



2016

THE PONTCHARTRAIN LEVEE DISTRICT PROGRESS REPORT



- WEST SHORE-LAKE PONTCHARTRAIN, LA HURRICANE PROTECTION PROJECT
- ST. JAMES-ASCENSION STORM SURGE FLOOD PROTECTION PROJECT
- LAUREL RIDGE LEVEE EXTENSION
- BAYOU CONWAY & PANAMA CANAL DRAINAGE IMPROVEMENT PROJECT
- AMITE RIVER DIVERSION CANAL WIER REHABILITATION PROJECT
- LAKE PONTCHARTRAIN AND VICINITY, LOUISIANA PROJECT NORTH OF AIRLINE HIGHWAY, ST. CHARLES PARISH 100 YEAR HURRICANE PROTECTION
- ST. CHARLES PARISH EAST BANK URBAN FLOOD CONTROL FEASIBILITY STUDY
- ST. CHARLES PARISH HURRICANE PROTECTION LEVEE SHORELINE ENHANCEMENT AND LABRANCHE WETLANDS RESTORATION
- ST. CHARLES PARISH LABRANCHE WETLANDS RESTORATION FRESH WATER DIVERSION
- ST. CHARLES PARISH LABRANCHE WETLANDS RESTORATION SALINITY CONTROL STRUCTURE

February, 2016

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Pontchartrain Levee District Board of Commissioners

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Representing East Baton Rouge Parish

Allen J. St. Pierre, Sr.
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Representing Illinois Central Railroad

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Board Secretary

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Representing St. James Parish

Dwight D. Poirrier
Special Counsel



PONTCHARTRAIN LEVEE DISTRICT
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Mission

- To maintain the existing levee systems in a condition that will ensure their integrity and capability to withstand river stages and hurricane tidal surges, as anticipated by their design and condition;
- To improve, by construction or supporting construction by others, of new or enhanced levels of protection as design parameters change or higher levels of protection are authorized; and
- To anticipate weaknesses in the system as and before they develop, and to respond actively with necessary emergency measures when the levees are being subjected to river stages or hurricanes tidal surges that would cause flooding within the jurisdiction of the Pontchartrain Levee District



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History of the Pontchartrain Levee District



The Pontchartrain Levee District (PLD) was created by the legislature in 1895. At that time it also included the Baton Rouge Front Levee, and until 1979 it encompassed what is now the East Jefferson Levee District. The PLD headquarters is in Litcher, and the maintenance shop is located at 9620 Highway 44, in the community of Union, two miles downstream from the Sunshine Bridge. Within the Pontchartrain Levee District today are 115 miles of levee along the east bank of Mississippi River, and 10 miles of hurricane protection levee in St. Charles Parish. The Pontchartrain Levee District extends from Baton Rouge to Kenner, La., at the Jefferson Parish line, and runs north from the Mississippi River to reach the Amite River and Lakes Pontchartrain and Maurepas. Portions of six parishes on the east bank of the Mississippi River are included in the Pontchartrain Levee District: East Baton Rouge, Iberville, Ascension, St. James, St. John the Baptist, and St. Charles Parishes.

The Board of Commissioners of the Pontchartrain Levee District is currently comprised of nine (9) board members, consisting of one member from each of the six parishes, two additional board members representing the Illinois Central Railroad, and an at-large member.

The PLD works closely with the Louisiana Coastal Protection and Restoration Authority (CPRA), the U.S. Army Corps of Engineers (Corps) and formerly with Louisiana Department of Transportation and Development (DOTD) to promote and support industrial action and expansion through a program that grants a “no objection” statement to proposed operations that may have an effect on the integrity of the levee system and are compatible with flood control such as the construction of structures, roadways, and pipelines.

The Board of Commissioners is vested with the control and responsibility for assuring the proper monitoring of levees, structures, canals, and related improvements throughout the district. The Commissioners attend one regular monthly meeting, along with various special and committee meetings.

The Pontchartrain Levee District, under the direction of the CPRA and the Corps and acting as its local agent, is responsible for the performance of ordinary maintenance and repair of the levee system, policing to guard against damages to the levee and related structures, and to ensure the integrity of the levee system. The PLD keeps an accurate account of the finances, periodically examines and reviews financial transactions before approving expenditures, and adopts an operating budget. During all times, the PLD patrols the levee system and interrupts operations on or near levees which may be detrimental to the integrity of the flood protection levee.

The entire levee system within the Pontchartrain Levee District was designed and built by the U.S. Army Corps of Engineers. The Pontchartrain Levee District, in its authority to maintain the integrity of the levee, cannot allow any work, any activity, or any alteration to the design of said levees without the approval and consent from the CPRA, DOTD and U.S. Army Corps of Engineers. DOTD is consulted because of the highways that run along the levee and specific DOTD right-of-ways, and the Corps is consulted because as designers and constructors of the levees, they have the ultimate authority over such a system.



Pontchartrain Levee District

Facts and Statistics



The Pontchartrain Levee District's current budget is derived principally from a 3.52 mils ad valorem tax on the six-parish area, and from a limited amount of interest and royalties. Of the PLD's projected expenditures for FY 2015-2016, a total of 75% is spent on levee maintenance. There are 48 classified employees, an executive director, an executive assistant to the board, and a board secretary employed by the PLD.

The Pontchartrain Levee District conservatively estimates that its levees protect \$1.2 to \$1.5 billion in assessed taxable property and improvements, as well as highways, bridges, airports, schools, courthouses, and parks. The PLD protects an estimated 500,000 people within its six-parish jurisdiction, and incorporates the primary evacuation routes for 1.1 million people from the southeast (greater New Orleans), and an additional 300,000 people from the southwest via routes U.S. 61, U.S. 90, and Interstates 10 and 310.

The U.S. Army Corps of Engineers is responsible for levee construction and related works under the federal Mississippi River & Tributaries Flood Control Project (MR&T). The Pontchartrain Levee District, as a local assuring agency, works with the Corps to furnish rights-of-way and maintain levees, canals and caving banks. The New Orleans District of the Corps of Engineers continues to work toward completion of the MR&T Project by letting contracts for levee enlargements. These projects are financed through federal appropriations and are completed as part of a total upgrading of the levee system. Bank caving is being solved by a sophisticated "revetment program." Completion of the MR&T Project, which began in 1928, depends solely on availability of federal funds appropriated in the yearly federal budget.

The Pontchartrain Levee District (PLD) is the local sponsor for the projects referenced herein. Currently, there are projects in each of the six parishes comprising the PLD's jurisdiction. As presented in more detail throughout this report, ongoing feasibility studies are underway for many projects, some of which are federally authorized, and many where the PLD has assumed full responsibility at the local level. Additionally, several projects are currently under construction, which when completed, will provide the East Bank community of St. Charles Parish with increased protection from storm induced flooding and rainfall events.

The total cost of these projects is estimated to be in excess of \$750,000,000. The PLD is confident that the findings and recommendations in the ongoing studies will establish the forward path for future construction of critical drainage, coastal restoration, hurricane protection, and flood risk reduction projects. An integral part of several of the local studies includes the incorporation of recreational features which provide economic opportunities and a better quality of life for the citizens residing on the east side of the Mississippi River in the Parishes of St. Charles, St. John the Baptist, St. James, Ascension, Iberville and East Baton Rouge. The PLD appreciates the interest and support of the Congressional Delegation, the U.S. Army Corps of Engineers (Corps), the Coastal Protection and Restoration Authority (CPRA) and various state and local governments with regard to these projects.



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Ongoing Feasibility Studies (Federal Participation)

- St. Charles Parish East Bank Urban Flood Control Project
- West Shore – Lake Pontchartrain, LA Hurricane Protection Project

Ongoing Feasibility Studies (Local Participation)

- St. James-Ascension Storm Surge Flood Protection Project
- Laurel Ridge Levee Extension Project
- Bayou Conway/Panama Canal Drainage Improvements Project
- Amite River Diversion Canal Wier Rehabilitation Project
- LaBranche Wetlands Restoration and Shoreline Protection Project

Projects Currently under Construction (Federally Authorized)

- St. Charles Parish LaBranche Wetlands Restoration Salinity Control Structure
- Lake Pontchartrain and Vicinity Hurricane Protection Project, St. Charles Parish (100 year hurricane protection)
- St. Gabriel Levee Enlargement Project

Project Construction Complete (Local Funds pending completion of the East Bank Urban Flood Control Study)

- Cross Bayou Pump Station, St. Charles Parish

The Cross Bayou Pump Station is the 2nd of 4 or 5 pumps to be constructed with local funding while being evaluated in the East Bank Urban Flood Control Study. In 2004, construction of the Bayou Trepagnier Pump along the Lake Pontchartrain Hurricane Protection Project in St. Charles Parish was completed at a cost of \$8,500,000. The Cross Bayou Pump, at a cost of \$18,800,000, has been constructed with PLD, Shell Motiva, Shell Chemical, and statewide flood funds. Following the feasibility study, the PLD will pursue federal authorization for this project along with Corps credit for the 2 pumps constructed with local funds.

While the PLD is embarking on projects totaling \$750,000,000, there are continuous efforts associated with levee maintenance, levee drainage, borrow-pit drainage, and the maintenance and clearing of rights-of-way along the mainline Mississippi River levee and a ten-mile hurricane protection levee located on the East Bank of St. Charles Parish. All of the appurtenances within the St. Charles Parish Hurricane Protection Levee including flood control structures, floodwalls and the Bayou Trepagnier Pump Station are maintained and operated by St. Charles Parish. The PLD does not have the manpower or finances to assume this responsibility.



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PLD supports the Corps FY 2016 appropriations request for Mississippi River and Tributaries (MR&T) and Operations and Maintenance (O&M) as outlined below.

MR&T (FY 2016) **Total \$6,290,000** (Presidents budget \$6,290,000, additional work plan amount \$0).

Funding for PLD \$750,000 (Construction of St. Gabriel Levee Lift).

LA Congressional Districts 1, 2, 3, 5 and 6

FY 2016 funding will be used for Supervision and Administration and Engineering during Construction of the St. Gabriel Levee lift construction contract. In addition, FY 2016 funding will be used for engineering and design and environmental investigations for deficient levee sections within the PLD.

O&M (FY 2016)

ICW MR&T = \$1,028,000

MRL Maintenance = \$2,044,000

LA Congressional Districts 1, 2, 3, 4, 5, 6 and 7

Funding required for permit reviews, O&M levee inspections, Levee Safety Program and National Levee Datum support and instrumentation.

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PONTCHARTRAIN LEVEE DISTRICT JURISDICTIONAL BOUNDARIES



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West Shore – Lake Pontchartrain Hurricane Protection Project

Project Description and Purpose:

In September 1965, Hurricane Betsy struck the greater New Orleans area causing severe flooding in the Lower 9th Ward of Orleans Parish and almost all of St. Bernard Parish. Congress authorized the U.S. Army Corps of Engineers (Corps) to design and construct the Lake Pontchartrain and Vicinity, Louisiana Hurricane Protection Project in the Flood Control Act of 1965 in October 1965.

In 1970, St. John the Baptist Parish (St. John) raised objections to the Lake Pontchartrain and Vicinity, Louisiana Hurricane Protection Project based upon the lack of hurricane protection levees west of the Bonnet Carré Spillway. St. John argued that the development of hurricane protection levees from Orleans Parish to St. Charles Parish would funnel the storm surge to St. John the Baptist Parish thus consequently sacrificing St. John to save others.

In July 1971, a resolution was passed in the Committee on Public Works of the House of Representatives authorizing the Corps to include the remaining portion of St. Charles Parish (from the Bonnet Carré Spillway Upper Guide Levee to the Parish line) and St. John the Baptist Parish in the Lake Pontchartrain and Vicinity, Louisiana Hurricane Protection Project. In September 1974, a resolution was passed in the Committee on Public Works of the Senate authorizing the Corps to include St. James Parish in the Lake Pontchartrain and Vicinity, Louisiana Hurricane Protection Project.

Project Location:

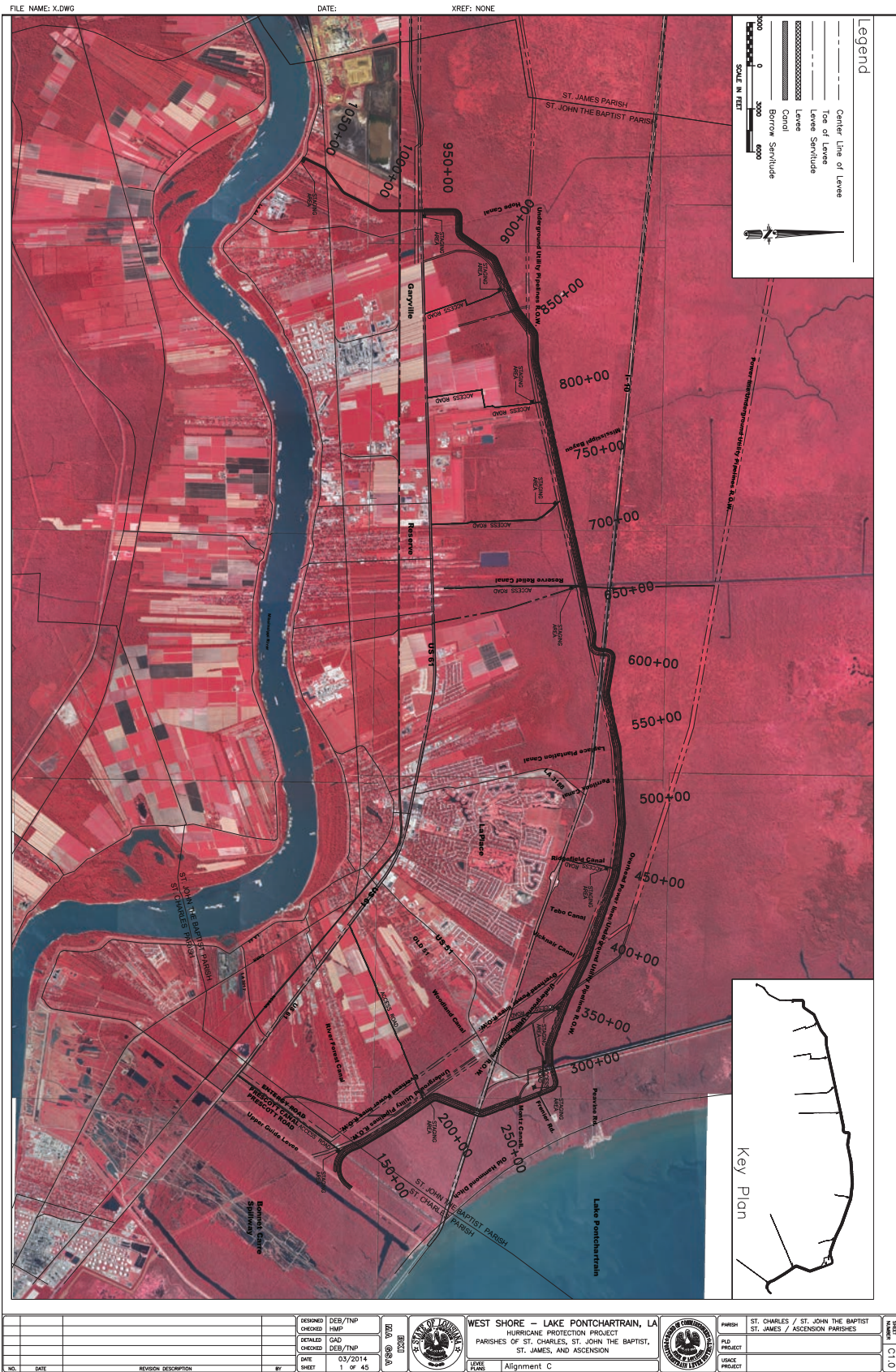
The West Shore – Lake Pontchartrain, Louisiana Hurricane and Storm Damage Risk Reduction Project study area is located in a portion of St. Charles Parish, St. John the Baptist Parish, and St. James Parish. The project begins at the Upper Guide Levee of the Bonnet Carré Spillway and continues westward toward the Hope Canal providing protection to the communities of Montz, LaPlace, Reserve, Garyville, Mount Airy, Gramercy, Lutchet, and Grand Point. Please see attached maps.

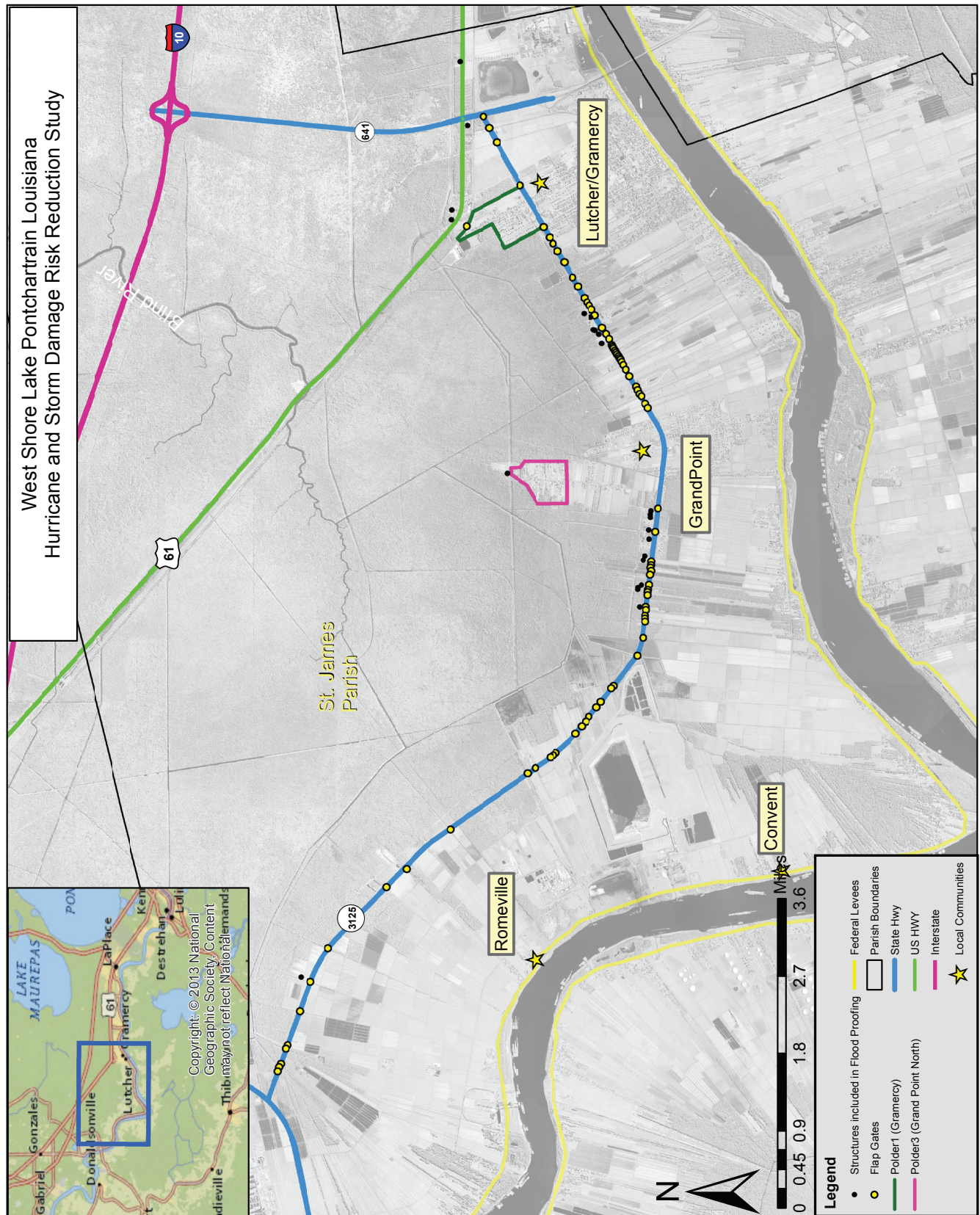
Status of Work:

The work on the Feasibility Study Report was split evenly between the United States Army Corps of Engineers (USACE) and the Pontchartrain Levee District (PLD). The Feasibility Study currently has been advanced to a final format stage. There were three alignments being reviewed; one alignment that followed the wet-dry interface with the wetlands from the Upper Guide Levee to Hope Canal (Environmentally Preferred Alignment); a second alignment that followed the petroleum pipeline right-of-way from the Upper Guide Levee to Hope Canal then turning south toward the Mississippi River (Pipeline Avoidance and Storage Capacity Alignment); and a third alignment that followed the Interstate-10 route from the Upper Guide Levee to the Marvin Braud Pump Station in Ascension Parish (Locally Preferred Alignment). The Environmentally Preferred and Pipeline Avoidance and Storage Capacity Alignments took into consideration protection for the St. James Parish communities via non-structural methods such as ring levees, property elevations, etc. The Pipeline Avoidance and Storage Capacity Alignment was recommended as the Tentatively Selected Plan in June 2013. The Pipeline Avoidance and Storage Capacity Alignment (Alignment C) was approved as the Tentatively Selected Plan during the Agency Decision Milestone Meeting in November 2013. The USACE and PLD finished preparation of

the Feasibility Study Report and Appendices and submitted the report for Division and Headquarters review in September 2014. The Feasibility Study Report was approved by the Civil Works Review Board in December 2014 and distributed to the State of Louisiana and Federal Agencies for review in January 2015. The Comment Resolution was completed in April 2015 and the approved Chief's Report was issued on June 12, 2015.

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St. James -Ascension Storm Surge Flood Protection Project

Project Location:

The St. James-Ascension Storm Surge Flood Protection Project study area is located in St James Parish and a portion of Ascension Parish. The project route starts at the upper end of the West Shore Lake Pontchartrain, LA Hurricane Storm Damage Risk Reduction Project, continues westward through St James Parish and then northerly toward the New River Canal in Ascension Parish. This project will provide protection to the communities of Gramercy, Lutcher, Grand Point, Convent, Romeville, Union, Burnside, and Sorrento. Please see attached map.

Project Goals

The Initial Phase of the project will provide storm damage risk reduction equivalent to the West Shore Lake Pontchartrain, LA Hurricane Storm Damage Risk Reduction Project. This protection will be accomplished by constructing levees, floodwalls, floodgates, gravity drainage gates, and stormwater pumping stations to prevent extreme high tides or storm surges from flooding the developed areas within the Blind River, Bayou Conway, and Panama Canal basins. The proposed levee will be constructed to the 2020 Design Year 0.01% Probability Storm surge levels. The proposed structures will be built to the 2070 Design Year 0.01% Probability Storm surge levels. Wherever possible, existing infrastructure, such as highways, may be used to lower the initial construction costs. If raising the level of the existing roadways equivalent to the 2020 Design Year elevation is nominal, then the construction of floodgates and floodwall may be delayed to the next phase.

The Intermediate Construction Phase will also be equivalent to the West Shore Lake Pontchartrain, LA Hurricane Storm Damage Risk Reduction Project for the 2045 Design Year. If new levees are required due to the 2045 Design Year surge levels, then these levees will be constructed in lifts to the 2045 Design Year elevation. Existing levees will be lifted to the 2045 Design Year elevations. Floodgates and floodwalls will be constructed as required to meet the 2070 Design Year elevations.

The Future Construction Phase will also be equivalent to the West Shore Lake Pontchartrain, LA Hurricane Storm Damage Risk Reduction Project for the 2070 Design Year. Existing levees will be lifted to the 2070 Design Year elevations.

Status of Work

The levee alignment study of the Initial Phase for St James Parish has been completed. Three alignment alternatives were evaluated for the St James portion of the project. The recommended alignment is to follow the existing spoil banks from the Parish canal network. Order of Magnitude estimates were developed for all three alternatives.

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Pontchartrain Levees District-United States Army Corps of Engineers Westshore Levee (St. John Parish) - Non Structural (St. James Parish) Plans,
St. James Parish - Ascension Parish Surge Protection Plans

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Laurel Ridge Levee Extension, Ascension Parish

Project Location:

The Laurel Ridge Levee Extension Project is located in the north east corner of Ascension Parish along the Amite River.

Project Description:

The Laurel Ridge Levee Extension Project consists of extending the existing Laurel Ridge Levee to protect additional properties along/within the Amite River floodplain from backwater flooding and high water on the Amite River. The proposed levee extension will begin at the ending point of the existing Laurel Ridge Levee, and is proposed to terminate at the eastern end of Wall Cemetery Road.

The Laurel Ridge Levee Extension, as currently proposed, will be approximately 4.5 miles long, and will be constructed to an elevation of 15.0 NAVD. The construction will require approximately 405,000 cubic yards of fill material.

The proposed project will reduce flood stages by several feet and will provide protection for a population of approximately 750 residents, and approximately 1,300 structures.

Project Status

The initial reconnaissance level investigation was completed during the summer of 2011. The reconnaissance study investigated the feasibility of the project and helped determine some of the project features, modeling results, and design criteria. In May of 2013, the project scope changed from a project of approximately 3.3 miles long to a total project length of approximately 4.5 miles to provide flood risk reduction to additional residents within the Amite River Flood Plain located along LA 431. This revision required additional surveying and preliminary engineering to incorporate into the original project. Three alignments were considered.

Alignments 1 & 3 were investigated to minimize environmental impacts to the jurisdictional wetlands. Because of the increased levee lengths and the necessity for multiple pump stations for both alignments, Alignment 1 & 3 were deemed too expensive (\$32 and \$35 million, respectively) to construct, compared to the benefits that they would have provided.

Alignment 2 is the preferred alignment due to the reduced estimated cost (\$24 million) for providing the same benefits and level of protection as Alignments 1 & 3. Alignment 2 would utilize the existing swamp as retention for the internal drainage while the Amite River is at flood stage. This alignment does not require the construction of pump stations. Also the gravity-driven internal drainage will be handled by a flood gate system. This will allow the swamp area on the protected side of the levee to be used as storm water storage until the Amite River floodwaters recede. The proposed levee is approximately 25,300 feet long with a crest elevation of 15.0. Because the gated system will be operated in an open condition, and only closed during a backwater flooding event from the Amite River, there will be minimal environmental impacts to the wetlands on the protected side. This alignment allows a shorter levee length.

Additionally, Alignment 2 has been considered

with more detail, and minor alignment modifications have been investigated resulting in fewer impacted wetlands and a more efficient alignment.

Project Breakdown

Phase I: Reconnaissance Study

This effort was an investigation into the general project concept. Engineering parameters, project costs, project benefits were investigated to determine whether the project was worthy of consideration. The results for the construction of Alternative Alignment #2 were deemed favorable. This study was completed during the summer of 2011.

Phase II: Preliminary Design and Permitting

This effort consists of the data collection necessary to perform the preliminary design required to better define the project parameters before design and permitting application submitted. Topographical Survey Services were required to better define the termination point of the proposed levee. The proposed project structures were more closely investigated for site requirements and alignments. A wetlands delineation was performed to determine the boundary of the areas impacted by the proposed improvements, and to assist in the permit submittals.

This effort was completed during the summer of 2014.

Phase III: Permitting

The permitting will be critical to the successful completion of this project. The permitting requires submittal of the preliminary design documents, and the approval of the proposed plan. An operation plan for the flood gates will be developed and approved that will dictate the specific ownership impacted and operation parameters for the flood gates. Also, the environmental impacts will have to be identified, and a wetlands mitigation and monitoring plan will have to be established for impacted areas.



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Laurel Ridge Levee Extension, Ascension Parish

Once these concerns have been addressed, the various entities having jurisdiction will have an opportunity to accept the proposed improvements.

The permitting efforts are currently underway, and are estimated to be completed in early summer of 2016.

Phase IV: Final Plans & Specs

After completion of Phase III, the final design and the necessary construction documents will be developed. Once the final design is completed, a revised construction cost estimate will be calculated and provided.

Phase V: Real Estate Services & Environmental

This phase will include the acquisition of all necessary real estate right-of-ways and easements and wetland mitigation. The real estate right-of-ways, easements and wetland mitigation will be accomplished according to the permitting requirements. The final design documents will then be completed and approved. Once these steps are completed, and the construction funds are in place, then the project can be opened for bidding.

Phase VI: Construction Administration & Inspection Services

The Construction Administration and Inspection Services will be performed to ensure that the Contractor is constructing the levee and structures in accordance the construction documents, and to protect the interests of the owner. This effort will include the day-to-day management of the project, the inspection of the construction progress, the verification (geotechnical and survey) of the construction materials and quantities, progress meetings, approval of pay applications, processing of change orders, owner updates and reports, and various other construction administration services.



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Project Schedule

Phase I: Reconnaissance Study – COMPLETE

Began: 9/29/2008

Status: Completed - Spring 2011

Phase II: Prelim Design and Prelim Permitting – COMPLETE

Began: 7/5/2012

Status: Complete

Phase IIa: Additional Data Collection and Design Revision – COMPLETE

Began: September 2013

Status: Completed 2/2014

Future Phase III: Permitting

Estimated Duration: 10 Months

Projected Begin: 10/2014

Projected Completion: 5/2016*

**Dependent on LADNR & USACE Review/Approval Schedule*

Future Phase IV: Final Design/Specifications (on-going simultaneous to Permitting)

Estimated Duration: 12 Months

Projected Begin: 5/2016

Projected Completion: 1/2017*

**Dependent on LADNR & USACE Review/Approval Schedule*

Future Phase V: Real Estate Services, Wetland Mitigation

Estimated Duration: 12 Months

Projected Begin: 5/2016

Projected Completion: 5/2017

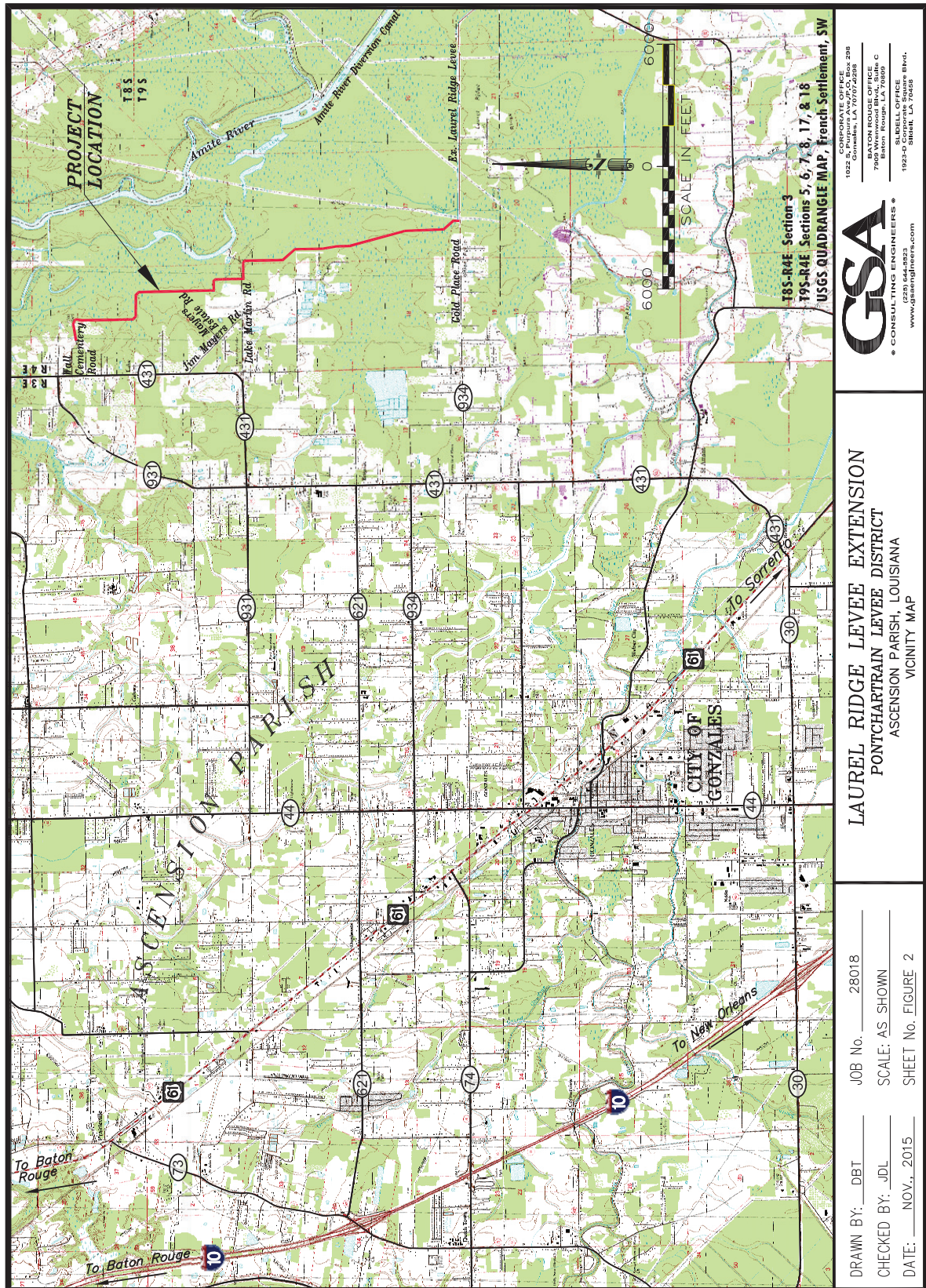
Phase VI: Construction - Estimated Construction Cost \$20M

Estimated Duration: 18 Months

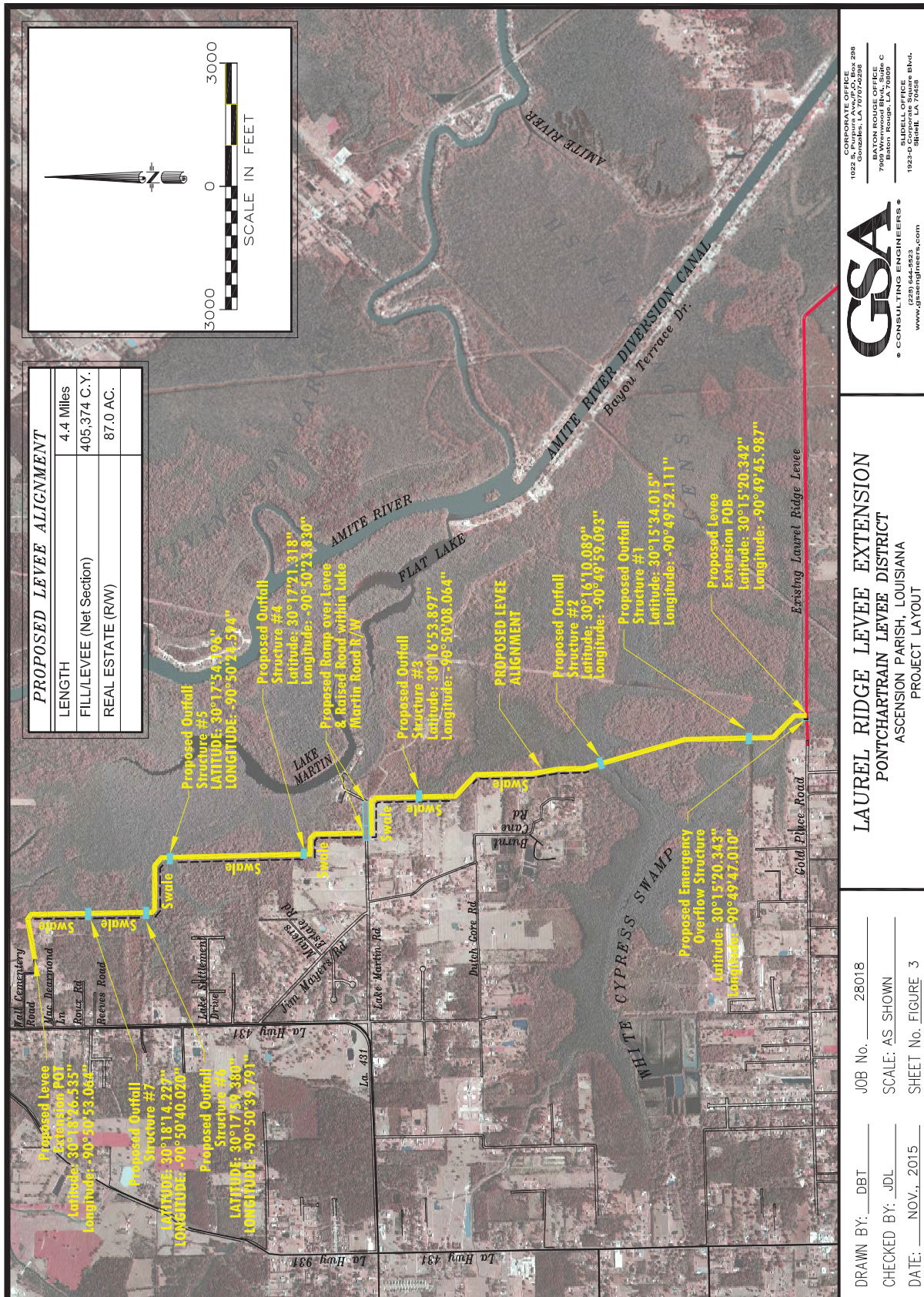
Projected Begin: Summer 2017

Projected Completion: Winter 2018

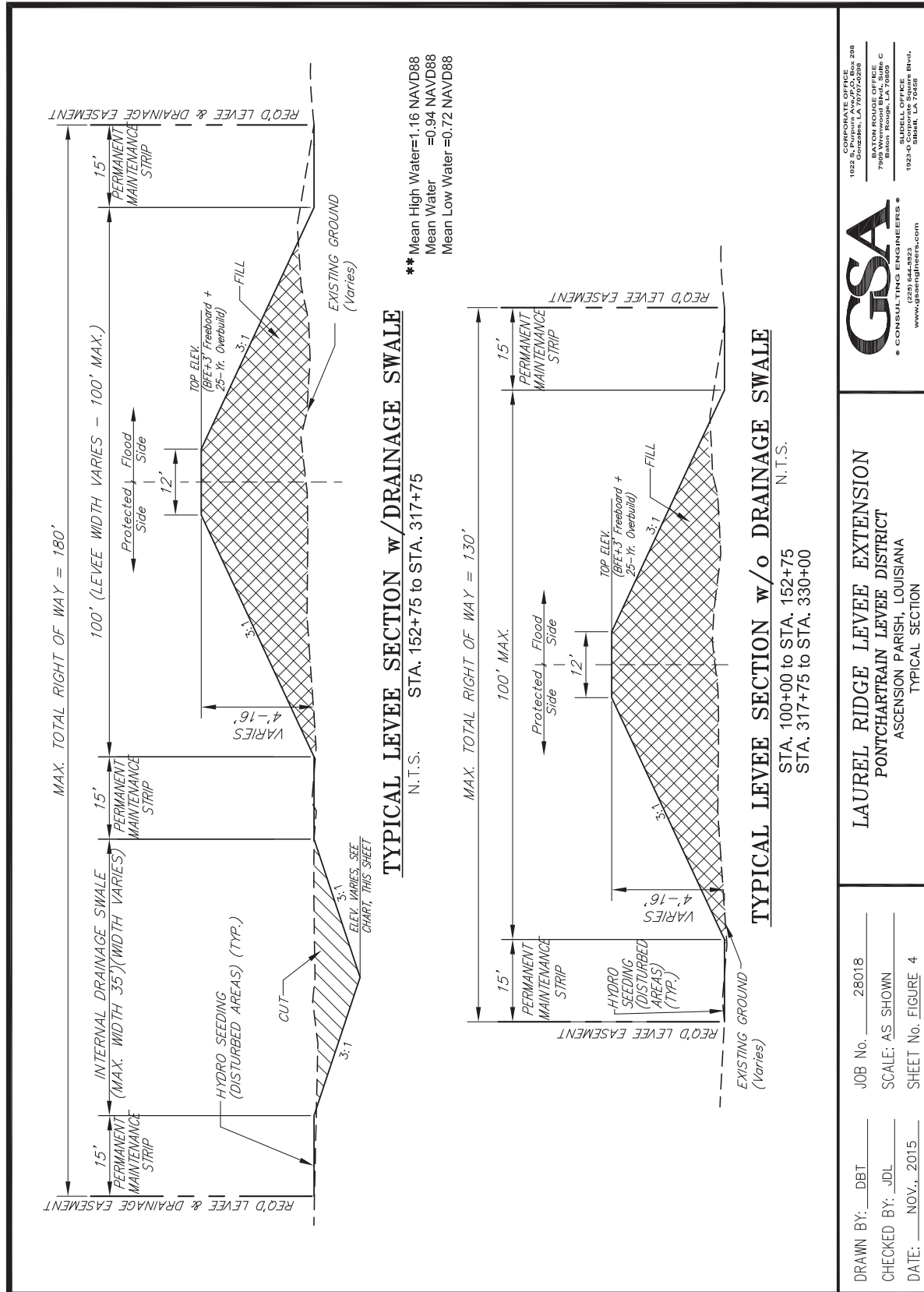
Total Estimated Project Cost: \$24M



Laurel Ridge Levee Extension, Ascension Parish



Laurel Ridge Levee Extension, Ascension Parish



Laurel Ridge Levee Extension, Ascension Parish



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Bayou Conway & Panama Canal Drainage Improvement Project Ascension Parish and St. James Parish

Project Location:

Bayou Conway and the Panama Canal drainage basin is located in southern Ascension Parish and northern St. James Parish, along the proposed Ascension Parish alignments of the Lake Pontchartrain West Shore Hurricane Protection Levee Project.

Project Description:

The purpose of the Bayou Conway and Panama Canal Drainage Improvement Project is to provide a reduction in the risk of flooding for the drainage basin that includes the area near the boundary between Ascension and St. James Parishes.

The modeling component of the project was utilized in the West Shore Hurricane Protection Levee project for the Bayou Conway crossing of the proposed Levee Alignment D. It now appears that Alignment D has effectively been removed as an alternative from consideration for the West Shore Hurricane Protection Levee. The modeling results are being utilized to make improvements to the gravity conveyance system (channel improvements) within the watershed, and to consider the potential for a forced drainage system (levees and pump stations) in the future.

The Bayou Conway watershed encompasses the Mississippi River Levee at the 81 mile point (mile marker 180) to its confluence with Blind River, and travels a distance of approximately 23.5 miles. The Panama Canal is an 8.3 mile diversion relief channel that cuts a more direct channel to the downstream end of Bayou Conway. The Conway/Panama System serves as the major conveyance channel for the southeastern portion of Ascension Parish and a portion of St. James Parish. The drainage basin encompasses an area of approximately 65 square miles, of which a large portion lies along the Mississippi River corridor. The entire drainage basin lies outside of the area served by the Marvin J. Braud Pump station located at McElroy, and its protection levees, which are located in Ascension Parish. The results of the Bayou Conway/Panama Canal Drainage Study are being utilized for proposed channel improvements, so that the risk of flooding can be reduced within the basin. The study and modeling efforts also form the basis for future basin planning and watershed management.

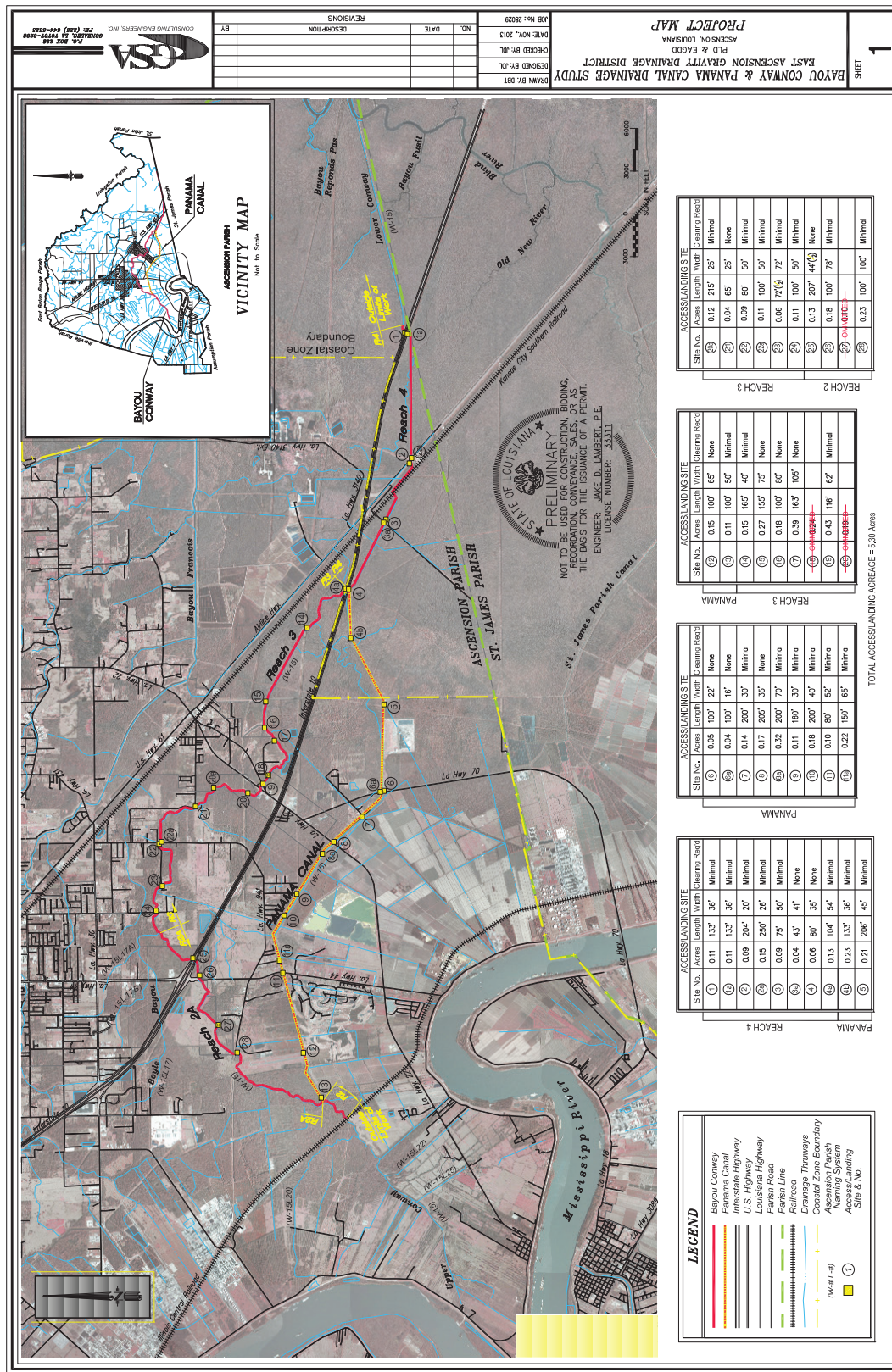
Project Status

The hydraulic analysis/study was completed in July 2011. The study determined the existing conditions within the basin based on varying downstream conditions and proposed necessary improvements to the channels to reduce the risk of flooding within the watershed. Downstream conditions were determined utilizing the existing data from existing gage data, FEMA Studies, and data generated from the Amite River Tributaries and Lake Pontchartrain West Shore projects. As a result of this investigation, channel maintenance and a dredging regime is recommended to provide the needed channel capacity for the gravity conveyance improvements within the Bayou Conway and Panama Canal watershed.

Permits for the Snagging and Clearing of the channels were received in the summer of 2014 to facilitate the drainage improvements. The actual improvements were completed by the fall of 2014, resulting in over 1,500 "targets" (logs, snags, lay-downs, etc.) being removed from the channels.

The next phase of work will be to begin the implementation of the proposed channel maintenance dredging. The proposed improvements consist of five phases of work that will open up the silted/clogged channels and provide needed capacity for the drainage system. The phases of work were divided by assessing the most urgent priorities determined in the modeling efforts.

Additionally, the potential for a forced drainage system including levees and pumps are being considered for future efforts.



Bayou Conway/Panama Canal Drainage Study



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Amite River Diversion Canal Weir Rehabilitation Ascension and Livingston Parishes, LA

Project Location:

The project is located at the north head of the Amite Diversion Canal and the Amite River in Ascension Parish and adjacent to Livingston Parish.

Project Description:

The existing weir is proposed to be raised in order to re-establish the desired flow distribution between the Lower Amite River and the Amite River Diversion Canal. The current flows to the Lower Amite River have substantially been reduced by the degradation of the weir. This weir rehabilitation project will involve rebuilding the existing stone weir and reshaping the existing boat way in order to obtain a normal flow distribution of water into the Lower Amite River and Diversion Canal. This will assist in restoring the ecosystem balance, and slow the deposition of excess silt in the river.

Project History

Drainage improvements on the Amite River were authorized by the U.S. Army District, New Orleans entitled Survey of Amite River and Tributaries, Louisiana and approved by Public Law 274.84, 84th Congress, August 1955.

The U.S. Army Corps of Engineers (USACE), New Orleans District submitted to the Lower Mississippi Valley Division, Vicksburg, Mississippi, the Amite River and Tributaries, Louisiana Design Memorandum NO. 1, General Design dated November 15, 1956. This document provided the design criteria for the Control Weir (Amite River Diversion Canal Weir). The General Design Memorandum describes a control weir with a total length of 1,500 feet at elevation 0.0 feet mean sea on the right bank of the Amite River at the head of the Diversion canal. The weir was then constructed on the ground prior to the Amite River Diversion Canal being dredged and completed at that location.

The Operation and Maintenance Manual for the Amite River and Tributaries, Louisiana, dated December 1963 states: the plan was modified at the request of the Ascension Parish Police Jury to add a boat way from Amite River to the Amite River Diversion Canal. This document shows the navigation opening (boat lane) as a trapezoid section with a 20-foot bottom width and a 1 vertical and 2 horizontal side slopes with an invert elevation of -5 feet.

In 2007 the U. S. Geological Survey (USGS) performed stream flow measurements on the Amite River upstream of the weir, lower Amite River Downstream of the weir and on the Amite River Diversion Canal. The USGS measured flow for high flow is 75% Amite River Diversion Canal (ARDC) and 23% Lower Amite River. The low measured flow distribution is 94% ARDC and -4% Lower Amite River. In March 2015, The Amite River Drainage and Water Conservation

District contracted with the firm GEC to perform a hydraulic design of the weir and a hydraulic analysis of flood events. The USGS measurements and the GEC modeled HEC-RAS analysis shows the existing weir does not meet the design requirements to retain a greater percentage of normal and low flows in the natural outlet of the Amite River.

GEC's hydraulic analysis resulted in a recommendation of a 10 foot wide weir with 3:1 slopes on the River side and 6:1 slopes on the Canal side of the weir. GEC modeled different boat lane open sizes and shapes to obtain normal flow distribution into the Lower Amite River. The resulting model indicated that a 20 wide bottom with 3:1 side slopes and a -6 foot elevation will produce the normal flow distribution needed to restore flow to the Lower Amite River.

The Pontchartrain Levee District (PLD) then contracted with Volkert, Inc. to implement the recommendations of the hydraulic analysis performed by GEC.

Description of Current Plan

The current project plan is to leave the existing structure in place and construct the new weir over the remaining stone. The current stone will serve as the filter layer for the new rock weir.

The current project modifies the boat lane to -6 invert elevation with a 20 foot wide bottom and 1 vertical and 3 horizontal side slopes as recommended in the hydraulic analysis. The 1700 foot weir will be at elevation 1.5 feet, 10 wide at the top with 3:1 side slopes on the river side and 6:1 sides slopes on the canal sides. A large scour hole on the Canal side of the boat lane was discovered and is being stabilized to prevent undermining of the new boat way and weir.

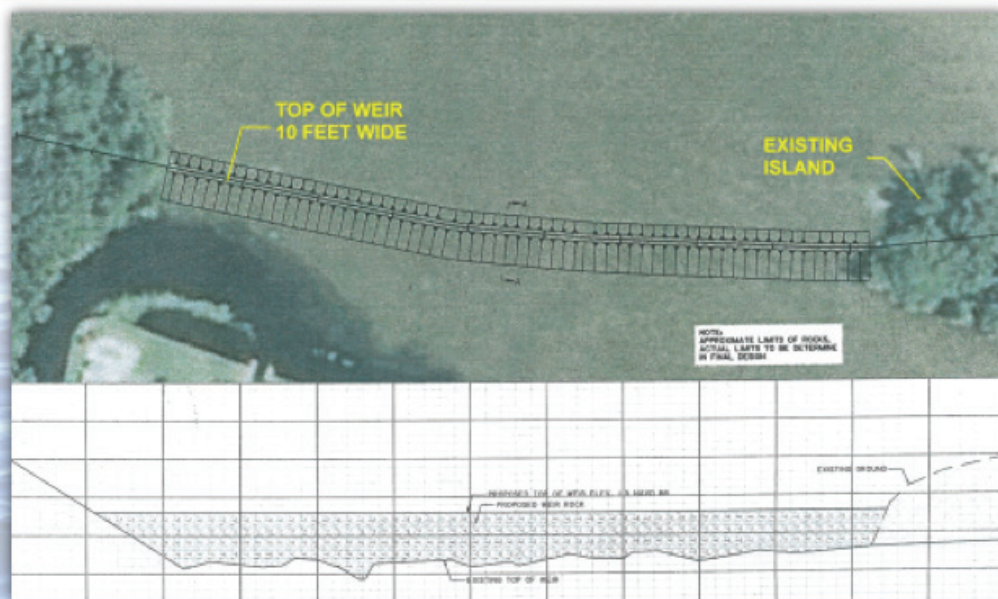
A geotechnical study of the weir area is to be performed by PSI, Inc., under contract to Ascension Parish, to provide a geotechnical opinion on the stability of the boat lane and proposed weir area. At the time of this report the geotechnical study has not been completed.

Existing Amite River Diversion Canal Weir

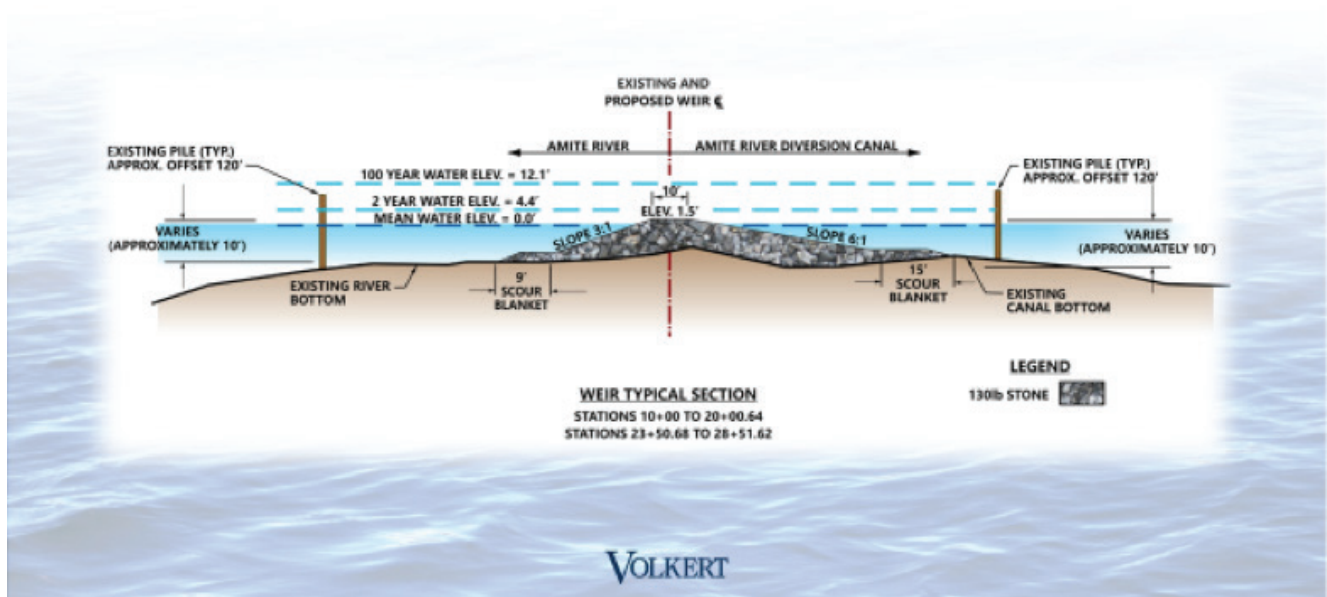


VOLKERT

WEIR PLACEMENT



Preliminary Design Of The Weir



VOLKERT

Existing Boatway on South End





2016

THE PONTCHARTRAIN LEVEE DISTRICT
PROGRESS REPORT

Lake Pontchartrain and Vicinity, Louisiana Project North of Airline Highway, St. Charles Parish 100 Year Hurricane Protection

Project Description:

The Lake Pontchartrain, Louisiana and Vicinity Hurricane Protection Project was authorized by Public Law 298, 89th Congress, 1st Session, approved on October 27, 1965. The original authorized design provides standard hurricane protection (SPH) from a fast moving Category 3 hurricane. The existing hurricane protection levee system, fully constructed to the original authorized design is currently being constructed to the new Corps of Engineers design standards which provides a 100 year level of protection, equivalent to a slow moving Category 3 hurricane. The project includes approximately 9.75 miles of earthen levee, four (4) drainage structures, two (2) swing gates, two (2) pre-cast concrete access bridges and five (5) floodwalls, one being a major floodwall under Interstate 310.

Project Location

The St. Charles Parish levee north of Airline Highway, a feature of the Lake Pontchartrain and Vicinity, Louisiana 100 Year Hurricane Protection Project, is located in southeastern Louisiana in St. Charles Parish on the East Bank of the Mississippi River. The levee project is oriented in an east-west direction and separates the developed areas in St. Charles Parish from the approximately 26,000 acres of wetlands on the north, or flood side of the levee, known as the "LaBranche Wetlands." On the levee system's eastern limits, the levee transitions into the Jefferson/St. Charles Parish Return Levee just south of the east-west runway extension of the New Orleans Louis Armstrong International Airport. Generally, the levee parallels Airline Highway to where, at the levee system's western limits, it traverses around the Shell Oil Company tank farm and transitions into the existing Bonnet Carre' Spillway East Guide Levee.

Project Status

As of January 2016, there are fifteen (15) projects that have been awarded by the Corps which include: five (5) levee projects, which include two (2) pre-cast concrete access bridge projects; five (5) floodwall projects; one (1) railroad swing gate project; and four (4) drainage structure projects which have all passed final inspections and are complete. On December 15, 2014, the Corps of Engineers awarded a contract for the armoring of two (2) of the levee projects. Those levee armoring projects are substantially complete. Remaining work includes some maintenance and necessary seeding and fertilizing in the spring of 2016.



Armoring of Levee Reaches LPV-05.2a and LPV-05.2b

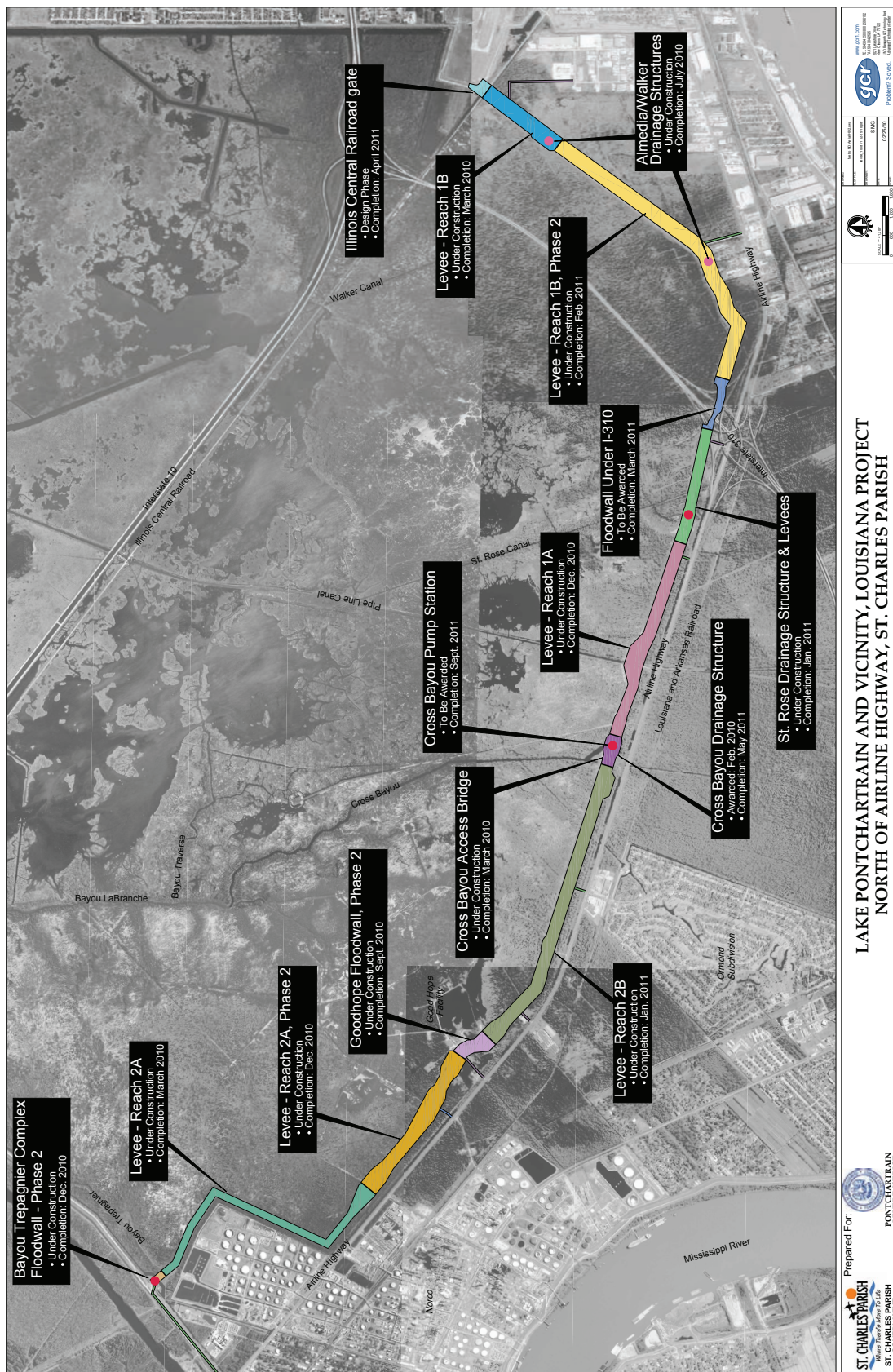


Cross Bayou Drainage Structure and Floodwall



Illinois Central Railroad Swing Gate

THE PONTCHARTRAIN LEVEE DISTRICT PROGRESS REPORT



**Map of Lake Pontchartrain and Vicinity Hurricane Protection Levee,
North of Airline Highway, St. Charles Parish (SCHPL)**



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THE PONTCHARTRAIN LEVEE DISTRICT
PROGRESS REPORT

St. Charles Parish East Bank Urban Flood Control Feasibility Study

Project Description:

The St. Charles Parish East Bank Urban Flood Control Feasibility Study is the result of recommendations from earlier work by the U.S. Army Corps of Engineers (Corps) and others to evaluate the need and costs for flood control improvements in the area upstream of the Lake Pontchartrain Hurricane Protection Levee. Alternatives currently being evaluated during this study include increasing the effectiveness of existing storm water conveyance systems and the construction of a new storm water pump station along the existing hurricane protection levee.

Project Status

The work on the Study Report was originally funded by the Corps and the Pontchartrain Levee District (PLD). The computer model for the existing and proposed conditions hydraulics and hydrology is complete. The results of the model are currently being reviewed by St. Charles Parish for use by FEMA to establish Base Flood Elevations throughout the East Bank.

Pump Stations

The PLD has constructed the Bayou Trepagnier Pump Station and the Cross Bayou Pump Station. Both are fully operational and have performed well during several named tropical events and numerous local rainfall events. The total construction cost of the Trepagnier Pump Station Project was \$8,500,000. The total construction cost of the Cross Bayou Pump Station was \$18,800,000.00. The PLD has finalized detail design reports and construction documents for an additional needed pump station, the Walker-Almedia Pump Station, and is currently in the process of procuring construction funding.

Project Schedule

The East Bank Urban Flood Control Feasibility Study is essentially complete. The Corps is currently working with FEMA in their efforts to develop risk assessment in the modeled area. The PLD has completed its commitment to the initial phase of the Feasibility Study. Some earmarked funds will be used for completion of specific improvements authorized by the Corps Study Team. Funding has been secured by the Corps to continue working with the Study, and work is currently underway to complete all remaining phases of the project. The cost share for construction of the East Bank Urban Flood Control Project features is 65% Federal and 35% Non-Federal.

CROSS BAYOU PUMP STATION

ST. CHARLES PARISH EAST BANK FLOOD CONTROL PROJECT

PROJECT DESCRIPTION

PURPOSE

The purpose of the project is to reduce localized flooding in the East Bank of St. Charles Parish.

DESIGN

The overall design capacity of the pump station is 1300 cfs (580,000 gpm).

The station will have five 250 cfs (112,000 gpm) and one 50 cfs (37,400 gpm) pumps.

The Airline Highway Borrow Canal will act as the conduit to feed the pumps. A canal will be built interconnecting the east and west sides of Interstate 310, its size depending on pumping capacities of Cross Bayou Pump Station and the future St. Rose Pump Station.

COST

Projected construction cost is \$18.8M.

- LaDOTD (7.3m)
- Pontchartrain Levee District (6.5m)
- Donation from Shell (2.5m)
- Donation from Motiva (2.5m)

PROJECT SPONSORS



MOTIVA
A CHEVRON COMPANY

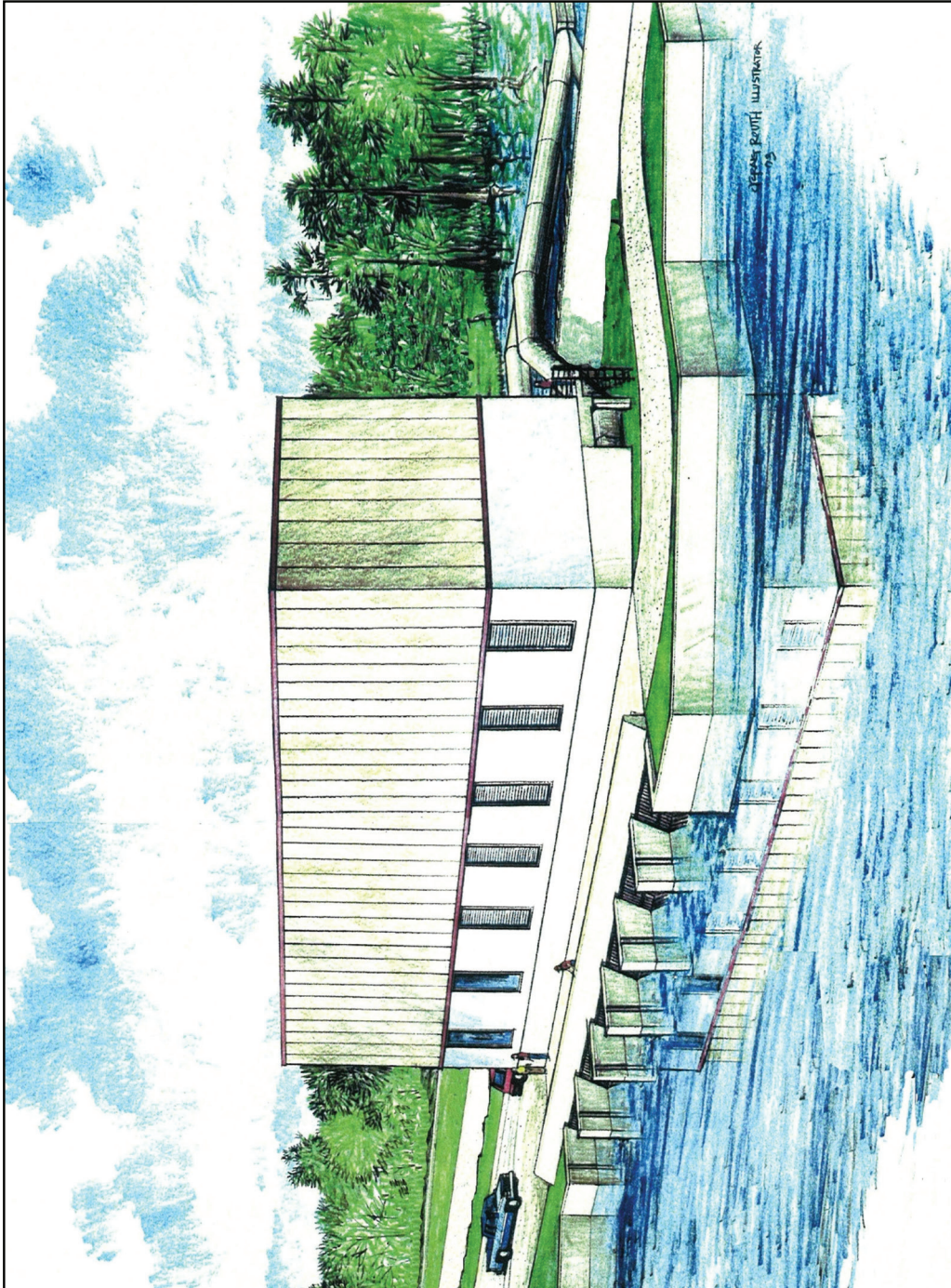


Illustration of the Cross Bayou Pump Station



St. Charles Parish Hurricane Protection Levee Shoreline Enhancement and LaBranche Wetlands Restoration

Project Location:

The project is located along the unprotected sections of St. Charles Parish Lake Pontchartrain shoreline.

Project Description:

The project's overall objective is to protect northern St. Charles Parish by stabilizing the Lake Pontchartrain shoreline from further erosion, enhancing the shoreline where possible, and restoring the LaBranche Wetlands to provide an integrated system of multiple lines of defense. The shoreline protection measures are integrated with interior marsh restoration for a comprehensive restoration strategy for the LaBranche Wetlands. Previous efforts have protected approximately 14,000 feet of shoreline. There was approximately 18,500 feet of shoreline which is not protected. The Coastal Impact Assistance Program (CIAP) constructed approximately 3,400 feet of shoreline with the East LaBranche Shoreline Protection project PO-43. This leaves approximately 15,000 feet of unprotected shoreline.

Project Status

Recent activity:

West LaBranche Shoreline Protection Project, PO-42

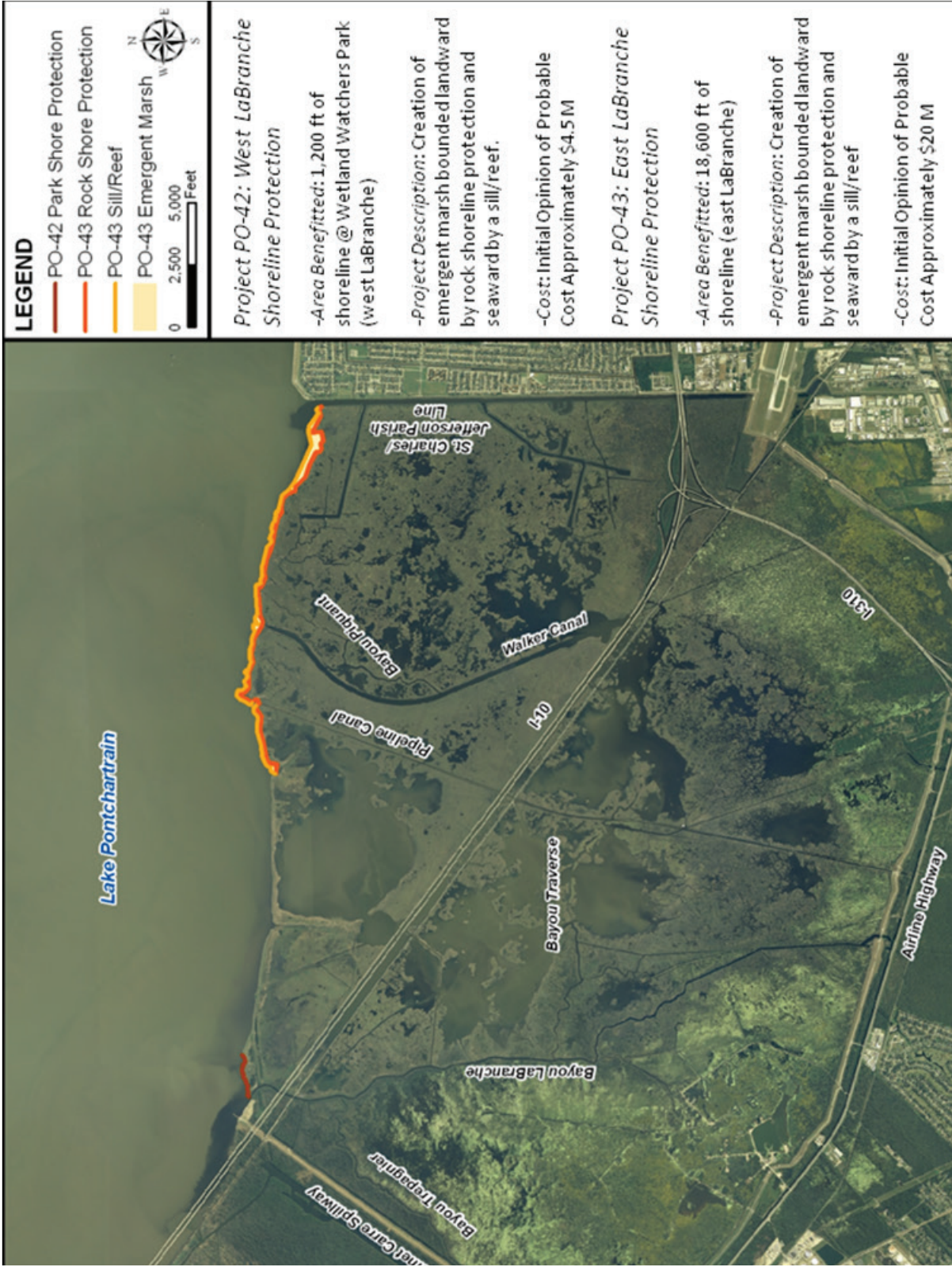
This project completed construction in June 2013. This project stabilized approximately 2,000 feet of shoreline.

East LaBranche Shoreline, PO-43

This project completed construction in July 2015. This project stabilized approximately 3,400 feet of shoreline.

There is approximately 15,000 lf of shoreline which has not been protected and is eroding at a rate of 9 feet per year. The permits and designs have been completed on the unprotected section of shoreline. This is a shovel ready project if funds can be allocated.

The unprotected section extends from Walker Canal east to Parish Line Canal, see attached image.



St. Charles Parish Hurricane Protection Levee Shoreline Enhancement and LaBranche Wetlands Restoration



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THE PONTCHARTRAIN LEVEE DISTRICT
PROGRESS REPORT

St. Charles Parish LaBranche Wetlands Restoration Fresh Water Diversion

Project Location:

The project is located in St. Charles Parish and involves the Mississippi River and the LaBranche Wetlands.

Project Description

The project would involve the construction of ~750-cfs hybrid pump-siphon structure on the Mississippi River (See Figure 1), with a conveyance structure aligned along a currently parish owned servitude from the Mississippi River to the Airline Canal. From there the water would then be pumped over the Lake Pontchartrain and Vicinity (LPV) St. Charles Parish Hurricane Protection Levee (SCPHPL) into the LaBranche wetlands. The Pontchartrain Levee District (PLD), St Charles Parish and the US Army Corps of Engineers (Corps) are currently modifying the current permits to the (SCPHPL) pump stations in order to officially dedicate at least 50% of available pumping capacity at each location for coastal restoration purposes. Ultimately the pump stations located along the SCPHPL will be owned and operated by the levee district. The hybrid pump-siphon approach would operate as a siphon conveyance by default, with the structure reverting to a pumped conveyance during low river stages.

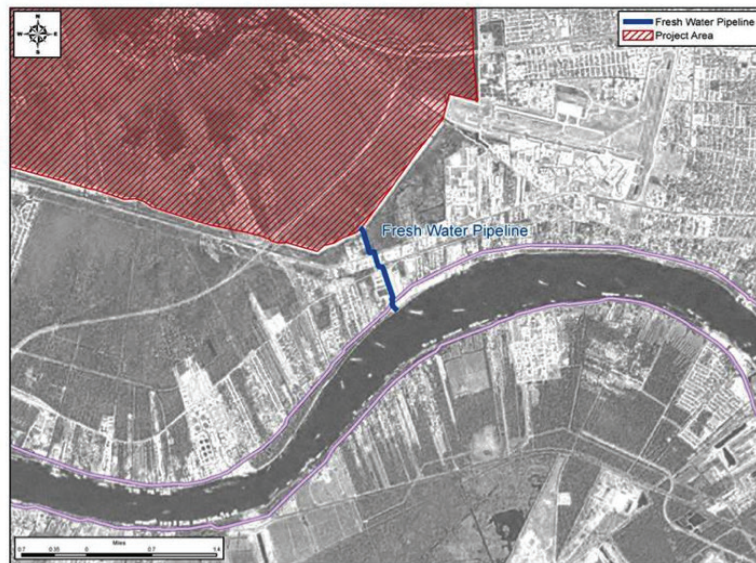


Figure 1: Project Layout



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THE PONTCHARTRAIN LEVEE DISTRICT
PROGRESS REPORT

St. Charles Parish LaBranche Wetlands Restoration Salinity Control Structure

Project Location:

The project is located in St. Charles Parish in the LaBranche Wetlands where I-10 intersects Parish Line Canal.

Project Description

The project involves the construction of a 635 ft. barrier to limit water entering the wetlands at the location shown below. The proposed barrier would be positioned on top of an existing barrier placed in 1987 as part of mitigation for the I-310 split. The existing barrier settled and is no longer serving its purpose.

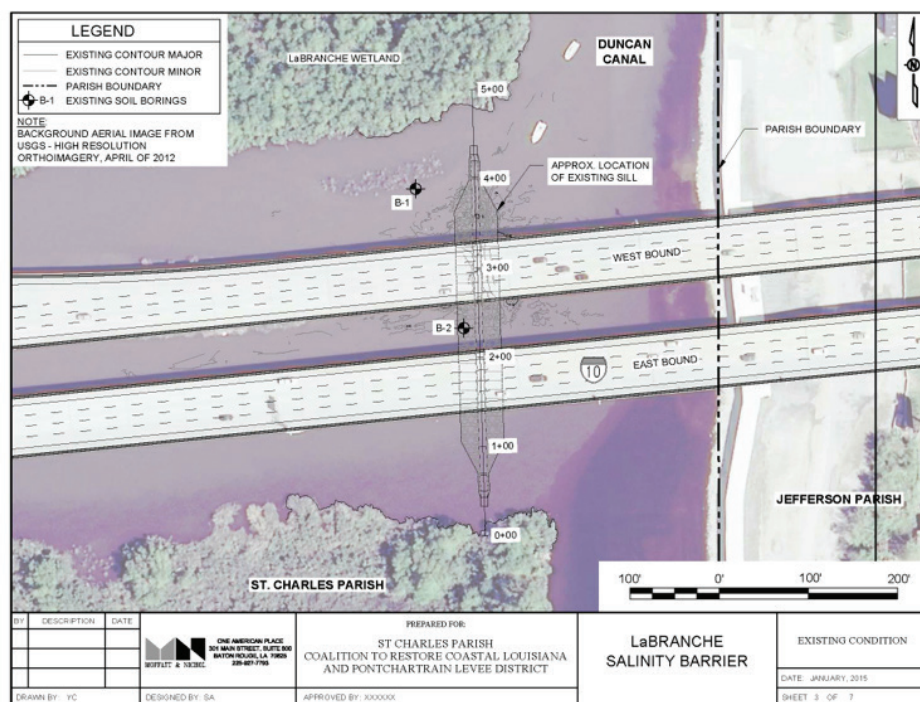
Project Status

The project was approved as part of the State of Louisiana Coastal Protection and Restoration Authority (CPRA) Community Partnership funds. The Coalition to Restore Coastal Louisiana applied for and were granted \$350,000 to administer, design and construct this project. The Pontchartrain Levee District (PLD) has provided

in kind services and also funded a portion of the design and data collection.

St Charles Parish has allocated \$100,000 for construction of this project.

The project design phase is complete and all permits have been acquired. Current work involves finalizing the land rights agreements. Once complete the project will be advertised by St Charles Parish.



Project location and layout



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THE PONTCHARTRAIN LEVEE DISTRICT
PROGRESS REPORT

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2016

THE PONTCHARTRAIN LEVEE DISTRICT PROGRESS REPORT



PROJECT FUNDING

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www.leveedistrict.org



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2021 Lakeshore Drive, Suite 500
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504-304-2500 fax 504-304-2525
www.GCRincorporated.com



2016

THE PONTCHARTRAIN LEVEE DISTRICT
PROGRESS REPORT

West Shore – Lake Pontchartrain, LA Hurricane and Storm Damage Risk Reduction Project

Project Funding:

Funding Requirements for FY2016

In 2011, the PLD secured \$10,830,000 in Local Match funds through the Louisiana Capital Outlay Program and has executed contractual agreements with the affected Parishes to provide the Local Match for this project. The Feasibility Study Report has been completed and the Chief's Report issued. The USACE needs Federal funding to start Preliminary Engineering Design (PED); the Local Match funding is in place to begin PED. The FY2016 request is based upon normal PED funding of newly approved projects.

FY 16 Federal Funding Needed for PED \$1,500,000

Bayou Conway & Panama Canal Drainage Improvement Project Ascension Parish & St. James Parish

Project Funding:

The Pontchartrain Levee District and the East Ascension Gravity Drainage District have entered into an intergovernmental agreement that split the funding of the Drainage Study between each entity. Funding for the implementation of the recommendations will be funded by the EAGDD and PLD.

Estimated Project Construction Costs:

The preliminary project cost estimates for the snagging and dredging of the selected channels was divided into several phases. The priority phase of work is approximately \$2.0M and consists of targeted areas that will have the greatest flood risk reduction and the least environmental impact. Subsequent phases could occur over a period of time, as funds become available. Costs range from \$5-8M depending on the project permitting and material disposal methods.

Laurel Ridge Levee Extension Ascension Parish

Project Funding:

Ascension Parish has previously funded several Master Drainage Plans that have included this levee extension project in the overall plan. Some preliminary geotechnical investigations were performed and funded by the East Ascension Gravity Drainage District (EAGDD), an entity of Ascension Parish.

The Pontchartrain Levee District (PLD) has funded the Laurel Ridge Levee Extension Reconnaissance Study, and the preliminary permitting efforts.



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THE PONTCHARTRAIN LEVEE DISTRICT
PROGRESS REPORT

A Memorandum of Understanding (MOU) has been executed between the PLD and EAGDD, that states that the PLD will be responsible for the funds required to complete the engineering, design, and permitting phases of the proposed project, and the EAGDD will provide the funds for the environmental impacts, real estate acquisition, and construction phases.

Project Estimated Costs:

Alignment Option 2- The total preliminary estimated project cost for this alignment option is \$24 million dollars.

Amite River Diversion Canal Weir Rehabilitation Ascension and Livingston Parishes, LA

Project Funding:

The Amite River Drainage and Water Conservation District (ARDWCD) will be administering the construction contract for the weir rehabilitation project. The engineer's current estimate of construction cost is considerably higher than initially anticipated by the PLD or ARDWCD. Therefore, upon receipt of the geotechnical report, alternate designs may be considered. Ascension Parish, ARDWCD and other agencies are willing to participate in funding, however a shortage remains to in order meet the engineer's estimate of construction costs.

Lake Pontchartrain and Vicinity, Louisiana Project North of Airline Highway, 100 Year Hurricane Protection St. Charles Parish

Project Funding:

The Lake Pontchartrain and Vicinity, Louisiana 100 Year Hurricane Protection Project is a cost-shared project between the U.S. Army Corps of Engineers (Corps) and the Pontchartrain Levee District (PLD), the local Non-Federal sponsor. For construction of the earthen levee sections, the Corps is responsible for 65% of the project costs and the PLD is responsible for 35% of the project costs. The project costs for the drainage structures, floodwalls and pre-cast access bridges are 100% federally funded. Due to the Corps credited amounts accumulated by the PLD over a 20 year period, the financial impact to the PLD for this new construction is expected to be minimal to the PLD.

St. Charles Parish, East Bank Urban Flood Control Feasibility Study

Project Funding History:

The cost sharing for the original Feasibility Study was 50% Federal and 50% Non-Federal. Total funding to date for the Study is \$5,400,000 (\$2,700,000 Federal and \$2,700,000 Non-Federal). In the aftermath of Hurricane Katrina, large portions of the Feasibility Study were used in other projects, most notably by the Interagency Performance Evaluation Taskforce (IPET), with additional Federal funding being allocated to support those projects. Currently, the Feasibility Study is serving as the basis for an updated assessment of the area by FEMA for use in determining risk for their rate maps.



2016

THE PONTCHARTRAIN LEVEE DISTRICT
PROGRESS REPORT

At this time, no Federal funding has been authorized for the construction of the East Bank pump stations.

Funding Requirements for FY 2016:

The expected cost sharing for the design and construction of two major pump stations, Bayou Trepagnier and Cross Bayou Pump Stations, is 65% Federal and 35% Non-Federal; however, at this time, no Federal authorization is in place for the construction of any of the East Bank pump stations. To date, the Pontchartrain Levee District has allocated \$32,000,000 for the design and construction of Lake Pontchartrain Hurricane Protection Levee Pump Stations. The Bayou Trepagnier Pump Station construction was completed in FY 2004 and the Cross Bayou Pump Station construction was completed in FY2011. Both pump stations have been credited with significant reductions in protected-side flooding during numerous storm events since 2004, including Hurricane Katrina.

The third critical primary hurricane protection pump station, the Walker-Almedia Pump Station, has been fully designed and is awaiting construction funding. This pump station is the third of four stations cited and recommended in the Corps Design Memorandum No. 18, the basis for the East Bank Urban Study.

The Non-Federal funding for the original East Bank Urban Flood Control Study Project has been allocated and expended by the Pontchartrain Levee District for their portion of the effort including the Feasibility Study. The Feasibility Study consists of developing an alternative conditions hydraulics and hydrology model and developing, modeling, and evaluating various alternative mitigation efforts. The remainder of the PLD commitment was utilized on improvements cited in the Feasibility Study.

Funding Requirements Outside the East Bank Urban Flood Control Study:

During FY 2016, the Corps should release its recommendations for the alternative mitigation analyses portion of the East Bank Study. The Non-Federal funds associated with the design portion of this effort have been allocated and expended, and much of the permitting and preliminary design work has already been undertaken. Upon completion of the analyses and design, funding will be required for construction of the mitigation projects. The expected total cost of the mitigation construction is \$40,000,000 over five years. Additionally, the expected cost for the design and construction of the remaining two Lake Pontchartrain Hurricane Protection Levee Pump Stations will be \$50,000,000, and cost shared 65% Federal and 35% Non-Federal. The total cost of all portions of this project not currently authorized for Federal funding is \$122,000,000 over the next five years.

St. Charles Parish Hurricane Protection Levee Shoreline Enhancement and LaBranche Wetlands Restoration

Project Costs:

Once this East LaBranche Shoreline Protection Project is complete there will be a remaining 15,000 feet of shoreline which remains unprotected. The opinion of probable cost to complete the shoreline protection is approximately \$18 Million.

Project Design Funding:

In January 2010, the Pontchartrain Levee District (PLD) Board authorized \$598,301.00 for the design of approximately 20,500 feet of shoreline protection and enhancement.

Project Construction Funding:

The Coastal Impact Assistance Program is partially funding these projects. In total CIAP has \$6,530,916.99 allocated to these two projects. As mentioned above the West LaBranche project has been constructed. The amount of funds allocated to the East LaBranche project is \$1,753,816.



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THE PONTCHARTRAIN LEVEE DISTRICT
PROGRESS REPORT

In addition, the State elected to appropriate \$2 million of State CIAP funds to the East LaBranche Project. Thus, a total of \$3,753,816 was allocated to the East LaBranche Shoreline Project.

There is approximately 15,000 lf of shoreline which has not been protected and is eroding at a rate of 9 feet per year. The permits and designs have been completed on the unprotected section of shoreline. This is a shovel ready project if funds can be allocated.

Using the bids obtained from the two constructed projects an opinion of probable costs were developed for the unprotected section. It is anticipated \$18 million is needed to protect the remaining shoreline.

St. Charles Parish LaBranche Wetlands Restoration Fresh Water Diversion

Project Costs:

The preliminary opinion of probable cost based on the schematic design of the diversion piping and canal work is approximately \$21 Million.

Project Design and Construction Funding:

Project funds have not been allocated. Project has been submitted to the CPRA for consideration in the 2017 Master Plan.

St. Charles Parish LaBranche Wetlands Restoration Salinity Control Structure

Project Costs:

The total cost of the project to administer, design, permit and construct is estimated at \$450,000.

Project Design:

Project administration, design and permitting is fully funded (\$130,000).

Construction Funding:

All construction funds have been allocated for this project.

