An aerial photograph showing a large green field adjacent to a river. In the foreground, there is a parking lot with several cars and a building with a blue roof. The river is on the right side, with a large red structure extending into the water. The background shows a line of trees and a distant city skyline under a blue sky with scattered clouds.

City of Port Neches Riverfront Planning and Design

Port Neches, Texas

LJA Engineering, Inc.

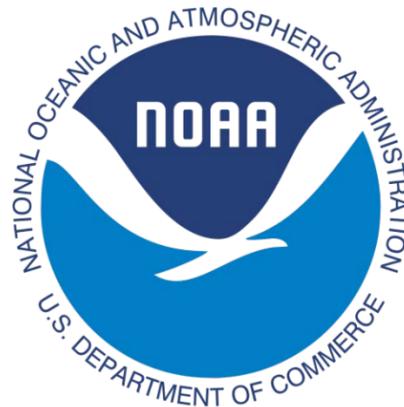
The Rivers Studio, LLC



# Port Neches Riverfront Planning and Design

## Acknowledgements

This work product was developed by the City of Port Neches under Texas Coastal Management Program (CMP), Cycle 20, Grant No. 16-063-000-0107 and GLO Contract No. 16-063-000-9107. The City of Port Neches is led by Mayor Glenn Johnson and City Council members Chris McMahon, Adam Anders, John Davenport, Robert Arnold, and Julie Gauthier. City administrators guiding the project were City Manager Andre Wimer and Public Works Director Taylor Shelton, PE. LJA Engineering, Inc., project manager was W.L. “Bill” Worsham, PE, assisted by, Stephanie Gonzales, PE, Evan Walters, and Victoria Jones (LJA Project No. B753-1003). Additional professional services were provided by Roy Mann of The Rivers Studio, LLC. Grant managers on behalf of the City of Port Neches were Peter Ravella and Lillian Johnson of Peter A. Ravella Consulting, LLC. TGLO grant managers were Julie McEntire and Melissa Porter.



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## **Executive Summary**

This Riverfront Planning and Design Report is an important part of an ongoing initiative by the City of Port Neches to reclaim and beautify its heritage waterfront. Previous City efforts have resulted in the acquisition and environmental cleanup of more than a half-mile of Neches River waterfront. Now, preparations are being made to redevelop the site.

Input from City planners and participants in two public meetings led to the formation of a vision for a publicly-accessible scenic walkway along the river's edge. Ideas presented herein represent that vision, and are meant to be adaptable to specific development opportunities as they arise.

The overarching premise of the planning and preliminary design is that the river is a public natural resource to be featured in the redevelopment of the site. Sensible development will incorporate the river in various ways, whether as a beautiful scenic backdrop, recreation area, transportation route, relaxation space, or a place to learn about the history and heritage of Port Neches.

As you will see, the vision includes a river bank stabilized to protect against natural water flow and manmade wakes and surges. Above the bank, a wide walkway is featured including shade, seating, and spaces for public art and other displays. Pedestrian access can be provided to and from commercial outlets along the waterfront such as restaurants, shops, professional spaces, entertainment venues, lodging, or other desirable landward development.

A connection to the natural resources of the Neches River system is also provided, featuring a boardwalk extending over the water along a living shoreline protected from ship wakes by a rock breakwater. The boardwalk also connects the new public waterfront to the existing, very popular park and boat ramp located immediately downstream. The vision extends the publicly-accessible improvements along the waterfront edge of the boat ramp parking areas.

Although not a primary focus of the waterfront planning and design effort, the vision includes potential sidewalk improvements along Block Street, Lee Avenue, and Merriman Street to form a continuous pedestrian path around the perimeter of the site and

connecting with Port Neches Park, City Hall and historic downtown Port Neches. Woodcrest Elementary and PN-G High School are also nearby.

An important part of the planning and preliminary design effort is the formulation of cost estimates of various plan elements. Planning-level estimates developed herein can form the basis for local decision making about priorities and the scheduling of proposed improvements based on availability of funds. The estimates also facilitate pursuit of potential external funds from a variety of sources, both public and private.

## **Purpose and Need for Riverfront Planning and Design**

City leaders intend to repurpose this former industrial site into a valuable and productive space that reconnects the public to the Neches River waterfront. Previous City efforts have resulted in the acquisition and environmental cleanup of the site including more than a half-mile of Neches River waterfront. A plan of action was needed to identify next steps and indicate the potential costs involved. The City specifically identified river bank stabilization and creation of a public waterfront corridor as two elements for which planning and cost estimates were needed.

The City sought and received a matching grant from the Texas Coastal Management Program for this purpose.

Texas Coastal Management Program grant funds will continue to be a suitable source for plan implementation. Other ongoing potential grant sources include the Coastal Erosion Planning and Response Act (CEPRA) program also administered by the Texas General Land Office; the Boating Access Grant Program administered by Texas Parks and Wildlife Department; federal RESTORE Act funds and the various other "buckets" of restoration funding originating from the settlement of impacts of the 2010 Horizon Offshore spill in the Gulf of Mexico including the Gulf Environmental Benefit Fund (GEBF) administered by the National Fish and Wildlife Foundation (NFWF) and Natural Resource Damage Assessment (NRDA) through state trustees headed by Texas Commission on Environmental Quality; and federal Gulf of Mexico Energy Security Act (GOMESA) funds available to coastal counties as well as the State of Texas. Local hotel occupancy taxes may also be applicable.



CITY OF PORT NECHES  
RIVERFRONT PLANNING & DESIGN  
PLAN OVERVIEW EXHIBIT



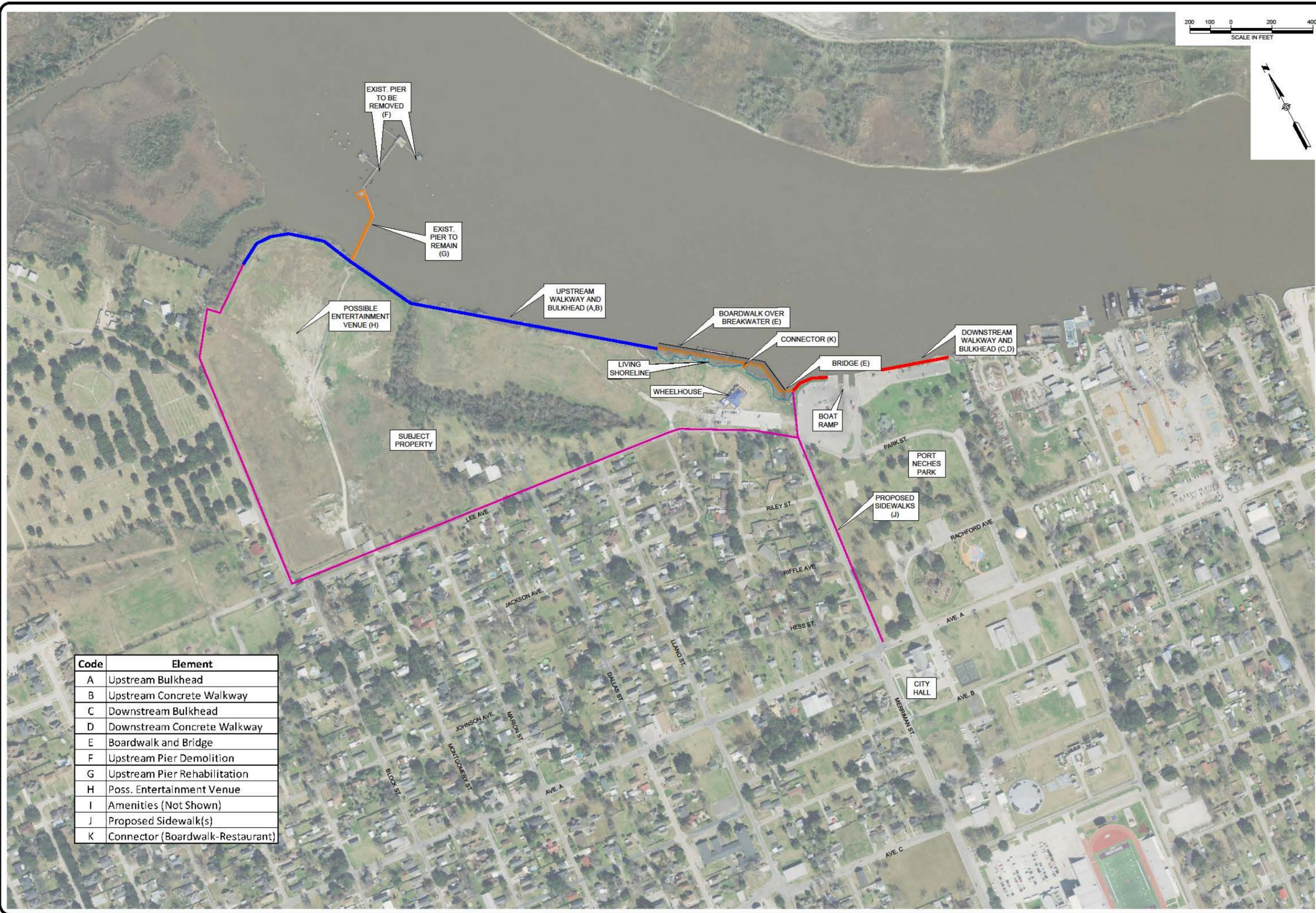
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DRAWING NAME:	PLAN-OVERVIEW-01.dwg

**LJA**  
Phone: 409.613.1862  
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**LJA Engineering, Inc.**  
Coastal Group  
323 2nd Street  
Galveston, Texas 77550

JOB NUMBER:  
753-1001

SHEET NO.  
**1**  
OF 1 SHEETS



Code	Element
A	Upstream Bulkhead
B	Upstream Concrete Walkway
C	Downstream Bulkhead
D	Downstream Concrete Walkway
E	Boardwalk and Bridge
F	Upstream Pier Demolition
G	Upstream Pier Rehabilitation
H	Poss. Entertainment Venue
I	Amenities (Not Shown)
J	Proposed Sidewalk(s)
K	Connector (Boardwalk-Restaurant)

# I. Introduction

## 1. Regional Context

Port Neches is an incorporated community of over 13,000 residents situated in Jefferson County, Texas on the south bank of the Neches River, some 6 miles upstream of Sabine Lake and 12 miles downstream of Beaumont.

The regional economy is closely linked to the petrochemical industry, for which the Neches River is a vital transportation route. The region is also known for abundant natural resources, including the Neches and Sabine Rivers, Sabine Lake, the Gulf of Mexico and its beaches, and vast marshes and wetlands numbering thousands of acres, along with the fish and wildlife that inhabit them. Hunting, fishing, and birding are significant activities that are integral to the local coastal lifestyle and quality-of-life.

The regional population is over 250,000. Other nearby population centers include Lake Charles, Louisiana to the east and Houston to the west.

Information about Port Neches and its history was obtained from a variety of sources, including the City web site, the Port Neches Chamber of Commerce, the Museum of the Gulf Coast, Texas State Historical Association, and the book "Sapphire City on the Neches" by W.T. Block.



## 2. History of the Port Neches Waterfront

The site overlooking the Neches River was first settled in 1834 by Joseph Grigsby and his family. The riverfront settlement was known as Grigsby's Bluff. According to the Texas State History Association, the area was formerly the site of an Attakapa Indian village, relics of which were excavated in 1841.

In the 1850's the site was home to a gristmill and steam sawmill.

By 1860, census records indicated 80 residents in the community. During the Civil War, "Fort Grigsby" became the temporary fallback position of the Confederate troops guarding the Neches River after the abandonment of Sabine Pass.

The area changed forever with the discovery of oil at the Spindletop field in nearby Beaumont, and the birth of the local oil refining industry. The Central Asphalt Company set up a plant near Grigsby's Bluff in 1902, and the town of Port Neches was planned along the new Kansas City railroad.

World War II brought synthetic rubber and butadiene plants to Port Neches that continued the tradition of the industrial waterfront.

In addition to the industrial waterfront, the 27-acre Port Neches RiverFront Park and its associated public boat ramps on the Neches River have served the community for many decades and has helped maintain the public's connection to the riverfront. The park includes the "Tugboat Island" playscape, a splash park, an authentic Cajun house known as La Maison Beausoleil, a pavilion, restroom, and various recreational facilities.

The annual RiverFest at the park celebrates the city's connection to the river each spring.





## II. Land Use and Mobility Constraints

### 1. Functional Constraints

A variety of functional constraints exist at the City-owned waterfront property.

The river bank was protected from erosion by bulkheading and riprap that is far beyond its useful life and is failing in most locations. Stabilization of the river bank is a prerequisite to meaningful upland infrastructure investment. The City is presently implementing a breakwater project for a portion of the waterfront, scheduled for 2017 construction.

Existing adjacent land uses include an operational cemetery, a federally-authorized deep-draft ship channel within the Neches River, an operating restaurant, and hundreds of single-family residences.

Primary vehicular ingress and egress for the area is from Lee and Merriman Streets. Utilities are available adjacent to the property but do not presently exist within the site.



## 2. Pedestrian Considerations

Within the overall riverfront acreage, the areas most in need of care in land use planning and subject to caution in mobility (road, trail, path) planning and construction are those in proximity to Oak Bluff Memorial Park at the upstream end, out of concern for the needs for quiet of families and others visiting this cemetery, and in proximity to Port Neches Park and the boat ramps at the downstream end, out of concern for the separation of users from unbuffered vehicular traffic.

## 3. Shore Protection Requirements

A primary focus of the current planning and design effort is to develop a plan of action to stabilize the river bank and create a wave barrier in anticipation of future waterfront development. The stabilized bank must withstand typical tidal river conditions for a 20-plus year design life. In addition, due to the adjacent deep-draft ship channel and future plans by the US Army Corps of Engineers to deepen the channel further, the bank must also withstand significant ship-induced waves and surges on a daily basis.

A public easement along the river bank will facilitate construction and maintenance of shore protection measures.

## 4. Regional access to PN/riverfront (land/sea)

Merriman Street is presently the preferred route to and from the riverfront and should remain so in order to protect the established neighborhoods from excessive new traffic. Although not within the scope of the current planning effort, the City would benefit from further effort to define the near-and long-term access, parking, and neighborhood insulation needs, given the potential of the area to attract hundreds of new visitors at a time.

In addition, the waterfront is a potential destination for waterborne visitors. Consideration should be given for the accommodation of boat landings and whether or not to promote other boating activities as part of the planning process, in addition to considering ongoing uses of the existing boat ramps.

## 5. Site Utilities

At present, the site generally lacks civil infrastructure including water, wastewater, electricity, fire flow, and drainage, although each of these is available adjacent to the property.

## 6. Maintenance capacity (City and/or private)

City staff have indicated a desire to limit the maintenance requirements for public facilities on site. Access (sidewalk, trail, and pier) development should conform to Texas Accessibility Standards (TAS) and Americans with Disabilities Act (ADA) requirements.

## 7. Floodplain

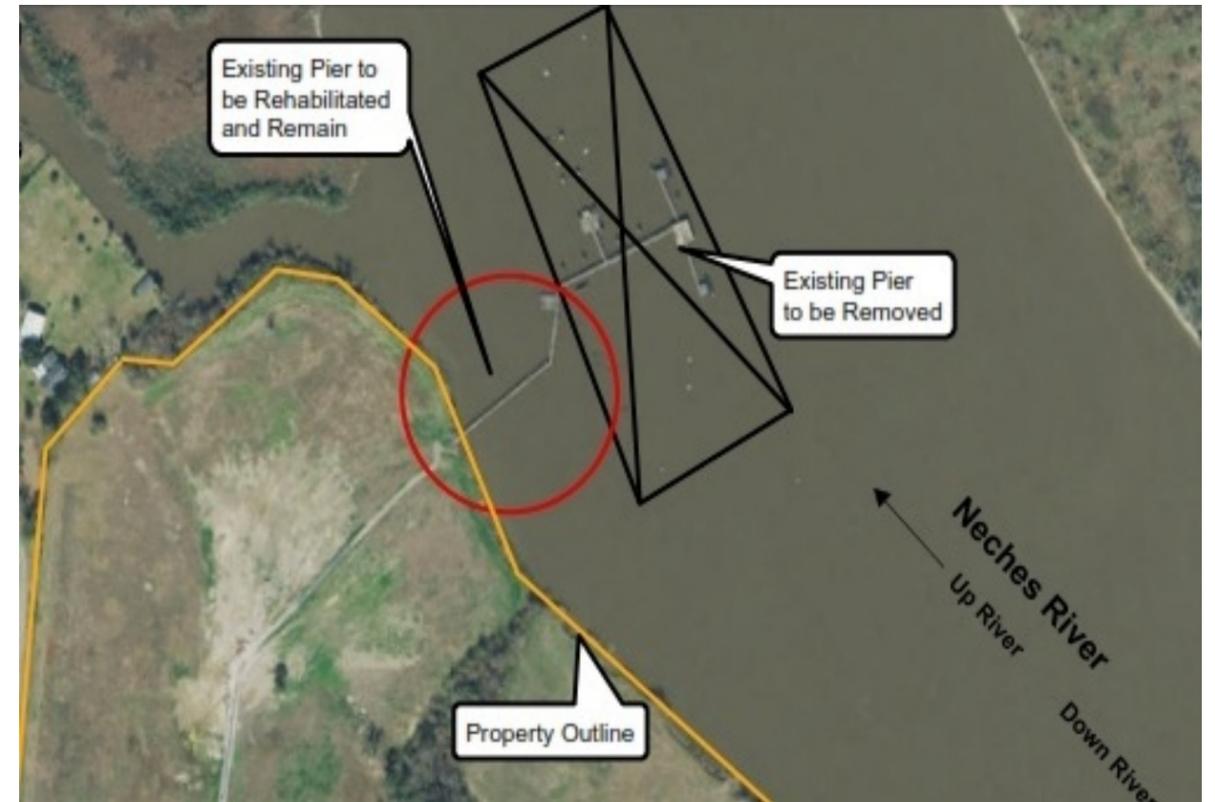
The riverfront is within the regulatory floodplain and could possibly be flooded by combinations of rising tides and storm surges with rainfall runoff from upstream.

## 8. Existing structures

Existing upland structures associated with the site include a public pavilion and restroom facilities adjacent to the boat ramp parking lot, as well as the Neches River Wheelhouse Restaurant.

Existing shorefront structures along the river bank include low bulkheading and concrete rubble used as bank protection adjacent to the boat ramps; failed bulkheading and concrete rubble bank protection upstream of the restaurant; and an inoperative former liquid bulk cargo pier extending into the Neches River from the upstream portion of the site. In addition, derelict steel bulkheading and a steel pier adjacent to the Wheelhouse Restaurant are to be removed in early 2017 by the City with the help of a Texas Coastal Management Program (CMP) grant.

The pier to be removed near the restaurant is shown in the photo below. The portion of the upstream pier to remain and be rehabilitated is shown in the lower right photo.



### III. Potential future land uses

#### 1. Private

In the near-term, the site is subject to an existing developer option agreement that may ultimately influence the development trajectory of the site. The likely approach to development of the site based on this agreement was uncertain at the time of this planning effort. A variety of future land uses is possible for the site, subject to the constraints of the existing developer option agreement, at least at this time.

Potential private land uses include restaurants/café's; concessions; retail; an entertainment venue; professional; hotel; short term rental; and residential uses, to name a few.



#### 2. Public

Potential public land uses may include an amphitheatre; heritage interpretive center; display of historical waterfront uses; walking paths, trails, and trailside interpretation; shore access (pedestrian, fishing, hunting, boating, kayaking, personal watercraft; and public safety operations (land and water-based). Costs to implement such uses can range from tens of thousands of dollars for paths, trails, and interpretive signage, to hundreds of thousands for operations facilities, to over a million dollars for a public pier or an entertainment venue such as an amphitheatre.

All private and public uses related to the riverfront must acknowledge the continued passage of deep-draft commercial vessels and associated safety concerns including wakes and surges, as well as future deepening of the river channel by the the U.S. Army Corps of Engineers.

The riverfront itself can be a public magnet, as can a pier, boardwalk, and other river-dependent uses and attractions.



## IV. Waterfront Stabilization and Public Access

As a prelude to future development of its Neches River waterfront, the City desires to stabilize the river bank and restore the public's connection to the riverfront for the long term. This will include the necessity for a riverfront wave barrier and possibly other structures or shoreline protection measures due to any future deepening of the ship channel by the Corps of Engineers. Accordingly, the focus of the current planning and preliminary design effort is to produce a vision for the public waterfront to be refined and executed by the City, as well as a planning-level estimate of the cost involved.

Prior consideration by City leaders, augmented by public input opportunities provided as part of current grant activities, has led to the formulation of alternative opportunities for public improvements to the riverfront in fulfillment of City goals.

Input from City leaders, the public, and professional members of the project team offered the following aesthetic resources, constraints, and opportunities.

Developing a high-quality public waterfront will require consideration of each of the following. Each site warrants specific analysis and proposed solutions.

### 1. Long views—upstream, downstream, across river

Part of the charm of visiting the Port Neches waterfront is the open view of the river, both up and downstream, as well as across the river to the wetlands. This unobstructed view of the riverfront is found in few areas along the Neches River, many of which are industrialized. In addition, the city's waterfront park offers a starting point for birding, boating, water sports, fishing, hunting, etc.



## 2. Near views

Analysis of near views considers trees; birds; amenities; seating; piers and moorings (near the upstream pier); the riverwalk/boardwalk; public art; and potentially an amphitheatre.

Also, while future developers will likely be responsible for their own parking scheme, the City can review and amend City Code to ensure the Riverscape remains aesthetically pleasing. One element of potentially very high value will be the planting of shade trees and bankside flora which will provide an aesthetically pleasing environment.

## 3. Recreation

Recreation considers fitness/health; fishing; hunting; boating/personal watercraft; birding; and any other waterfront activities.



## 4. Economics

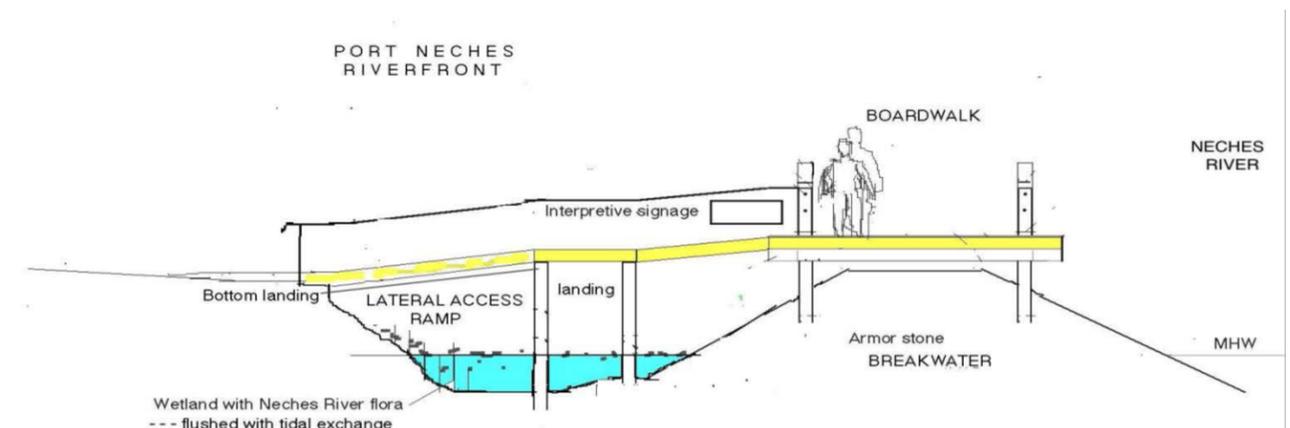
The economics of the public waterfront will require public revenue streams to serve capital project and maintenance requirements. Development of a regional destination attraction can be central to the economic success of the riverfront.

Since taking care to develop the riverfront -- both private and public properties -- as aesthetically, as scenically as possible -- will be to everyone's benefit, ensuring continuing benefit and economic and community growth for Port Neches through its riverfront revitalization program, the what and how of the riverfront's landscape design and implementation programs, and the measures by which the private sector and the City will collaborate, will be of highest priority.

With these environmental enhancements, the people of Port Neches will find new enjoyment along their river. Equally important will be the new attraction of the riverfront to people who hail from beyond the city.

## 5. Essential First Steps

Getting from here and now to the future goal requires several essential first steps on the part of the City, including continuing the ongoing waterfront cleanup; stabilization of the river bank; and identifying a range of potential project elements. The City has successfully initiated these steps, and is poised to move ahead.



## V. Potential Elements and Planning-Level Costs

Map Code	Element	Estimated Cost
A	Upstream Bulkhead	\$3,045,600.00
B	Upstream Concrete Walkway	\$788,882.00
C	Downstream Bulkhead	\$751,680.00
D	Downstream Concrete Walkway	\$215,074.00
E	Boardwalk and Bridge	\$645,387.00
F	Upstream Pier Demolition	\$1,250,000.00
G	Upstream Pier Rehabilitation	\$1,050,610.00
H	Entertainment Venue (1500-2000 seat)	\$1,515,870.00
I	Amenities (Not Shown)	\$278,923.00
J	Proposed Sidewalk(s)	\$868,506.00
K	Connector (Boardwalk-Restaurant)	\$26,080.00
	<b>Subtotal</b>	<b>\$10,436,612.00</b>
	Mobilization and Demobilization	\$1,565,491.80
	Permitting, Engineering, & Proj Management	\$3,600,631.14
	<b>Total</b>	<b>\$15,602,734.94</b>

## Assumptions

Values noted in the cost estimates are based on the following assumptions.

- Upstream (A) and downstream (C) bulkhead costs (vinyl sheet piles, cross wales, anchor piles, concrete caps, scour protection) are estimated to be \$1,200 per foot;
- Boardwalk installation (E) (piles, substructure, 12-ft wide decking, railing, and LED overhead lighting) at \$904 per linear foot;
- Deck installation between the boardwalk and shoreline near the Wheelhouse restaurant (K) at \$217 per square foot (includes lighting);
- 12-ft wide concrete walkway, upstream of the boardwalk (B), with handrails and lighting at \$336 per linear foot;
- 12-ft wide concrete walkway, downstream of the boardwalk (D) at \$221 per linear foot (the difference in cost per linear foot is based on the assumed need for an electrical utility service point for the upstream portion);
- Upstream pier demolition (F) at \$25,000 per day for a heavy barge crane, support vessel(s), and crew to remove support pilings, substructure, dolphin/fender piles, and superstructure components;
- Upstream pier rehabilitation (G) at \$125 per square foot including substructure repair, decking, railing, and lighting;
- Upstream pier rehab assumes a 400-ft long, 10-ft wide walkway and two 1,000 square foot observation decks, a landing structure, and lighting (G);
- A 1,500-2,000 seat entertainment venue (H)
- Sidewalks along Merriman, Lee and Block Streets (J), including electrical lighting, are estimated at \$160 per linear foot
- Mobilization costs are estimated at 10% of construction cost;
- Engineering, permitting, and project management at 30% of construction cost;

Amenities (I) could include a public restroom, public seating (benches), small pavilions or other shade structures, and landscaping. It is assumed the City would provide water and wastewater services where required.

## VI. Next Steps

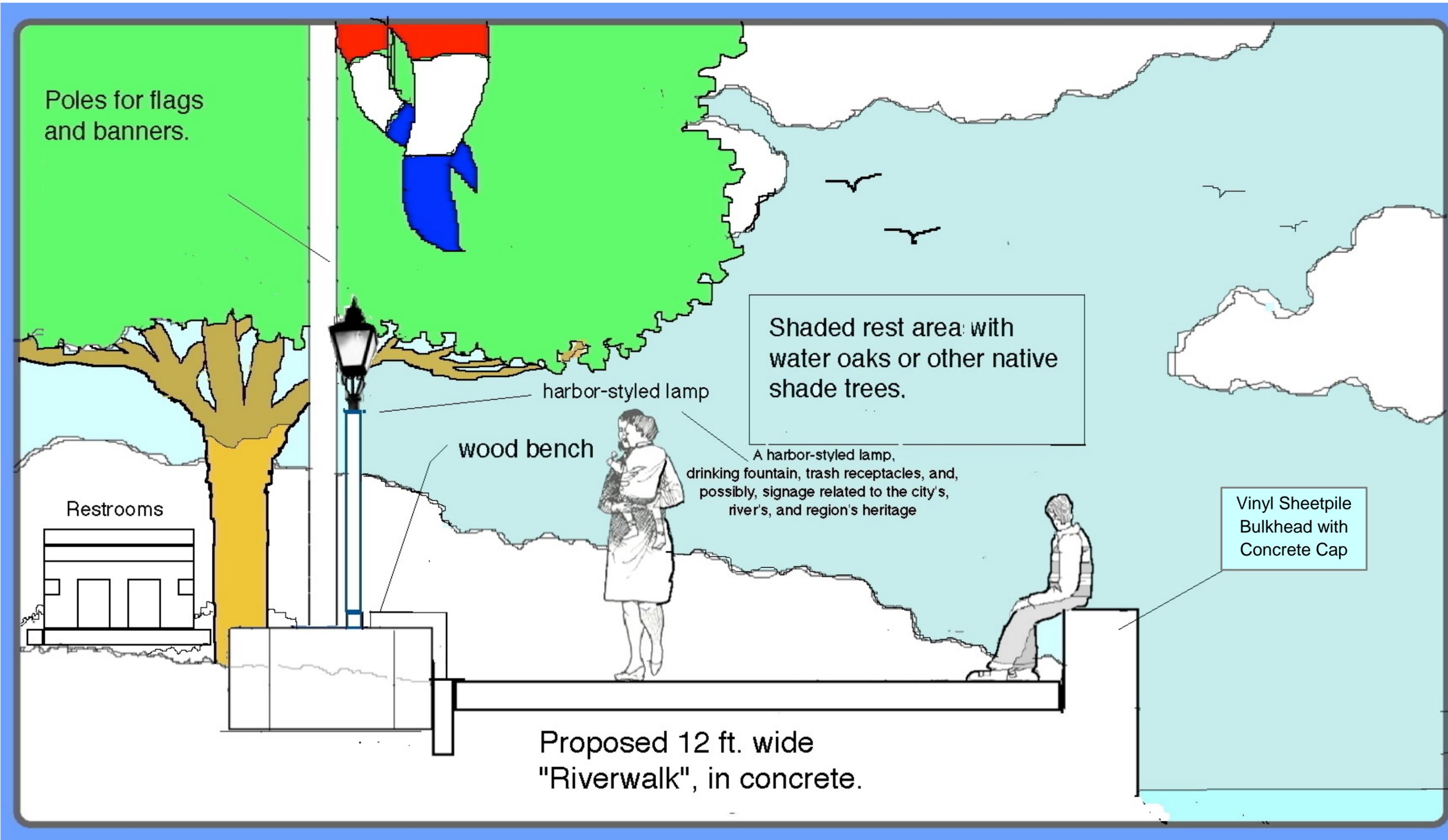
As a prelude to future development of its Neches River waterfront, the City desires to stabilize the river bank and restore the public's connection to the riverfront for the long term. Accordingly, the focus of the current planning and preliminary design effort is to produce a vision for the public waterfront to be refined and executed by the City, as well as a planning-level estimate of the cost involved.

A fundamental next step is to identify potential funding sources and revenue streams to allow the City to execute its vision by promoting and expanding public access to the Neches riverfront.

Texas Coastal Management Program grant funds will continue to be a suitable source for plan implementation. Other ongoing potential grant sources include the Coastal Erosion Planning and Response Act (CEPRA) program also administered by the Texas General Land Office; the Boating Access Grant Program administered by Texas Parks and Wildlife Department; federal RESTORE Act funds and the various other "buckets" of restoration funding originating from the settlement of impacts of the 2010 Horizon Offshore spill in the Gulf of Mexico including the Gulf Environmental Benefit Fund (GEBF) administered by the National Fish and Wildlife Foundation (NFWF) and Natural Resource Damage Assessment (NRDA) through state trustees headed by Texas Commission on Environmental Quality; and federal Gulf of Mexico Energy Security Act (GOMESA) funds available to coastal counties as well as the State of Texas. Local hotel occupancy taxes may also be applicable.

The project team also suggests consideration of one or more potential regional destination attractions, and includes examples in the Appendix.





Poles for flags and banners.

Shaded rest area with water oaks or other native shade trees.

harbor-styled lamp

wood bench

A harbor-styled lamp, drinking fountain, trash receptacles, and, possibly, signage related to the city's, river's, and region's heritage

Vinyl Sheetpile Bulkhead with Concrete Cap

Restrooms

Proposed 12 ft. wide "Riverwalk", in concrete.



Artist Rendering of Riverfront Boardwalk near City Park and Wheelhouse Restaurant



**Artist Rendering of Upstream Pier and Entertainment Venue**

## Appendix

### Potential Riverfront Tourism Magnets -- Creating Strong Visitor Attraction and Public/Private Revenue

#### Concepts for regional Destination Opportunities

- Pier
- Dynamic lighting (pier and/or elsewhere)
- Featured public art
- Heritage center
- Performance venue

Area museums are an example of successful visitor attractions that can draw thousands of tourists, sightseers and other visitors to a particular community. With Port Neches' rich heritage in Indian, Cajun, and Texan settlement, in fascinating oil exploration, production, and refining, the grand tapestry of Southeast Texas' river, forest/wetland, and Gulf beach-and waters environment, and, among other chapters, the town's service to the nation in World War II, you have all the ingredients for a highly successful visitor attraction.

The overall concept could include a concert amphitheater-and-performance stage on the riverbank in some manner similar to the color illustrations given in this report, including a weather-proof building with state-of-the-art exhibitions, videos/films, historic event simulations, and a colorful panorama of Southeast Texas/Port Neches historic and environmental highlights. This facility would not be a staid and quiet museum. It would be rich with color, fascinating film and video, and attracting static displays, the elements that attract young and old explorers today.

#### Concept detail—Port Neches Lightscape Celebration Pier

Port Neches could have a major regional attraction, a transformation of the old tanker-loading (upstream) pier into the "Port Neches Lightscape Celebration Pier" (or otherwise suitable name). This could be an extravaganza of lighting displays, both static and dynamic, with one or more modest-sized steel towers on which a myriad of LED and other lighting would be installed and programmed variously. These would be erected on the reinforced and widened existing pier.

The LED's, several neon art-works, and illuminated screens (suitable for both day-time and night-time presentations) could be dynamically programmed, both as sets of attractive lights creating art forms and as outlines of significant ships, other watercraft, and land structures significant in Port Neches' heritage, such as a pump-jack or drilling feature. The lighting effects, installed on one or more open-work light steel structures, could appear to audiences/observers three-dimensionally.

One or two river, estuary, or Gulf creatures could also be wrought (see the Sarasota inset as an example). Once created, the lighting programs could be modified through simple variable switching by City staff. One or more of the light programs could be combined with (low-volume) musical elements together with voice-overs to form visual-audial presentations similar to those of state and National Parks' visitor center interpretive programs.

Simple, sparsely loaded "light-chains" could also be affixed to the edges of the rebuilt pier deck, so that concert-goers and other night visitors would be treated to regular displays; this lighting would also provide orientation and safety value.

Such funding sources as the Texas Commission on the Arts, various foundations, and a local businesses and industries could be willing to consider requests from the City for funding some or much of such a project, with, say, naming privileges.

Manatee Baywalk conceived for Sarasota's Bayfront by TRS' Roy Mann



Oklahoma City's SkyDance Bridge, on the river's backshore in tribute to the ScissorTail Flycatcher, OK's state bird

