



Riverfront Development  
Design Study

Prepared By:



Project No. 18-062



October 1, 2019

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## **Purpose and Authorization of the Design Study**

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The purpose of this study was to consider and develop feasible options for a riverfront facility along the Mississippi River in St. Francisville, Louisiana. The property is owned and maintained by West Feliciana Parish who intends to establish a “gateway” to the Mississippi River for residents and tourists. The primary objective for site development is to construct port infrastructure to dock the riverboats that frequently stop in West Feliciana Parish. Additionally, there is a desire to develop the site to provide a recreational area for the residents of St. Francisville and the Parish of West Feliciana and promote tourists to the area. West Feliciana Parish recognizes this project is long-term and will have multiple phases of design and construction for full implementation.

West Feliciana Parish’s innovative vision for the project site prompted the Parish to request a front-end design study to explore conceptual solutions for the design and development of the riverfront property. Infinity Engineering Consultants, LLC submitted a Statement of Qualifications (SOQ) on June 18, 2018 in response to West Feliciana’s Request for Qualifications (dated May 21, 2018) and thereafter was selected to serve as the project designer/planner in completion of the project. The SOQ included a proposed design team which consists of ELS Landscape Architecture Studio, Grout Sanchez Design, LLC, and ELOS Environmental, LLC.

Following the notice of award, Infinity, in collaboration with the design team, provided a proposal to West Feliciana, dated March 25, 2019, for performing this design study. The proposal outlined the specific tasks that would be undertaken, which are further discussed in the methodology section of this document. West Feliciana Parish accepted this proposal and thereafter an Agreement authorizing this study was executed by West Feliciana and Infinity, dated April 23, 2019.

The contents of this report discuss the design team’s recommendations for the West Feliciana Riverfront Development.

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## EXECUTIVE SUMMARY

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The West Feliciana Riverfront Development Design Study was conceived as the first phase of a multi-phase design project to provide a path forward for the Parish of West Feliciana to improve access to and from the Mississippi River by constructing port access and docking facilities for riverboats as well as providing cultural and recreational access for residents and visitors alike.

The proposed project site offers a unique opportunity for the public due to the location on the Mississippi River and the presence of Bayou Sara and its relationship to West Feliciana. The 72 acre riverfront property is the only site on the east bank of the Mississippi River between Baton Rouge and Natchez which allows direct public access to the river. Additionally, Bayou Sara intersects the Mississippi River near the West boundary of the property. Once a town of its own, Bayou Sara is now a source for recreational water sports such as kayaking and fishing.

The Design Study looked at existing conditions including, but not limited to, site topography, the fluctuation of Mississippi River elevations, and design parameters as set forth by the anticipated riverboats. That data, combined with input from Parish officials, residents of St. Francisville and West Feliciana Parish, and riverboat cruise executives, resulted in the conceptual development as presented herein. This report includes the long-term visions and goals for the proposed project site; it is understood that only a portion of what is presented will be undertaken within the follow-on design portion of this project. The immediate design features will focus on the construction of improved riverboat docking facilities. However, the goal of this design study is to provide a conceptually developed site to provide a gateway to West Feliciana for marine and commercial interests, as well as residents and tourists desiring to visit the Mississippi River front.

The Design Study also incorporated a Section 106 review to consider the proposed project site's historical and archaeological background and determine a proposed survey method, which has been presented to the Louisiana State Historic Preservation Office (SHPO) and the United States Army Corps of Engineers (USACE). Prior to construction, several USACE permits will need to be obtained.

The proposed concept includes, in its full implementation, riverboat docking facilities, a welcome center with passenger terminal restaurant, parking, bus access, fishing recreational amenities, walking trails, pavilions, an amphitheater, a kayak/small boat launch, primitive camp sites, a children's play area, and a small boat launch into the Mississippi River, separate from the riverboat docking area.

Considering the current funding capabilities, the recommended scope for Phase I Construction will be limited to the riverboat docking facilities which include, a floating dock structure and walkways, a fixed concrete platform which will serve as a passenger terminal, and a raised pathway for buses transporting riverboat passengers to and from the facility.

Phase I Construction is estimated to cost \$2,919,000 with a total estimated project capital expenditure is estimated to be \$4,059,150 (including Permitting, Engineering & Design, Construction, and Contingency). The proposed project is anticipated to take 30 months to design, permit, and construct.

The total estimated project capital expenditure for all future implementation elements (not included in Phase I) is \$13,970,225. An anticipated construction schedule for the full scope has not been developed, as funding is not yet available.

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## 1. INTRODUCTION

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### 1.1 Design Team

#### A. Prime Engineering Consultant

Infinity Engineering Consultants LLC, Metairie, LA; responsible for leading the Design Study and serving as the design manager for the conceptual development of the riverfront and dock

#### B. Landscape Architecture

ELS Landscape Architecture Studio, Baton Rouge, LA; responsible for overall site planning and the development of the design study renderings

#### C. Architecture

Grout Sanchez Design, LLC, (GSD) Baton Rouge, LA; responsible for collaborative site planning and for design of the welcome center and passenger terminal

#### D. Permitting & Wetlands Delineation

ELOS Environmental, Hammond, LA; responsible for performing the Section 106 Review and providing information on future permitting scope

### 1.2 Methodology

The West Feliciana Riverfront Development Design Study was broken down into the following distinct parts:

#### A. Record Document Review

The design team was provided with area maps for the proposed project area along with general concept sketches that were previously prepared for West Feliciana Parish. Additionally, the following sources were used for reference and research in order to gain a general understanding of the existing project site conditions and or proposed project parameters:

- i. Navigational charts and hydrographic surveys available through the United States Army Corps of Engineers (USACE);
- ii. Google Earth images;
- iii. Reference drawings and documentation provided from American Cruise Lines, American Queen Steamboat Company, and Viking Cruises; and
- iv. Several other riverfront concept sketches prepared previously for West Feliciana Parish.

#### B. Community Outreach Meeting

On April 30, 2019, West Feliciana Parish hosted a community outreach meeting attended by leaders of the Parish, representatives from Infinity Engineering, ELS, and GSD, and residents from across the Parish. The goal of this event was to present the project to the public, provide site information, discuss the scope of work and estimated project schedule, and gather public

input from the residents. It is understood that although one of the main priorities for this development is to improve access for tourists visiting the area on riverboat cruises, it is also equally important to provide a site for the residents to occupy and enjoy.

C. *Design Team Charrette*

The Design Team met several times during the course of the Design Study for intensive meetings (charrettes) to review data and develop the working designs, for site visits, and for meetings with the stakeholders to present progress on the design options and receive feedback.

D. *Coordination with Riverboat Executives and Viking Cruises*

The design team was tasked with coordinating with representatives from the three riverboat companies that will utilize the proposed project site: American Cruise Lines, American Queen Steamboat Company, and Viking Cruises.

There were two conference calls with representatives of the design team and Mr. Paul Taiclet, Vice President of American Cruise Lines, Inc. on May 29, 2019 and on September 10, 2019. The purpose of these conversations was to share general design concept ideas and get feedback on how the site could be developed to best serve American Cruise Lines' needs. Mr. Taiclet expressed the desire for the facility to allow for the possibility of up to three boats at once, whether they approach the berth at the side of the vessel (parallel to the river) or the vessels utilize bow landings near the shore (with the ship being at a 30 degree angle in the river). At other sites, bow landings are the preferred method to safely moor the vessel for passenger loading and unloading. Following the call, Mr. Taiclet provided an electronic drawing of all three vessels for our reference.

There was a separate conference call on June 19, 2019, with members of the design team and Mr. David Simmons, Consultant to Viking River Cruises. This design study does not include the design or development of Viking's dock; however, the site will serve Viking and their customers as they arrive and leave St. Francisville. For this reason, Mr. Simmons was consulted on the size of the new vessel and dock, as well as additional services that could potentially be provided at the site.

Representatives from American Queen Steamboat Company, Mr. Gary Frommelt, Vice President of Marine Operations, and Ms. Ruth Richebacher, Senior Director of Product Development, were contacted by the design team, however, at the time of this report, a conference call was unable to be arranged due to scheduling conflicts. These efforts will continue per the request of West Feliciana officials.

All three riverboat companies will continue to be consulted during the detailed design, should West Feliciana Parish choose to proceed with the next phase of this project.

E. *Preliminary Environmental and Permitting Review*

Preliminary research indicated that the proposed project site may contain both historic and prehistoric archaeological deposits and such deposits have been previously identified adjacent

to the proposed project area. Due to the historical nature of the site, it was determined that a Section 106 Review (as required by the National Historic Preservation Act of 1966) was required for the proposed riverfront development.

ELOS Environmental performed a review of historical/background research of existing data including historical maps and aerial photographs, local and regional public records, and archaeological site files. The intent of the review was to identify previously recorded cultural resources sites, historic standing structures, cemeteries, and National Register of Historic Places. Additionally, ELOS assessed the environment and physical setting of the properties to determine the potential for cultural resources to be located within the proposed project area.

ELOS prepared a report with their findings and recommendations for survey scope and methodology. The report was reviewed by the design team and then submitted to the Louisiana State Historic Preservation Office (SHPO), who notified ELOS of their concurrence with the proposed. Additionally, the LA SHPO approval and Section 106 review report was forwarded to the USACE. A representative from USACE was consulted and reported no concerns with the proposed survey scope, only stating that the entire “Area of Potential Effect” surveyed should cover the entirety of the project’s impacts. The Section 106 review report is attached in Appendix B.

F. Preliminary Conceptual Review

Following the community meeting and design charrette, two different site plan options were presented and reviewed in a meeting with the design team and West Feliciana Parish officials on June 18, 2019. The discussion centered around the positives and negatives of each concept and ultimately, the design team was provided with feedback to proceed with preparing the final conceptual plan discussed later in this report.

A draft version of this report was submitted to West Feliciana Parish on July 31, 2019. Following that submittal, the design team received comments on the report contents and several meetings and discussions were conducted in order to address each comment and provide West Feliciana with a final Design Study that satisfies the project requirements.

G. Exploratory Site Visits

Upon the request of West Feliciana, Infinity traveled to Greenville, Mississippi on September 24, 2019, to meet with representatives from the Town who maintain the riverfront facility. The riverboat docking area is located on Lake Ferguson and oxbow lake connected to the Mississippi River. The facility is a large, sloped concrete slab with a variety of deadman anchored below the concrete for mooring. The American Harmony was docked during our visit and the general mooring of the vessel was observed. This facility is also used for by the community as a boat ramp and fishing.

Two additional exploratory visits are currently scheduled; meetings at the Beale Street Riverfront in Memphis, TN are scheduled for October 7, 2019 and a visit to the Tunica County

River Park in Robinsonville, MS is planned for October 8, 2019. It is anticipated that knowledge gained from these site visits be applied during the detailed design phases of this project.

*H. Engineering and Project Schedule*

The design team used previous project experience and industry research to develop an estimated critical path schedule of the final design concept from design through construction. The schedule included the major components of the project: detailed engineering and design, permitting, bidding, and construction.

*I. Estimated Project Cost*

Opinions of probable construction cost for each design element was generated using manufacturer estimates and experience from similar projects. Two separate cost documents were prepared: Phase I and Future Development. A Phase I estimate included costs of engineering, permitting, and construction of only the design features expected to be included in the initial development of the site. Additionally, all other elements included in the fully developed concept were included in a Future Development cost document.

## 2. PROJECT SITE AND TOURISM IMPACTS

### 2.1 Riverfront Property

The existing project area consists of 72 acres of land located at the Mississippi River Old Ferry Landing near the mouth of Bayou Sara. The property boundaries are Bayou Sara (West), River Road near the Oyster Bar and US Army Corps of Engineers Concrete Yard (North), a private road presumably owned and operated by USACE (East), and the Mississippi River (South). Ferdinand Street is located near the middle of the site and runs perpendicular to the River. It is approximately 3000 feet in length and is currently undeveloped with no visible obstructions.



Photo 1 - Site Aerial

West Feliciana wishes to develop the riverfront property to include improved access from St. Francisville via Ferdinand Street, a docking facility and passenger terminal for riverboats, and amenities such as parking, a welcome center, fishing piers, a boat/kayak launch and landscaping for tourists and residents to enjoy.

West Feliciana is a top tourist destination in the State of Louisiana and the number of riverboat calls is continuing to increase yearly. Currently, riverboats are only able to dock at the site during low river conditions when the site is most accessible. West Feliciana wishes to improve access by constructing a docking facility for the vessels that will not only allow year-round access, but also potentially allow the opportunity for more than one riverboat to safely dock at a time. Currently, the riverboats utilize an existing concrete boat ramp and deadman further inland when docking at the site.

The project scope was to provide West Feliciana with design recommendations for the new riverfront development that would address the current and future needs of West Feliciana. The scope terminated

at the approximate intersection of Ferdinand Street and River Road; determining a solution for year-round access from St. Francisville was not included.

## **2.2 Bayou Sara**

Bayou Sara is both a body of water and a physical location in the history of this site. The bayou empties into the Mississippi River at the western edge of the project site. Historically, the site was once a part of a thriving town called Bayou Sara. Beginning in the late eighteenth century, Bayou Sara was a bustling port along the river, and, while often described as “notorious,” it was at one time equal in prominence along the river to Saint Francisville itself. In the early part of the last century, the town experienced significant flood damages and was abandoned.

Presently, the bayou provides recreational opportunities for small boats such as kayaks and canoes, along with access to the River. Residents of St. Francisville as well as West Feliciana officials expressed the desire to include an educational element within the development project that will portray the history of the site to visitors while they are enjoying the present-day amenities.

## **2.3 Mississippi River**

The Mississippi River acts as one of two access routes for the public visiting the riverfront development. The property is located on the left descending bank of the Mississippi River at mile marker 266 Above Head of Passes (AHP). The river is approximately 3700 feet wide in this location, not including the batture land above low water.

The USACE records elevation data (referred to as “river stage”) for the Mississippi River. The nearest data collection point is located at river mile 260.3, roughly 5 miles south of St. Francisville. The river stage at the project site varies from an average low water elevation of (+)10’ and an average high-water elevation of (+)45’. The record high stage reported at the St. Francisville gage was 53.48’ on May 18, 2011.

Currently, access to and from the Mississippi River for both riverboat passengers and local residents is via an existing sloped concrete boat ramp located at the end of Ferdinand Street. In the event that a riverboat is docked in this area, the boat launch becomes unusable to the community, and thus, a separate area for small boats and fisherman is a goal for this design study. Additionally, the boat ramp is only accessible in low water conditions; improved riverboat access during all water events is also a design study goal.

## **2.4 Riverboats**

St. Francisville is a popular tourist destination, especially via riverboats that cruise up and down the Mississippi River. It is reported that there are currently over 15,000 riverboat passengers that visit the town and parish yearly. According to West Feliciana Parish’s Request for Proposal, dated May 21, 2018, riverboat vessel traffic was up by 50% from fiscal year 2015 to fiscal year 2018. It is understood that the West Feliciana Parish Tourist Commission and Parish anticipates 110 riverboat calls for the 2019 fiscal year. After the new docking facility is built, it is anticipated that the project site will see approximately 4-6 riverboats per week, which has the potential to result in 32,000 to 35,000 yearly visitors. The number

of vessels calls is expected to increase to over 150 vessel calls annually in future years as infrastructure becomes available. Future U.S. Mississippi River Cruise market for river tourism is currently in high demand and this market trend is anticipated to continue to increase as new vessels are added to the fleets on the Mississippi River.

There are two riverboat companies that operate on the Mississippi River with stops at St. Francisville: The American Queen Steamboat Company and American Cruise Lines. Phase I of the riverfront development will be the construction of a riverboat docking facility to service riverboats from both companies.

*A. The American Queen Steamboat Company*

There are three vessels from the American Queen Steamboat Company that currently dock in St. Francisville: The American Duchess, The American Queen, and The American Empress. The largest of these is the American Queen, which is approximately 420 feet in length, 85 feet in width and has a capacity of 450 passengers. A fourth vessel, The American Countess, is reportedly being added in 2020.

*B. American Cruise Lines*

As of 2019, there are currently three riverboats from American Cruise lines operating along the Mississippi River (Queen of the Mississippi, America, and America Harmony), with an additional boat anticipated to be added in both 2020 (American Jazz) and 2021 (Name TBD). The largest of their vessels is approximately 330 feet long and capable of holding 190 passengers.

In addition to the American Queen Steamboat Company and American Cruise Lines, Viking Cruise Lines intends to introduce a new vessel to the Mississippi River which will stop in St. Francisville. It is understood that Viking Cruise Lines is working towards an agreement with West Feliciana to design and construct a dedicated docking structure to support their new Mississippi River vessel.

This design study does not include the design or development of Viking's dock; however, the site will serve Viking and their customers as they arrive and leave St. Francisville. For this reason, an approximate location of the Viking dock is shown on the conceptual plans.

### 3. DESIGN PARAMETERS

The goal of the West Feliciana Riverfront Development Design Study was to provide a preliminary design concept for the riverfront property as a whole. This includes recommendations for improved riverboat docking facilities, parking for recreational activities and tourism vehicles, recreational spaces for residents and tourists, and improved kayak and fishing boat launch capabilities. The concept is a long-range vision for the site which provides a roadmap for how to develop the site from bare land into a cultural hub that marks itself as a special place along the Mississippi River. This section discusses each site element taken into consideration during the preliminary design process.

#### 3.1 General

The history of the site, the Town of St. Francisville, and West Feliciana Parish are all of great importance to residents and visitors alike. The site should feature information about the history and ecology of the site as part of all elements to infuse the culture and history of the region to enhance the user experience.

#### 3.2 Bayou Sara

Bayou Sara’s location at the riverfront property presents several limiting factors to be considered in the development of the site. The bayou can at times be very shallow, and therefore, it should not be relied upon for boat docking, other than smaller boats such as canoes and kayaks. Additionally, it has been reported that the bayou naturally deposits silt from its mouth along the shoreline of the property.

#### 3.3 Mississippi River

The Mississippi River conditions affect the riverfront development in several ways. Infinity compiled historical data from the USACE St. Francisville gage for the period between January 1, 2010 to present and is included graphically below and in Appendix D.

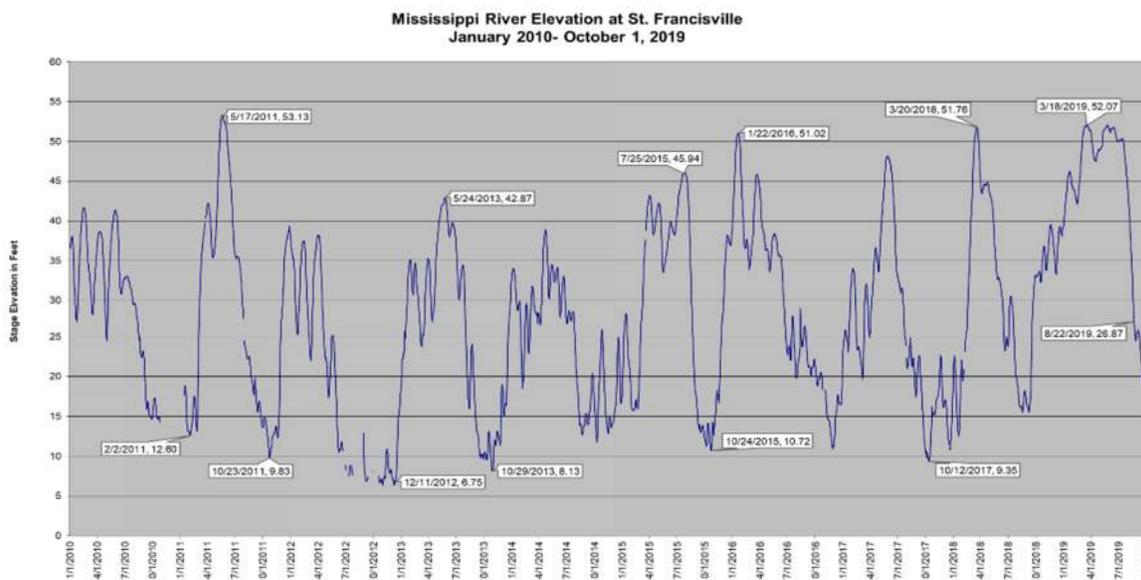


Figure 1 - Mississippi River Elevations

In general, the river stage at St. Francisville reaches its annual low stage (10-15 feet or lower) near the start of September and remains at or below this stage until about mid-December. The higher stages (25 feet and greater) typically begin early-January and last through approximately mid-July. Rapid rises and falls occur in between these seasonal highs and lows. The design team analyzed the frequency of specific river elevations in order to determine the site design parameters. The table below provides an overview of how often the river elevation has gotten above elevation +10', +25', +45', and +53' in the time period from January 2010 to present.

ABOVE 10 FT	ABOVE 25 FT	ABOVE 45 FT	ABOVE 53 FT
96.58%	58.75%	9.00%	0.21%

The river stages affect access to the site from water, via riverboat traffic, and land, via Ferdinand Street. Access to the site by water is subject to the variation in river level. Pedestrian paths and river embankment must accommodate the constantly changing operating range for the passengers to safely travel to and from the docking area and passenger terminal. Passengers will need to get from the deck of the riverboat, which is approximately 10 feet above water level, to the fixed structure on land.

The main access road from St. Francisville to the site is Ferdinand Street, which has an approximate elevation of +47' at its lowest elevation. During a high river event, it is common for this road to become impassable, and thus, without raising the elevation of the road, the site would be inaccessible from land.

### 3.4 **Riverboat Docking Theory**

Once the site is fully developed, the riverboat docking facilities should provide accommodations for multiple riverboats at one time. It has been reported that in the past, there have been up to as many as four vessels docked in St. Francisville at once. Design considerations for the riverboat dock structures include breasting and mooring capabilities; basic theories of each are discussed below:

#### A. **Breasting**

Breasting refers to the act of a vessel approaching the dock and coming to rest. Riverboats typically navigate towards the dock under their own power as opposed to being moved into place by other vessels (tugboats). Riverboats can approach a dock facility in two positions; (1) berthed along the side of the vessel and parallel to the dock structure and (2) with bow landings positioned to accept the vessel's berthing forces and protect the structure from damage. When a vessel utilizes a bow landing close to shore, the vessel approaches the dock on an angle, so that the body of the vessel remains angled towards the river. In this scenario, no fender system is needed, as the vessel does not come in contact with any fixed structure.

#### B. **Mooring**

Mooring is the act of restraining a vessel in the berth by anchorage or rope tethers. Riverboats are typically secured with their own mooring lines to permanent structures within the berth.

As discussed previously, the conditions of the river are important to the design of the new docking facility. The three conditions that specifically effect the design and placement of mooring structures are elevation, current velocity, and wind.

- i. The elevation is pertinent because it affects the relative height between the vessel and the mooring point.
- ii. The current is relevant because it determines the amount of force on the vessel.
- iii. Wind conditions are also very critical to mooring structures. Typically, the berth is designed to hold a vessel in place for “normal” wind conditions. Normal operating wind could account for sudden events that might occur with minimal warning, such as squalls, but not “extreme” conditions such as tropical storms or hurricanes.

For side berthing scenarios, there could be up to six mooring lines from the boat to the shore, depending on river and wind conditions. Also, in this scenario, the boat’s engine is typically off. This is to ensure that the boat does not shift inland and collide with the structure.

Berthing at an angle is different in that the vessel could use the current from the river to its advantage to assist with keeping the vessel in position. Additionally, there is typically less chance of damages as the vessel does not directly contact the structure. Ships berthed at an angle require fewer mooring lines and the engine may be running during strong current or winds.



*Photo 2 – Mooring line to river boat, berthing at an angle (photo provided by American Cruise Lines)*

### **3.5 Riverboat Docking Preliminary Concepts**

During this design study, multiple concepts for docking the riverboats were considered: (1) sloped concrete pavement docking area, (2) angled floating platforms, and (3) floating platforms parallel to the Mississippi River.

A. Sloped Concrete Pavement

Riverboat executives described several existing ports with desirable docking conditions as having a sloped, concrete paved area which allow for angled berthing of the vessels. In this type of facility, the vessel is secured in place with mooring ropes tied to deadman anchors and the vessel's gangway is positioned directly on the concrete surface for passenger disembarkation. Representatives from the design team visited a facility with this type of docking at the Greenville, Mississippi Riverfront on September 24, 2019.



Photos 3 & 4 – (Left) The American Harmony docked in Greenville, MS on September 24, 2019  
(Right) Mooring Lines connected to a steel anchor and concrete deadman

This solution appears to be a more “simple” and affordable design compared to other concepts; however, sloped concrete presents several design challenges. During the Greenville visit, it was noted that the disembarkment path for the passengers was likely not ADA compliant and the riverboat company utilized golf carts to assist passengers to the tour bus location. At the proposed project site, the sloped concrete would have to be approximately 550 feet in length to accommodate varying water elevations and be ADA compliant. While this concept is certainly achievable, the design team recommends a solution that wouldn't require a large portion of the site to be covered in concrete.

B. Angled Floating Platforms

Floating dock platform concepts were also discussed with West Feliciana Parish officials and riverboat executives during the design study. To allow for bow landings, floating platforms orientated at an angle in the Mississippi River were proposed. This concept allows for angle berthing alongside or in between two floating platforms. The floating platforms would function as landings for passengers embarking or disembarking the vessel but would not be designed to accept any berthing loads from the vessel. The following image is from a rendering presented in the draft version of this report.

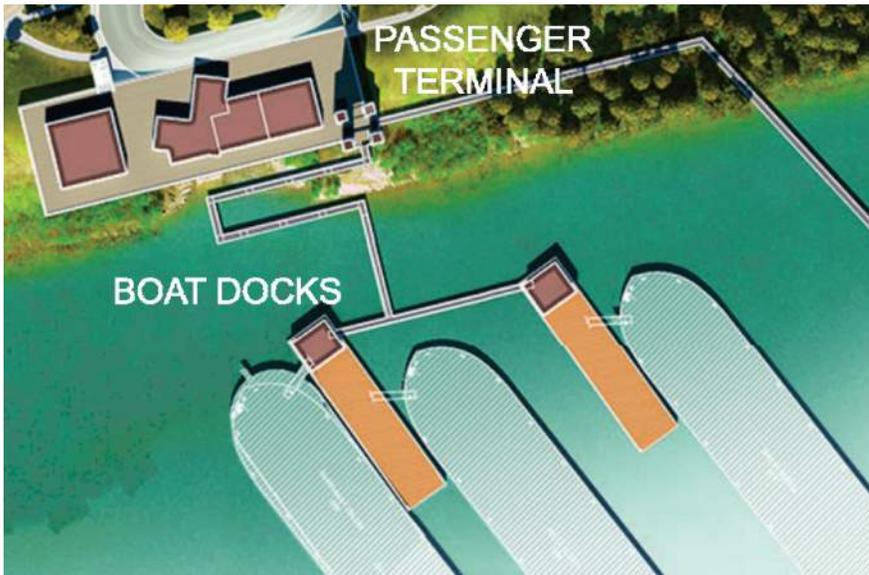


Photo 5 – Sample rendering depicting angled floating platforms

Riverboat executives expressed concerns with the location of the ship's stern (back) in the river while at the dock. Their preference would be to have the bow (front) of the ship nestled into the shore as close as possible, to avoid strong currents causing the vessels to shift while docked. Additionally, it was recommended that there be more space allowed for movement in between vessels.

C. Floating Platforms Parallel to the River

The third concept that was discussed was orientating floating dock platforms parallel to the river and allowing the vessels to dock along the side of the boat. In this concept, the floating platforms would be designed to accept berthing and mooring energies from the vessels. The riverboats would deploy their gangways at an angle away from the boat onto the floating platforms to allow for passenger loading and unloading. An example photo is shown below.



Photo 6 – Example photo of a riverboat docked parallel with the river

### **3.6 Passenger Loading and Unloading**

ADA compliant paths are required to be provided for all visitors arriving to and leaving from the site via riverboat cruises. The varying river levels present a particularly difficult challenge for the design of the required paths. The deck of the riverboat sits approximately 10 feet above the water elevation, thus, at low water elevation of +10', passengers would need to travel from an approximate elevation of +20' at the deck to the concrete platform serving as a passenger terminal which is proposed to be fixed at elevation +55' (as described in Section 3.6 below). The total vertical travel distance is approximately 35 feet. In order to be in compliance with ADA guidelines, the maximum slope of the ramped pathways is 1:12 and the design must include landings every 30 inches of vertical rise. Thus, a total of 420 feet plus approximately another 100 feet in landings will be required for access. Specific options to address this challenge are discussed in detail later in this report.

Parish officials and residents also expressed the desire for passengers to be protected from weather while embarking and disembarking the riverboats. Providing a shaded canopy above the path would be helpful during rain events or especially on sunny days.

### **3.7 Passenger Terminal**

A fixed structure welcoming riverboat passengers and visitors from West Feliciana and surrounding parishes is considered crucial to the development of the riverfront property. As the focal point of the conceptual plan, the structure would serve as a passenger terminal for loading and unloading the riverboats in Phase I, as well as potentially house a welcome center, interpretive center, restaurant, and/or a future event center. Access paths would be designed to connect to the structure near the river and travel along the platform leading to and from the riverboats. The intent of this design is to have the passengers disembarkment path routed through the structure (and potential revenue spaces) to the bus loading area where the tour buses would then take them to explore the town of St. Francisville.

### **3.8 Parking**

Ample amounts of parking areas should be provided to accommodate the many difference uses on the site. Riverboat cruises require charter buses to offload passengers who are then shuttled around the Parish and town as part of their tours. Safe and secure parking and drop-off areas are needed, and accessibility is important.

Community members wishing to utilize the site's many proposed recreational amenities must also have safe, accessible parking to encourage them to visit the site. Local visitors and fishermen, as well as those in the river cruise industry, requested that parking and circulation for the local fisherman remain separate from the riverboat traffic. Overflow parking should also be considered in the event of larger gatherings at the site beyond what the proposed parking may provide.

### **3.9 Fishing**

Recreational fishing already exists at the site; some passengers fish from the banks, while others launch boats and explore the river. Fishing in the river is a way of life for many as well as a recreational

opportunity. Currently, local residents utilize the existing boat ramp to launch their boats into the river, however, use is limited as this ramp is shared with the riverboats. Throughout the input and design study process the public made it clear that they would prefer to have separation of uses so that fisherman may come and go without being impeded by the activities of the riverboat cruises or other amenities. The proposed plan should provide safe areas from which to fish onshore while remaining separate from the tourism activities of the site.

### **3.10 Passive Recreation**

The community involvement process yielded requests for a number of recreational amenities for the site. Most requests were for passive recreation; residents expressed a desire to view nature and the river while getting the opportunity to exercise at their own pace or gather with friends and family. Numerous structured athletic facilities were considered but it was determined that they were unnecessary given the other facilities in the Parish.

## **4. PHASE I CONCEPT – SHORT-TERM DESIGN AND IMPLEMENTATION**

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### **4.1 General**

The proposed overall conceptual plan (See Conceptual Renderings, Appendix A) takes the program provided by West Feliciana Parish and feedback from the community and synthesizes them into one unified plan. It provides amenities for community residents, access for recreational and commercial fisherman, interpretive opportunities, tourism, and access and amenities for the riverboat/marine industry that relies on the Mississippi River.

This design study was performed for both the short-term and long-term visions of the project. For the purposes of this design study, the short-term vision is Phase I, which includes the design and construction of new riverboat docking facilities including a floating dock platform, access walkways, a passenger terminal platform, and a bus loading area and associated parking.

### **4.2 Riverboat Docking Facility**

The proposed docking facility will be in a similar location to where riverboats currently dock along the Mississippi River near the southwest end of the property. The location of the floating platform will be near the existing shoreline, and thus, at the same location in the navigation channel at all times. Because of the lack of levee protection at the site, water has encroached inland during high river events, thus flooding the site. In this instance, the docking facilities could appear further away from the shore; however, this is not the case. They will remain at the same distance away from the fixed structure. The conceptual renderings in Appendix A include diagrams to demonstrate how varying river elevations will affect the site.

The Phase I Riverboat Docking Facility design concept includes one (1) floating barge dock connected to a gangway and series of access ramps leading to the passenger terminal platform. The proposed design allows for berthing alongside the floating platform orientated parallel to the river. A spud piling system will be designed to allow the platform to remain in the same location in the river, while staying afloat at water level. It is proposed that the batture area immediately adjacent to the floating dock and ramp system be cleared and the embankment regraded during construction as to create a more aesthetically pleasing walk to and from the docking facilities.

The floating platform will be designed with breasting fenders alongside the front of the structure and mooring cleats on the top of the structure. It is anticipated that loads be accepted by the structure and a portion of the loads would be transferred into the spud pile system. Thus, those piles would also need to be designed to accept loads, not just to allow for the platform to float at water level. It is important to note that no geotechnical investigation or hydrographic survey has been performed due to the site being flooded; this preliminary design concept will need to be confirmed and or adjusted as needed once these tasks are complete.

While it is acknowledged that West Feliciana desires to service multiple riverboats at one time, the budget for Phase I implementation currently only allows for the design and construction of one floating dock. The full conceptual plan, however, does allow for future floating docks to accommodate additional vessels.

Further, Phase I implementation allows for the existing boat ramp to remain in use, which could potentially allow for a second vessel to be accommodated at low river levels.

#### **4.3 Riverboat Access Walkways**

Ingress and egress to the floating platform will be via one gangway structure approximately 100 feet in length fixed to the passenger terminal platform. The gangway will connect to a series of walkways with landings provided every 30 feet. Each landing will be supported by a steel pile structure which will act similarly to the spud pile system described above. The landings and attached walkways will either float at water level or stop at a fixed point in order not to exceed the maximum slope of 1:12. The access path will include several turns to meet the required changes in elevation; the estimated length is approximately 500 feet, which includes estimated 13 landing structures. The entire system will be designed to be ADA compliant. The Phase I construction cost estimate does not include having the access paths covered, however, this is a modification that could be added in the future when additional funds are made available.

A second design feature of the walkway system provides look-out points for locals wishing to visit the area when riverboats are not in use. The landings will provide space for visitors to stop and enjoy the sights and sounds of the Mississippi River and will be accessible as far as the river elevation will allow.

#### **4.4 Passenger Terminal Platform**

The Passenger Terminal Platform will be sited close to the river to allow access to the dock facilities for riverboat passengers. The elevation of the structure will be fixed at +55', approximately 10 feet above the existing ground elevation and 2.5' above the record flood stage to provide protection against flooding at past river levels.

Phase I implementation includes a concrete platform approximately 4800 square feet in size supported by steel piles. The primary purpose of the platform at this stage is to serve as an area for riverboat passengers to load and unload tour buses that bring them into the town of St. Francisville. The access walkways will begin and end at this platform.

The initial platform is planned to be a small structure to serve a single function, however, it will also be designed such that a future expansion is achievable. Possible modifications to consider for this structure are discussed in Section 5.3.

#### **4.5 Bus Loading Area**

Bus parking and drop-off is recommended to be developed to meet the Passenger Terminal Platform at its elevation. Raising the bus parking area is crucial to ensure that all visitors may access the site even in the event of prolonged high-water levels that have been seen in 2018-2019; dependent on access via Ferdinand Street. Phase I implementation allows for one wide drop-off space along the north face of the platform to allow for a single tour bus to approach the Passenger Terminal Platform, however, there would be space for additional queuing on the bus ramp leading up to the platform. Some non-structured at-grade gravel parking around the bus parking area could be prepared as part of Phase I Construction.

#### 4.6 Existing Boat Ramp

Phase I implementation allows for the existing boat ramp to continue to be utilized both by local residents and at times, potentially, riverboats. Not demolishing the existing ramp in Phase I will allow for a higher probability of continued riverboat operations during construction of the new docking facility. Further, once the new riverboat dock is operating, the existing boat ramp could potentially be utilized as a second riverboat at low river stages. This would require the development of a supplemental, ADA compliant, walking path to the Passenger Terminal.

The fully developed concept includes a small boat dock at the east end of the riverfront property to satisfy the desire for a separate docking area for locals. However, until that dock is constructed, the existing boat ramp should remain in place. During construction, it would remain a shared space. Once construction of the new dock is completed, the boat ramp could serve as a separate docking facility for locals unless a second riverboat is accommodated at this location.

#### 4.7 Estimated Project Schedule

The design team prepared the attached preliminary project schedule for Phase I Construction. For convenience, we have included the table below of the major categories and their estimated durations.

Task	Duration (Months, Rounded)
Geotechnical Investigation	1
Survey	1
USACE Permitting	18
Engineering & Design	8
Bidding	4
Construction	8

It is assumed that the geotechnical investigation, survey, and engineering and design will all be completed during the permitting process, and therefore, making the total estimated project duration 30 months, or 2.5 years.

## **5. FUTURE IMPLEMENTATION CONCEPTS**

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The remaining elements depicted on the proposed site plan will need to be constructed in future phases with additional funding resources. While West Feliciana Parish currently has a number of areas for recreation throughout, the riverfront site is a unique location for additional recreational opportunities that complement their existing portfolio.

### **5.1 Additional Riverboat Docking Platforms**

The first recommendation for future implementation of the project site is the construction of additional floating docking facilities to accommodate more riverboats. The property adjacent to the Phase I facility allows for up to two additional floating docks, one on each side of the originally planned platform. The platform immediately downstream of the Phase I dock is proposed to be the same size (approximately 350 feet in length) and would be able to accommodate riverboats of all sizes. Construction of a new dock downstream would require the demolition of the existing boat ramp, and thus, it is recommended that a new boat launch be constructed at this time.

Should West Feliciana wish to accommodate a third riverboat, the concept includes a smaller floating dock just upstream of the Phase I dock and just downstream of Bayou Sara. The third platform would be smaller (approximately 275 feet in length) and would be limited in the size of riverboats it could accommodate. It would be recommended that the smaller vessels such as the American Duchess or the Queen of the Mississippi utilize this dock.

Passengers embarking and disembarking at the two outside docks would travel to the Welcome Center via a gangway that is connected to the main dock and then travel the same access path implemented in Phase I.

### **5.2 Boat Launch & Fishing Pier**

A boat launch that is separate of the riverboat dock facility and tourist areas is desired and ultimately necessary. As part of the overall master plan, this boat launch and parking should be the next immediate phase after construction of the riverboat docking facilities. The boat launch is proposed to be designed as a paved concrete sloped apron at grade and wide enough to allow up to 2 boats to be launched at a time.

The boat landing would be enhanced by a fishing dock along the edge of the river and a pavilion that could be used for lunch, escaping inclement weather, and potentially could house a fish cleaning station and restrooms.

Vehicular access to the boat launch is planned to be from River Road at the northern boundary of the property, adjacent the existing USACE concrete mat casting yard. Pedestrians wishing to visit the fishing pier would also have the option to access this area via a planned nature trails that loops around the property.

### **5.3 Passenger Terminal Platform Expansion**

In Phase I the fixed structure is referred to as the Passenger Terminal Platform, however, as future implementation progresses the concept for this platform is much more developed. At this point, the

structure would become a Welcome Center serving a variety of functions for both visitors and locals alike. Modifications could be done in one future phase or several phases, depending on fund availability.

The complete site development is proposed to be focused on a fixed, single story structure that would serve a variety of functions. The Phase I platform would be expanded to approximately 30,000 square feet in size with several attraction spaces including a Visitor's Center, Interpretive Center, Restaurant Space and Event Center. The platform is proposed to be mostly covered, with the activity spaces set back from the edge to allow deep overhangs, giving shade to visitors. The remaining areas on the platform are intended for staging river boat passengers loading on and off tour buses, a balcony providing views of the river, and space for open air activities such as farmer's markets, musical shows and/or living history events. A monumental style Entry Tower is planned as a lighted, recognizable and iconic focus for the site, both from the Mississippi River and from Ferdinand Street. Access to the Welcome Center from the landside would be from a stairway or elevator at the face of the building that connects to a winding pathway and nearby parking, separate from the raised bus loading area.

As the site continues to be developed and multiple riverboats are being accommodated at once, the platform expansion would be modified to add additional spaces for bus loading. The full concept includes a wide drop-off with space for 3 buses loading and unloading at a time along the north face of the platform.

#### **5.4 Site Arrival & Identity**

Upon entering the site from Ferdinand Street, visitors would arrive at the threshold that signifies they've arrived at the West Feliciana Gateway site. Just south of River Road, Ferdinand Street would be widened, and a raised crosswalk across the street would be met with a landscaped center island. This island, tree planting on both sides, and the raised crosswalk signify to drivers along with signage that there is a pedestrian crossing. On either side of the road, there would also be a gateway sign that gives the park its initial identity and directs visitors to the different amenities at the site. This area could be used to close off the site with a functioning gate if the Parish should desire to do so.

#### **5.5 Parking**

The complete design study depicts parking in 4 areas, designed to separate uses and maximize the utilization of the site. To accommodate tour buses, eight parking spaces is proposed at ground level near the ramped entrance to the Welcome Center, arranged such that no bus will have to back up into Ferdinand Street. For the general public, a large parking lot is proposed to be located within close proximity to the Welcome Center and a curved access road would divide the main parking area and lead to the kayak and hiking trailhead areas. At the end of the road, a small gravel parking lot is planned to be nestled between two family picnic pavilions and would have a space in the center for loading and unloading kayaks onto automobiles. Further east on the site, a large gravel parking area for vehicles, tractors, and boats is proposed near the boat launch and fishing pier.

#### **5.6 Kayak Launch**

A recreational kayak launch could also be developed over time, first with the actual dock and access to the top of bank and loose gravel parking. At a later phase, a clearly defined parking lot, access ramps,

and pavilions could be added to create a recreational hub on the west end of the site for adventure-seekers. The kayak launch could also serve as an impromptu fishing pier.

### **5.7 Nature Trails**

With nearly 2 miles of trails, visitors would have the opportunity to walk or run measured distances for fitness, have access to historical and ecological interpretive information around the site, and use of seating and covered structures with which to observe the Mississippi River.

The nature trail would likely be implemented in phases. The trail should be 6' wide at minimum and made of a crushed stone that is ADA compliant and easy to clean off after the water has risen and receded during high river levels.

### **5.8 Primitive Camping Sites**

The northeast end of the site could feature primitive camping sites for visitors and river travelers interested in camping and nature experience. Each primitive camping site is proposed to be set off the trail to give campers privacy from trail users. Camp sites would have a fire ring, potentially built-in barbecue grills, and a clearing large enough for an 8-person tent.

The primitive campsites would require relatively little improvements other than clearing space for tents and adding a permanent fire ring at each. The actual sites should be selected in the field, with a maximum of 20 camp sites to prevent over-crowding.

### **5.9 Amphitheater**

Envisioned as a place where events can take place with the river as a backdrop, a sunken amphitheater is imagined between the Welcome Center and Passenger Terminal and the site's western boundary at Bayou Sara.

This amphitheater would feature concrete seating walls separated by flat lawns around a central stage for music, movies, and live theater performances. The amphitheater should be excavated into the bank with the stage at least three feet above the average river level to ensure usability for a longer period during the year.

### **5.10 Children's Play Area**

Adjacent to the amphitheater could be a large playground designed with a river theme to encourage visitors to learn about the history of the site and the river's importance to the region. The playground would be designed with equipment and passive play structures that evoke the history of transportation and commerce on the river while providing fun and developmental play elements.

Along with the amphitheater, the children's play area would be an amenity provided for the community. The area should have educational opportunities for children and adults while providing play opportunities for kids between the ages of 2 and 15 years old.

### **5.11 Pavilions and Seating**

The western end of the site, at the confluence of Bayou Sara and the Mississippi River, is proposed to house the largest event pavilion and open plaza on the site, along with a large event lawn. The event

lawn is depicted to expand the usable space for the pavilion and amphitheater for events such as markets and festivals.

Several smaller shaded pavilions and seating nodes are proposed throughout the site. These elements would provide picnic opportunities for residents and visitors. Pavilions could be rentable to garner income to help cover the costs of site maintenance and upkeep. The installation of these elements could be done at any point throughout the development of the overall site.

#### **5.12 Estimated Project Schedule**

A schedule for future construction and development of the site is unable to be provided at this time, as it will be up to West Feliciana Parish to decide which elements to proceed with after Phase I. Recommendations on implementation and additional funding sources are provided in Section 6 of this report.

## 6. OPINIONS OF PROBABLE CONSTRUCTION COST

### 6.1 Phase I

Two preliminary cost estimates were prepared during this study. The first estimate is specific to Phase I activities and is divided into categories to separate the engineering and design and construction costs. The table below provides a summary of the total project cost of Phase I.

Task	Estimated Cost
Permitting, Engineering & Design	\$504,150.00
Total Construction Costs	\$2,919,000.00
20% Contingency	\$583,800.00
Construction Management & Engineering Support	\$52,200.00
<b>Total Project Capital Expenditure (Phase I)</b>	<b>\$4,059,150.00</b>

### 6.2 Future Implementation

A separate estimate was prepared for all future site elements included in the conceptual plan. It is understood that the remaining efforts will likely not take place at one time. Therefore, the purpose of this estimate was to provide a preliminary estimate for each element to assist in decision making process of the selection and order of all remaining activities. The table below provides a summary of the approximate cost of each future element.

Future Element	Estimated Cost
Additional Floating Platforms	\$4,167,000.00
Platform Expansion	\$5,256,125.00
Boat Launch	\$1,152,900.00
Public Parking Lot	\$1,427,000.00
Kayak Launch	\$488,400.00
Entrance Enhancements	\$68,200.00
Entertainment Amenities	\$756,000.00
Bayou Sara Event Pavilion	\$202,300.00
Trail System	\$388,800.00
Primitive Camping Areas	\$63,500.00
<b>Total Project Capital Expenditure</b>	<b>\$13,970,225.00</b>

Full item breakdowns for both estimates are attached in Appendix C.

## 7. **PERMITTING**

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There are several jurisdictional authorities that would be involved in the permitting for the proposed riverfront development.

### 7.1 **Wetland Delineation Services**

Wetland Delineation services will be performed to establish an opinion on the presence and potential extent of jurisdictional “wetlands” and/or “other waters of the United States.” These services include obtaining maps, photos, survey information, and other historical documentation to prepare a report for the Chief of the Enforcement Section, USACE New Orleans District requesting a Jurisdictional Determination for the property.

### 7.2 **US Army Corps of Engineers**

As a navigable waterway, construction of any structure in the Mississippi River requires federal permits from USACE. These are as follows:

#### A. Section 10/404

The USACE has authorization over Section 10 permits for structures to be constructed in navigable waterways. In addition, Section 404 permits are for the dredging and/or filling of water bottoms. Often, the construction of structures is considered a “filling of water bottoms” as the USACE measures this based on the size of the individual foundations that are installed. For simplicity, the USACE typically reviews both Section 10 and Section 404 concurrently and jointly within the same application process. For new construction, it should be anticipated that the USACE will require a “public notice” period, which typically consists of a 30-day window to announce the permit application to the public and invite comments. Typical processing time for a Section 10/404 permit is between 90 and 180 days, depending upon comments that may be received and their required resolution. In addition to its internal review, the USACE relies upon the U.S. Coast Guard for support.

#### B. Section 401

Section 401 of the Clean Water Act requires the certification of all federal licenses and permits in which there is a “discharge of fill material into navigable waters”. The certification is used to determine whether an activity, as described in the federal license or permit, will impact established site-specific water quality standards.

Water Quality Certification must be obtained from DEQ before proceeding with any work. Section 401 of the Clean Water Act states, “Any applicant for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification from the State in which the discharge originates or will originate...”

A water quality certification (WQC) is not a permit to perform the activity and all federal licenses or permits cannot be issued without it.

#### C. Section 408

The USACE also has authorization over Section 408 permits for construction that potentially affects completed Federal works. The process for obtaining a Section 408 permit is more

stringent than that for a Section 10/404. In some cases, permit approval may require up to 12 months to obtain.

### **7.3 State of Louisiana**

There are several state agencies that are taken into consideration for permitting regarding the construction described in this report.

#### **A. DOTD**

The proposed concept includes an access road from the new welcome center to the existing road, Ferdinand Street, which is State Highway 1263. The Louisiana Department of Transportation and Development (DOTD) could require a permit for any work to a state highway.

#### **B. Other Agencies**

- i. DNR Coastal Use Permit (CUP): The Louisiana Department of Natural Resources (DNR) has authorization over the issuance of permits that involve construction in coastal regions. For this they issue a “Coastal Use Permit” (CUP). West Feliciana Parish is not in the Coastal Zone, so no Coastal Use Permit (CUP) is anticipated to be required from the DNR.
- ii. Coastal Protection and Restoration Authority: Since no CUP is required, there is no levee at the site, and there are no Master Plan projects existing or planned in the vicinity of the project area, there is no approval or authorization anticipated to be needed from CPRA.

## **8. EXECUTION**

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### **8.1 Phase I & Future Construction**

West Feliciana Parish has received funding through the State Capital Outlay program for immediate improvements to the riverfront. The development of the docking facility and passenger terminal is the primary construction element in Phase I.

Upon implementation of all Phase I elements, the remaining improvements to the site enhancements for the tourism industry and providing amenities for the residents of St. Francisville, West Feliciana Parish, and surrounding parishes. Implementation priorities are listed below in a recommended order of magnitude:

- A. Additional Riverboat Docks
- B. Passenger Terminal Platform/Welcome Center Expansion
- C. Site Parking: vehicle, boat trailers, and buses
- D. Boat ramp for local fishermen
- E. River access: fishing piers, pavilions, batture walking path, seating
- F. Entertainment amenities: amphitheater, play area
- G. Recreational amenities: kayak launch, trail markers, pathways, camping sites

### **8.2 Ferdinand Street**

Ferdinand Street is the only means of access to the site from land and is reported to become impassable during high river events. If West Feliciana wishes to achieve year-round access to the site, future upgrades will be needed. It is recommended that a solution, potentially raising the elevation of the road, be considered and implemented.

### **8.3 Funding Options**

Phase I of the overall project has been funded through State Capital Outlay funding, however, future phases will need to be funded. Funding for projects such as this can come from a wide variety of sources, both public and private.

The West Feliciana Riverfront Development Design Study plan provides amenities for visitors traveling the Mississippi River as well as land-based visitors from the region and beyond. Existing infrastructure on the site must be upgraded as more elements of the Design Study are completed and use of the site increases.

Access to the site by all modes should be considered. Ferdinand Street is a state highway; funding sources could include, but are not limited to, State funding, federal disaster mitigation funding, and State Transportation Alternative Funding. If West Feliciana proceeds with improving Ferdinand Street, it is recommended that the design and implementation be done in a way that creates a complete street; meaning bike and pedestrian access to the site on dedicated pathways separate of vehicular traffic lanes should be incorporated.

A list of potential funding sources for various elements of the West Feliciana Riverfront Development site are listed below.

- A. **BUILD:** Better Utilizing Investments to Leverage Development (formerly TIGER); US DOT  
<https://www.transportation.gov/BUILDgrants/about>  
Can be utilized for: Road improvements, access to passenger terminal.
- B. **INFRA:** Infrastructure for Rebuilding America; US DOT  
<https://www.transportation.gov/buildamerica/infragrants>  
Can be utilized for: Road improvements, access to passenger terminal & boat launch.
- C. **TIFIA:** Transportation Infrastructure Finance and Innovation Act (loan program); US DOT  
<https://www.transportation.gov/buildamerica/programs-services/tifia>
- D. **FTA:** Federal Transit Administration grant program  
<https://www.transit.dot.gov/funding/grants/grant-programs>
- E. **TA:** Transportation Alternatives funding  
[https://www.fhwa.dot.gov/environment/transportation\\_alternatives/](https://www.fhwa.dot.gov/environment/transportation_alternatives/)  
Can be utilized for: Improved access to the site, bike and pedestrian access to the site.
- F. **SRTPP:** Safe Routes to Public Places (formerly Safe Routes to School)  
[http://wwwsp.dotd.la.gov/Inside\\_LaDOTD/Divisions/Multimodal/Highway\\_Safety/SRTPP/Pages/default.aspx](http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Multimodal/Highway_Safety/SRTPP/Pages/default.aspx)  
Can be utilized for: Bike and pedestrian access to the site.
- G. **RTP:** Recreational Trails Program  
<https://www.crt.state.la.us/louisiana-state-parks/grant-opportunities-for-outdoor-recreation/recreational-trails/>  
Can be utilized for: Walking paths/trails/kayak launch.
- H. **LWCF:** Land and Water Conservation Fund  
<https://www.lwcfcoalition.com/about-lwcf>  
Can be utilized for: Amenities throughout the site.

## 9. SUMMARY AND CONCLUSIONS

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The West Feliciana Mississippi Riverfront Development Design Study was a collaborative effort by the Design Team, West Feliciana Parish Officials, residents of St. Francisville, West Feliciana Parish and surrounding parishes, and representatives from the riverboat industry. The study provides an overall conceptual plan to develop the riverfront property and connect the Mississippi River to West Feliciana Parish by providing widely desired amenities for both residents and tourists.

Implementation of the concepts discussed in this report will likely need to occur in multiple phases. Current funding allows for immediate design and construction of improved docking facilities, a passenger terminal platform and associated bus access. The Phase I docking facility allows for one riverboat to be accommodated at the dock, not including the Viking riverboats that are understood to be a possible addition in the near future. The riverboat will dock parallel to the river and provide bow landings on the floating platform that connects to the passenger terminal platform via a series of floating walkways. It is important to tourism for the construction of the docking facilities to allow for minimal impacts to riverboat traffic, and thus, continued utilization of the existing boat ramp is recommended until a new small boat ramp is constructed as part of the permanent site facilities.

The remaining site development recommendations include tourism and recreational amenities such as additional riverboat docking platforms, an expansion to the passenger terminal platform to include a welcome center and event space, a separate boat launch, additional areas for fishing, boating, camping, kayaking, walking paths, an educational playground, amphitheater, and pavilions as well as ample improved car and bus parking. The full implementation of the Design Study will allow for an educational and recreational space that West Feliciana can use to attract visitors from all over the region.

The plan allows for improved, potentially year-round access to the site from the river; however, it should be noted that the current access road (Ferdinand Street) to the proposed facility requires improvements for access from St. Francisville.

Through regulatory research, the design team determined the procedures involved with receiving a USACE permit for construction at the proposed site. The process can be timely and should be one of the first things done in concurrence with design activities in order to ensure the most expedited delivery of the permit; construction would not be allowed to take place without it. At this time, it is anticipated that permit applications will be required by USACE Section 10/404, 401, and 408.

## **10. LIMITATIONS AND DISCLAIMERS**

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This design study is limited in its scope and level of detail within any given part of the conceptual solutions offered.

The scope terminated at the approximate intersection of Ferdinand Street and River Road; determining a solution for year-round access from St. Francisville was not included.

Through a great duration of this study, the Mississippi River has been above flood stage at the project site. River conditions remained high for the majority of time during the preparation of the Design Study. During this time the project site remained flooded and Ferdinand Street was inaccessible. Until recently, access to the site was not possible, thus no site inspections, surveying, geotechnical exploration, or other related tasks could be performed. All field work is in the process of being contracted a scheduled and is anticipated to occur within the next few months.

In reference to the project schedule, the input duration for permitting was an estimate based on our previous experiences. The permitting process varies greatly in procedures and timelines from project to project. It would be up to West Feliciana on how much work and money should be put forth prior to receiving a USACE permit. Should West Feliciana choose to wait to begin engineering and design efforts until after the permit is received, the schedule duration could be significantly longer. Additionally, the schedule is dependent on the timely receipt of the geotechnical report, and approval and release of required information by West Feliciana.

The opinion of probable cost provided is simply an estimate and may vary based on a more detailed design, timeline, and other circumstances. The input engineering cost is not to be understood as a direct proposal for future work, rather an estimate of what West Feliciana should expect the engineering and design work to cost.

## **APPENDICES**

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- A. Conceptual Renderings (10 total)
- B. ELOS Environmental Section 106 Review and LA SHPO Concurrence
- C. Preliminary Opinions of Probable Cost
- D. River Stage Data
- E. USACE Hydrographic Survey, dated February 2019

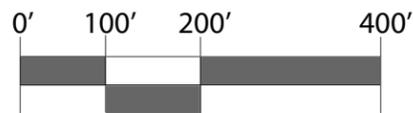
# APPENDIX A

## CONCEPTUAL RENDERINGS

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NORTH



SCALE: 1"=200'

50-J63 West Feliciana Port Infrastructure, Planning, Engineering, & Construction

Project ID: 561220

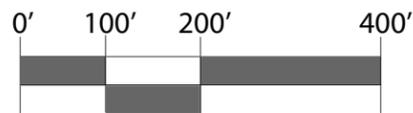
10' RIVER STAGE

October 1 2019





NORTH



SCALE: 1"=200'

50-J63 West Feliciana Port Infrastructure, Planning, Engineering, & Construction

Project ID: 561220

PHASE 1

October 1, 2019





NORTH



SCALE: 1"=200'

50-J63 West Feliciana Port Infrastructure, Planning, Engineering, & Construction

Project ID: 561220

45' RIVER STAGE

October 1, 2019





Proposed Passenger Terminal and Welcome Center  
(Current and Future Phases)

- 1 TOP OF SLAB = 55.00'
- 2 HIGH WATER = 53.48'
- 3 WATER LEVEL = 38.00'

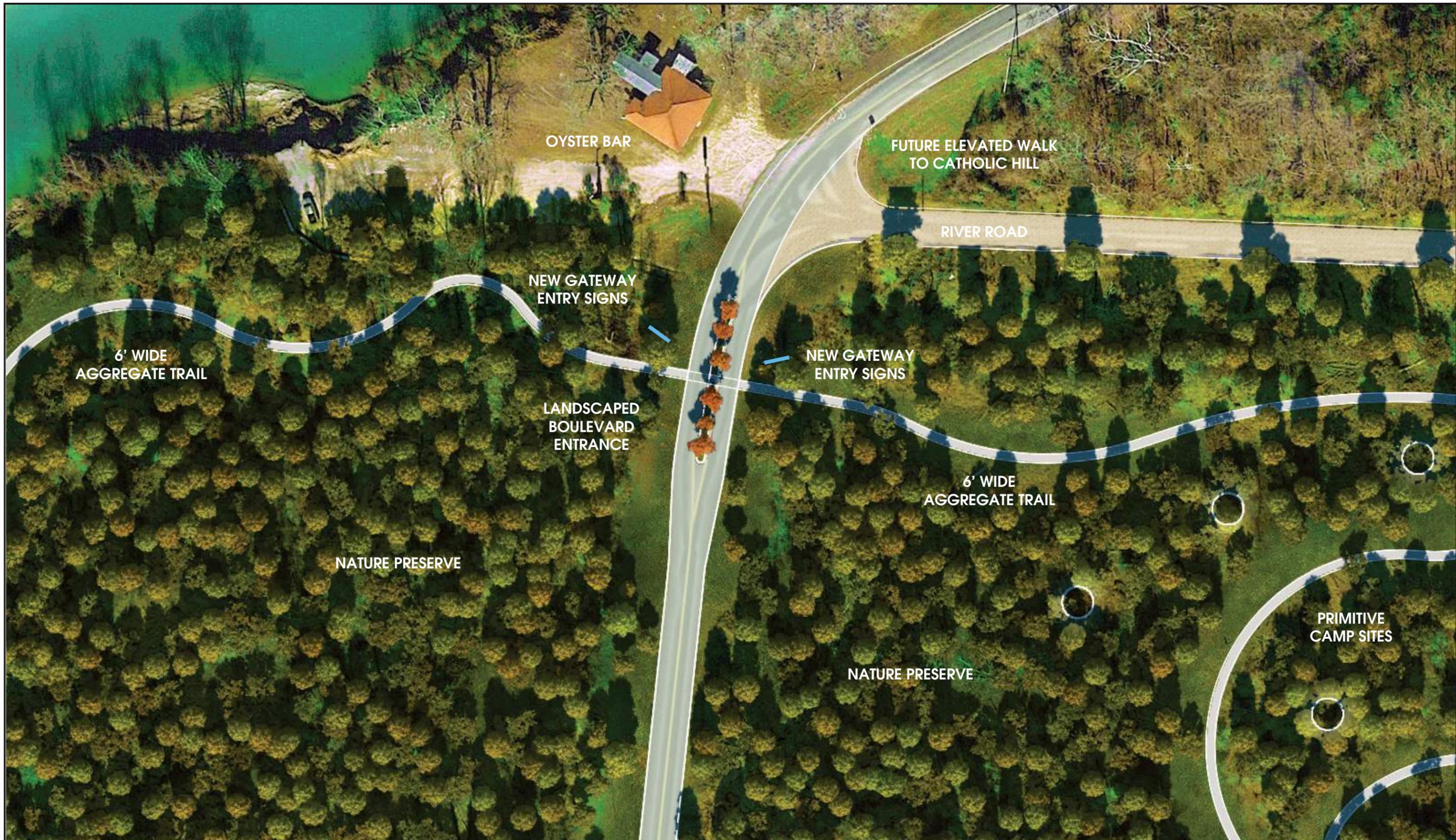
50-J63 West Feliciana Port Infrastructure, Planning, Engineering, & Construction

Project ID: 561220

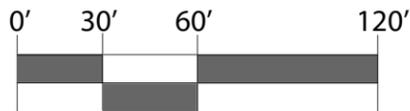
PHASE 1

October 1, 2019





NORTH



SCALE: 1"=60'

50-J63 West Feliciana Port Infrastructure, Planning, Engineering, & Construction  
Project ID: 561220

ENTRY PLAN

October 1, 2019





NORTH



SCALE: 1"=60'

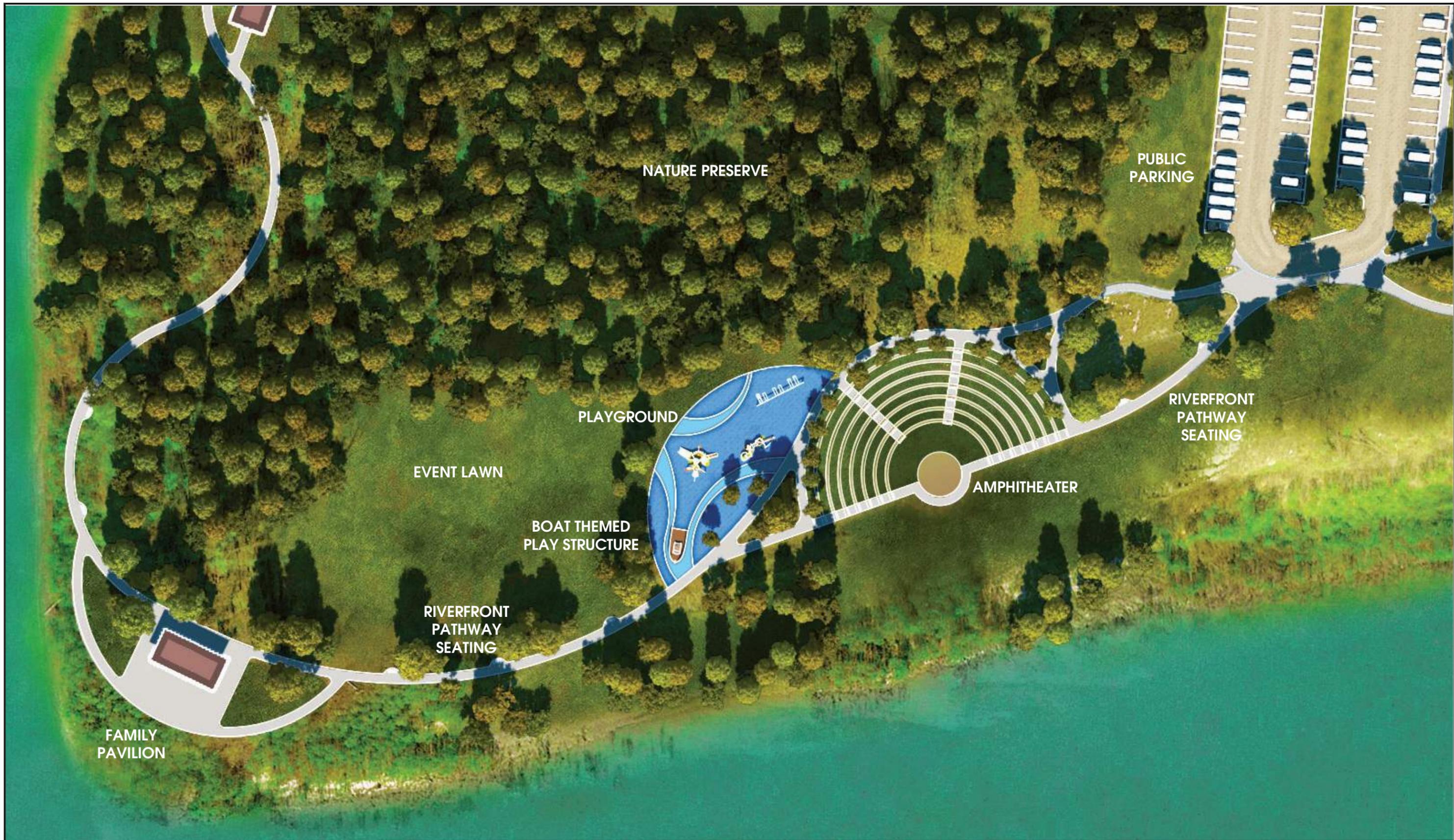
50-J63 West Feliciana Port Infrastructure, Planning, Engineering, & Construction

Project ID: 561220

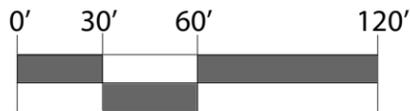
BOAT LAUNCH PLAN

October 1, 2019





NORTH



SCALE: 1"=60'

50-J63 West Feliciana Port Infrastructure, Planning, Engineering, & Construction  
Project ID: 561220

ENTERTAINMENT AREA PLAN

October 1, 2019





KAYAK LAUNCH PIER

BAYOU SARA

6' WIDE AGGREGATE TRAIL

FAMILY PAVILION

NATURE PRESERVE

KAYAK LOADING

GRAVEL ROAD

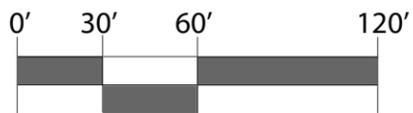
FAMILY PAVILION

6' WIDE AGGREGATE TRAIL

NATURE PRESERVE



NORTH



SCALE: 1"=60'

50-J63 West Feliciana Port Infrastructure, Planning, Engineering, & Construction

Project ID: 561220

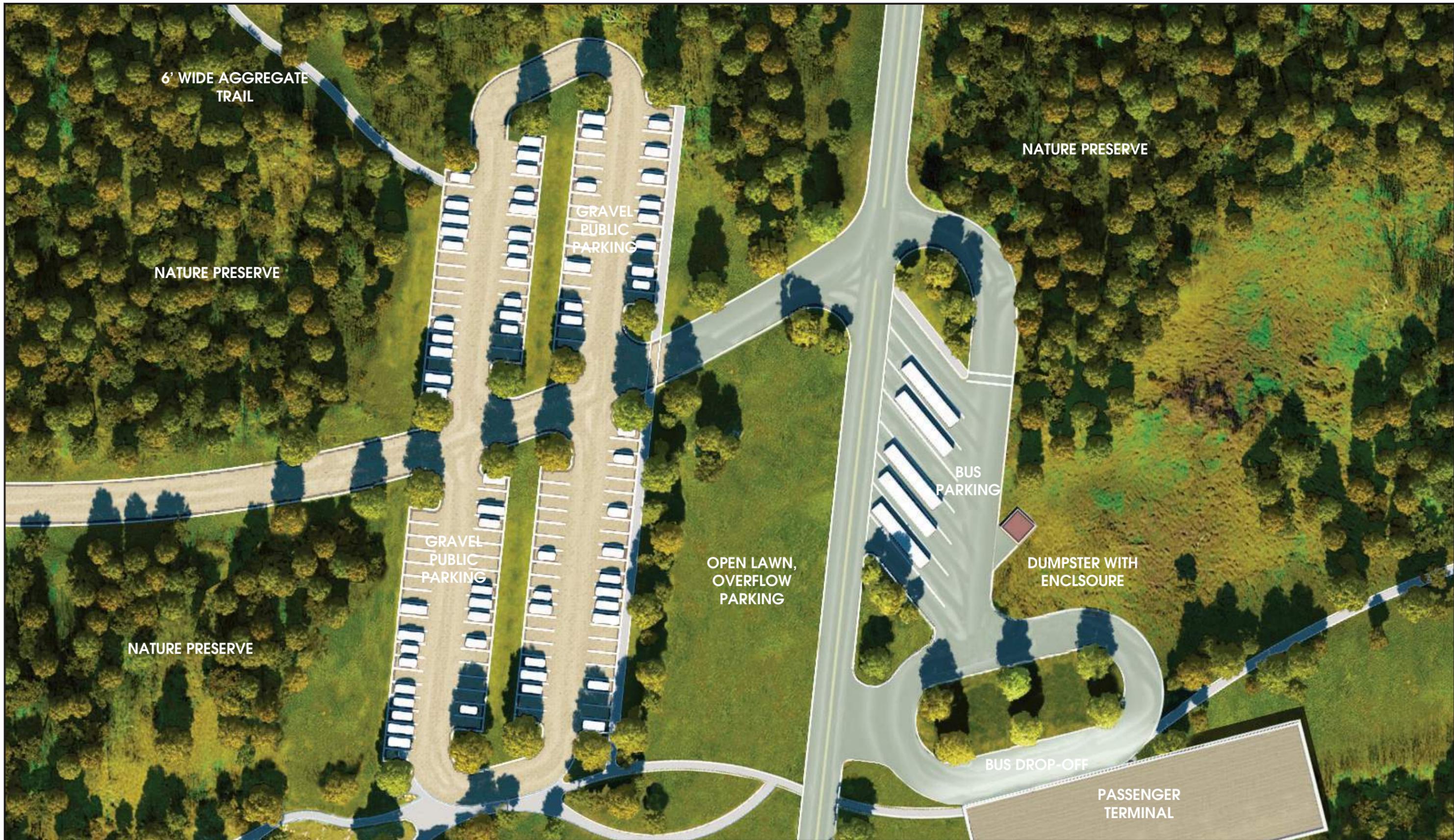
KAYAK LAUNCH PLAN

October 1, 2019



G S D

architecture  
planning  
development



6' WIDE AGGREGATE TRAIL

NATURE PRESERVE

GRAVEL PUBLIC PARKING

NATURE PRESERVE

GRAVEL PUBLIC PARKING

OPEN LAWN, OVERFLOW PARKING

BUS PARKING

DUMPSTER WITH ENCLASURE

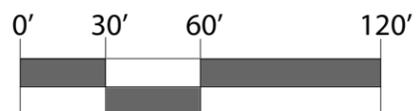
NATURE PRESERVE

BUS DROP-OFF

PASSENGER TERMINAL



NORTH



SCALE: 1"=60'

50-J63 West Feliciana Port Infrastructure, Planning, Engineering, & Construction  
Project ID: 561220

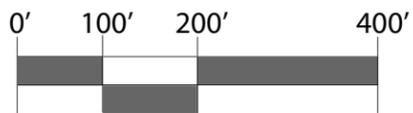
PARKING PLAN

October 1, 2019





NORTH



SCALE: 1"=200'

50-J63 West Feliciana Port Infrastructure, Planning, Engineering, & Construction  
 Project ID: 561220

OVERALL SITE DESIGN STUDY

October 1, 2019



# APPENDIX B

## ELOS ENVIRONMENTAL SECTION 106 REVIEW



June 6, 2019

Kristin Sanders  
State Historic Preservation Officer  
Louisiana Office of Cultural Development  
P.O. 44247  
Baton Rouge, LA 70804-4241  
section106@crt.la.gov

**Re: Section 106 Review for the Proposed West Feliciana Riverfront Development and Dock located in West Feliciana Parish, Louisiana**

Dear Ms. Sanders,

On behalf of Infinity Engineering Solutions, LLC (Infinity), ELOS Environmental, LLC (ELOS) is submitting the following information in support of Section 106 review for the proposed West Feliciana Riverfront Development and Dock project. The proposed project will be conducted within approximately 7.69 acres (3.11 hectares) located in Section 43, Township 3 South – Range 3 West in St. Francisville, West Feliciana Parish, Louisiana (**Figures 1 and 2**).

The Section 106 Review was conducted as due diligence as part of the West Feliciana Riverfront Development and Dock project. In addition to constructing a dock for riverboat access on the Mississippi River, the proposed project would provide public recreation and community spaces that would enhance tourism in the area.

Based on ELOS's preliminary analysis, we recommend a 7.69-acre direct Area of Potential Effect (APE) for the proposed project. The proposed project area is located on a parcel of land adjacent to the Mississippi River that was historically submerged and was most recently utilized as a ferry landing. Soils at the project area include Morganfield and Bigbee (MB) soils, which are frequently flooded (**Figure 3**). Morganfield soils consist of silt loam and are found on floodplains. Bigbee soils consist of excessively drained loamy sand and sand. According to elevations maps, the project area is located in a high point compared to the surrounding area (**Figure 4**).

ELOS has conducted historical research and background review of historic maps and aerial photographs, examined local and regional archives and other relevant public records, and completed a review of the online archaeological site files maintained by the Louisiana State Historic Preservation Office (LA SHPO). Our research found eight previous cultural resource surveys, nine known archaeological sites, three historic standing structures, and two historic

standing structures that are listed on the National Register of Historic Places (NRHP) within a 1-mile search radius of the project area as described below and shown on **Figure 5**. In addition, a portion of the St. Francisville historic district included within the 1-mile radius of the proposed project area.

The previous surveys are as follows:

- **22-0846: 1983.** A complete (100 percent) pedestrian archeological survey of areas of proposed disturbance, and a partial (25 percent) archeological reconnaissance of the remaining 20-mile span of the project area identified no cultural resources. It was determined that previously recorded cultural resources, including Old Pointe Coupee, 16PC33, and 16PC31, would not be affected.
- **22-0895: 1984.** Historic archeological investigations were undertaken at two sites on the Mississippi River in south Louisiana. Archival research, pedestrian survey, surface collection, and excavation at sites 16PC33 and 16EBR46 provided evidence of 19th and 20th-century occupation of Lakeland Plantation in Pointe Coupee Parish and of Hollywood Plantation in East Baton Rouge Parish. Both sites were found to have been seriously impacted by fluvial and anthropogenic processes. Neither site was found to meet the criteria for the NRHP.
- **22-0918: 1984.** The purpose of this project was to (1) to provide a research design that would facilitate future cultural resources investigations within designated U.S. Army Corps of Engineers (Corps) project areas; (2) to provide the basis for identification, description, and evaluation of known cultural resources along the lower Mississippi River; and (3) to provide management with direction in undertaking future Corps-related projects affecting cultural resources.
- **22-1623: 1994.** A cultural resources survey was conducted within the Red Store, Grand Bay, and Arbroth Revetment easements. A total of eight sites were located during intensive survey. One of these, Nina Plantation (16PC62), was evaluated as potentially eligible. Subsequent NRHP test excavations at Nina revealed that architectural features and sheet midden associated with both the great house and the quarters complex were preserved at the site. At the site of the former sugar house, a machinery mount and two large pans were discovered. These appear to be the only remnants of the plantation's industrial complex. The site was evaluated as eligible for inclusion in the NRHP. In addition, intensive survey was conducted of drainages included in the Pointe Coupee Seepage Control Project. A total of 20 sites were located during survey. Seven of these (16WBR18, 16WBR19, 16WBR20, 16WBR23, 16WBR26, and 16WBR38) were evaluated as potentially eligible for the NRHP.
- **22-2018: 2003.** A Phase I Identification and Assessment Field Survey was conducted in 1994 within the proposed rights-of-way (ROW) for the Mississippi River Bridge between New Roads and St. Francisville, Louisiana. Approximately 814.14 ha (2,012.48 ac) were examined in 1994 and 2001-2002 which included 42 archaeological sites, ranging in age from the Archaic Period to the 1970.
- **22-2582: 2002.** The Southeastern Louisiana Regional Archaeology Program, Museum of Natural Science, Louisiana State University, collected data on 26 prehistoric and historic sites during the period from September 1, 2001 to August 31, 2002. Approximately 60 acres were surveyed. Twenty-four landowners were contacted, and Rob Mann responded

to 52 requests for information or assistance from the public. Ten sites were recorded for the first time, and updates or supplemental information were provided for 16 sites.

- **22-4340: 2014.** A Phase I cultural resources survey was completed for the U.S. Army Corps of Engineers, (USACE) New Orleans District for the Pointe Coupée Seepage Project Area, adjacent to the mainline Mississippi River levee at Pointe Coupée, in Pointe Coupée Parish, Louisiana. A survey of 910 ac (368.3 ha), which included a phase I survey and standing structure survey was completed. Seven archaeological sites and three historic standing structures were surveyed.
- **22-5805: 2018.** Phase III data-recovery excavations were conducted for the proposed Federal Emergency Management Agency's (FEMA) Bayou Sara Bank Stabilization Project in West Feliciana Parish, Louisiana. The level of effort that FEMA, in agreement with SHPO, determined to be sufficient for data recovery in Focus Areas 1 and 2, of the project APE, was expended during these investigations. No Phase III excavation occurred outside of the focus areas, within the APE, or outside the APE in the remainder of 16WF37. Portions of 16WF37, where no Phase III excavations occurred, remain eligible for the NRHP and will require additional archaeological investigations.
- **22-0808: 1982.** Staff archeologists from the USACE, New Orleans District, conducted a pedestrian cultural resources survey of the Red Store Revetment project at Mississippi River mile 266-R near Point Coupee, LA. No significant cultural resources were located.
- **22-5503: 2017.** An archaeological survey of the proposed Bayou Sara Bank Stabilization Project in West Feliciana Parish, Louisiana was completed under contract with FEMA. One previously recorded site, Bayou Sara (16WF37), is located in the APE. Intact cultural deposits, including a brick subterranean cistern, brick piers, and four artifact scatters, were found in the project area. Based on those findings, it was recommended that the site be evaluated for eligibility for the NRHP.

The previously known sites are as follows:

- **16PC33:** Lakeland Plantation, residence and maintenance areas of Lakeland Plantation, Not recommended for further research, Not Eligible for NRHP.
- **16PC58:** Historic artifact scatter, Not Eligible for NRHP.
- **16PC59:** Historic artifact scatter, Not Eligible for NRHP.
- **16PC60:** Historic artifact scatter (including 2 vertical pipes), Not Eligible for NRHP
- **16PC110:** Bouvard Sugar Mill, research potential is high and is recommended for further research.
- **16WF37:** Bayou Sara, Phase III found intact cultural deposits of a small town from the early 19<sup>th</sup> century, only small portion surveyed and is recommended for further research.
- **16WF59:** Daffodil Site, modern house site circa 1940s, recommended Not Eligible for NRHP.
- **16WF157:** Bayou Sara Brick Company Site, found brick foundations, Eligibility for NRHP is Unknown but further research is recommended.
- **16WF175:** West Feliciana Courthouse/Royal Hotel, found cellar, trash pit (related to Royal Hotel), privy, and brick foundation. Eligibility for NRHP is unknown.

In addition to the previously mentioned cultural resource surveys and sites, three historic standing structures have been previously recorded, which are listed below.

- **63-00109:** Historic house. 543 Florida St, St. Francisville, LA.
- **63-00108:** Historic house. 189 Prosperity St, St. Francisville, LA.
- **63-00100:** Historic house. Gully Behind Brasseaux House on Ferdinand St., St. Francisville, LA
- **63-00101:** Historic house. Gully Behind Brasseaux House on Ferdinand St., St. Francisville, LA
- **63-00102:** Historic house. Gully Behind Brasseaux House on Ferdinand St., St. Francisville, LA
- **63-00110:** Historic house. Gully Behind Brasseaux House on Ferdinand St., St. Francisville, LA

Two historic standing structures that are listed on the NRHP are also within the 1-mile radius of the direct APE, which are listed below.

- **79001102:** Grace Episcopal Church
- **73000879:** Propinquity

There is also a cemetery, Grace Cemetery, associated with the Grace Episcopal Church within the 1-mile radius.

After a review of the historic topographic map data, it appears that there was once a town (Bayou Sara) located just north of the direct APE (**Figures 6, 7, 8 and 9**). Based on the 1863 map (**Figure 6**), the current project area was underwater, and the land slowly built up over time. By 1965 (**Figure 9**), the entire project area was completely out of the water, and the land continued to build up to present day levels. The project area was once used for a ferry landing. The ferry service ran until 2011 when the new bridge (John James Audubon Bridge) was completed downstream.

ELOS proposes to conduct a high-probability systematic subsurface analysis of 38 subsurface shovel test pits (STPs) at 30-meter interval transects within the approximately 7.69-acre APE (**Figure 10**). All subsurface testing within the direct APE would be conducted in accordance with LA SHPO cultural resources field survey standards. The STPs will comply with the 2018 Louisiana standards, excavating to a depth of 50 centimeters (cm), or to the subsoil, whichever is less. Each STP would be at least 30 x 30 cm in area, and the soil matrix would be screened through 0.25-inch mesh hardware cloth. Auger testing would be done where possible.

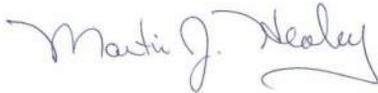
If artifacts are recovered in shovel tests, archaeological sites would be delineated in accordance with LA SHPO guidelines. The boundary for the positive shovel tests would be determined, and a detailed map of each site would be created in the field. If any human remains are uncovered, all ground-disturbing activities in the area would be halted immediately, local law enforcement would be notified within 24 hours of discovery, and the Louisiana Division of Archaeology (DOA) would be notified within 72 hours

ELOS proposes no historic standing structure survey as part of this project, as the end result of the project will have no adverse effect on historic properties outside of the direct APE. Any potential impacts within an indirect APE, if one is determined necessary, would be temporary during construction of the dock, recreation areas, and associated infrastructure. ELOS understands that the LA SHPO does not set the indirect APE; we are seeking agreement with this recommendation.

ELOS is respectfully requesting the LA SHPO's recommendations and/or concurrence regarding the measures needed to fulfill the requirements necessary to comply with Section 106 for the proposed West Feliciana Riverfront Development and Dock project. If you have any questions or need additional information, please do not hesitate to contact me via phone at 985-662-5501 or email, [mhealey@elosenv.com](mailto:mhealey@elosenv.com).

Thank you for your assistance in this matter.

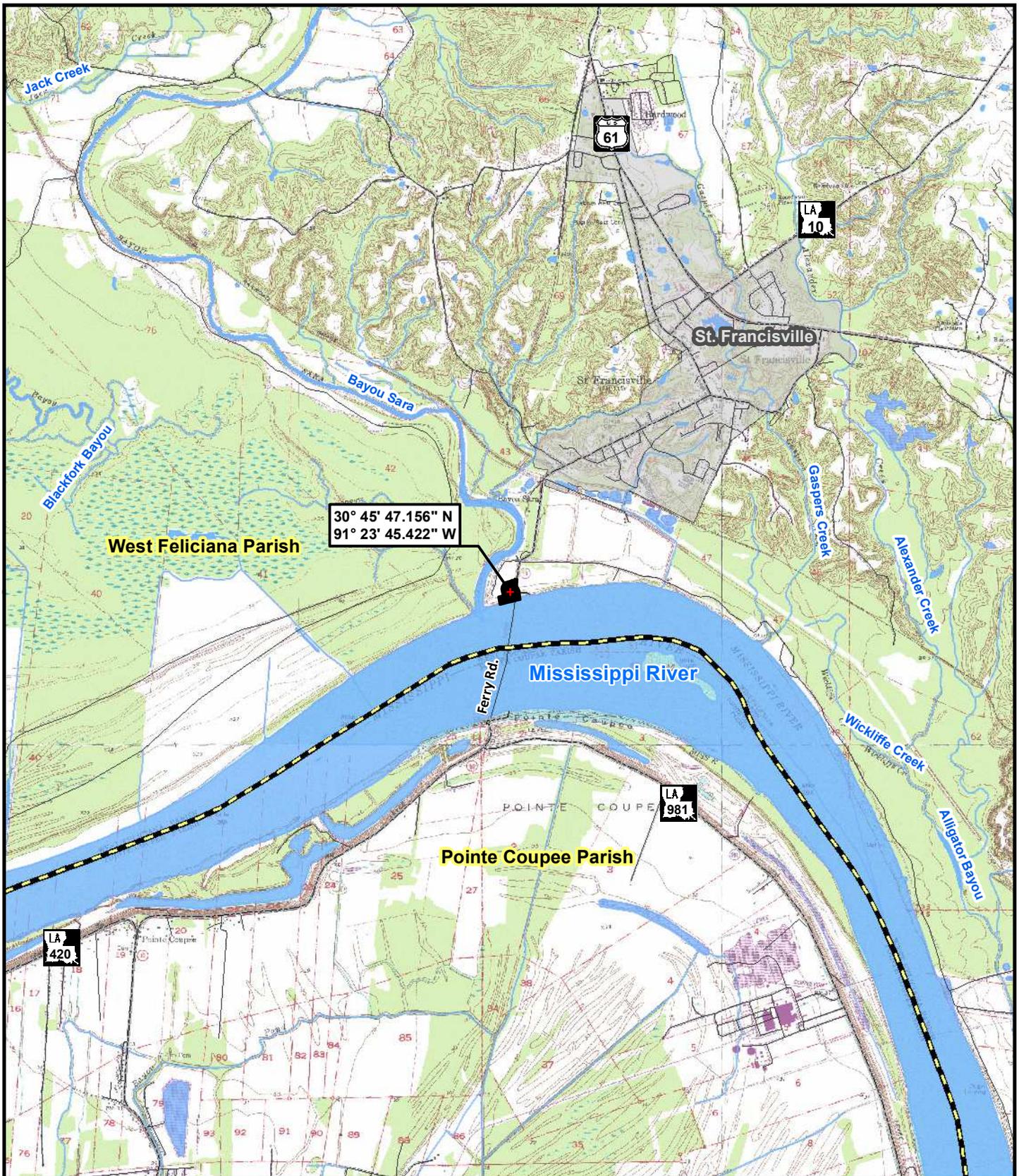
Sincerely,

A handwritten signature in cursive script that reads "Martin J. Healey".

Martin J. Healey, M.A., RPA  
Cultural Resource Specialist  
ELOS Environmental, LLC

**Enclosures:**

- Figure 1:** Topo Vicinity Map
- Figure 2:** Project Area
- Figure 3:** Elevations Map
- Figure 4:** Soils Map
- Figure 5:** Previous Investigations
- Figure 6:** 1863 New Orleans to Vicksburg Civil War Map
- Figure 7:** 1906 Bayou Sara USGS Historic Topo Map
- Figure 8:** 1939 St. Francisville USGS Historic Topo Map
- Figure 9:** 1965 St. Francisville USGS Historic Topo Map
- Figure 10:** Shovel Test Transect Map



30° 45' 47.156" N  
91° 23' 45.422" W



**ELOS**  
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Hammond, Louisiana 70403  
P. 985-662-5501, F. 985-662-5504

0 2,700 5,400 Feet



**Figure 1: TopoVicinity Map**

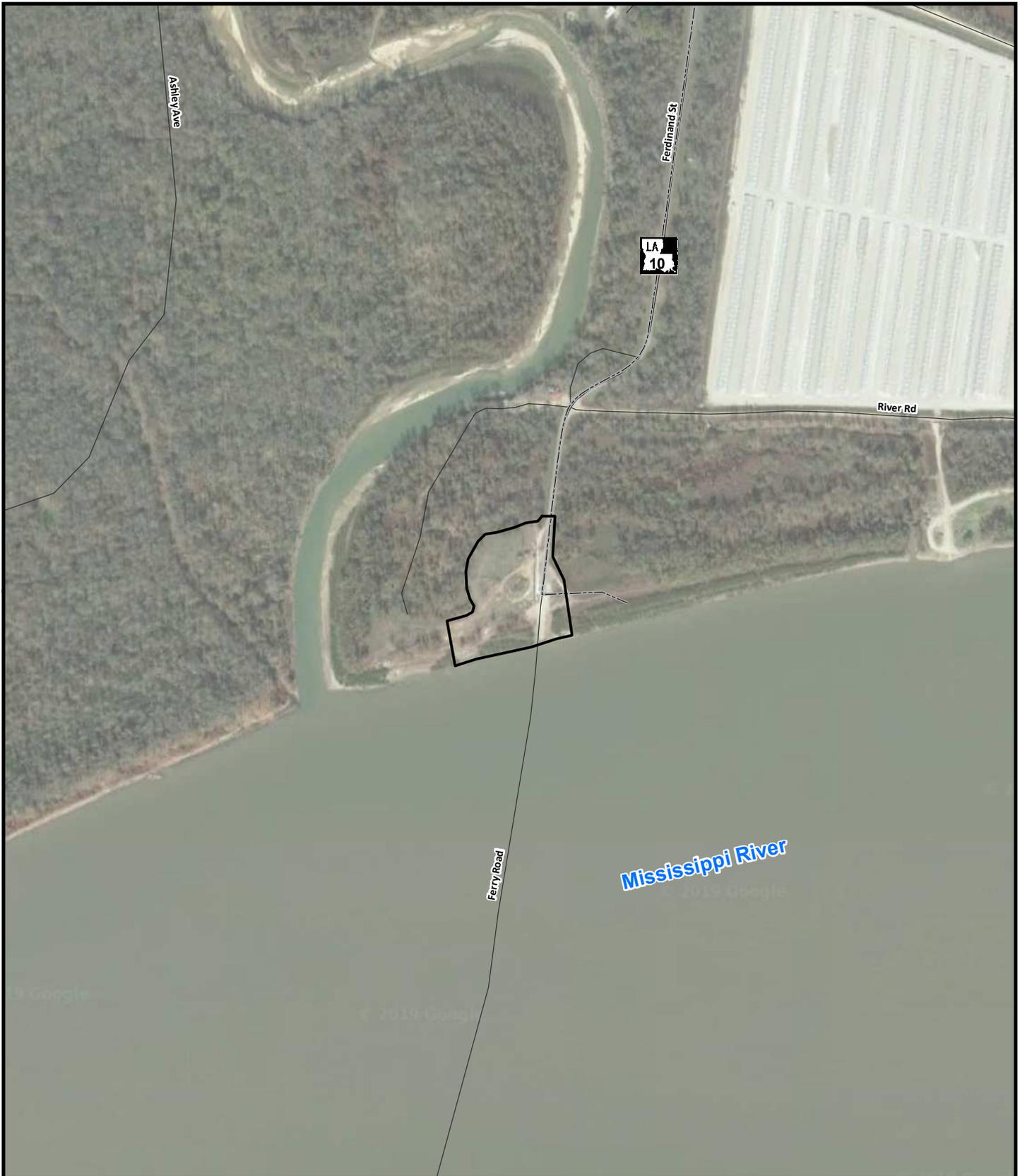
**West Feliciana Riverfront Development and Dock**

**Legend:**

- Site Outline
- Parish Boundary
- City/Town
- Highway
- Roadway
- Stream/River
- Waterbody

Sections: 43  
Township: 03 South  
Range: 03 West

This figure was prepared utilizing public and proprietary data. It should not be used to establish any legal boundaries or specific locations. ELOS Environmental, L.L.C., is not responsible for any usage of this figure contrary to its original, intended purpose.




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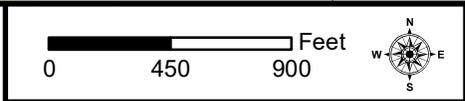


Figure 2: Project Area

**West Feliciana Riverfront Development and Dock**

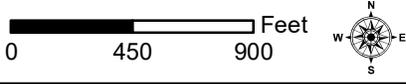
**Legend:**

-  Site Outline
-  Highway
-  Roadway

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0 450 900 Feet
   

  
**Figure 3: Soils Map**

**West Feliciana Riverfront  
 Development and Dock**

**Legend:**
  

  
 Site Outline    Non-Hydric
   
 Hydric        Water

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0 450 900 Feet 

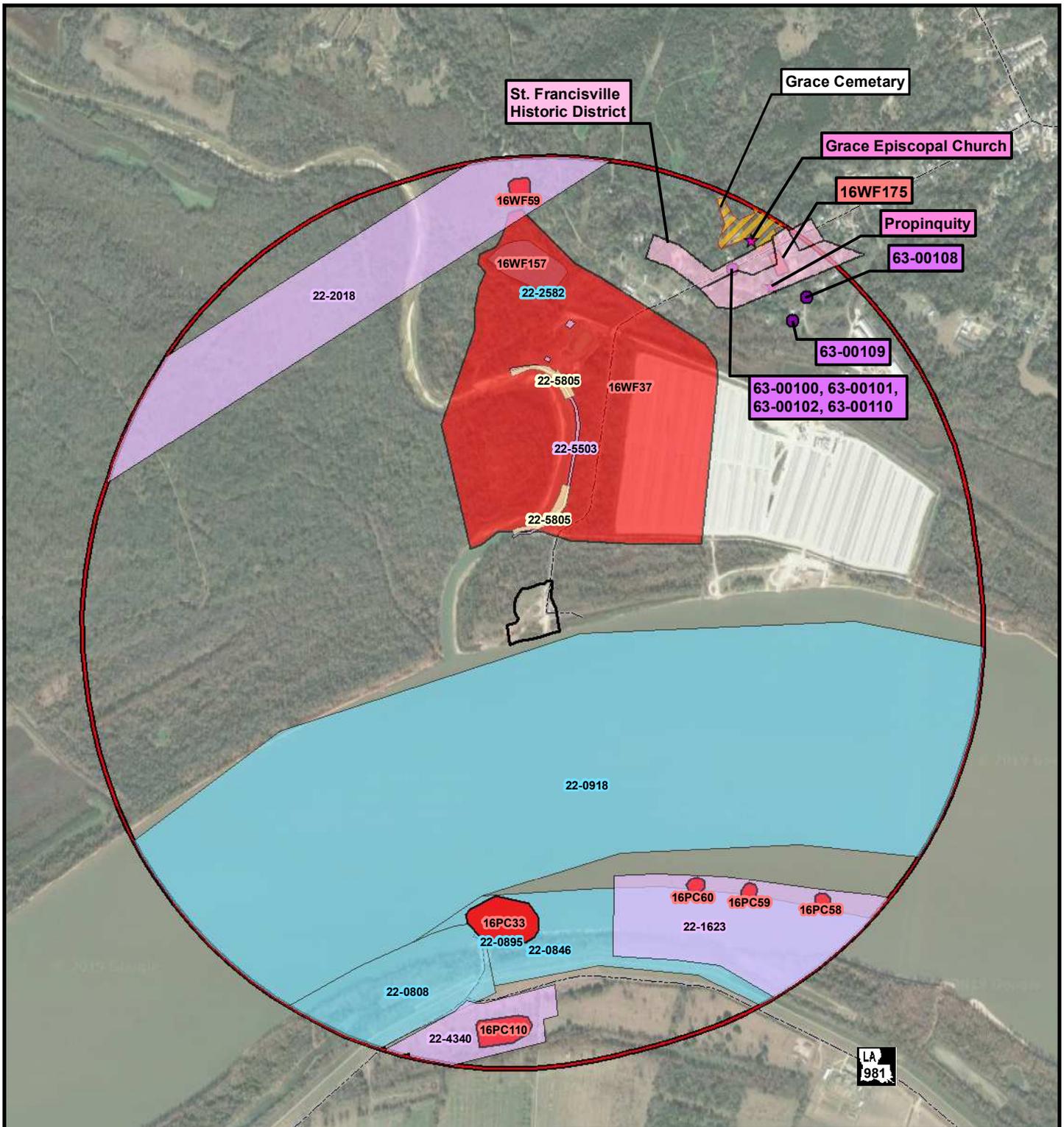
**Figure 4: Elevations Map**

**West Feliciana Riverfront Development and Dock**

**Legend:**

-  Site Outline
-  Contour
-  Higher  
Lower

This figure was prepared utilizing public and proprietary data. It should not be used to establish any legal boundaries or specific locations. ELOS Environmental, L.L.C., is not responsible for any usage of this figure contrary to its original, intended purpose.



**Legend:**

1 Mile Radius	Reconnaissance or Assessment Survey
Site Outline	National Register Districts
Phase I Survey	National Register Individual Listings
Phase III Survey	LHR Standing Structure Survey
Archaeological Site	
Cemetery	

0 1,100 2,200 Feet

Figure 5: Previous Investigations

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**West Feliciana Riverfront  
Development and Dock**

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Project Area

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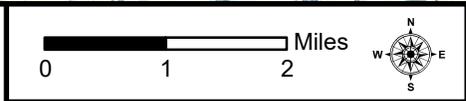
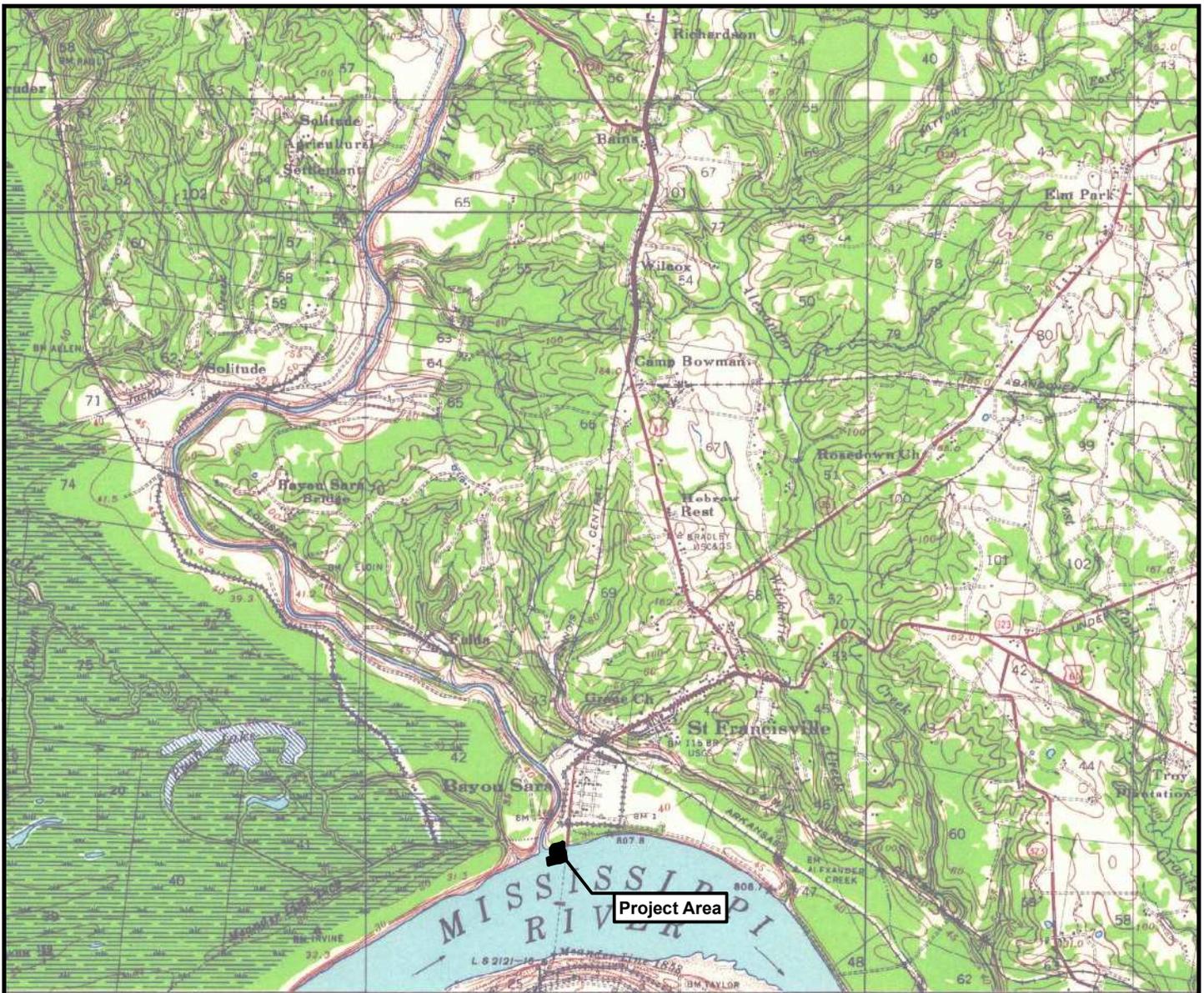


Figure 7: 1906 Bayou Sara  
USGS Historic Topo Map

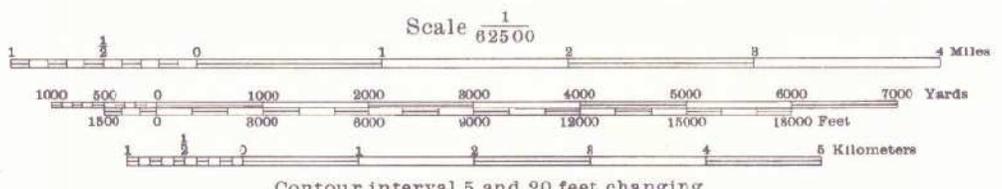
**West Feliciana Riverfront  
Development and Dock**

**Legend:**  
 Site Outline

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Commission.  
Engineers,  
Engineers,  
may be  
s, La.  
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S. G. S.  
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Contour interval 5 and 20 feet changing on 60 foot contour

*Datum is mean gulf level at Biloxi, Mississippi. Elevations differ from mean sea level elevations as determined by the U. S. Coast and Geodetic Survey, by small fractions of a foot. Persons interested may secure elevations of bench marks as determined by the latest U. S. C. & G. S. adjustment, by applying to the U. S. Coast and Geodetic Survey.*

FIVE THOUSAND YARD GRID COMPUTED FROM " GRID SYSTEM FOR PROGRESSIVE MAPS IN THE U. S.," ZONE G, U. S. C. & G. S. SPECIAL PUBLICATION NO. 28

FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER 25, COLORADO OR WASHINGTON 25, D. C.  
STATE OF LOUISIANA, DEPARTMENT OF PUBLIC WORKS, BATON ROUGE 4, LOUISIANA  
AND MISSISSIPPI RIVER COMMISSION, VICKSBURG, MISSISSIPPI  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

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Figure 8: 1939 St. Francisville  
USGS Historic Topo Map

**West Feliciana Riverfront  
Development and Dock**

**Legend:**

■ Site Outline

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0 3,500 7,000 Feet

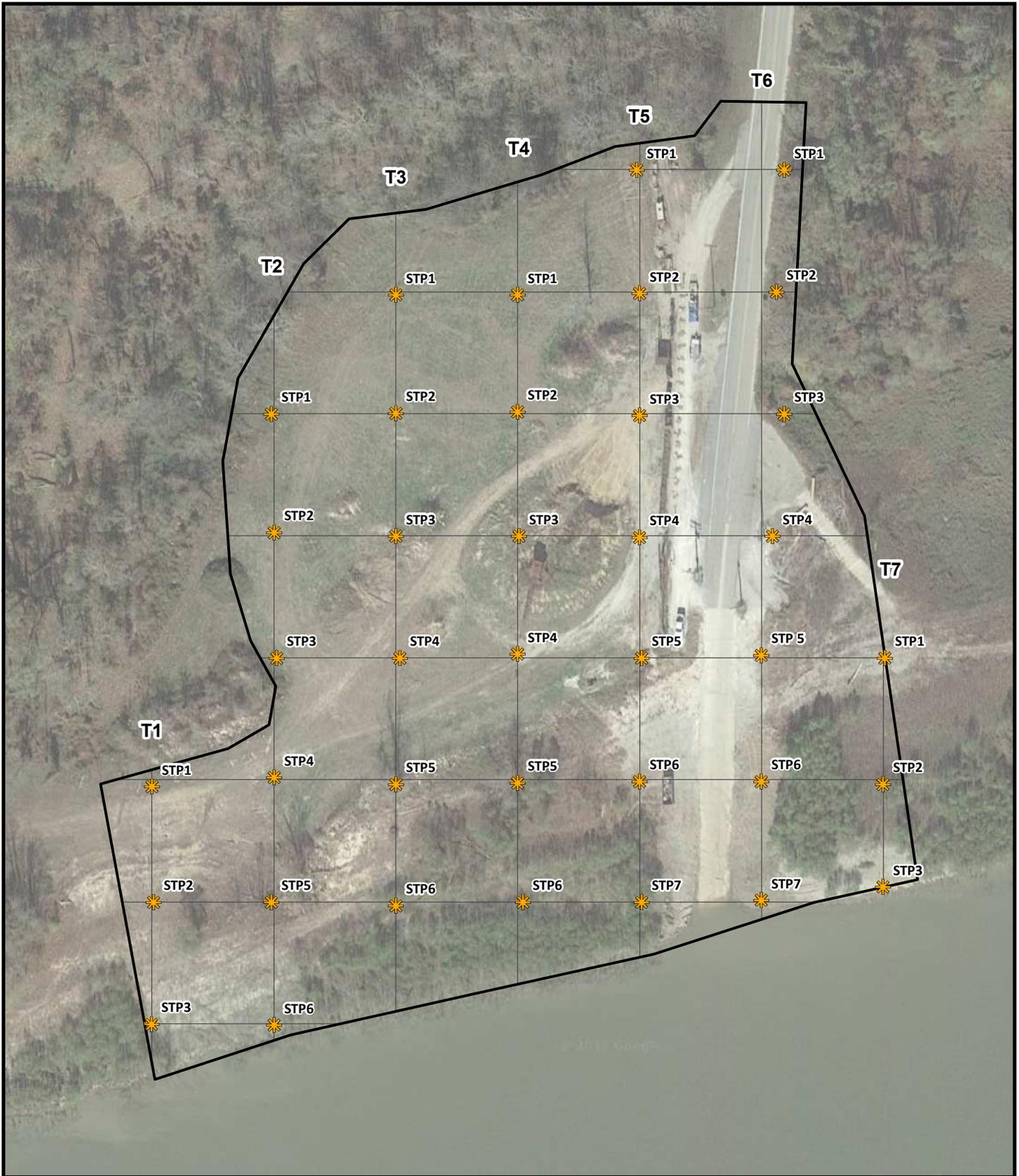
**Figure 9: 1965 St. Francisville  
USGS Historic Topo Map**

**West Feliciana Riverfront  
Development and Dock**

**Legend:**

■ Site Outline

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0 75 150 Feet

**Figure 10: 30 Meter STP**

**West Feliciana Riverfront  
 Development and Dock**

**Legend:**

- Site Outline ~7.69 Acres
- 30 Meter STP ~38
- Transect

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# APPENDIX C

## PRELIMINARY OPINION OF PROBABLE COST

<b>OPINION OF PROBABLE COST</b>				
Description	Quantity	Unit	Unit Cost	Total Price
1. Permitting	1	LS	\$ 60,000.00	\$ <b>60,000.00</b>
<b>2. Engineering &amp; Design</b>				
Basic Professional Services	1	LS	\$ 316,000.00	\$ 316,000.00
Geotechnical Investigation	1	LS	\$ 102,150.00	\$ 102,150.00
Topographic and Hydrographic Survey	1	LS	\$ 26,000.00	\$ 26,000.00
<b>Engineering &amp; Design Subtotal</b>				<b>\$ 444,150.00</b>
<b>3. Construction</b>				
Mobilization/Demobilization	1	LS	\$ 100,000.00	\$ 100,000.00
Site Clearing & Grubbing	1	LS	\$ 3,000.00	\$ 3,000.00
Floating Dock Structure	1	LS	\$ 1,120,000.00	\$ 1,120,000.00
Gangway to Dock Platform	1	LS	\$ 250,000.00	\$ 250,000.00
Dock Access Walkways	500	LF	\$ 375.00	\$ 187,500.00
Support Structures for Walkways	13	EA	\$ 55,000.00	\$ 715,000.00
Passenger Terminal Concrete Platform	4800	SF	\$ 40.00	\$ 192,000.00
Passenger Terminal Support Structures - 14" Steel Piles	9	EA	\$ 30,500.00	\$ 274,500.00
Passenger Terminal Support Structures - 6" Pile Bracing	1	LS	\$ 41,000.00	\$ 41,000.00
Passenger Loading Area - Bus Ramp and Loading Apron	1	LS	\$ 36,000.00	\$ 36,000.00
<b>Construction Subtotal</b>				<b>\$ 2,919,000.00</b>
Contingency			20%	\$ 583,800.00
<b>3. Total Construction Cost</b>				<b>\$ 3,502,800.00</b>
<b>4. Construction Management and Engineering Support</b>				
	1	LS	\$ 52,200.00	\$ <b>52,200.00</b>
<b>Total Project Capital Expenditure</b>				<b>\$ 4,059,150.00</b>



WEST FELICIANA PARISH  
MISSISSIPPI RIVERFRONT DEVELOPMENT

10/1/2019

**OPINION OF PROBABLE COST - FUTURE IMPLEMENTATION ELEMENTS**

Description	Quantity	Unit	Unit Cost	Total Price
<b>ADDITIONAL FLOATING PLATFORMS</b>				
Floating Dock Structure	2	EA	\$ 1,120,000.00	\$ 2,240,000.00
Gangway to Dock Platform	2	EA	\$ 250,000.00	\$ 500,000.00
Gangway Covers	3	EA	\$ 50,000.00	\$ 150,000.00
Dock Access Walkway Canopies	4,000	SF	\$ 35.00	\$ 140,000.00
Subtotal				\$ 3,030,000.00
Contingency			25%	\$ 758,000.00
Engineering & Design			10%	\$ 379,000.00
<b>TOTAL</b>				<b>\$ 4,167,000.00</b>
<b>PLATFORM EXPANSION</b>				
Site Clearing & Grubbing	1	LS	\$ 10,000.00	\$ 10,000.00
Dock Embankment Grading Improvements	3,500	CY	\$ 22.00	\$ 77,000.00
Concrete Platform	25,200	SF	\$ 40.00	\$ 1,008,000.00
Passenger Terminal Support Structures - 14" Steel Piles	15	EA	\$ 30,500.00	\$ 457,500.00
Passenger Terminal Support Structures - 6" Pile Bracing	1	LS	\$ 68,625.00	\$ 68,625.00
Passenger Loading Area - Bus Ramp and Loading Apron	1	LS	\$ 72,000.00	\$ 72,000.00
Platform Roof & Overhangs	30,000	SF	\$ 35.00	\$ 1,050,000.00
Welcome Center	2,250	SF	\$ 150.00	\$ 338,000.00
Interpretive Center	1,850	SF	\$ 150.00	\$ 278,000.00
Entry Tower	850	SF	\$ 250.00	\$ 213,000.00
Elevator Tower (Including elevator and stairs)	500	SF	\$ 500.00	\$ 250,000.00
Subtotal				\$ 3,822,125.00
Contingency			25%	\$ 956,000.00
Engineering & Design			10%	\$ 478,000.00
<b>TOTAL</b>				<b>\$ 5,256,125.00</b>
<b>BOAT LAUNCH</b>				
#57 limestone parking	83,700	SF	\$ 7.00	\$ 585,900.00
4" thick concrete walks	4,500	SF	\$ 8.00	\$ 36,000.00
6" thick concrete parking	600	SF	\$ 10.00	\$ 6,000.00
12" thick concrete boat ramp	10,000	SF	\$ 14.00	\$ 140,000.00
Wood Fishing pier	1	LS	\$ 30,000.00	\$ 30,000.00
20x30' Pavilion	1	EA	\$ 40,000.00	\$ 40,000.00
Subtotal				\$ 837,900.00



WEST FELICIANA PARISH  
MISSISSIPPI RIVERFRONT DEVELOPMENT

10/1/2019

Description	Quantity	Unit	Unit Cost	Total Price
Contingency			25%	\$ 210,000.00
Engineering & Design			10%	\$ 105,000.00
<b>TOTAL</b>				<b>\$ 1,152,900.00</b>
<b>PUBLIC PARKING LOT</b>				
Concrete curb & gutter	9,800	LF	\$ 30.00	\$ 294,000.00
#57 limestone parking	90,000	SF	\$ 7.00	\$ 630,000.00
4" thick concrete walks	7,000	SF	\$ 8.00	\$ 56,000.00
6" thick concrete parking	800	SF	\$ 10.00	\$ 8,000.00
Tree Planting	50	EA	\$ 650.00	\$ 32,500.00
Parking signage	20	EA	\$ 150.00	\$ 3,000.00
Hydroseeding	30,000	SF	\$ 0.45	\$ 13,500.00
Subtotal				\$ 1,037,000.00
Contingency			25%	\$ 260,000.00
Engineering & Design			10%	\$ 130,000.00
<b>TOTAL</b>				<b>\$ 1,427,000.00</b>
<b>KAYAK LAUNCH</b>				
Concrete curb & gutter - parking	500	LF	\$ 30.00	\$ 15,000.00
Concrete curb & gutter - drive	1,100	LF	\$ 30.00	\$ 33,000.00
#57 limestone parking	7,800	SF	\$ 7.00	\$ 54,600.00
#57 limestone drive to kayak	15,000	SF	\$ 7.00	\$ 105,000.00
4" thick concrete walks	3,000	SF	\$ 8.00	\$ 24,000.00
6" thick concrete parking	800	SF	\$ 10.00	\$ 8,000.00
Parking signage	2	EA	\$ 150.00	\$ 300.00
Wood dock	1	EA	\$ 30,000.00	\$ 30,000.00
20x30' Pavilion	2	EA	\$ 40,000.00	\$ 80,000.00
Hydroseeding	10,000	SF	\$ 0.45	\$ 4,500.00
Subtotal				\$ 354,400.00
Contingency			25%	\$ 89,000.00
Engineering & Design			10%	\$ 45,000.00
<b>TOTAL</b>				<b>\$ 488,400.00</b>
<b>ENTRANCE ENHANCEMENTS</b>				
Concrete curb & gutter	300	LF	\$ 30.00	\$ 9,000.00
Asphalt roadway	15	SF	\$ 7.00	\$ 200.00
Traffic signage	10	SF	\$ 150.00	\$ 1,500.00
Entry feature signage	2	EA	\$ 10,000.00	\$ 20,000.00
Trees	20	EA	\$ 650.00	\$ 13,000.00
Hydroseeding	10,000	SF	\$ 0.45	\$ 4,500.00



WEST FELICIANA PARISH  
MISSISSIPPI RIVERFRONT DEVELOPMENT

10/1/2019

Description	Quantity	Unit	Unit Cost	Total Price
Subtotal				\$ 48,200.00
Contingency			25%	\$ 13,000.00
Engineering & Design			10%	\$ 7,000.00
<b>TOTAL</b>				<b>\$ 68,200.00</b>
<b>ENTERTAINMENT AMENITIES</b>				
Playground Equipment	1	LS	\$ 200,000.00	\$ 200,000.00
Playground Surfacing	8,500	SF	\$ 20.00	\$ 170,000.00
4" thick concrete walks	4,500	SF	\$ 8.00	\$ 36,000.00
Stage	1	EA	\$ 12,000.00	\$ 12,000.00
Amphitheater	1,450	LF	\$ 50.00	\$ 72,500.00
Amphitheater turf	15,000	SF	\$ 1.00	\$ 15,000.00
Hydroseeing	20,000	SF	\$ 0.45	\$ 9,000.00
Shade Trees	30	EA	\$ 650.00	\$ 19,500.00
Ornamental Trees	30	EA	\$ 500.00	\$ 15,000.00
Subtotal				\$ 549,000.00
Contingency			25%	\$ 138,000.00
Engineering & Design			10%	\$ 69,000.00
<b>TOTAL</b>				<b>\$ 756,000.00</b>
<b>BAYOU SARA EVENT PAVILION</b>				
4" thick concrete walks	7,000	LF	\$ 8.00	\$ 56,000.00
24'x48' Pavilion	1	LS	\$ 75,000.00	\$ 75,000.00
Shade Trees	20	EA	\$ 650.00	\$ 13,000.00
Hydroseeding	5,000	SF	\$ 0.45	\$ 2,300.00
Subtotal				\$ 146,300.00
Contingency			25%	\$ 37,000.00
Engineering & Design			10%	\$ 19,000.00
<b>TOTAL</b>				<b>\$ 202,300.00</b>
<b>TRAIL SYSTEM</b>				
6' #8 limestone trail	9,500	LF	\$ 12.00	\$ 114,000.00
Resting benches	20	EA	\$ 2,000.00	\$ 40,000.00
20x30' Pavilion	2	EA	\$ 40,000.00	\$ 80,000.00
Trail signage	20	EA	\$ 250.00	\$ 5,000.00
Hydroseeding	95,000	SF	\$ 0.45	\$ 42,800.00
Subtotal				\$ 281,800.00
Contingency			25%	\$ 71,000.00



WEST FELICIANA PARISH  
MISSISSIPPI RIVERFRONT DEVELOPMENT

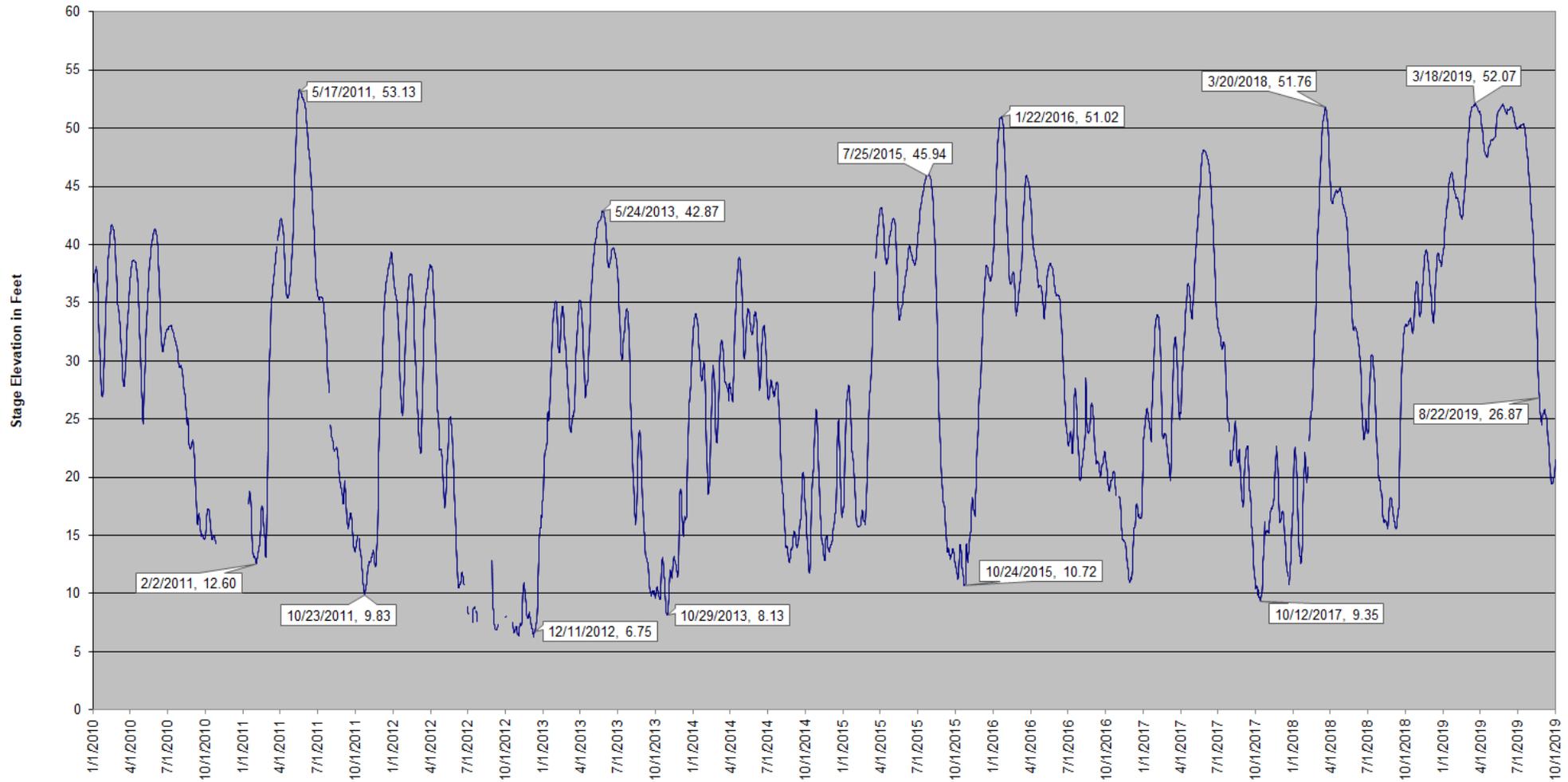
10/1/2019

Description	Quantity	Unit	Unit Cost	Total Price
Engineering & Design			10%	\$ 36,000.00
<b>TOTAL</b>				<b>\$ 388,800.00</b>
<b>PRIMITIVE CAMPING AREAS</b>				
Clearing, seeding	6,000	SF	\$ 3.00	\$ 18,000.00
Fire pit	20	EA	\$ 1,000.00	\$ 20,000.00
Camp signage	30	EA	\$ 250.00	\$ 7,500.00
<b>Subtotal</b>				
				\$ 45,500.00
Contingency			25%	\$ 12,000.00
Engineering & Design			10%	\$ 6,000.00
<b>TOTAL</b>				<b>\$ 63,500.00</b>
<b>ESTIMATED DESIGN AND CONSTRUCTION COST OF ALL FUTURE IMPLEMENTATION ELEMENTS</b>				<b>\$ 13,970,225.00</b>

# APPENDIX D RIVER STAGE DATA

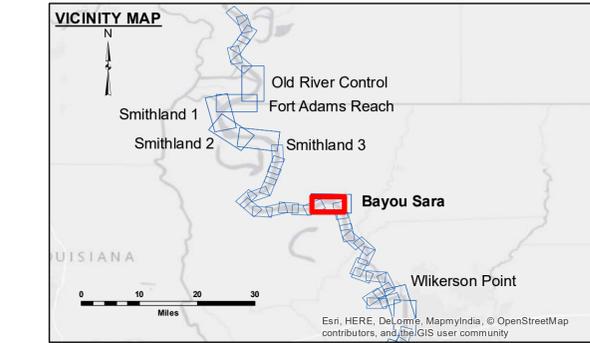
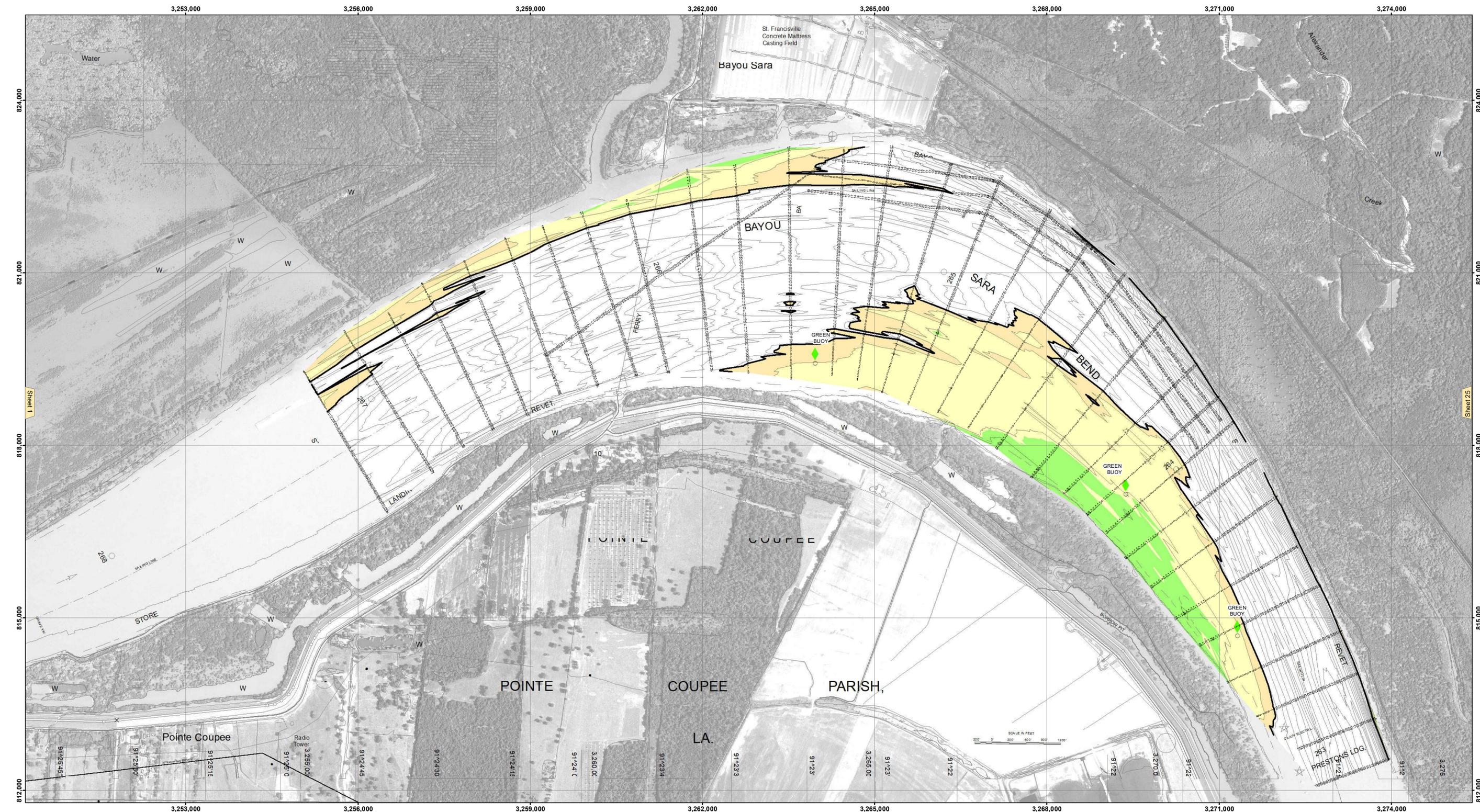
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### Mississippi River Elevation at St. Francisville January 2010- October 1, 2019



# APPENDIX E

## USACE HYDROGRAPHIC SURVEY



**LEGEND**

--- Federal Navigation Channel	○ Cable Area	■ Shoaling Area	■ 0' and above
— Federal Navigation Center Line	□ Placement Area	● Shoalest Sounding**	■ 0' to -5'
— As-built Pipeline/Cable	□ Anchorage Area	☆ Beacon, General	■ -5' to -9'
..... Unconfirmed Pipeline/Cable	⊗ Obstruction Point	◆ Red Navigation Buoy	□ -9' and below
— Project Depth Contour	⚓ Wrecks-Submerged	◆ Green Navigation Buoy	



LWRP: 6.7  
 Gage Reading: BR:36.52 RR:53.55 USED:44.9 NGVD  
 Sea Conditions: CALM  
 Vessel Name: OB-167  
 Survey Type: CONDITION  
 Sounding Frequency\*\*\*: HIGH

**NOTES:**  
 Horizontal Coordinate System:  
 North American Datum of 1983 (NAD83), projected to the State Plane Coordinate System (SPCS), Louisiana South Zone. Distance units in U.S. Survey Feet.  
 Vertical Datum:  
 Soundings are shown in feet and indicate depths below Low Water Reference Plane 2007 (NGVD).  
 Distances on the Mississippi River, above and below Head of Passes are shown at 1 mile intervals.  
 The location of navigation aids are base on and provided by the U.S. Coast Guard and USACE crew.  
 2015 Aerial Photography data source: NAIP, USDA-FSA-APFO Aerial Photography Field Office.  
 Reference is USACE IENC U35LM236.  
 \*\*\* Shoalest Sounding per Quarter per Reach.  
 \*\*\* High frequency (200 kHz) survey data represents the first signal return at a sounding location and will include suspended solids, known as "fluff", if present. Low frequency (20 kHz) survey data normally penetrates through this "fluff" layer to depict elevations of consolidated bottom material. Low frequency accuracies may vary depending on channel conditions and fathometer settings.



**Distribution Liability:** The data represents the results of data collection processing for a specific US Army Corps of Engineers project. It is only valid for its intended use, content, time and accuracy specifications. The user is responsible for the results. The user's application of the data for other than its intended purpose. Data Collection: Hydrographic survey data is subject to change due to several factors including but not limited to dredging activity, channel migration, and other factors. The user is responsible for the hydrographical conditions when developing the data of a project. The information depicted on this map represents the results of a survey conducted on the date indicated. The user is responsible for the general condition existing at that time.

U.S. ARMY CORPS OF ENGINEERS NEW ORLEANS DISTRICT		
Submitted:	Surveyed By: JH/SP	Plotted By: BD
Recommended: Chief Survey Section	Checked By: AC	Approved: Chief Waterways Maintenance Section

**MISSISSIPPI RIVER - SHALLOW DRAFT**  
**BAYOU SARA**  
**MS\_24\_BYS\_20190206\_CS**  
**06 February 2019**

**Sheet Reference Number**  
**24 of 39**

Revision Number:  
 3.13-20160811