

Engineering With Nature Case Examples of Practice

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Organizational Perspective

EWN Provides the District's with:

Opportunities to both validate & refine existing practices;

Methods to describe & quantify non-traditional benefits; &

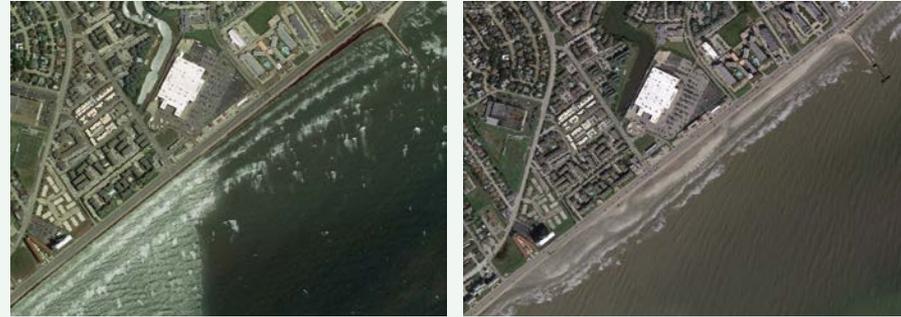
Mechanisms to justify added cost & attract cost-share partners.



Current Projects

GALVESTON ISLAND BEACH RESTORATION

- * Habitat & Recreational Benefits
- * Beach nourishment in lieu of ODMDS
- * Partnership with Galveston Island Park Board of Trustees & Texas General Land Office



ROUND ISLAND – PASCAGOULA UPPER SOUND

Multi-Agency Sponsored Beneficial Use Facility

- * Overbuilt Semi-Containment Dikes
- * Cells Sized for Known Future Needs
- * Collaboration made Construction Possible



CHAIN ISLANDS - ATCHAFALAYA BAY

Linear Series of Dredged Material Islands

- * Bird Nesting Grounds
- * Protected Water for SAV & Emergent Veg
- * Channel Constriction / Increased Flow



Significant Outcomes/Value Produced

BOLIVAR MARSH, GALVESTON BAY, TX

“Hard and Soft” Engineering Features

- * Fish and Wildlife & Recreational Benefits
- * Beneficial Use of Dredged Material
- * Interagency Collaboration on Design



DEER ISLAND – MISSISSIPPI COAST

“Soft Engineering” Shoreline Features

- * Habitat & Recreational Benefits
- * Storm Protection & Erosion Control
- * Capacity for Future Dredging Projects



HORSESHOE ISLAND - ATCHAFALAYA RIVER

Island Formation Fueled by Dredged Material

- * Complex & Diverse Habitats
- * Shortened Navigation Route
- * Reduced Maintenance Requirements



Challenges

Construction costs relative to base placement plan (navigation projects).

Construction limitations related to project authority & policy.

Alignment of partnership agreements, cost-shares, & the Federal budget cycle.

Urgent need to fulfill primary USACE missions rarely compatible with planning & legal review times for partnering projects.



Future Opportunities

Leveraging funds from other authorities & programs.

Staging or stockpiling dredged material for future use by others when schedules do not overlap.

Assistance from others with monitoring performance of constructed projects to inform future design.

