



St. James Parish EAST BANK STORMWATER MASTER PLAN

St. James Parish has an ambitious goal to develop a comprehensive, multi-faceted plan to manage East Bank stormwater runoff and storm surge in a manner that protects and enhances property values and promotes a thriving and sustainable community.

This Stormwater Master Plan is central to achieving that goal.

Note: Master Plan was approved at the March 7, 2018 Parish Council Meeting.



EAST ST. JAMES PARISH DRAINAGE AND FLOOD PROTECTION TASK FORCE

Membership

▶ Parish Government

- ▶ Timothy Roussel - Parish President
- ▶ Blaise Gravois - Operations Director
- ▶ Ryan Donadieu - Planning and Permits
- ▶ Ashley Poche - Finance
- ▶ Michelle Octave - Administration
- ▶ Alvin St. Pierre - District 1
- ▶ Jason Amato - District 2
- ▶ Terry McCreary - District 3 (until Dec 2015)
- ▶ Ryan Louque - District 3 (Jan 2016 to present)

▶ Town of Lutcher

- ▶ Patrick St. Pierre - Mayor
- ▶ R. J. St. Pierre

▶ Town of Gramercy

- ▶ Steve Nosacka, Mayor, **Secretary**

▶ Pontchartrain Levee District

- ▶ Marty Poche (until March 2017)
- ▶ Seneca Boudreaux (April 2017 to present)

▶ East Bank Residents

- ▶ Richard St. Pierre, **Chairman**
- ▶ Terry Borne
- ▶ John Hotard
- ▶ Barry LeBlanc
- ▶ Gene Roussel
- ▶ Sonny Zeringue

▶ Other Contributors

- ▶ David Boyd - Burk-Kleinpeter, Inc
- ▶ Dennis Hymel - T Baker Smith

St. James Parish
EAST BANK STORMWATER MASTER PLAN



Task Force Recommendations and Action Plan Status

A review of Objectives, Goals and Action Plans

East Bank Stormwater Master Plan Parish Government



- ▶ Objective A: Make drainage and flood protection a Parish priority.
- ▶ Goal 1: To review and promote progress on the East Bank Stormwater Master Plan monthly.
- ▶ Action Plans:
 1. Approve the East Bank Stormwater Master Plan as presented by the East Bank Drainage and Flood Prevention Task Force.
 2. Once approved, add East Bank Stormwater Master Plan Review as a standing agenda item at each month's East Bank council monthly meetings.
 3. Work together with all local, state and federal authorities to obtain funding for all drainage and storm surge protection improvements.
 4. Require preparation of quarterly reports summarizing progress for publication.
 5. Add quarterly report updates to the parish website and forward to local newspapers to promote community awareness.



East Bank Stormwater Master Plan Operations and Maintenance

- ▶ Objective B: Schedule and fund regular maintenance of all drainage systems.
- ▶ Goal 1: To maintain drainage systems on a priority basis so that they remain in good condition.
- ▶ Action Plans
 1. Prepare drainage maintenance inspection reports on all drainage systems twice each year (Maintenance Report explained in next slide.)
 - ▶ District 1: Estimated 11 miles of ditches/canals; District 2: Estimated 9 miles of ditches/canals
 - ▶ District 3: Estimated 37 miles of ditches/canals; District 4: Estimated 61 miles of ditches/canals
 2. Review maintenance reports to develop maintenance plans that includes all Priority 1 items and review the need for staffing assignments/reassignments to implement the plan.
 3. Assess annual funding requirements to implement the maintenance plans and include required funding in the parish budget.
 4. Keep accurate records of maintenance activities using GIS (Geographical Information System) and provide quarterly updates on progress to the Parish Council.
 5. Post updated quarterly reports on the parish website.



St. James Parish East Bank Drainage Ditches/Canals Drainage Maintenance Inspection Report

- ▶ Prepare biannual drainage maintenance inspection reports for all major ditches/canals
 - ▶ Specify priority
 - ▶ 1 - poor, inadequate or known flooding areas upstream (No. 1 priority)
 - ▶ 2 - barely adequate (No. 2 priority)
 - ▶ 3 - adequate, some minor problems noted (No. 3 priority)
 - ▶ 4 - excellent condition (No. 4 priority)
 - ▶ Indicate type of problem
 - ▶ Trash; debris; tree limbs; structural; Silted in, bank erosion; Culvert issues
 - ▶ Describe maintenance needs and equipment required
- ▶ Obtain “Right of Way” from property owners if none on record
- ▶ Obtain “Permit” if needed from state or federal agencies



East Bank Stormwater Master Plan Stormwater System Improvements

- ▶ Objective C: Greatly improve stormwater drainage on the East Bank of St. James Parish so there is no flooding during a 10-year storm.
- ▶ Goal 1: To replace all damaged/crushed and or undersized culverts as recommended in BKI's Master Drainage Report.
- ▶ Action Plans:
 1. Replace the 6 undersized Hwy 3125 lateral culverts as identified by BKI within the next 3 years at an estimated cost of \$1.5MM.
 - Await state funding for assistance on completing this item
 2. Replace the roughly 1178 damaged/crushed or undersized culverts as identified by BKI within the next 10 years at a cost of roughly \$4.6MM.
 - District 1: 12 Crushed; 18 Broken; 195 Undersized; 83 No Data; Estimated Cost \$1.35MM
 - District 2: 7 Crushed; 14 Broken; 106 Undersized; 3 No Data: Estimated Cost \$0.35MM
 - District 3: 55 Crushed; 54 Broken; 176 Undersized; 100 No Data; Estimated Cost \$1.83MM
 - District 4: 60 Crushed; 12 Broken; 238 Undersized; 44 No Data: Estimated Cost \$1.06MM
 3. Replace the 37 undersized Railroad culverts as identified by BKI within the next 5-10 years at an estimated cost of \$1.1MM
 4. Develop a timeline for project completion and track progress via quarterly reports.
 5. Post updated quarterly reports on the parish website each January, April, July and October.

Note: Drainage improvements in Districts 1 and 2 are a joint effort between the Parish and the Towns of Gramercy and Lutcher, respectively.



East Bank Stormwater Master Plan

Storm Surge Protection

- ▶ Objective D: Improve storm surge protection on the East Bank.
- ▶ Goal 1: To implement a short-term solution for storm surge protection and continue efforts to identify a feasible and cost effective long-term solution.
- ▶ Action Plans:
 1. Implement the short term solution (AquaDam with sheet pile structures with gates/pumping stations to block backflow from Blind River) at an estimated cost of roughly \$30MM.
 - Develop a model of the area to determine the benefits of implementing the project in phases as funding becomes available.
 - If purchased, prepare an AquaDam deployment plan for quick deployment during an anticipated storm surge event.
 2. Continue efforts to identify a long-term solution to storm surge protection.
 - ▶ Five long-term solutions have been identified.
 3. Prepare quarterly progress reports.
 4. Post updated quarterly reports on the parish website each January, April, July and October.



East Bank Stormwater Master Plan

Storm Surge Protection

- ▶ One short-term solution has been identified.
 - ▶ Backwater flood protection consisting of two phases:
 - ▶ Phase 1) Installation of four sheet metal piling structures with pump-back facilities at each of the four Hwy 61 bridges.
 - ▶ Sheet metal piling structure can be closed to prevent backflow and pumps operated in the event of heavy rains during a storm surge event.
 - ▶ Cost estimated at \$24.5MM with funding being pursued through State Capital Outlay Program.
 - ▶ Can be in place within 16 months post funding availability.
 - ▶ Phase 2) Acquisition of an AquaDam system to stretch along the entire length of Hwy 61 (about 12 miles).
 - ▶ The AquaDam would only be deployed prior to a storm surge event. The east bound lane of Hwy 61 would remain open during deployment.
 - ▶ Cost estimated at \$6MM with funding being pursued through FEMA.

Bayou Conway (\$6,036,100)
Two 20' long sheet pile walls 72' Long (2/3 Rule)
Four 100 cubic feet per second pumps (400 c.f.s.)
Two 24' x 20' Drainage Structures

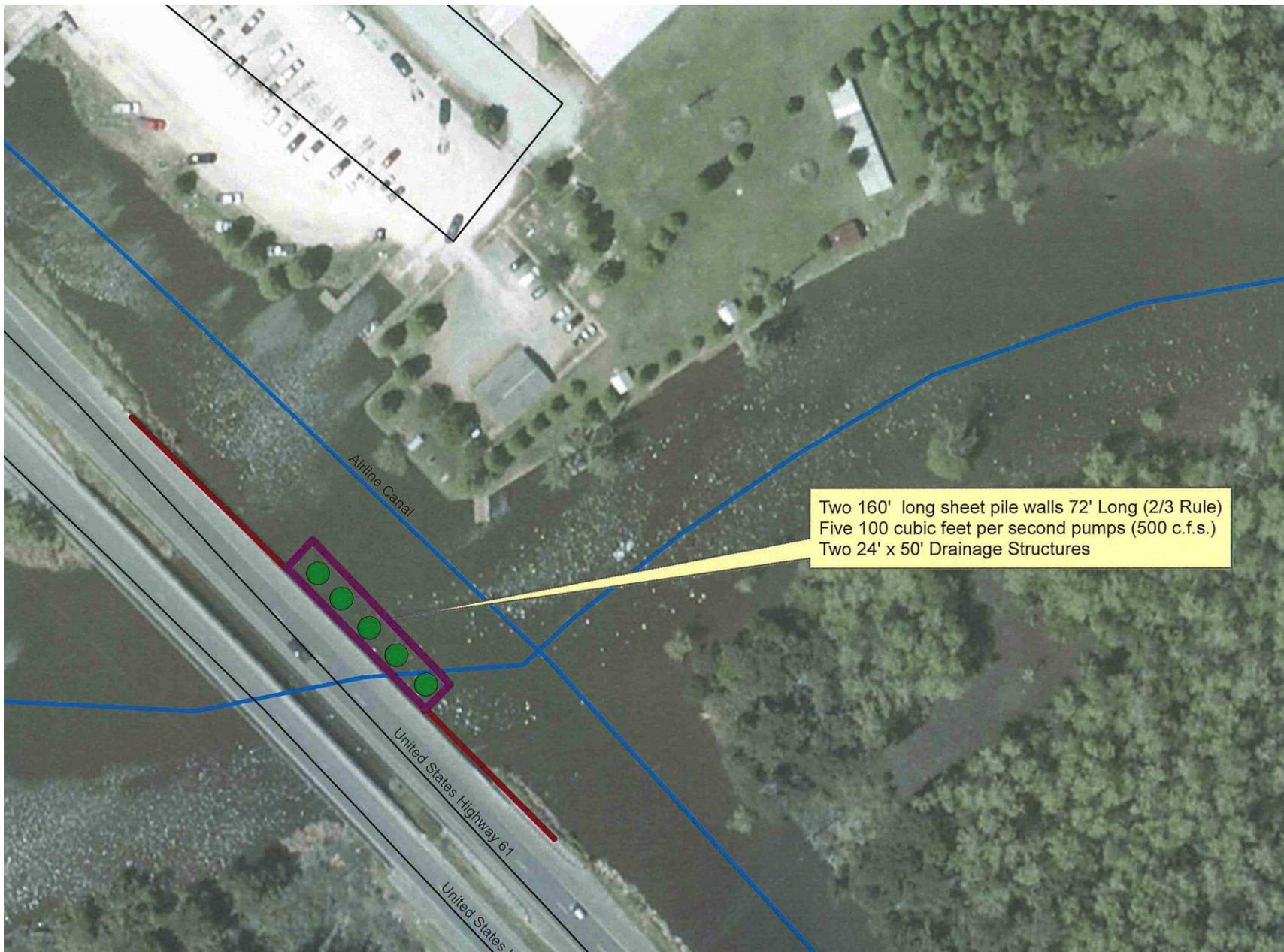
Blind River (\$11,617,280)
Two 160' long sheet pile walls 72' Long (2/3 Rule)
Five 100 cubic feet per second pumps (500 c.f.s.)
Two 24' x 50' Drainage Structures

3' Aquadam System (\$6,000,000)
12 miles up to 9' of protection

Bayou la Trainasse (\$3,460,560)
Two 30' long sheet pile walls 48' Long (2/3 Rule)
Four 50 cubic feet per second pumps (200 c.f.s.)
Two 18' x 20' Drainage Structures

East St. James M2 Canal (\$3,430,200)
Two 20' long sheet pile walls 60' Long (2/3 Rule)
Four 50 cubic feet per second pumps (200 c.f.s.)
Two 18' x 20' Flood Gates

Figure 6
Short Term Solution



Two 160' long sheet pile walls 72' Long (2/3 Rule)
Five 100 cubic feet per second pumps (500 c.f.s.)
Two 24' x 50' Drainage Structures

Figure 7
Short Term Solution
Typical setup
for all four
pump stations



East Bank Stormwater Master Plan Storm Surge Protection

- ▶ Five long-term solutions have been considered:
 - ▶ **1. Raising of US Hwy 61** and installation of pump-back stations
 - ▶ Most expensive at \$458MM making it not cost-effective and does not allow for raises to 11' and 16' deemed necessary in the next 50 years
 - ▶ Most difficult to construct
 - ▶ Most environmentally controversial
 - ▶ Stands low chance of ever being permitted for construction
 - ▶ Does not meet National Flood Insurance Program requirements for accreditation

FILE NAME/LENAME

DATE: PLODATE

XREF: XREFNAME



GRAPHIC SCALE

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Figure 1 Raising of US Hwy 61

NO.	DATE	REVISION DESCRIPTION	BY

REVISION	BY	DATE	SHEET
DESIGNED	T. PRATER	OCTOBER 2013	X OF X
CHECKED	H. PICARD		
DRAWN	G. DURAN		
CHECKED	T. PRATER		

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 PHONE (504)885-3601 FAX (504)885-1712
 BKI#NO.13.041
 ST. JAMES PARISH

ST. JAMES PARISH
 ST. JOHN THE BAPTIST TO
 ASCENSION PARISH, LA
 INTERIM FLOOD PROTECTION STUDY



East Bank Stormwater Master Plan Storm Surge Protection

- ▶ Five long-term solutions have been considered:
 - ▶ 2. Raising of Hwy 3125
 - ▶ Cost estimated at \$270MM
 - ▶ Does not allow for raises to 11' and 16' deemed necessary in the next 50 years
 - ▶ Does not protect those living north of Hwy 3125, only those to the south.



East Bank Stormwater Master Plan Storm Surge Protection

- ▶ Five permanent solutions have been considered:
 - ▶ 3. **Elevation of existing spoil banks** of the East St. James Parish M-2 Canal and the Parish Canal and providing pump-back facilities.
 - ▶ Cost estimated at \$183MM
 - ▶ Allows levee raises to 11' and 16' deemed necessary in the next 50 years
 - ▶ Provides protection to more residents, commercial and agricultural business than the previous project (Raising Hwy 3125).
 - ▶ Consistent with the St. James/Ascension Parish alignment
 - ▶ Compatible with West Shore project



East Bank Stormwater Master Plan Storm Surge Protection

- ▶ Five permanent solutions have been considered:
 - ▶ **4. Existing Spoil Bank Project Modification:** breaks down previous project into three phases (Lutcher-Gramercy Phase, Grand Point Phase and a Future Phase) with pump-back facilities and delaying construction of the Future Phase to a later date.
 - ▶ Cost estimated at \$112MM (Future Phase - \$71MM)
 - ▶ Allows levee raises to 11' and 16' deemed necessary in the next 50 years
 - ▶ Can be completed within 7 years pending funding availability

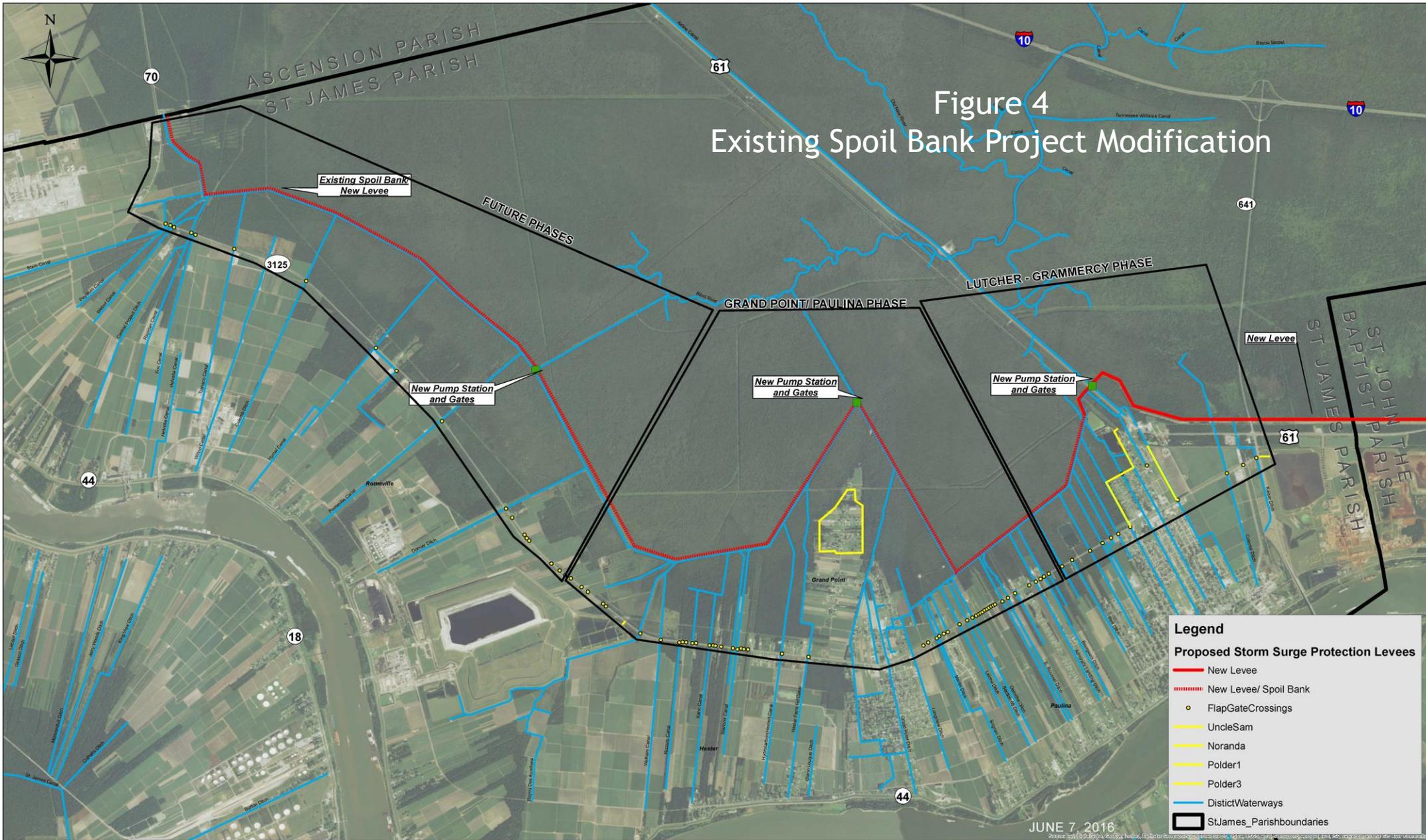


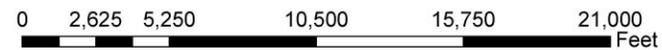
Figure 4
Existing Spoil Bank Project Modification

Legend

Proposed Storm Surge Protection Levees

- New Levee
- - - - New Levee/ Spoil Bank
- o FlapGateCrossings
- UncleSam
- Noranda
- Polder1
- Polder3
- DistrictWaterways
- StJames_Parishboundaries

JUNE 7, 2016



**USACE West Shore Non Structural-
St. James-Ascension Storm Surge Protection Projects**

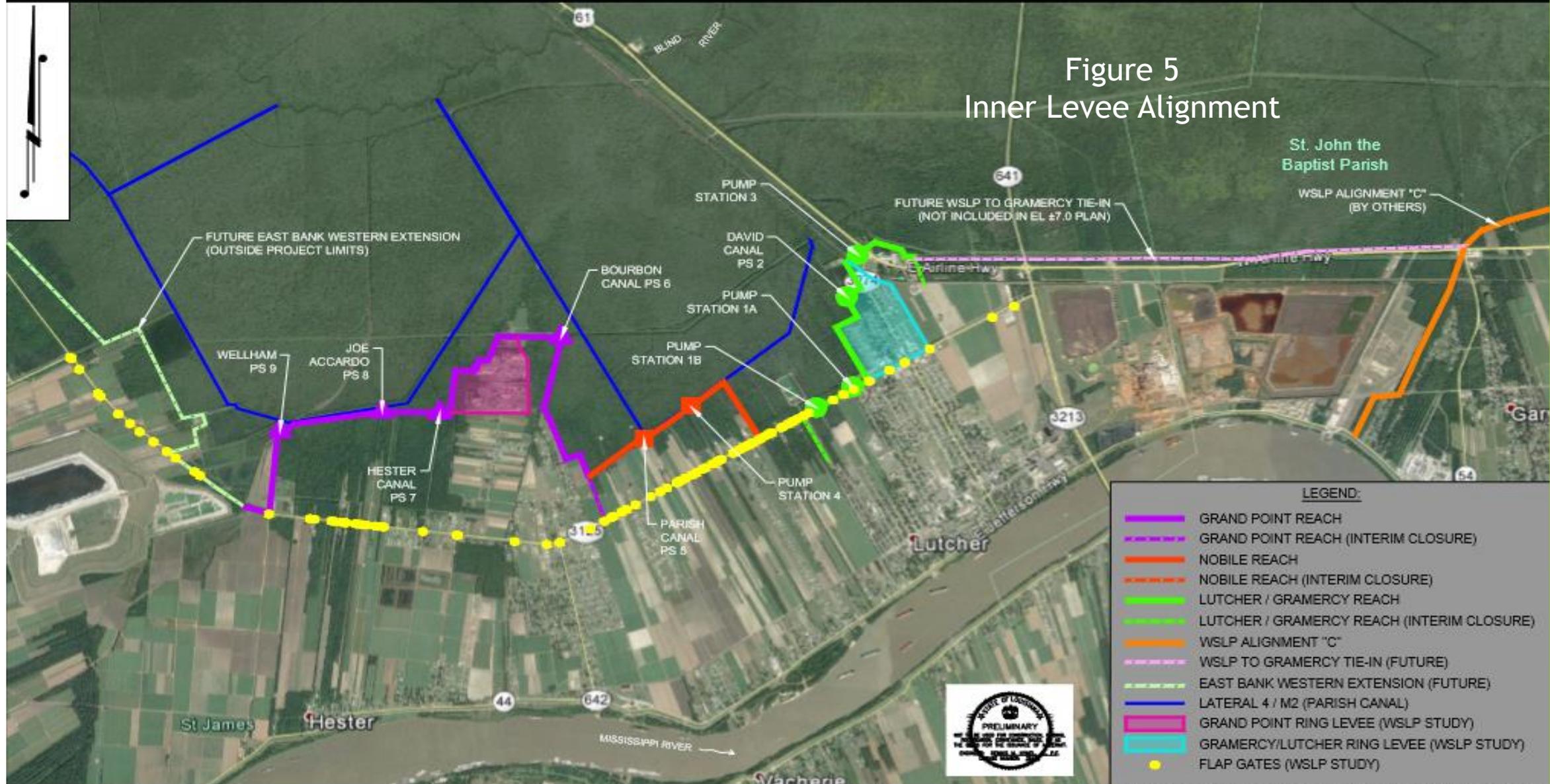
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ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS



East Bank Stormwater Master Plan Storm Surge Protection

- ▶ Five permanent solutions have been identified:
 - ▶ 5. **Inner Levee Alignment**: composed of 3 reaches identified as the Lutcher/Gramercy Reach, Nobile Reach and Grand Point Reach with pump-back facilities and delaying construction of a Future Phase to a later date.
 - ▶ Levee alignments consistent with portions of federally authorized West Shore Lake Pontchartrain Study.
 - ▶ “Needs and Justification” considerations have been included in the development of this alignment in an effort to expedite permitting and NEPA clearance.
 - ▶ Conceptual cost estimated at \$57MM including a 25% contingency.
 - ▶ The parish should receive \$500,000 each in two fiscal year allocations. First funds are expected after April 2018 and will be used to fund the 30% Design Phases 1-3 of this proposed project.
 - ▶ Construction could be complete by 2024 pending permitting and funding.
 - ▶ Allows levee raises as may be necessary in the future.
 - ▶ Future Phase required to protect area west of Welham Canal

Figure 5
Inner Levee Alignment



LEGEND:

- GRAND POINT REACH
- - - GRAND POINT REACH (INTERIM CLOSURE)
- NOBILE REACH
- - - NOBILE REACH (INTERIM CLOSURE)
- LUTCHER / GRAMERCY REACH
- - - LUTCHER / GRAMERCY REACH (INTERIM CLOSURE)
- WSLP ALIGNMENT "C"
- - - WSLP TO GRAMERCY TIE-IN (FUTURE)
- - - EAST BANK WESTERN EXTENSION (FUTURE)
- LATERAL 4 / M2 (PARISH CANAL)
- GRAND POINT RING LEVEE (WSLP STUDY)
- GRAMERCY/LUTCHER RING LEVEE (WSLP STUDY)
- FLAP GATES (WSLP STUDY)



NOTES:

TBS T. BAKER SMITH
A HISTORY OF SOLUTIONS
Tribune, Acadian Parish, Thibodaux, LA 70301
504.281.2222

SCALE IN FEET

4000' 2000' 0' 4000'

REV. NO.	00	REV. DATE	---	REV. BY	---
REVISION DESCRIPTION					

DRAWN BY:	LMB	APPROVED BY:	DMH
DATE:	02/05/2017	JOB NO.:	
DRAWING NAME:	001_FUTURE REACH.DWG		
PROJECTION:	PROJECTION		
GEO. DATUM:	NAD83 VERT. DATUM: NAVD88		
GRID UNITS:	US SURVEY FEET		
SHEET NO.:	1	OF	1

EAST BANK FLOOD PROTECTION ALTERNATIVE
OVERALL PLAN VIEW
ST. JAMES PARISH, LA

East Bank Stormwater Master Plan

Storm Surge Protection Options



Solutions	Summary Description	Cost
1	<u>Raising of US Hwy 61</u> - includes pump stations	\$458MM
2	<u>Raising of Hwy 3125</u>	\$270MM
3	<u>Elevation of Existing Spoil Banks</u> of the East St. James Parish M-2 Canal and Parish Canal and pump-back stations	\$183MM
4	<u>Existing Spoil Bank Project Modification</u> - breaks down solution 3 into three phases (Lutcher-Gramercy Phase; Grand Point Phase and a Future Phase) and delays Future Phase construction to a later date	\$112MM
5	<u>Inner Levee Alignment</u> - system of 3 inner levees and 9 pump stations identified as the Lutcher/Gramercy Reach, Nobile Reach and Grand Point Reach	\$57MM
Short Term	AquaDam, 4 sheet pile structures w/gates and pump stations at Hwy 61 bridges	\$30MM



East Bank Stormwater Master Plan Flood Warning and Response Plan

- ▶ Objective E: Enhance the early warning and response systems needed in the event of potential flooding whether from stormwater or storm surge.
- ▶ Goal 1: To provide level monitoring at strategic locations to develop historical data to enhance response plan actions by mid-year 2018.
- ▶ Action Plans:
 1. Purchase and install level gauges at strategic location.
 2. Begin an on-going monitoring program to enable development of an historical data base.
 3. Update the parish Flood Warning and Response Plan periodically basis historical data.
 4. Review the plan with all parish departments.
 5. Prepare quarterly progress reports when new information is available.
 6. Post quarterly progress reports on the parish website.



East Bank Stormwater Master Plan Floodplain Management

- ▶ Objective F: Maintain participation and good standing in the National Flood Insurance Program (NFIP) and improve floodplain management practices to minimize flood damages and reduce flood insurance premiums for property owners.
- ▶ Goal 1: Identify actions needed to improve the Community Rating System (CRS) score to reduce flood insurance premiums and work to implement cost-effective actions.
- ▶ Action Plans:
 1. Advise property owners about flood hazards, flood insurance and flood prevention measures.
 2. Adopt and enforce regulations that exceed the NFIP's minimum standards for new developments and re-developments.
 3. Prepare a report identifying actions that would improve Community Rating System scores and work to implement those actions.
 4. Post quarterly progress reports, if any, on the parish website.



East Bank Stormwater Master Plan Floodplain Management

- ▶ Objective G: Reduce flood losses and better protect the natural resources, improving the function of the parish's floodplains.
- ▶ Goal 1: To implement projects that will restore a significant area of forested wetlands along the Maurepas Basin.
- ▶ Action Plans:
 1. Support the Small Diversion Program at Convent/Blind River and Diversion at Hope Canal.
 2. Monitor progress of these projects.
 3. Post updated quarterly reports, if any, on the parish website.
 4. Evaluate & Support Floodplain Management projects in surrounding Parishes.
 - ▶ Diversion Canal Weir restoration project
 - ▶ Dredging of Blind River at Lake Maurepas
 - ▶ Dredging of Amite River at Lake Maurepas



East Bank Stormwater Master Plan

Stormwater Best Management Practices

- ▶ Objective H: Encourage the use of stormwater Best Management Practices (BMPs) throughout the Parish to reduce stormwater runoff volume.
- ▶ Goal 1: To establish development regulations for the parish that are state-of-the-art with regard to stormwater management.
- ▶ Action Plans:
 1. Review development regulations of neighboring parishes.
 2. Update our parish regulations to include cost-effective Best Management Practices.
 3. Present to Parish Council for adoption and subsequent enforcement by the Planning Commission.
 4. Advise the public via the parish website.



East Bank Stormwater Master Plan Financial Plan

- ▶ Objective I: Fund stormwater management initiatives through sustainable and equitable sources of revenue.
- ▶ Goal 1: To search for all potential funding sources and work to solicit those funds on an on-going basis.
- ▶ Action Plans:
 1. Estimate the cost of all system improvement to identify funding needs.
 2. Identify potential funding sources.
 3. Solicit funds from all available sources for budget preparation.
 4. Prepare quarterly progress reports.
 5. Post quarterly progress reports, if any, on the parish website.



East Bank Stormwater Master Plan Implementation Plan

- ▶ Objective J: Develop an aggressive implementation plan and project tracking system to promote community awareness of progress.
- ▶ Goal 1: To prioritize project implementation basis greatest impact on reducing flooding and develop a timeline for informing the public, noting that the availability of funding will be the greatest obstacle to implementation.
- ▶ Action Plans:
 1. Work with the “Engineer of Record” for timeline development.
 2. Present Implementation Timeline to the Parish Council for approval.
 3. Prepare quarterly updates on progress.
 4. Post quarterly updates, if any, on the parish website.



East Bank Stormwater Master Plan

Highest Priority Items

▶ Flood Prevention:

1. Develop an aggressive plan to clean all ditches/canals in need of maintenance and begin plan implementation.
2. Initiate a program to replace crushed/broken/undersized culverts beginning north of Hwy 3125 and moving towards the river starting in areas of known flooding.
 - ▶ Have roughly \$3.8MM available for culvert replacements
 - ▶ Awaiting word from the State on additional funding: need \$3.4MM to complete

▶ Storm Surge Protection:

1. Implement the short term solution (AquaDam) if grant funds are awarded
 - ▶ Awaiting word from the State on funding
2. Continue working on viable long-term solutions
 - ▶ CPRA anticipates using GOMESA funds form Fiscal Years 2018 and 2019 - \$500,000 each year beginning after April 2018 and will be used for 30% Design Phases 1-3 for the inner-levee alignment project.

▶ Funding:

1. Pursue all available funding options working with all local, state and federal authorities

Public Assistance



- ▶ Remove simple obstructions from ditches
- ▶ Make the Parish aware of drainage problems
- ▶ Report any illegal dumping into drainage ditches
 - ▶ Parish - Director of Operations
 - ▶ Blaise Gravois 225-562-2262
 - ▶ Town of Gramercy - Mayor
 - ▶ Steven Nosacka 225-869-4403
 - ▶ Town of Lutcher - Mayor
 - ▶ Patrick St. Pierre 225-869-5823

