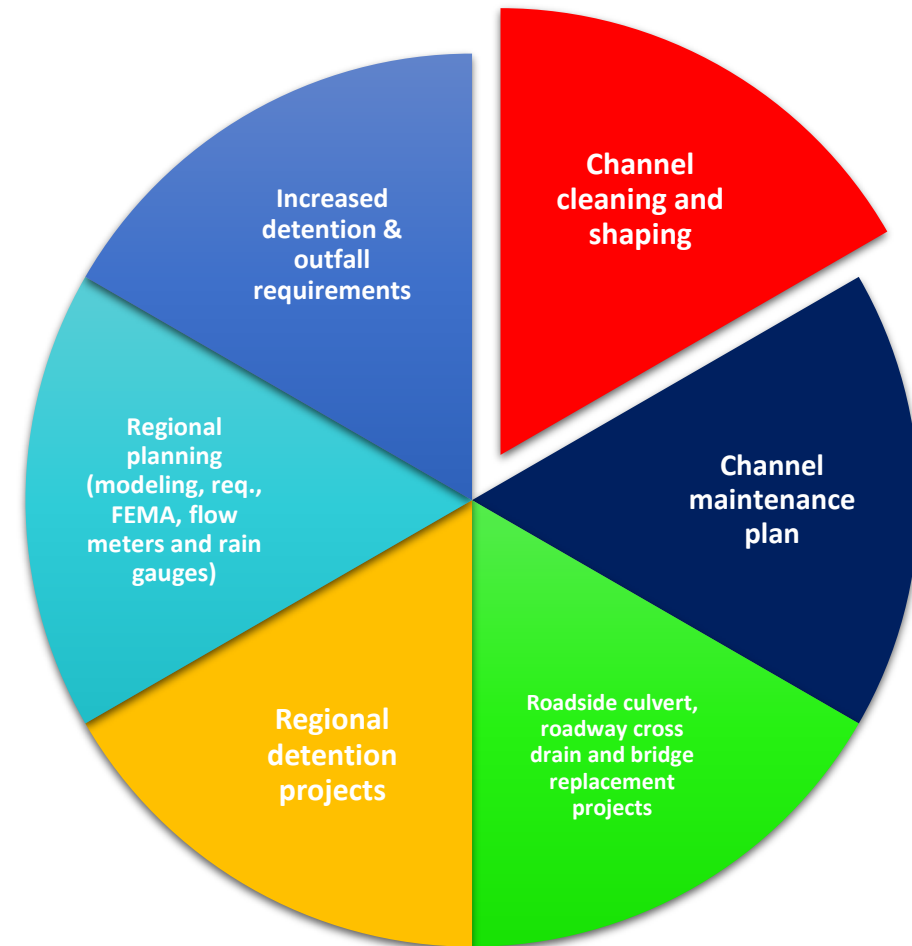
In 2017, LCG Implemented the Following:

- No net fill requirements
- Required the reduction of post development peak flow by 15%
- Required detention ponds hold a 25-year storm in lieu of a 5-year or 10-year storm (approximately 50% more detention)



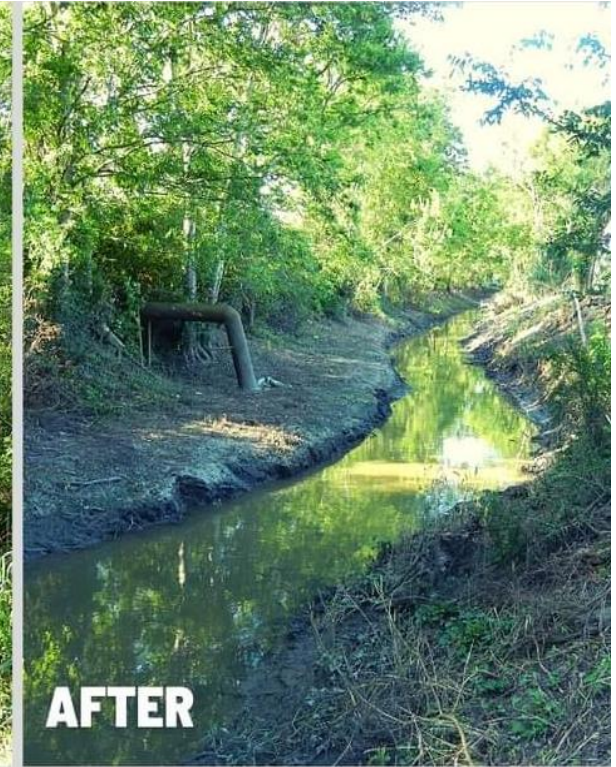
In 2018, by a vote of the People, LCG rededicated funding for drainage. LCG now provides for a Parishwide Channel Maintenance Initiative

- Originally contained 77 channels
- 25 channels have been added to the Program
- Channels were rated for priority and categorized into Groups A, B, and C
- All original channels in Groups A and B have been completed ~ 72 miles and the Program is ongoing





# DRAINAGE MAINTENANCE INITIATIVE



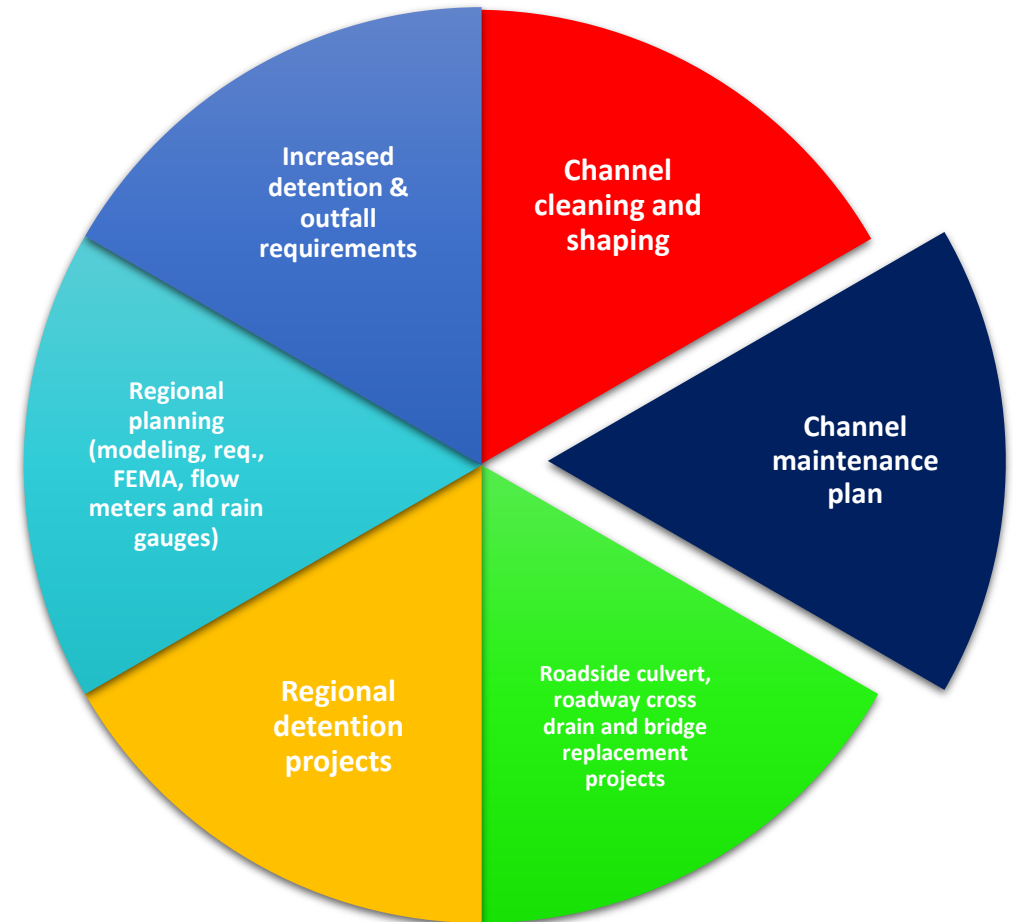




Coulee Ile Des Cannes Lateral 8-C

## LCG is currently developing a Comprehensive Parishwide Storm Water Management Plan

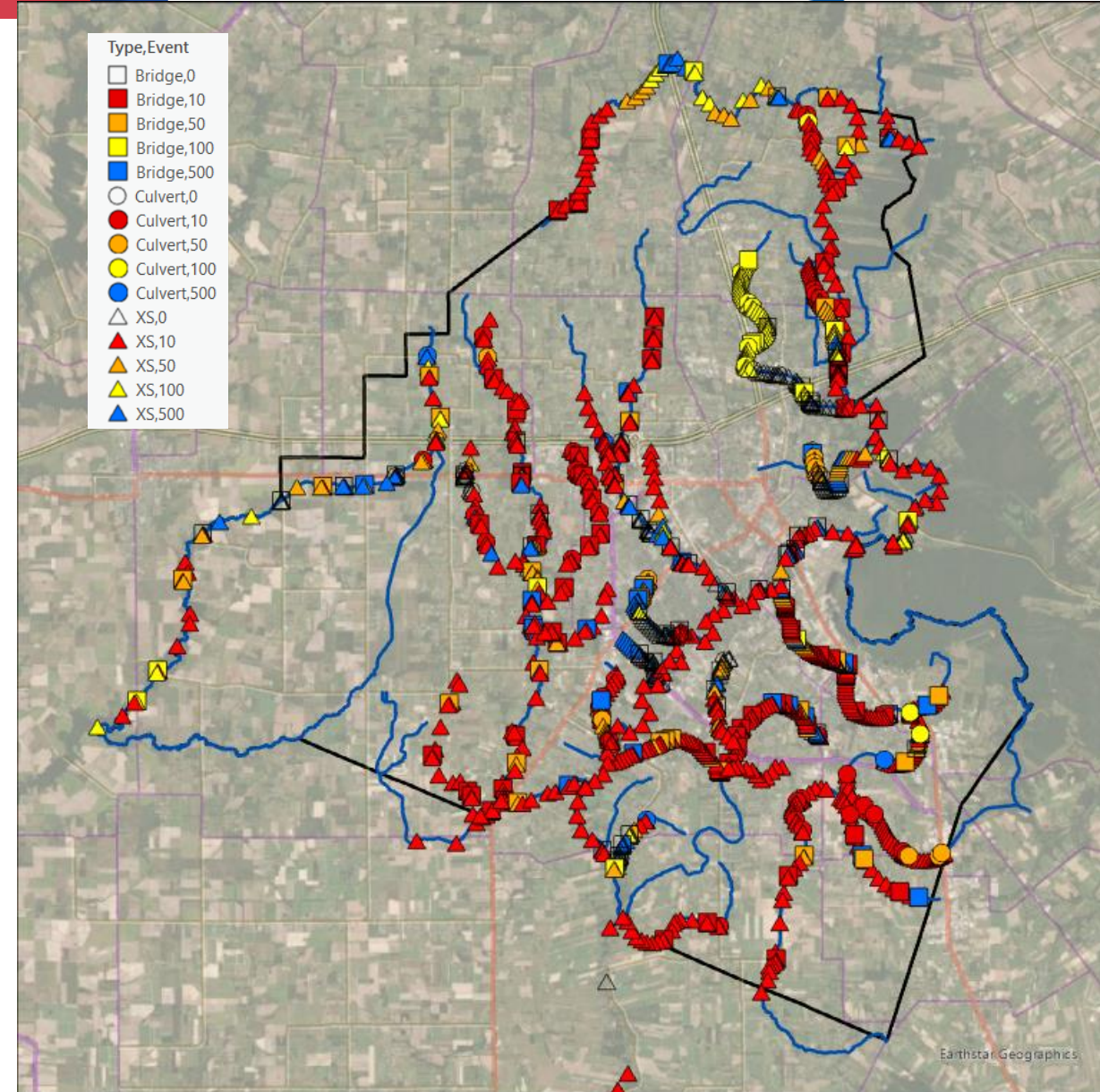
- We have determined structure efficiency for all major road crossings in the Parish
- We have determined each major channel's conveyance capacity
- We have identified areas requiring specific investigation with regard to potential drainage improvements
- We have located potential detention areas where channel improvements can not be performed without negative impacts or economic feasibility warrants other action



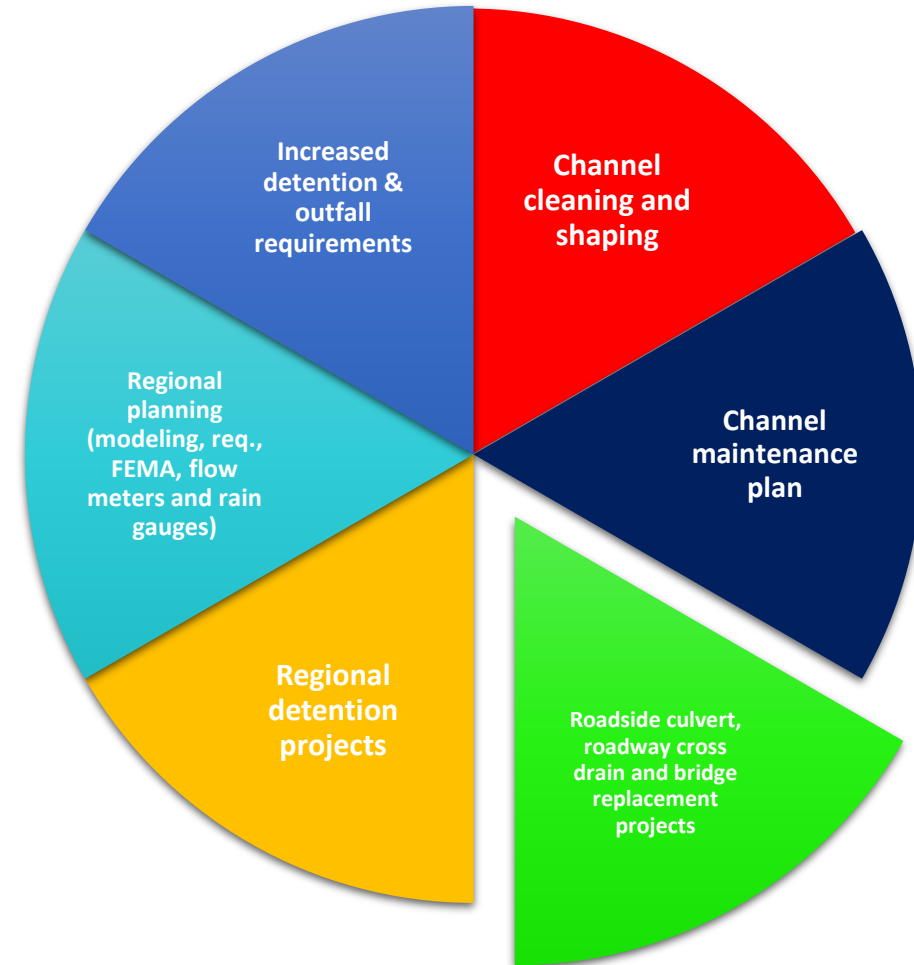


## Infrastructure Capacity Analysis

26 Channels



- A comprehensive reoccurring Roadside Cleaning Program has been developed and is currently being implemented
- Since 2018, initial phases totaling over 350 miles have been completed and were performed by the Drainage Department
- Further cleaning will be contracted out as part of the Emergency Funding Program appropriated by City and Parish Councils after the May 21, 2021 Flood Event

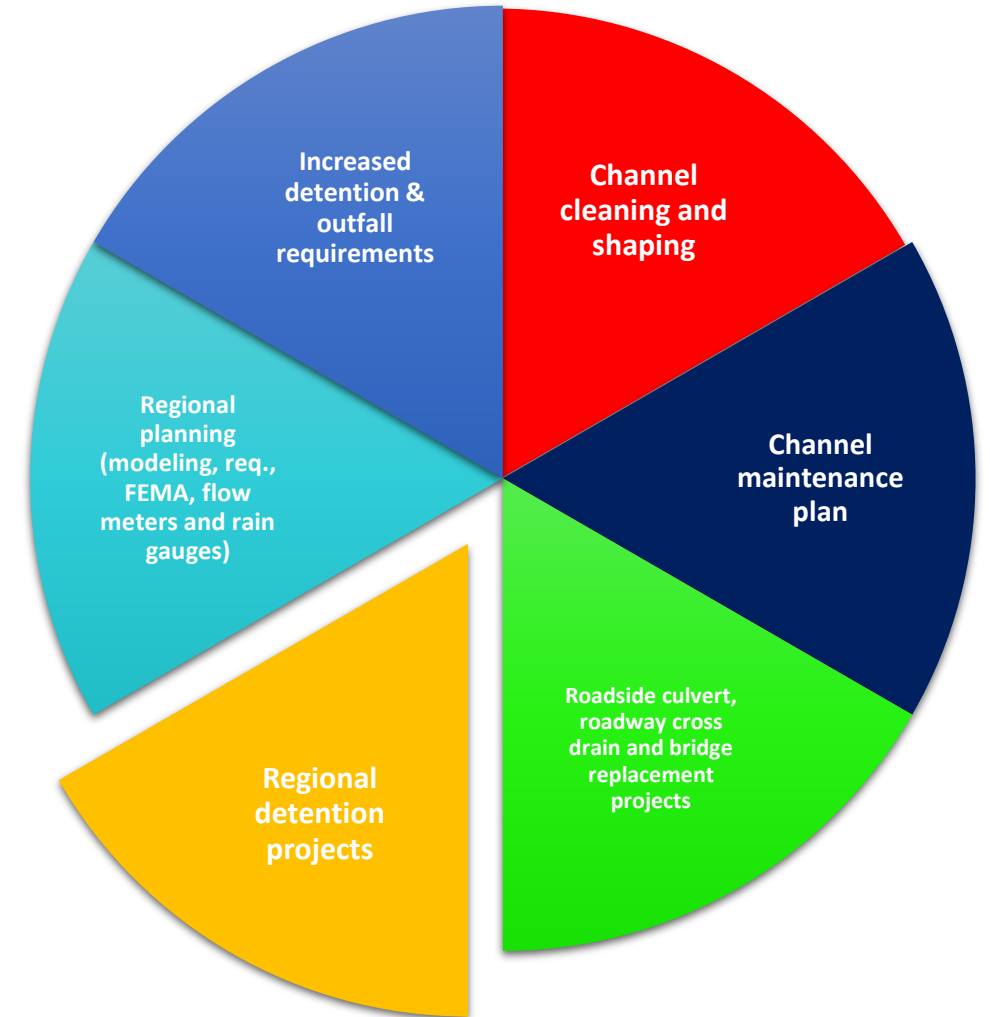


- As part of LCG's Bridge Replacement Program, bridges are designed with no piles in the channel for increased efficiency and reduced maintenance
- Box culverts and arched structures are used when we can to minimize future maintenance
- LCG currently has over 30 bridge replacements in design.
- Last year, we completed our Bridge Rating Program which has allowed us a better plan for replacement





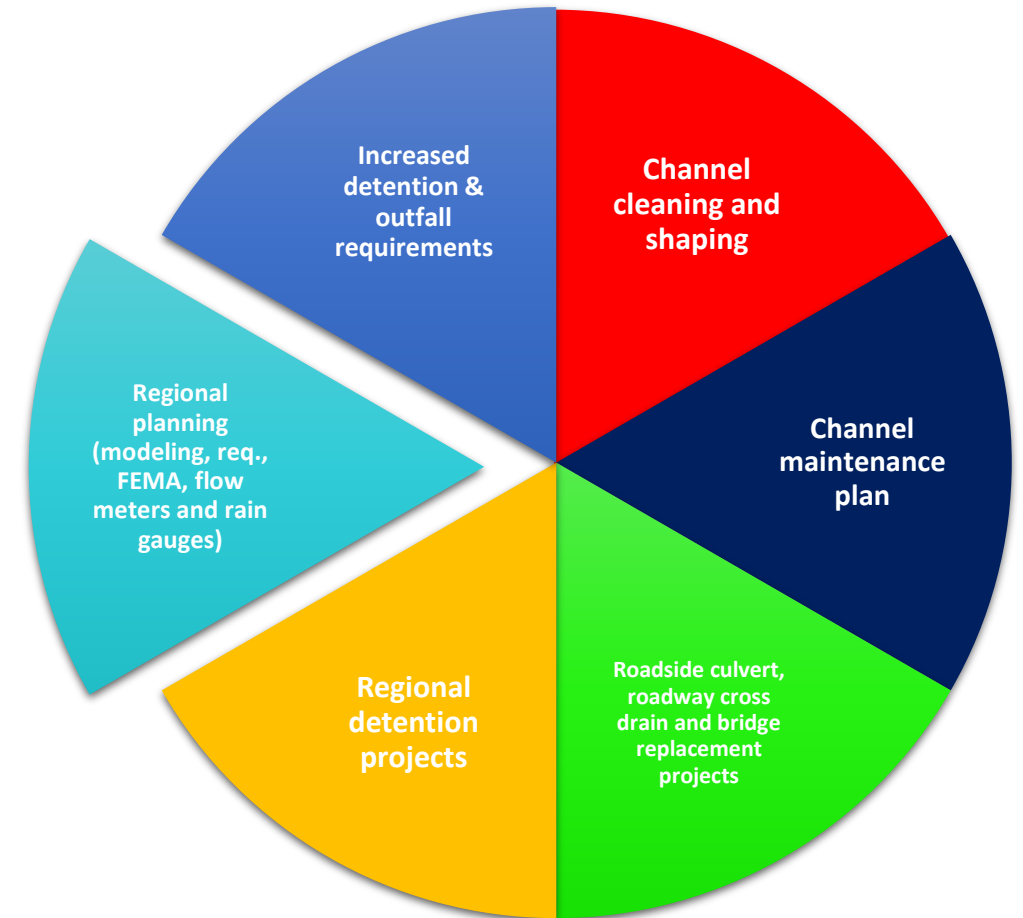
- 90 Potential locations have been targeted for Hydraulic Evaluations
- To date, over 60 evaluations have been completed
- 20 show beneficial reductions in Water Surface Elevations
  - 4 - Construction Complete
  - 4 - Under Construction
  - 9 – In Design Phase or Awaiting Corps Permits for Construction



# REGIONAL DETENTION PROJECTS

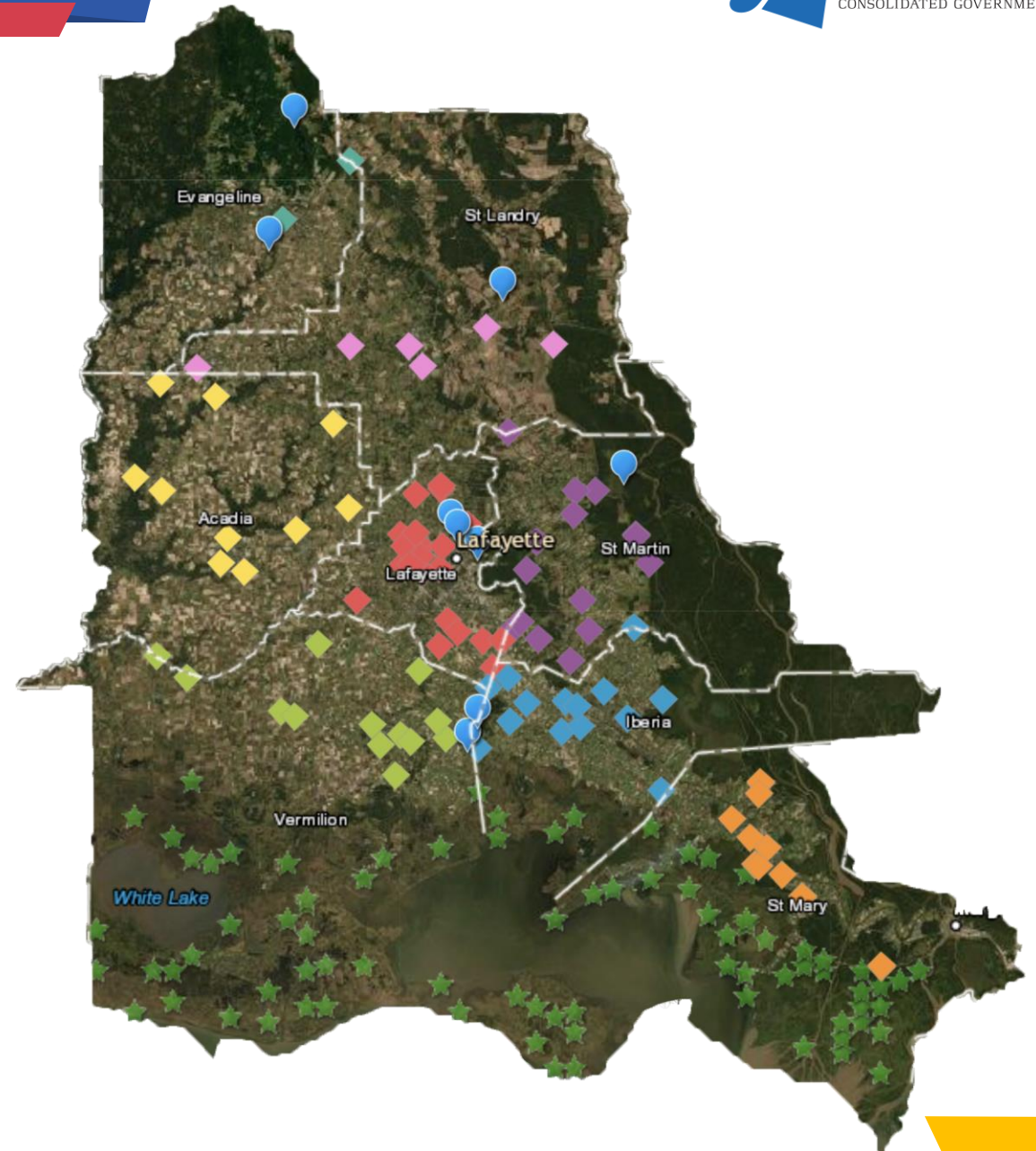
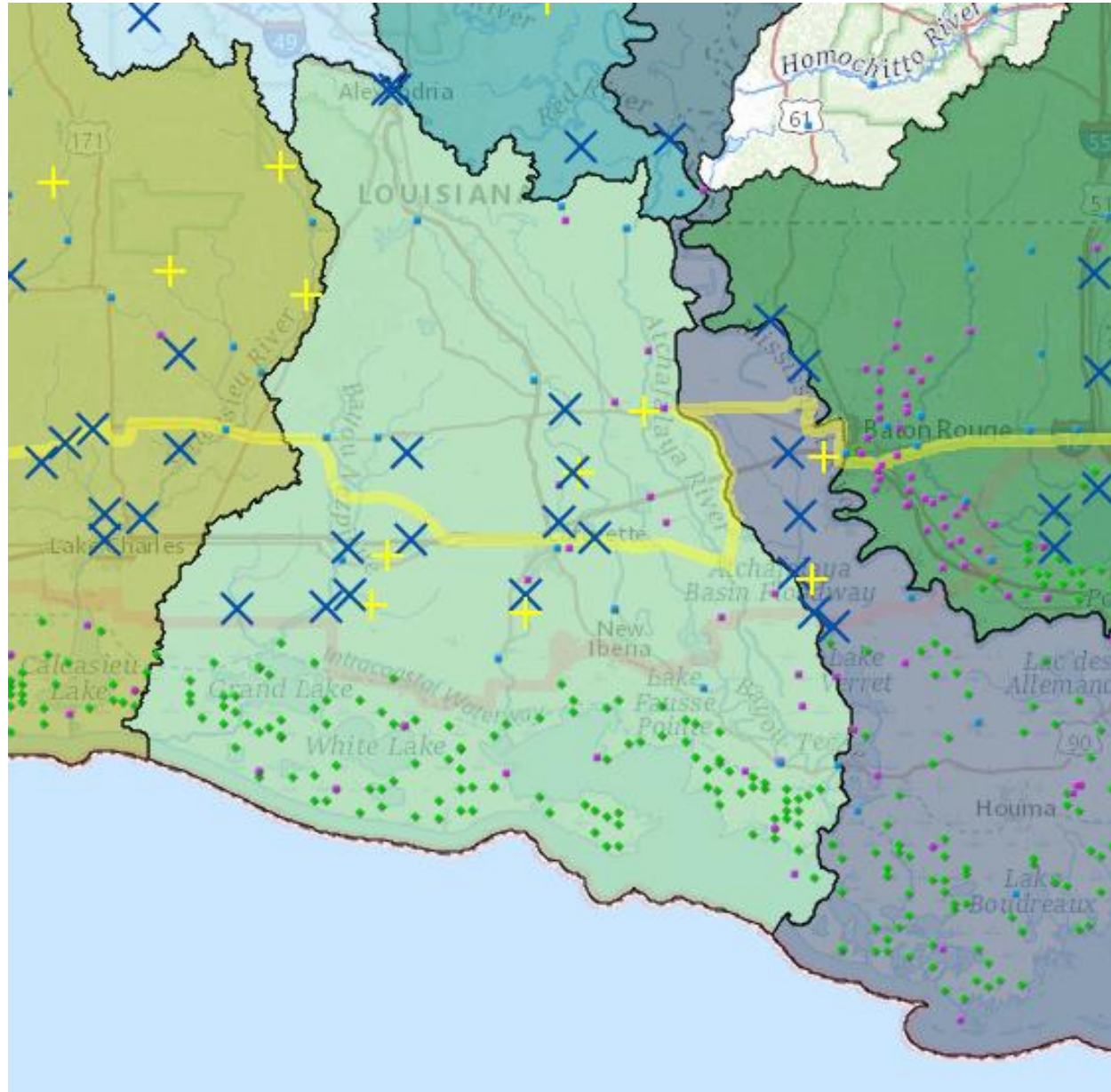


- A Rain/Stage Gauge Program has been funded through the State under the LWI Program
- A Rain/Stage Gauge Program funded through FEMA HMGP for Teche Vermilion Watershed lead by APC
- LCG has installed 8 gauges within the Parish and the City of Lafayette to supplement these gauge locations and for internal use
- Participation in Regional 5 Steering Committee
- Tentative agreement with ULL to further advance the Vermilion Dynamic Model began by ULL
- Collected and used various independent models from area consultants that were developed as part of other initiatives in our program development





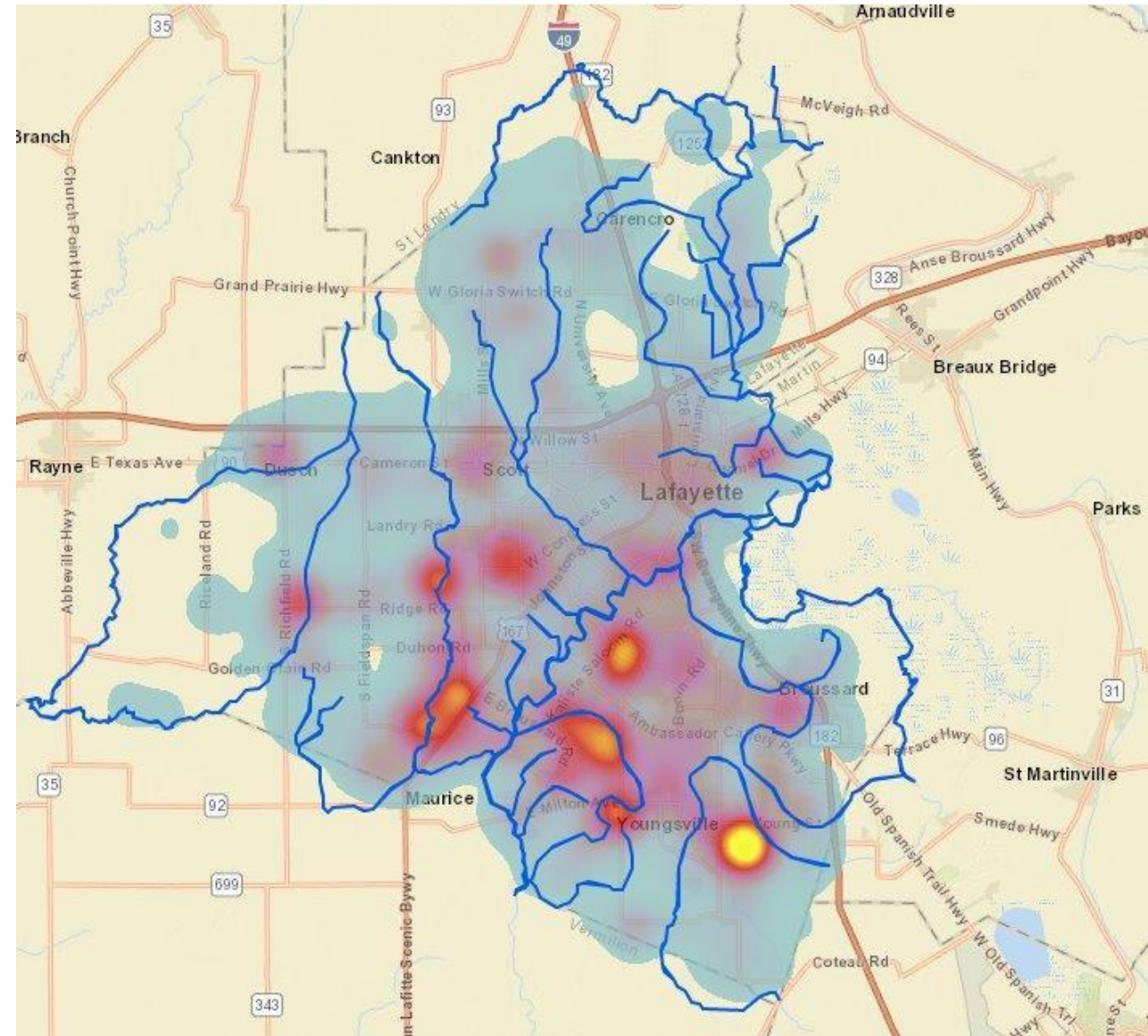
# REGIONAL PLANNING – PROPOSED GAUGES





## ➤ Intensity Indicators

- City of Youngsville (Bayou Parc Perdu/Coulee LaSalle/Anslem Coulee)
- Isaac Verot and Laterals of Isaac Verot
- Coulee Ile Des Cannes
- Coulee Mine
- Detention Pond Locations
- Channel Maintenance Initiative



# 2016 USACE RECOMMENDATIONS ALIGNS WITH HEAT MAP AND PROGRAM

## Alternative

Develop a model of the Vermilion River that includes updated cross sections and utilizes collected rainfall data for the past 15-20 years

Develop a Vermilion-Teche Watershed model that includes the thirty-three identified channels of the Lafayette Parish Drainage Map

Using the collected rainfall data, develop a watershed rainfall distribution to be used in the design calculations for structural project and the future planning and design for development

Install rain gauges and flow meters along major channels prone to flooding to monitor and collect data for future planning and design

Use the more recent trends of rainstorm events in planning, ordinance development and design regulations for drainage infrastructure

Work with neighboring parishes on a regional watershed approach to look for diversion and/or larger detention systems that provide benefit to the parish and watershed on a much larger scale

Lafayette parish and surrounding areas within the Vermilion-Tech watershed adopt an ordinance similar to the City of Youngsville requiring 25-year storm event detention on new development with requirements for modeling using recent data, backflow prevention and 25-year event tailwater on receiving streams

Enforcement of the drainage ordinances that identify developer maintenance of drainage collection systems until the developments are 70-80%

Increased monitoring and enforcement of erosion and sediment control measures on construction sites

The development of a routine maintenance plan for channel maintenance within the Parish

Clean channels and laterals within the parish as soon as possible to restore the historical capacity of the water bodies:

Coulee Ile Des Cannes

Coulee Mine East

Cypress Bayou and laterals

Coulee LaSalle and laterals

Bayou Parc Perdue coulee and laterals

Isaac Verot Coulee

Anslern Coulee and laterals

Request USACE assistance with dredge maintenance of the Vermilion River

Complete the channel regrading projects of Coulee Mine East and Cypress Bayou

Construct regional detention systems at the following locations:

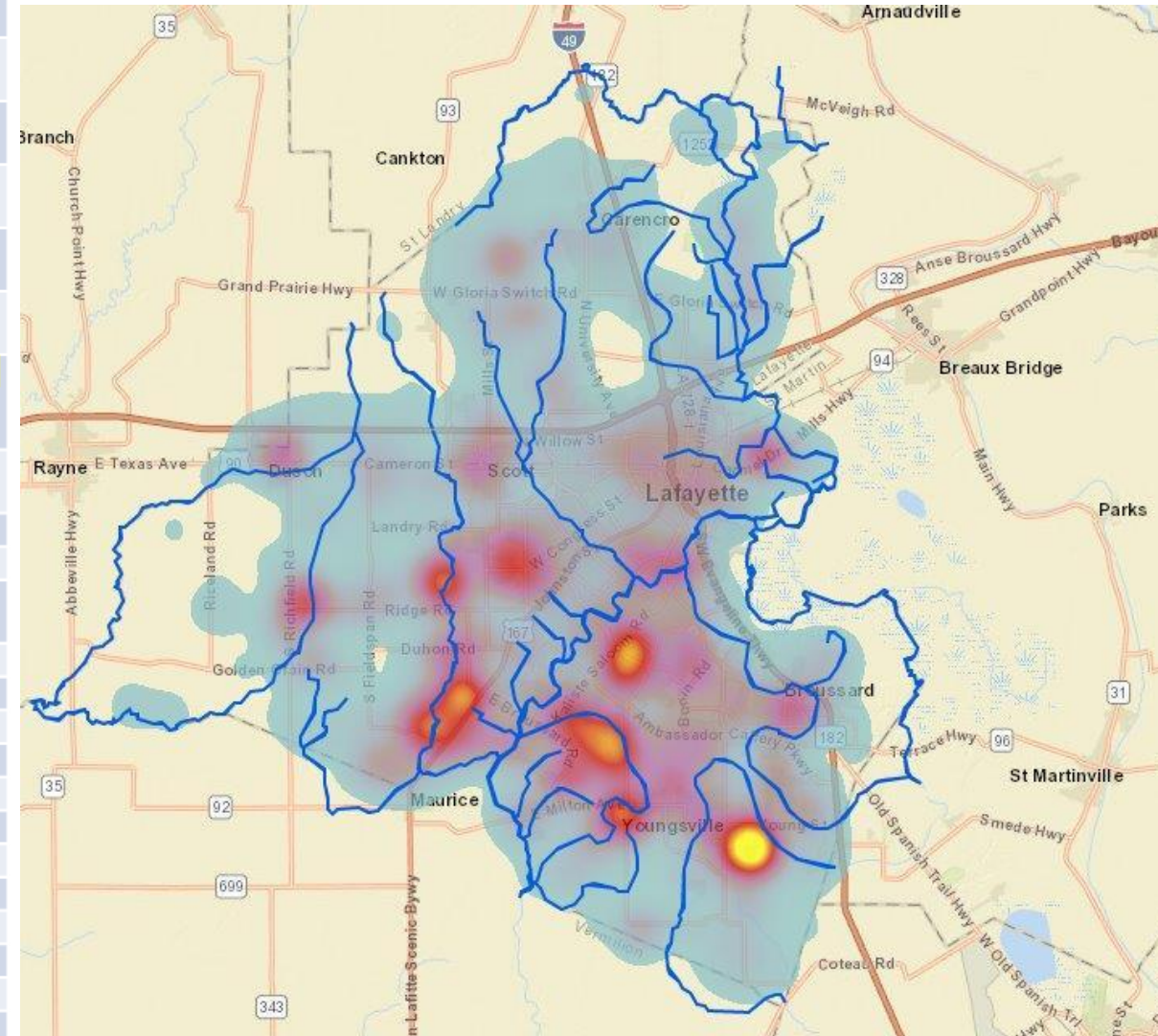
Along Coulee Ile Des Cannes in Scott

Along Bayou Parc Perdue in Youngsville

Along Coulee LaSalle in Youngsville

Along Anslern Coulee/Isaac Verot Coulee in Youngsville

Along Cypress Bayou in Broussard





## Contact:

Chad Nepveaux

Public Works Director

(337) 291-8501

[cnepveaux@lafayettela.gov](mailto:cnepveaux@lafayettela.gov)