CITY OF PORT LAVACA

COUNCIL MEETING: APRIL 14, 2025

DATE: 04.09.2025
TO: HONORABLE MAYOR AND CITY COUNCIL MEMBERS
FROM: JODY WEAVER, INTERIM CITY MANAGER
SUBJECT: GLO CEPRA CYCLE 14 Grant Application for Lighthouse Beach

Background:

As you recall, we were awarded a GLO CEPRA Cycle 13 grant in 2023 in the amount of \$105,000 combined with \$70,000 matching funds for the Lighthouse Beach Phase 1 project. The scope of this project, for which GLO was the lead partner, included performing a feasibility study and develop an engineered solution to accomplish 1) nourish the recreational beach at Lighthouse Beach Park to reduce erosion, 2) protect and enhance the wetlands, and 3) improve the performance of existing structures along with a secondary benefit to modify sediment transport pathways to prevent future erosion and resulting deposition within the boat ramp basin. Attached is a copy from the draft final report showing the alternatives studied. The full report can be downloaded at the following link: https://cleargov.com/texas/calhoun/city/port-lavaca/projects/16604/port-lavaca-lighthouse-beach-phase-1-cepra The Final Report will reflect a recommendation of Alternative 1b to protect the wetlands and Alternative 2b or 2 c for the beach area. We are meeting next week to discuss the pros and cons of each option. The combined cost estimate is \$2.95M and \$2.76M respectively.

CEPRA is a GLO grant program (Coastal Erosion Planning and Response Act) that accepts applications every other year. This year's application is due on May 1. With the completion of the Phase 1 study and recommendation phase, we would like to apply for the next phase which would include Preliminary Engineering, Permitting, and Final Design (95%) Engineering. If successful, we would again partner with the GLO who would perform as lead partner. The proposed cost for this phase is \$395,000. The City would be responsible for 40% as matching funds. This means we would need to include \$158,000 in next year's budget for these matching funds. If we are awarded the grant, we would need to pay the matching funds in the spring of 2026.

If approved, the hope would be that this Cycle 14 project for the engineering and permitting would be complete in order to consider an application in 2027 for construction funding. Of course, this timing will depend a lot on how long it takes to receive the COE permit. (We can't apply for construction funding until we have that in hand). We also intend to apply to have this project included in the 2027 GLO Coastal Resiliency Master Plan, which will open us up to more construction funding for our match amount.

Budgetary Impact:

If awarded, we will need to include \$158,000 in the Lighthouse Beach budget for FY 2025-26. If there is another opportunity this year to apply for Matagorda Bay Mitigation Trust funding, we could apply for this match amount.

Recommendation:

Staff recommends City Council approve Resolution R-041425-2 to approve and support the submission of a CEPRA Cycle 14 grant application and commit \$158,000 of local match dollars.



Alternative 1a

Alternative 1b

Figure 28. Proposed alternatives for the marsh section.

For the beach shoreline, three alternatives were developed, referred to as Alternatives 2a, 2b, and 2c. All alternatives include beach nourishment along Lighthouse Beach with the geometry described in Section 4.1.1. Alternative 2a includes the small beach nourishment template along the entirety of the shoreline. Alternative 2b includes the small beach nourishment template on the north side of Lighthouse beach and the large beach nourishment template on the south side of Lighthouse Beach. Alternative 2b also includes the addition and/or modification of coastal structures to create a pocket beach. The structures would include a new groin structure on the southern end of Lighthouse Beach measuring 425 ft and an extension of the existing northern groin structure by 250 ft, resulting in a total structure length of 415 ft. Alternative 2c includes the same beach nourishment template as Alternative 2a and the addition of three offshore breakwaters along the -1 ft NAVD88 contour. The breakwater structures have a length of 175 ft and gaps of 100 ft. Figure 29 shows alternatives 2a, 2b, and 2c. Alternative 1b is shown with all alternatives for the marsh section.



Figure 29. Proposed alternatives for the beach section. The green hatch shows the existing estuarine wetlands delineated during the habitat survey (Section 2.6).

5.4 Construction Costs

An Engineer's Estimate of Probable Costs (EOPC) were prepared for each conceptual alternative based on market pricing for projects in the surrounding area, input from contractors, and engineering judgement. Marsh alternatives (Alternative 1a and 1b) and beach alternatives (Alternatives 2a, 2b, and 2c) were evaluated independently and then combined to calculate the costs for the full project. Table 8 summarizes the estimated construction costs for each combination of alternatives.

Alternative Combination	Construction Cost
Alternative 1a + 2a	\$832,452
Alternative 1a + 2b	\$2,502,278
Alternative 1a + 2c	\$2,313,282
Alternative 1b + 2a	\$1,279,500
Alternative 1b + 2b	\$2,949,326
Alternative 1b + 2c	\$2,760,330

Table 8. Summary of construction costs for each combination of alternatives.

The cost estimates for each alternative were broken down and are shown in Table 9. The materials, equipment, and labor needed to construct each item was determined based on the best available data. The cost for the material, transport to site, offloading, and placement were all included in the price for each item. The following assumptions were used to develop the cost estimates for the project:

- The mobilization and demobilization were estimated as 20% of the total construction cost.
- The costs for Best Management Practices (which includes turbidity control and similar environmental protection measures) and Construction surveying were determined based on engineering judgement and the prices received for similar projects in the area, adjusted for inflation.
- The costs for the marsh fill assumed that the material could be sourced locally from the adjacent boat ramp basin and/or the dredge material placement (DMPA) located adjacent to the boat ramp basin.
- The costs for the Artificial Reef Units were determined independently for two (2) types of units including Oyster Breaks and Natrx Exoforms. The unit price per Artificial Reef Units was determined based on the maximum unit price of the two (2) units. Wave Attenuation Devices (WADs) were excluded because the geometry is not feasible for the shallow conditions at the project site.
- The costs for the geotextile material was determined based on bids received for similar projects in the area, adjusted for inflation.
- The cost for the stone, including armor stone and bedding stone, were determined based on input from contractors for similar projects in the area, adjusted for inflation.
- Repairs for the existing groins were included for both groins for Alternative 2c, for the north groin only for Alternative 2b, and neither of the two groins for Alternative 2a. Repairs assume two layers of Armor stone will be added to the existing groins.
- The costs for beach fill assumed that the material was sourced from Vulcan Materials. Vulcan Materials has a high quantity of readily available manufactured beach quality sand and is located in Victoria, Texas.
- A 20% contingency was incorporated into the estimated costs to account for the conceptual level design, variation in unit prices, and other uncertainties.

Table 9. Conceptual Cost Estimates.

		Estimated			
Item No.	Description	Quantity	Unit	Unit Cost	Total Cost
Alternative	e 1a				
1.1	Mobilization and Demobilization	1	LS	\$51,000	\$51,000
1.2	Best Management Practices	1	LS	\$8,000	\$8,000
1.3	Construction Surveying	1	LS	\$50,000	\$50,000
1.4	Marsh Fill - Local Dredged Fill	3,000	CY	\$65	\$194,840
			Alterr	native 1a Subtotal	\$303,840
				20% Contingency	\$60,768
			Alt	ernative 1a Total	\$364.608

Estimated

Item	No. Description	cription Quantity Unit Unit Cost		Total Cost	
Alte	rnative 1b				
1.1	Mobilization and Demobilization	1	LS	\$113,000	\$113,000
1.2	Best Management Practices	1	LS	\$17,000	\$17,000
1.3	Construction Surveying	1	LS	\$50,000	\$50,000
1.4	Marsh Fill - Local Dredged Fill	3,000	CY	\$65	\$194,840
1.5	Breakwater Unit	235	EA	\$1,120	\$263,200
1.6	Breakwater Geocomposite	426	SY	\$90	\$38,340
				Alternative 1b Subtotal	\$676,380
				20% Contingency	\$135,276
				Alternative 1b Total	\$811,656

		Estimated			
Item	No. Description	Quantity	Unit	Unit Cost	Total Cost
Alter	rnative 2a				
1.1	Mobilization and Demobilization	1	LS	\$65,000	\$65,000
1.2	Best Management Practices	1	LS	\$10,000	\$10,000
1.3	Construction Surveying	1	LS	\$50,000	\$50,000
1.4	Beach Fill - Upland Sand Fill	5,000	CY	\$53	\$264,870
			native 2a Subtotal	\$389,870	
				20% Contingency	\$77,974
			Al	ernative 2a Total	\$467,844

		Estimated			
Item No. D	escription	Quantity	Unit	Unit Cost	Total Cost
Alternative	e 2b				
1.1	Mobilization and Demobilization	1	LS	\$336,000	\$336,000
1.2	Best Management Practrices	1	LS	\$49,000	\$49,000
1.3	Construction Surveying	1	LS	\$50,000	\$50,000
1.4	Beach Fill - Upland Sand Fill	8,000	CY	\$53	\$423,792
1.5	Armor Stone - Groin Repairs	642	TON	\$225	\$144,450
1.6	Bedding Stone - Breakwaters	1,110	TON	\$225	\$249,750
1.7	Armor Stone - Breakwaters	2,120	TON	\$225	\$477,000
1.8	Geotextile - Breakwaters	3,180	SY	\$30	\$95,400
			Alter	native 2b Subtotal	\$1,781,392
				20% Contingency	\$356,278
Alternative 2b Total					\$2,137,670

		Estimated			
Item No. De	escription	Quantity	Unit	Unit Cost	Total Cost
Alternative	2c				
1.1	Mobilization and Demobilization	1	LS	\$257,000	\$257,000
1.2	Best Management Practices	1	LS	\$38,000	\$38,000
1.3	Construction Surveying	1	LS	\$50,000	\$50,000
1.4	Beach Fill - Upland Sand Fill	5,000	CY	\$53	\$264,870
1.5	Armor Stone - Groin Repairs	1,283	TON	\$225	\$288,675
1.6	Bedding Stone - New Groins	920	TON	\$225	\$207,000
1.7	Armor Stone - New Groins	1,890	TON	\$225	\$425,250
1.8	Geotextile - New Groins	2,570	SY	\$30	\$77,100
			Alte	rnative 2c Subtotal	\$1,623,895
				20% Contingency	\$324,779
			Α	Iternative 2c Total	\$1,948,674