

West Galveston Island Bayside Marsh Restoration Project (construction September 2016 – November 2016)

- Coastal Impact Assistance Program – \$2,510,500
 - Galveston Bay Estuary Program (TCEQ) – \$200,000
 - NRG Texas (in-kind *Spartina* plants) – \$100,000
 - Coastal Erosion Planning and Response Act – \$50,000
 - Texas Parks and Wildlife Department (in-kind) – \$10,000
- \$2,870,500**



...determining a need, habitat loss.



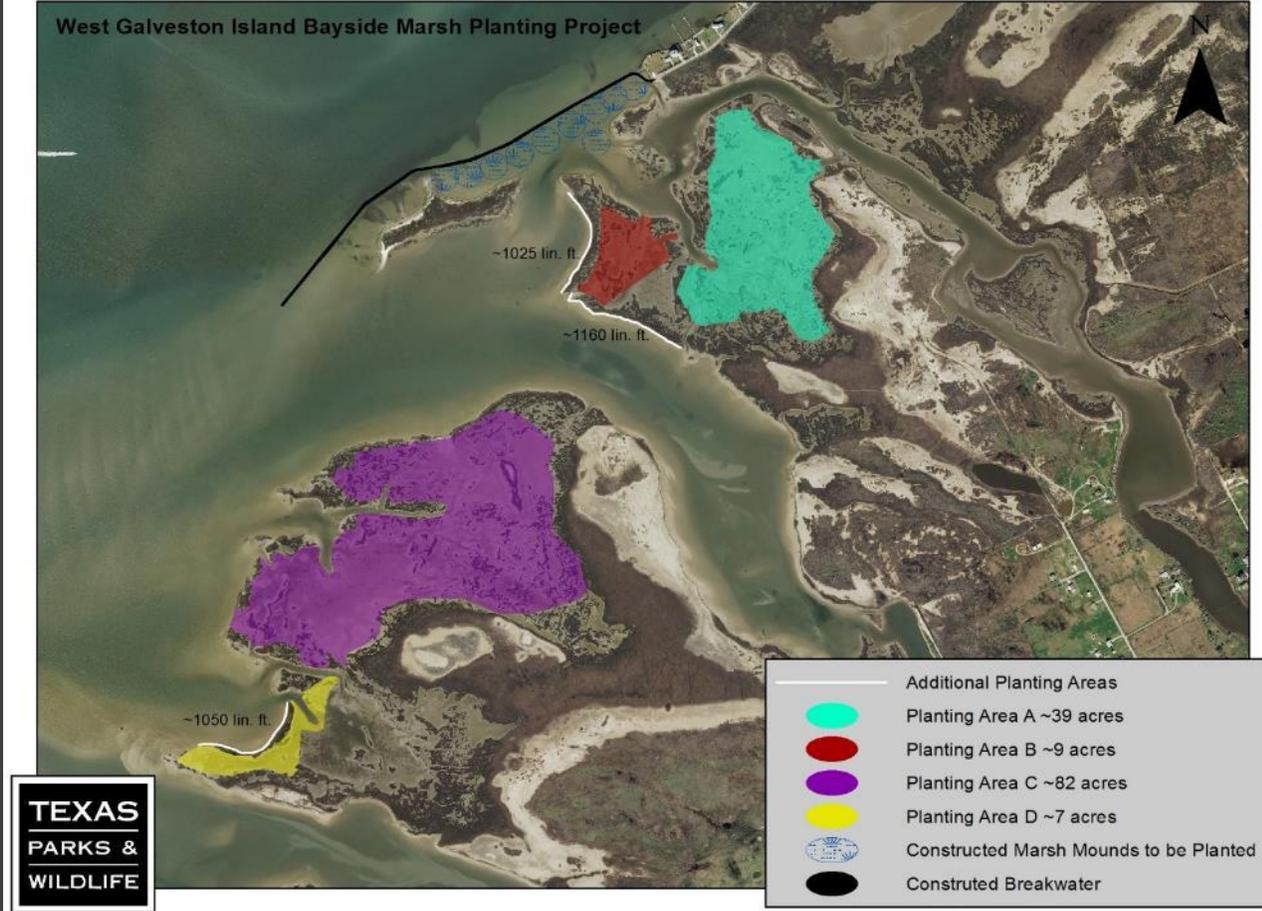
...determining a need, habitat loss.



....and many potential design renditions



....and more potential design renditions

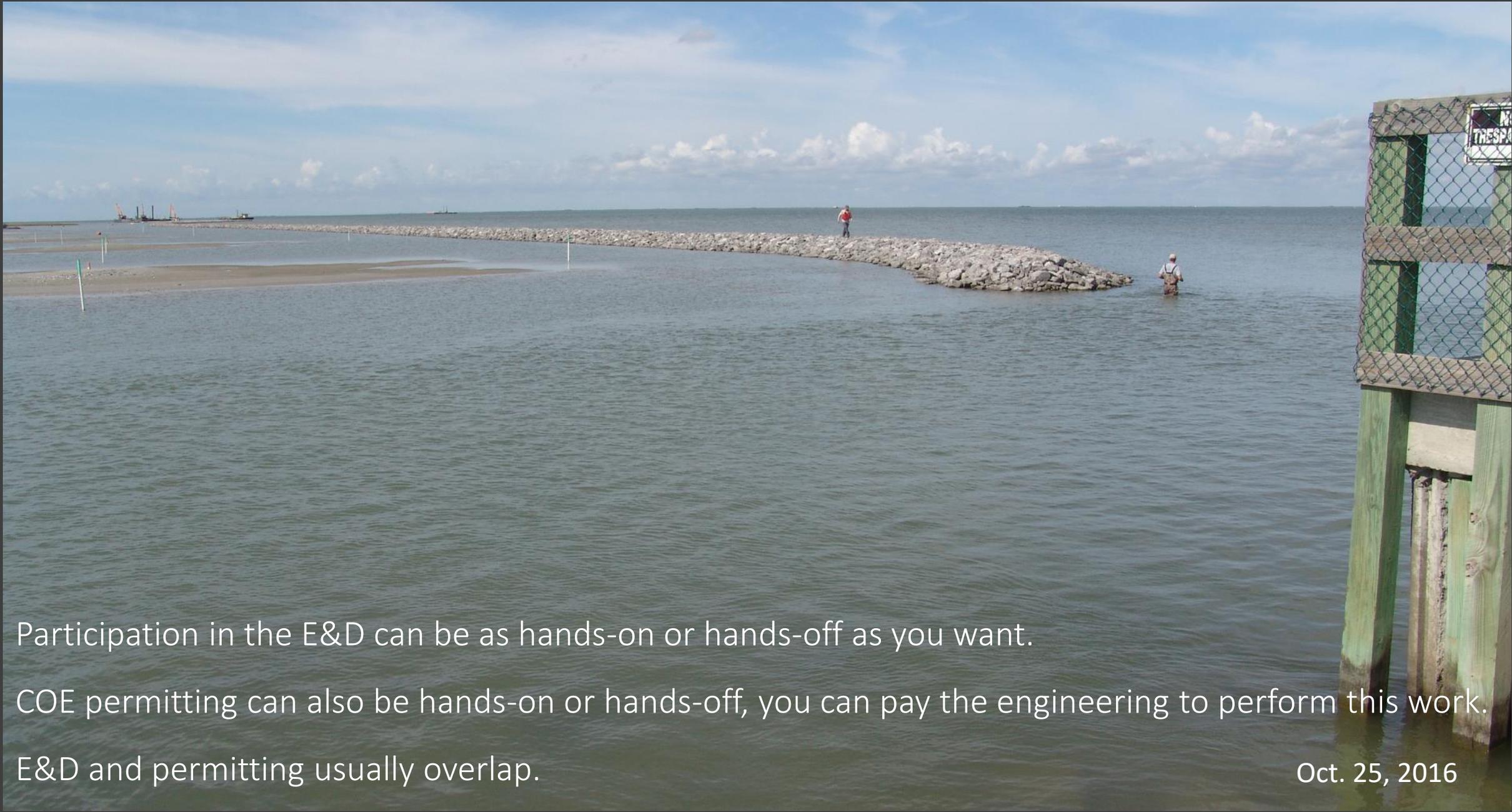


Engineering Costs

Data collection	\$11,000
Surveying	\$28,500
Geotechnical Investigation	\$20,800
Permit Exhibits	\$5,000
Engineering Design and Construction Proposal Package	\$61,000
Construction Solicitation Proposal Solicitation Assistance	\$8,500
Construction Administration Services	<u>\$81,500</u>
	\$216,300

Construction Costs

Mobilization and Demobilization	\$182,500
Pre-dredge Hazard Survey	\$4,750
Construction Surveying	\$57,500
Acceptance Aerial Photography	\$5,500
Breakwater (3,800 LF)	\$1,939,000
Marsh Mounds (34,930 CY)	\$124,750
Silt Fence	\$20,700
Day Beacons (3)	<u>\$3,300</u>
	\$2,338,000



Participation in the E&D can be as hands-on or hands-off as you want.

COE permitting can also be hands-on or hands-off, you can pay the engineering to perform this work.

E&D and permitting usually overlap.

Oct. 25, 2016



Allow 12-14 months for E&D and the bidding process.

Allow 12 months for construction.

Nov. 3, 2016

NWP 54. Living Shorelines (LS).

For the construction and maintenance of living shorelines to stabilize banks and shores in coastal waters, along shores with small fetch and gentle slopes that are subject to low- to mid-energy waves. footprint that is made up mostly of native material.

LS incorporate vegetation or other living, natural “soft” elements alone or in combination with some type of harder shoreline structure (e.g., oyster reef) for added protection and stability.

LS maintain the natural continuity of the land-water interface and retain or enhance shoreline ecological processes. LS must have a substantial biological component, either tidal or lacustrine fringe wetlands or oyster reef structures.

Oct. 25, 2016

NWP 13. Bank Stabilization.

Bank stabilization activities necessary for erosion control or prevention, such as vegetative stabilization, bioengineering, sills, rip rap, revetment, gabion baskets, stream barbs, and bulkheads, or combinations of bank stabilization techniques.



June 13, 2017



Contractors always want more time!

Oct. 11, 2016



Contractors often request to change the order of construction.
Often it is the “owner” that requests a change to the project.

Oct. 25, 2016



Having knowledgeable and experienced engineers involved with the project prevent or mitigate most problems that could occur during the construction phase.

Oct. 25, 2016



In addition to its value to habitat aesthetics should be a consideration, e.g. similar sized and like material.



Its important to be flexible (but not too flexible).

Dec. 20, 2016

A wide-angle photograph of a coastal landscape. In the foreground, several large, rectangular concrete blocks are scattered across a sandy and rocky shore. Some blocks are partially covered with green grass. The middle ground features a calm body of water, possibly a bay or inlet, with a sandy beach visible in the distance. A long, low breakwater made of grey rocks extends across the horizon. The sky is clear and blue. The overall scene suggests a coastal defense or erosion control project.

Its essential to be fair.

Jan. 23, 2017

Good projects come from inspection not expectation.



Nov. 21, 2016



Question?

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Nov. 21, 2016