St. James Parish

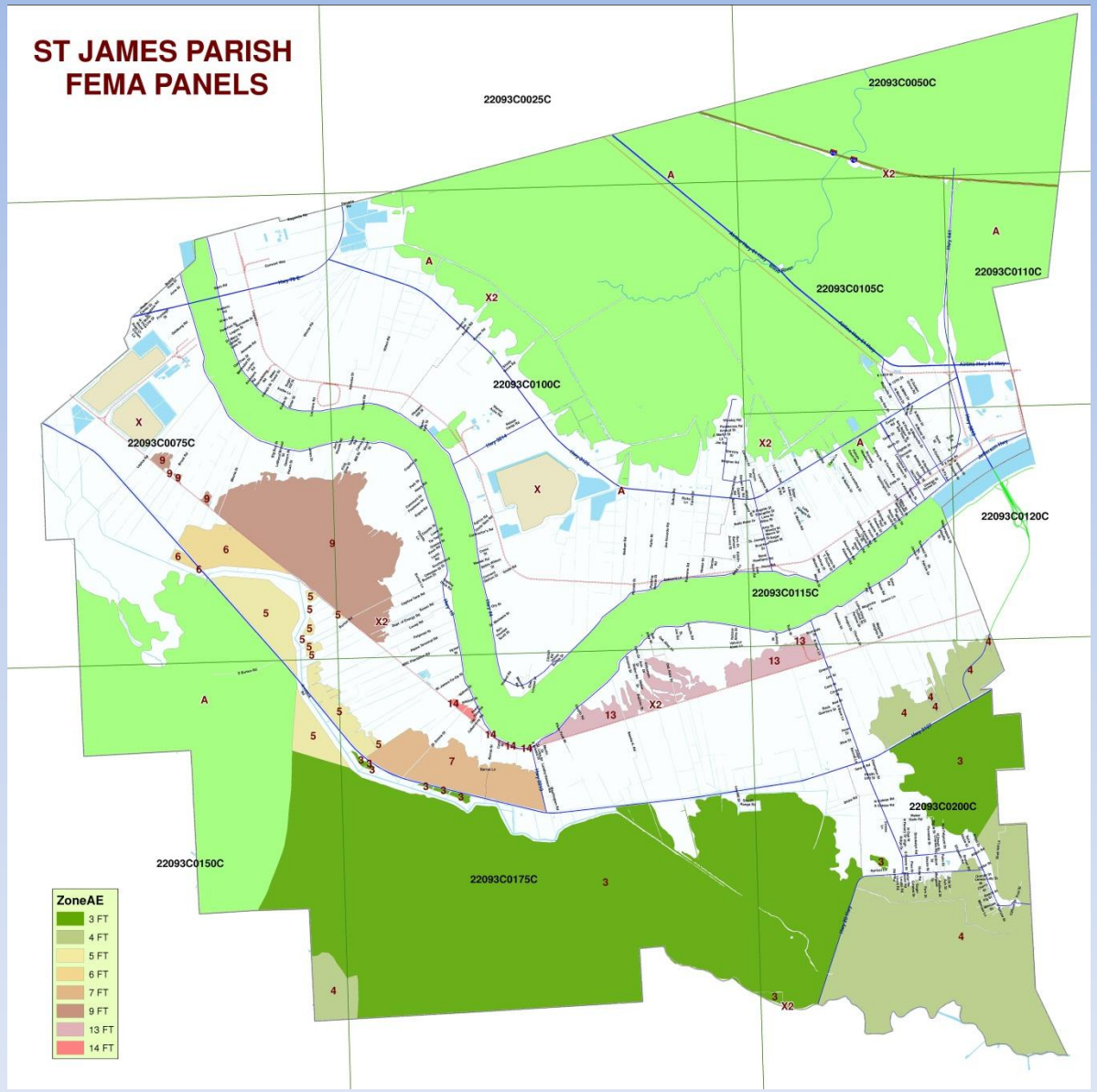
Drainage: Areas of Concern

and

Progress Towards Solutions

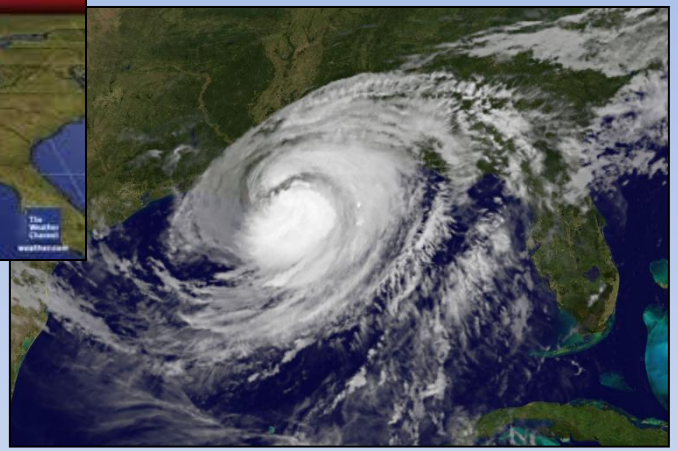
St. James Parish

- St. James Parish is home to approximately 21,794 residents.
- There is a concern for safety of residents due to an extensive amount of water accumulating in parts of the community after inclement weather.
- Following are some problems St. James Parish faces and some solutions we are working towards.



Problems Faced

- **Hurricanes**
  Hurricanes such as Hurricane Isaac bring devastating amounts of storm surge and backwater flooding.



- **Flash Floods Overloading Drainage Capacity**
  Flooding caused from heavy rainfall associated with hurricanes and severe thunderstorms can instantly destroy homes and businesses.

Importance of Preparation

One of the largest concern is the flooding of structures.

However, many other threats arise with the waters:

- Damage to Homes and Businesses
- Roads are Closed Stopping Supplies
- Emergency Response is Crippled
- Water Supplies can become tainted
- Power Supply Disruption
- Fuel Supply
- Infections
- Displaced Residents
- Work-Force Delayed in Returning
- Damage to Crops

US 61 closed from flooding

Hwy 20 blocked by fallen utility poles

Rail Line overtopped by flood waters

Hurricane Isaac

Flooding affects Businesses, Industries and Homes in St. James Parish.

Rail Line Completely Submerged

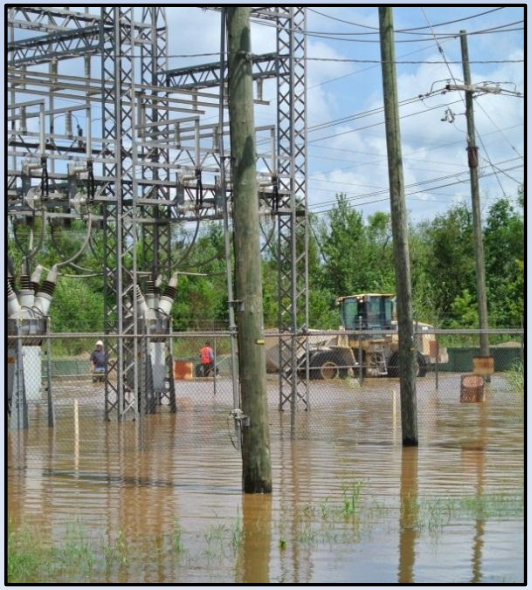
Quality Machine Works

Longview St.

Hurricane Isaac

- St. James Parish crews mobilized sand and sandbags to multiple locations where employees and volunteers filled and deployed to residents in need.

- St. James Parish employees worked tirelessly to protect residents and infrastructure. Below are employees in flood waters placing Hesco baskets to protect the electrical substation.



Hurricane Isaac

Work continues well after storms pass. Damages are assessed, streets need to be cleared and utilities restored.

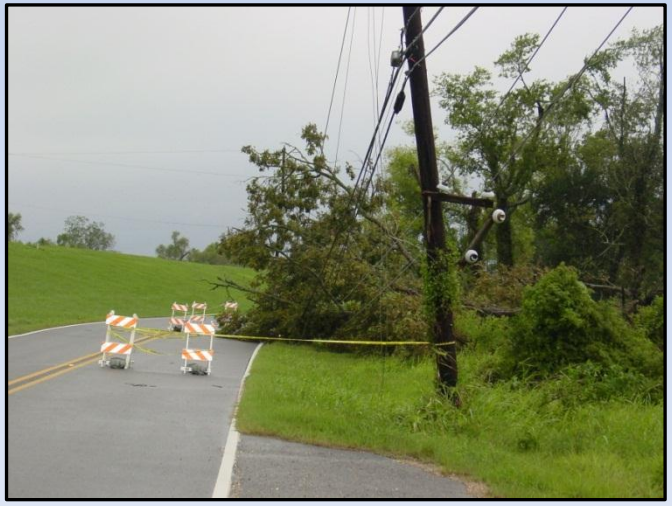
Pumping Station in Vacherie

Pumps Operated at Electrical Substation

Expenses:

- Emergency Measures and Preparedness
  $323,322.93
- Debris removal after the storm
  $232,432.00
- Damages to Parish Property
  $209,585.00
- Total Expenses
  $765,339.93
- Grants Obtained
  $451,721.23

Employees Cleaning Pump Screens in Vacherie



Trees Blocking Hwy 44

May 2014 Flash Flood

Carrot St. - Elevation 3.7 ft

LA 3125 Gramercy - 5.0 ft

Old Vacherie Ln – 8.6 ft

Irene St. - Elevation 11.5 ft

Desoto Dr. - Elevation 14.8 ft

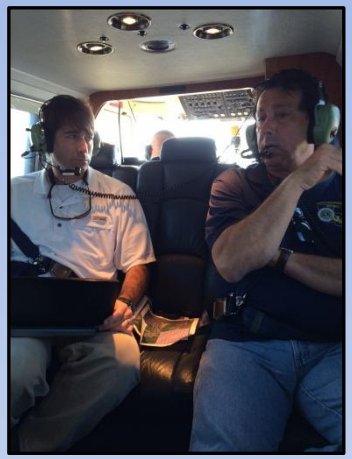
May 2014 Flash Flood

Water overtopping
Hwy 20 in Vacherie

Working Towards a Solution

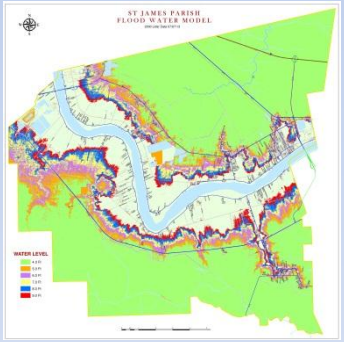
- Working with the US Army Corps of Engineers

Parish President Timmy Roussel, USACE William Klein and Jefferey Varisco



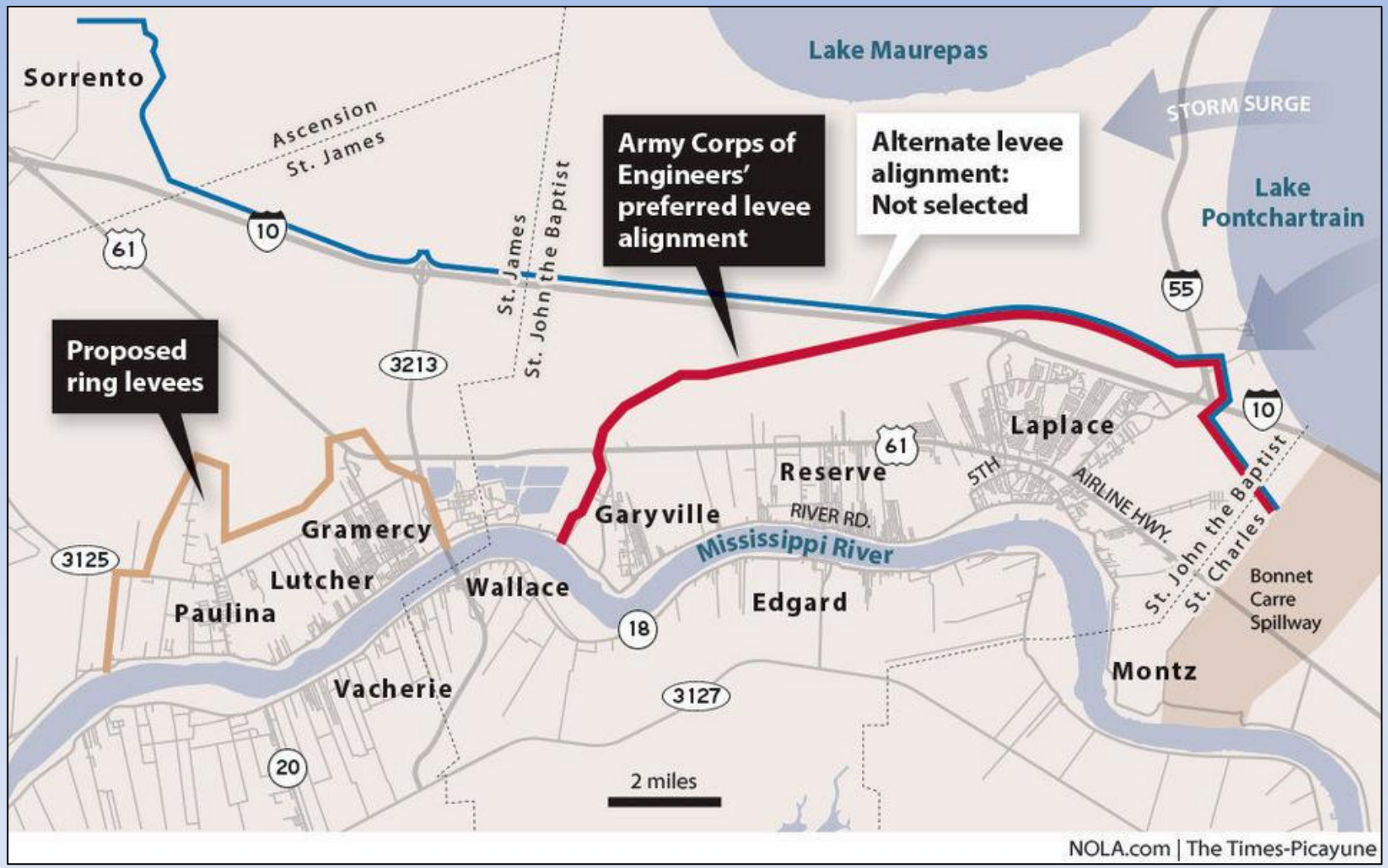
CPRA Chairman Garret Graves and Lake Pontchartrain Levee District President Steve Wilson

- Flood Modeling



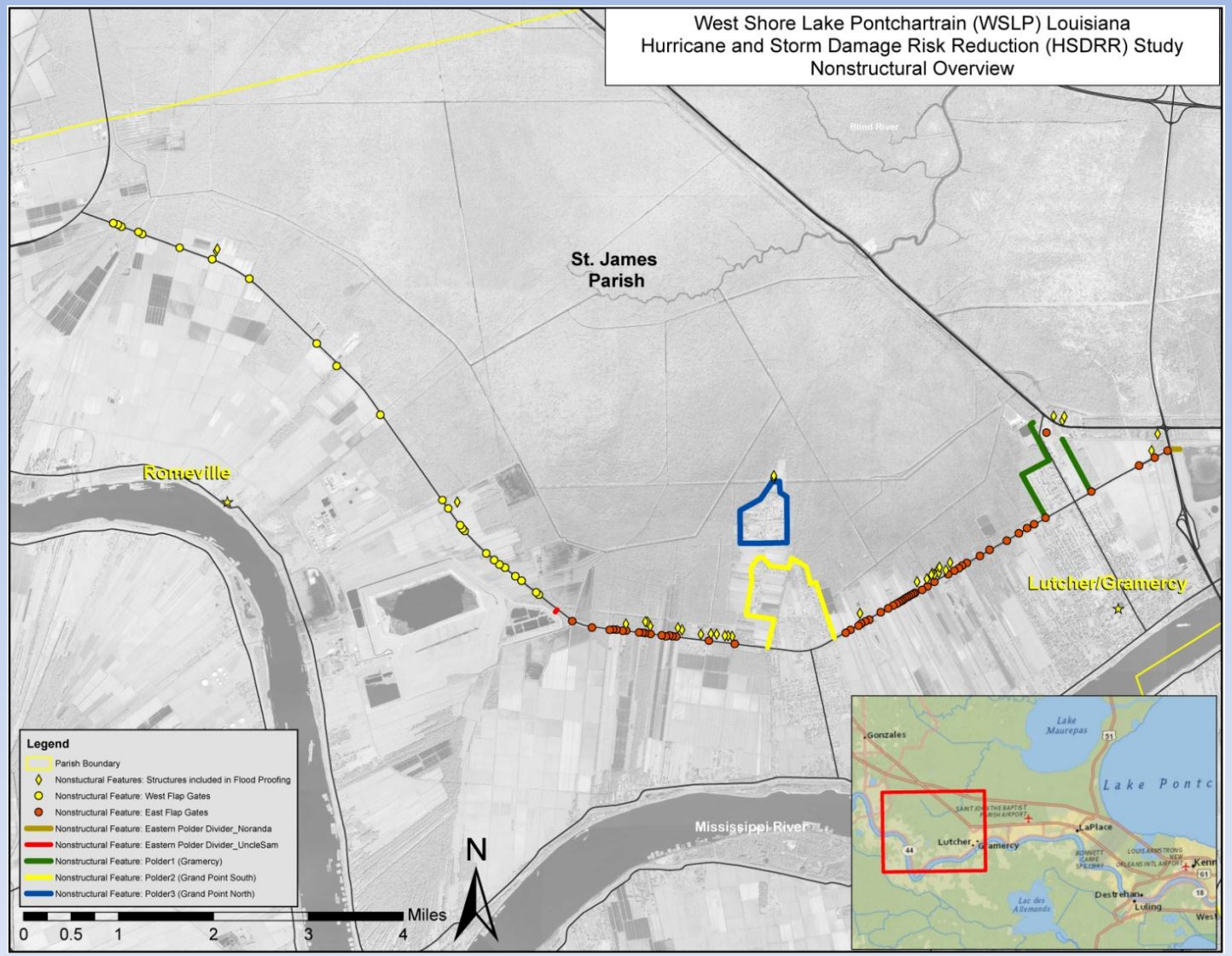
- Continuing Drainage Maintenance

West Shore Lake Pontchartrain



West Shore Lake Pontchartrain

- The tentatively recommended plan includes nonstructural measures to reduce risk for storm surge.
- Can include:
  - Culvert flap gates
  - Berms or Ring Levees
  - Structure elevation or buyout



West Shore Lake Pontchartrain

Nonstructural measures include:

- Small berms or ring levees around communities.
- Culvert flap gates that prevent storm surge in populated areas of St. James.
- Limited home elevation or buy-out of structures (<100 of 1500 structures).

The height of the small berms and ring levees will be approximately +6.5 ft NAVD88.

Nonstructural measures will provide a 100 year level of risk reduction in 2020; after 2020 the level of risk reduction will vary depending upon the rate of sea level rise and subsidence.

Site specific berms and culverts are environmentally sound and would help maintain the floodwater storage and surge buffering capacity of nearby swamps.

West Shore Lake Pontchartrain

Path forward for West Shore Lake Pontchartrain:

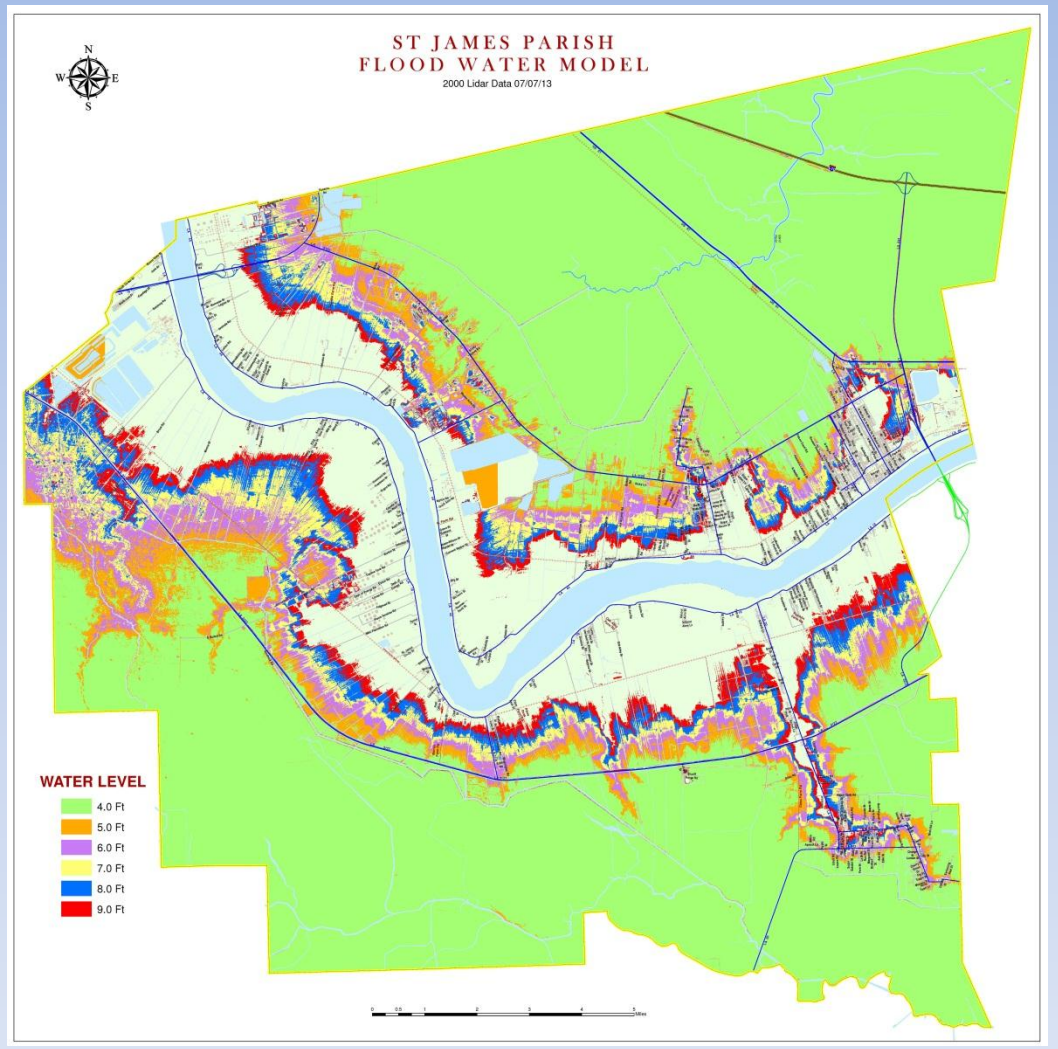
- Final State & Agency Review Ends: Feb 2, 2015
- Chief's report signed: May 29, 2015
- Chief's Report transmitted to the Assistant Secretary of the Army for Civil Works (ASACW) for a final administration review and transmittal to Congress.

The final administration review process is outside of the Corps process, but they estimate a 4 to 5 month process.

Flood Modeling & Preparations

St James Parish Government created a Flood Modeling and Sandbagging Program to assist residents in the event of flooding due to hurricane activity.

- Mapping different elevations utilizing multiple software programs and elevation data to identify areas of concern.
- Amount of sandbags needed and heights required to protect homes and businesses.
- This new program will enhance the parish's response time to assist areas of concern.



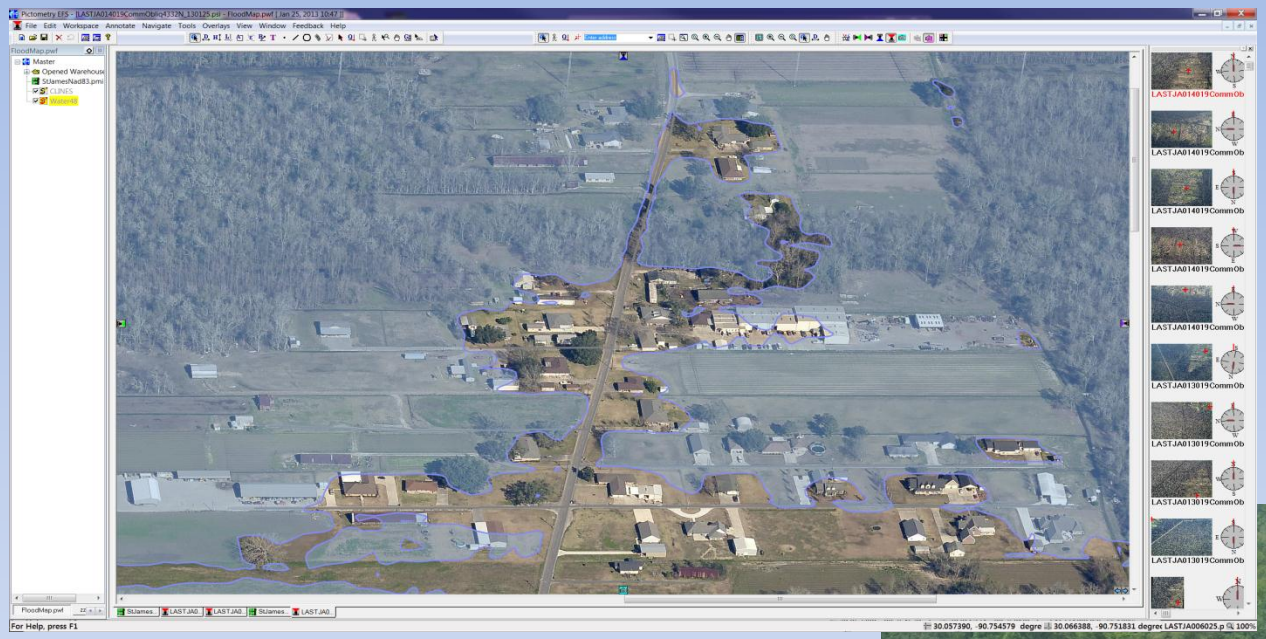
Flood Modeling & Preparations

Above are St. James Parish employees testing equipment before the Hurricane Season

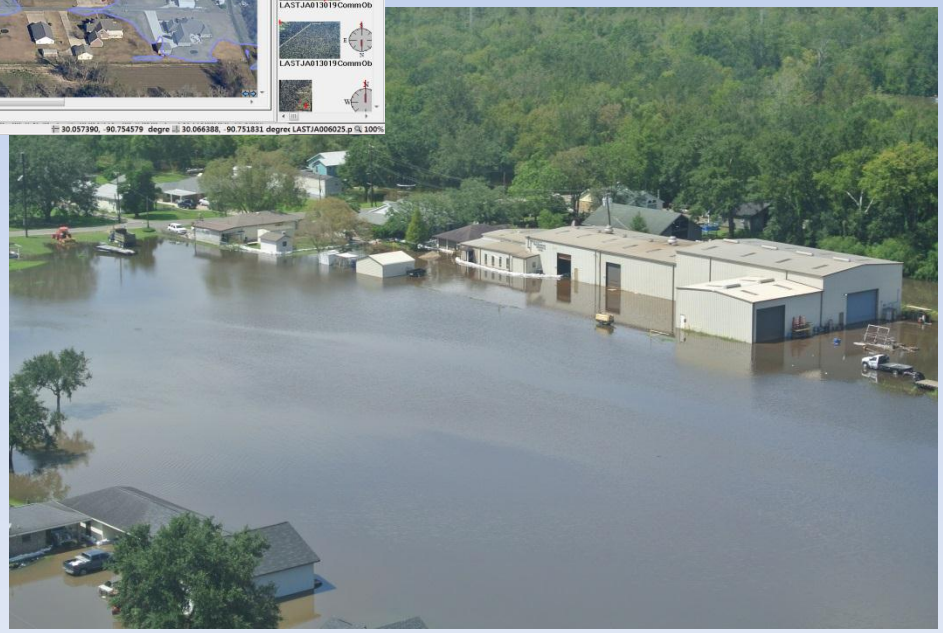
To the right is actual deployment of sandbagging equipment to assist during flooding.

Flood Modeling

Comparison of Computer Model and Actual Event



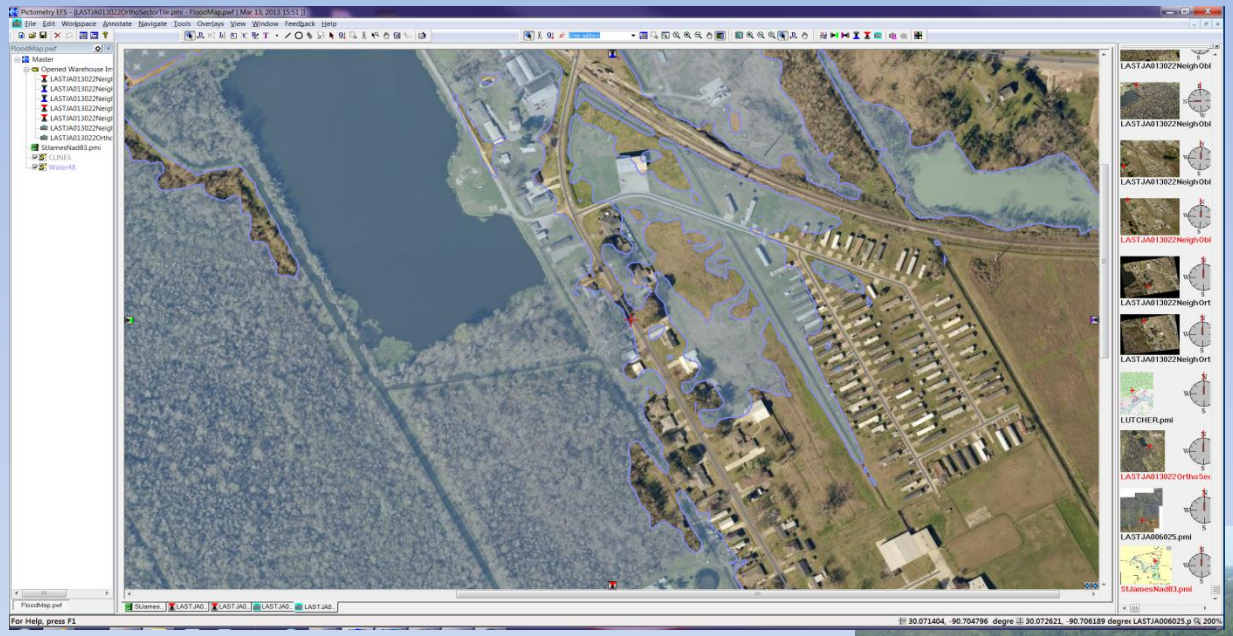
Mapped Water Level
Overlayed in Pictometry



Actual Floodwater level resulting
from Hurricane Isaac

Flood Modeling

Comparison of Computer Model and Actual Event



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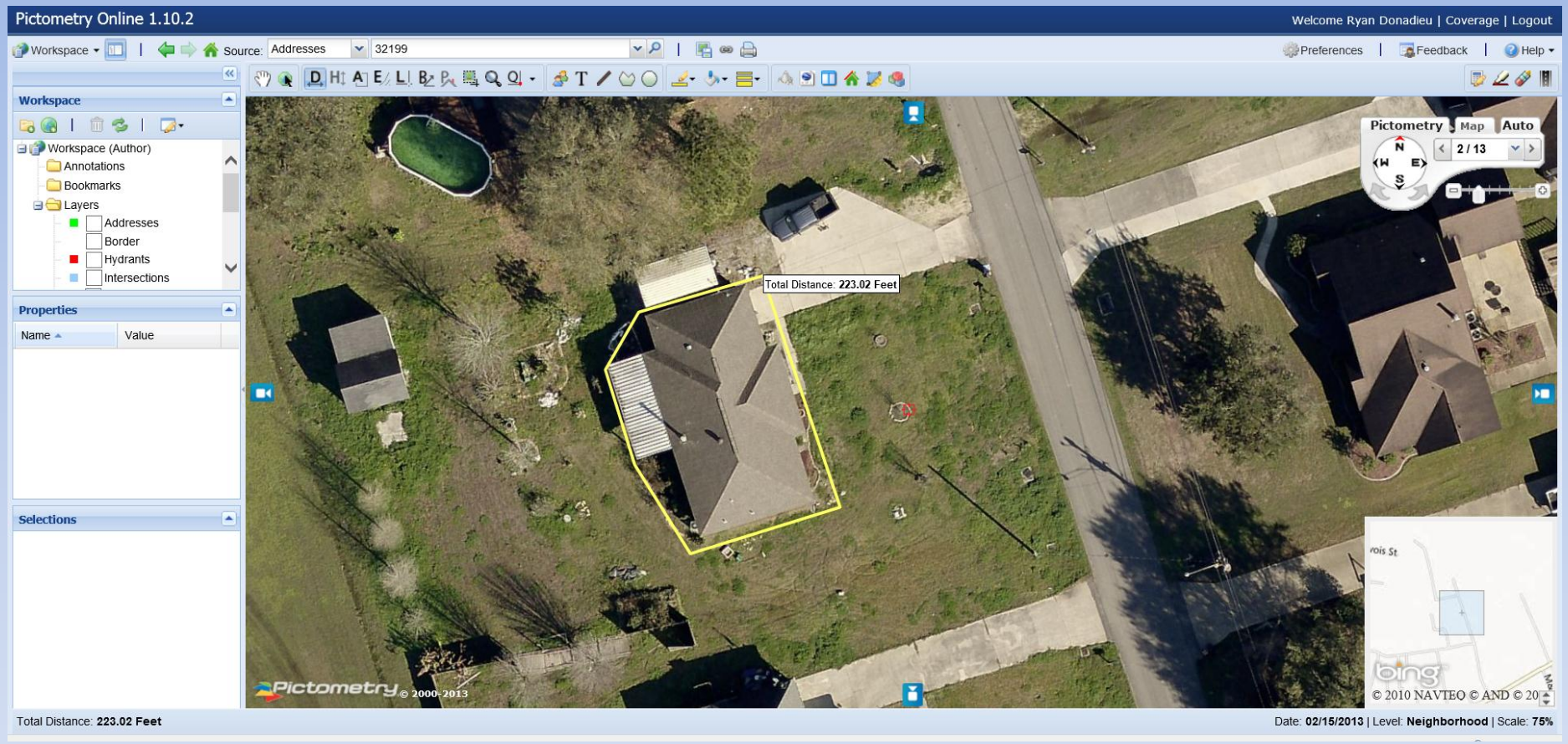
Flood Modeling



Pictometry Software used to create a Sandbag Perimeter for each residence inside of affected area to estimate required sandbags.

Flood Modeling Planning

Structure Type, Approximate Linear Footage for Protection, Estimated Quantities of Sandbags

Elevations to determine Flood Hazard and are Colored to show variations

Addresses Highlighted are Known Flood Hazards or High Risk from Isaac or previous storms

	A	B	C	D	E	F	G	H	I	J	K	L
1	ST_LABEL	ADDRESS	COMMUNITY	High Hazard	TENANT_NAME	Level	Approximate Linear Footage	Structure Type	Accessory Linear Ft	1' Sandbag	2' Sandbag	Accessory 1'
149	Admiral's Landing St	2841	Paulina		LOGAN LOUQUE JR	4.4	171	HOUSE		684	1368	0
150	Admiral's Landing St	2841	Paulina		LOGAN LOUQUE JR	4.6	171	HOUSE		684	1368	0
151	Admiral's Landing St	2841	Paulina		LOGAN LOUQUE JR	4.8	171	HOUSE		684	1368	0
152	Admiral's Landing St	2841	Paulina		LOGAN LOUQUE JR	5	171	HOUSE		684	1368	0
153	Admiral's Landing St	2841	Paulina		LOGAN LOUQUE JR	5.2	171	HOUSE		684	1368	0
154	Admiral's Landing St	2841	Paulina		LOGAN LOUQUE JR	5.4	171	HOUSE		684	1368	0
155	Admiral's Landing St	2841	Paulina		LOGAN LOUQUE JR	5.6	171	HOUSE		684	1368	0
156	Admiral's Landing St	2861	Paulina		NOLAN DEROCHE, JR	5.2	266	HOUSE		1064	2128	0
157	Admiral's Landing St	2861	Paulina		NOLAN DEROCHE, JR	5.4	266	HOUSE		1064	2128	0
158	Admiral's Landing St	2861	Paulina		NOLAN DEROCHE, JR	5.6	266	HOUSE		1064	2128	0
159	Admiral's Landing St	2871	Paulina		Lloyd Dicharry Jr.	3	208	HOUSE	226	832	1664	904
160	Admiral's Landing St	2871	Paulina		Lloyd Dicharry Jr.	3.2	208	HOUSE	226	832	1664	904
161	Admiral's Landing St	2871	Paulina		Lloyd Dicharry Jr.	3.4	208	HOUSE	226	832	1664	904
162	Admiral's Landing St	2871	Paulina		Lloyd Dicharry Jr.	3.6	208	HOUSE	226	832	1664	904
163	Admiral's Landing St	2871	Paulina		Lloyd Dicharry Jr.	3.8	208	HOUSE	226	832	1664	904
164	Admiral's Landing St	2871	Paulina		Lloyd Dicharry Jr.	4	208	HOUSE	226	832	1664	904
165	Admiral's Landing St	2871	Paulina		Lloyd Dicharry Jr.	4.2	208	HOUSE	226	832	1664	904
166	Admiral's Landing St	2871	Paulina		Lloyd Dicharry Jr.	4.4	208	HOUSE	226	832	1664	904
167	Admiral's Landing St	2871	Paulina		Lloyd Dicharry Jr.	4.6	208	HOUSE	226	832	1664	904
168	Admiral's Landing St	2871	Paulina		Lloyd Dicharry Jr.	4.8	208	HOUSE	226	832	1664	904
169	Admiral's Landing St	2871	Paulina		Lloyd Dicharry Jr.	5	208	HOUSE	226	832	1664	904
170	Admiral's Landing St	2871	Paulina		Lloyd Dicharry Jr.	5.2	208	HOUSE	226	832	1664	904
171	Admiral's Landing St	2871	Paulina		Lloyd Dicharry Jr.	5.4	208	HOUSE	226	832	1664	904
172	Admiral's Landing St	2871	Paulina		Lloyd Dicharry Jr.	5.6	208	HOUSE	226	832	1664	904
173	Admiral's Landing St	2885	Paulina		Dorrie Dicharry Oubre	4.4	222	HOUSE		888	1776	0
174	Admiral's Landing St	2885	Paulina		Dorrie Dicharry Oubre	4.6	222	HOUSE		888	1776	0
175	Admiral's Landing St	2885	Paulina		Dorrie Dicharry Oubre	4.8	222	HOUSE		888	1776	0
176	Admiral's Landing St	2885	Paulina		Dorrie Dicharry Oubre	5	222	HOUSE		888	1776	0
177	Admiral's Landing St	2885	Paulina		Dorrie Dicharry Oubre	5.2	222	HOUSE		888	1776	0
178	Admiral's Landing St	2885	Paulina		Dorrie Dicharry Oubre	5.4	222	HOUSE		888	1776	0
179	Admiral's Landing St	2885	Paulina		Dorrie Dicharry Oubre	5.6	222	HOUSE		888	1776	0
180	Admiral's Landing St	2895	Paulina	•	LARRY BABIN	4.6	234	HOUSE		936	1872	0
181	Admiral's Landing St	2895	Paulina	•	LARRY BABIN	4.8	234	HOUSE		936	1872	0
182	Admiral's Landing St	2895	Paulina	•	LARRY BABIN	5	234	HOUSE		936	1872	0
183	Admiral's Landing St	2895	Paulina	•	LARRY BABIN	5.2	234	HOUSE		936	1872	0
184	Admiral's Landing St	2895	Paulina	•	LARRY BABIN	5.4	234	HOUSE		936	1872	0
185	Admiral's Landing St	2895	Paulina	•	LARRY BABIN	5.6	234	HOUSE		936	1872	0
186	Admiral's Landing St	2905	Paulina		JOSEPH HYMEL	4.6	249	HOUSE	111	996	1992	444

Sheet1 Sheet2 Sheet3

POPULATION/WATER LEVEL

St James Parish East Bank

	Elevation	Structures	
Structures located below levels of Hurricane Isaac Flood Height of 4.8 feet	3.0 Ft	73	Historical
	3.2 Ft	93	
	3.4 Ft	117	
	3.6 Ft	146	
	3.8 Ft	180	
	4.0 Ft	207	
	4.2 Ft	240	
	4.4 Ft	272	
	4.6 Ft	308	
	4.8 Ft	355	
Structures between Hurricane Isaac Flood Height and 6 Ft elevation	5.0 Ft	408	6 Ft Slab Requirement
	5.2 Ft	476	
	5.4 Ft	568	
	5.6 Ft	653	
	6.0 Ft	795	
Structures at levels above 6 Ft through 9 Ft Flood Model Projections	6.5 Ft	929	Projected Models
	7.0 Ft	1055	
	8.0 Ft	1327	
	9.0 Ft	1612	

Flood Modeling

Flood Modeling will enable a more efficient preparation and mobilization of materials prior to an emergency or natural disaster.

Residents of St. James Parish unite to help save homes.

Drainage Work

Once drainage is in place, it must be maintained.

Drainage crews work daily in the ongoing maintenance of our drainage infrastructure.

Drainage Work

- Removing grass and debris from drainage ditches with hand tools.
- Replacing culverts and catch basins that are failing.

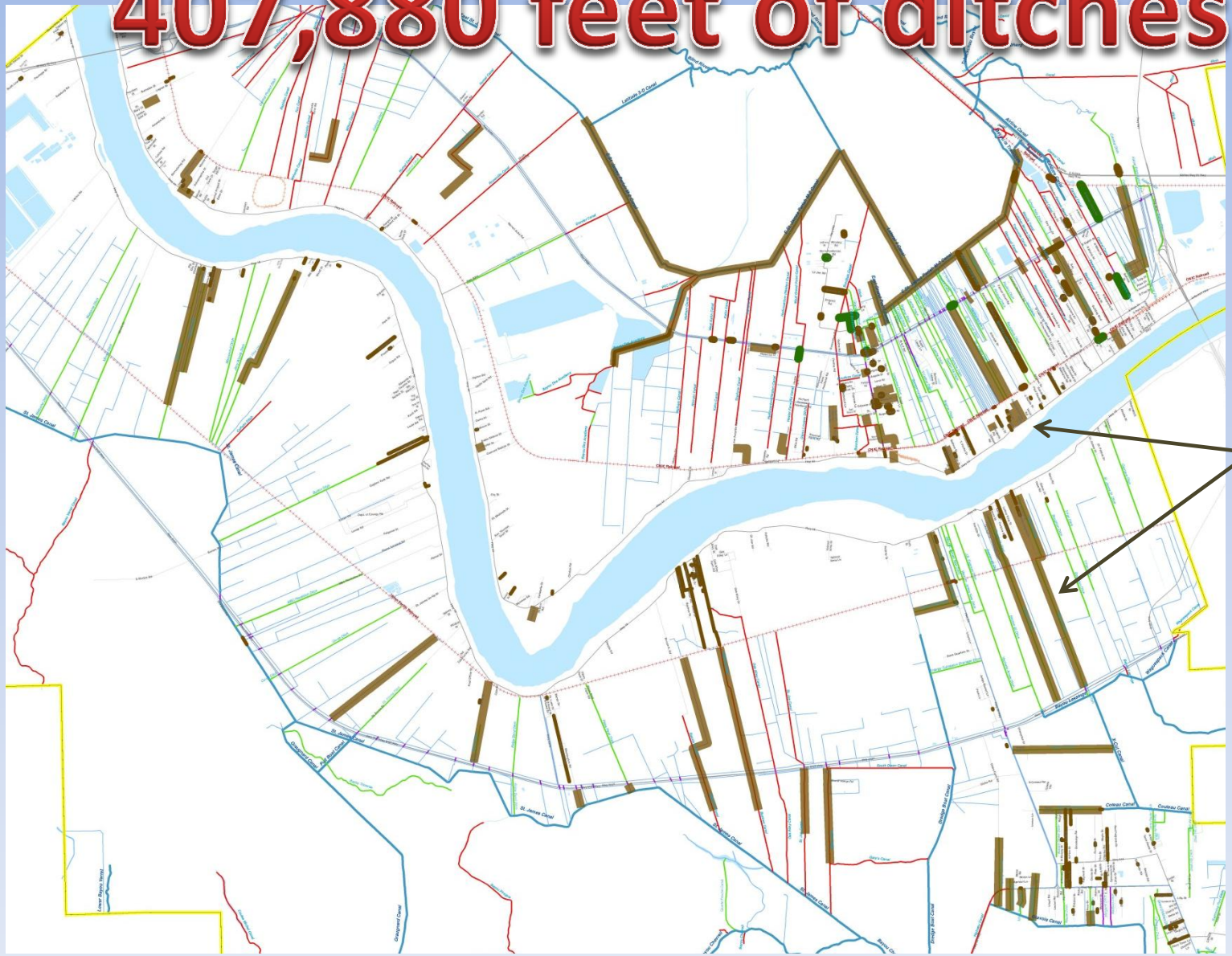
Drainage Work

- Cleaning of larger ditches.
- Use of specialized equipment in the maintenance of large canals.

However, the US Corps of Engineers future permitting requirements may delay work process.

Drainage Work

407,880 feet of ditches dug



A Map showing the Main Drainage in St. James Parish

Drainage Cleaned and Dug in the past Year and a Half are shown in brown.

East Bank Master Drainage Plan

BKI Engineering was hired to develop an East Bank Master Drainage Plan for St. James Parish.

The objectives of this plan are three fold:

1. Efficiently remove surface water runoff originating from the basin.
2. Intercept and divert surface flow originating outside the basin.
3. Minimize the impact of stormwater discharge from the basin on adjacent downstream areas.

This project will be a cost share with St. James Parish, Pontchartrain Levee District and the State of Louisiana at a cost of $620,000.00

- Phase I – Existing Drainage Survey and Model

BKI Engineering has done a survey of the existing drainage and performed modeling under current conditions.

- Phase II – Improved Conditions Model

BKI Engineering is in the process of developing a model to improve drainage.

- Phase III – Alternatives. BKI Engineering will develop two alternative options.

Drainage Task Force

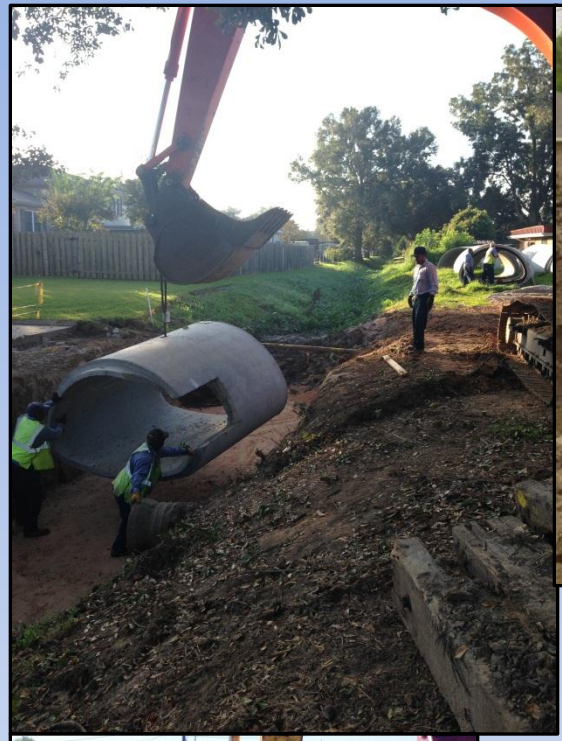
- September 2014 – St. James Parish Council passed a resolution to create "The St. James Parish Drainage and Flood Control Committee"
- BKI Engineering is in the process of formulating an East Bank Master Drainage Plan.
- The Towns of Lutcher and Gramercy are currently compiling drainage surveys.
- T. Baker Smith has begun a West Bank drainage study.
- The East Bank Task Force has been formed and will:
  - Review Existing Drainage and Flood Studies
  - Make Recommendations
  - Help Establish Priorities for Drainage and Flood Control
  - Identify Funding Options
- Members of the East Bank Task Force are:

-Councilman Jason Amato
-Councilman Terry McCreary
-Jon Hotard
-Sonny Zeringue
-Gene Roussell
-Barry Leblanc
-Councilman Alvin St. Pierre
-Councilman Ralph Patin
-Terry Borne
-Patrick St. Pierre
-Ryan Donadieu
-Marty Poche

Drainage Task Force

"We need to be very aware of backwater flooding. If St. John Parish gets the levee alignment then will be exposed coming from that end, because New Orleans, Jefferson, St. Charles and St. John will all have levees and we don't. Ascension Parish just added two more large pumps, so they have a levee system and will be pumping into that bowl of Lake Pontchartrain and Maurepas Swamp. We need to find some blockages, something to block the water from backing up on us due to hurricanes and storms."
– ***St. James Parish President Timmy Roussel***

"Our biggest threat is flooding. What we need to do is develop plans that include drainage, reclaiming the lands and providing flood protection in all areas of St. James Parish by the construction, maintenance and operation of gravity- and forced-drainage facilities, including canals, ditches, pumps to the river, small levees and other related works."
– ***St. James Parish Councilman Jason Amato***



St. James Parish

Where Community, Business, Industry and Agriculture Grow, Work, Live and Prosper Together.

For any additional information, please contact:
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