



US Army Corps of Engineers FY 20 Navigation Studies and Construction Projects Future Dredging Requirements

Western Dredging Association - Gulf Coast Chapter
Annual Conference

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USACE – Galveston District FY 20 Navigation Projects



Project Name	Non-Federal Sponsor	Milestones
General Investigations Studies		
Brazos River Floodgates/Colorado River Locks	Texas Dept. of Transportation	Chief's Report – 10/23/19
Matagorda Ship Channel	Calhoun Port Authority	Chief's Report – TBD
Houston Ship Channel	Port of Houston Authority	Submittal of Final Report – 12/11/19
Preconstruction Engineering Design/Construction Projects		
Corpus Christi Ship Channel Deepening (C)	Port of Corpus Christi Authority	2024
Sabine Neches Waterway (C)	Sabine Neches Navigation District	2028
Cedar Bayou (C)	Cedar Bayou Navigation District	2023



Brazos River Floodgates/Colorado River Locks, TX



Study Partner

- Texas Department of Transportation

Study Problems

- Modern barges and ships have to navigate through outdated 75-foot width alignments and narrow floodgates and locks, leading to frequent strikes and costly damages to guidewalls
- Outdated lock/floodgate construction at sector gates leads to frequent and costly structural, electrical and mechanical maintenance issues
- Shutdown of operations during high water periods and to repair strikes causes significant economic impacts to navigation industry

System Components

Structure	Construction Completion Year	Function	Dimensions	Max Tow Length / Width	Average Tows / Day Transit
Brazos	1943	Sediment Control/Navigation	75'	1180' x 74'	38
Colorado	1941/1954	Sediment Control/Navigation	1200' x 75'	1180' x 74'	38

Annual Impacts

Category	Brazos	Colorado
Allision repair costs (56 accidents per year at Brazos, 8 per year at Colorado)	\$1.4M	\$0.6M
Processing time cost	\$1.5M	\$2.2M
Queuing cost	\$4.6M	\$3.1M
Tripping time cost	\$6M	\$4.1M
Closure delay cost (Reported 221 days of accident related repairs in 2016 at Brazos)	\$5M	\$80K



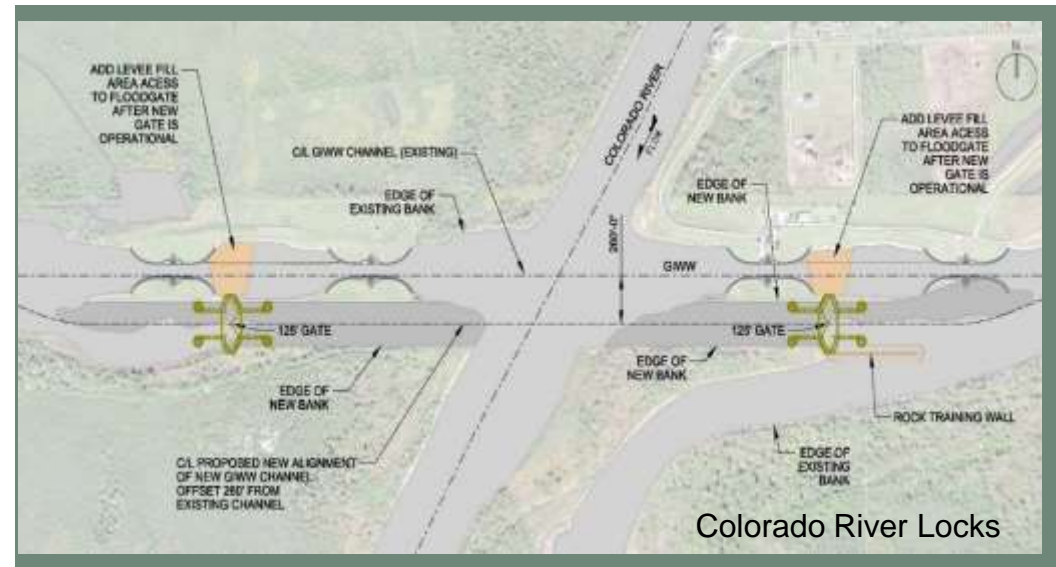
Brazos River Floodgates/Colorado River Locks, TX



RECOMMENDED SYSTEM PLAN

- **BRFG:** Replace with new 125-foot Gate
- **CRL:** Replace with new 125-foot Gates
- **First Cost:** \$399,727,000
- **NET Benefits:** \$41,603,000
- **BCR:** 3.25 @ 2.875%
- **Annual O&M:** \$2,664,000
- **Reduction in Allisions:**
 - 80% estimated at BRFG, 99% at CRL

Chief's Report Signed – Oct 23, 2019



Matagorda Ship Channel, TX



U.S. ARMY



Recommended Plan



Plan Features

- Deepen Main Channel to -47' Mean Lower Low Water Deepen Entrance Channel to -49' Mean Lower Low Water
- Widen Main Channel bottom width to 300' with 1V:3H side slopes
- Widen the Entrance Channel bottom width to 550' with 1V:10H side slopes
- Construct a sediment trap measuring 1600' x 550' x -62' Mean Lower Low Water within the channel just outside the Entrance Channel to abate the rate of shoaling
- Construct new turning basin of 1,200' diameter
- Creation of in-bay Placement Areas
- Creation of Sand Engine southwest of entrance channel jetties

Non-Federal Sponsor: Calhoun Port Authority

Current Project Cost Estimate: \$ 212,498,000

Chief's Report Signed – TBD

Plan Economics

First Cost: \$212,498,000

BCR: 2.26 @ 2.875%

Annual O&M: \$2,664,000

Non-Federal Sponsor: Port of Houston Authority

Recommended Plan Features

Segment 1 – Bolivar Roads to Boggy Bayou

- Four bend easings on main HSC channel with associated relocation of barge lanes
- Widen HSC from Bolivar Roads to BCC to 700 feet with barge lane relocation

Segment 2 – Bayport Ship Channel

- Widen BSC to 455 feet

Segment 3 – Barbours Cut Channel

- Widen BCC to 455 feet
- BCC Combined Flare and Turning Basin

Segment 4 – Boggy Bayou to Sims Bayou

- Deepen HSC from Boggy Bayou to Hunting Turning Basin to 46.5 feet
- Widen HSC from Boggy to Greens Bayou up to 530 feet
- Improvements to Hunting Turning Basin

Segment 5 – Sims Bayou to I-610 Bridge

- Deepen HSC from Sims Bayou to I-610 Bridge up to 41.5 feet

Segment 6 – I-610 Bridge to Main Turning Basin

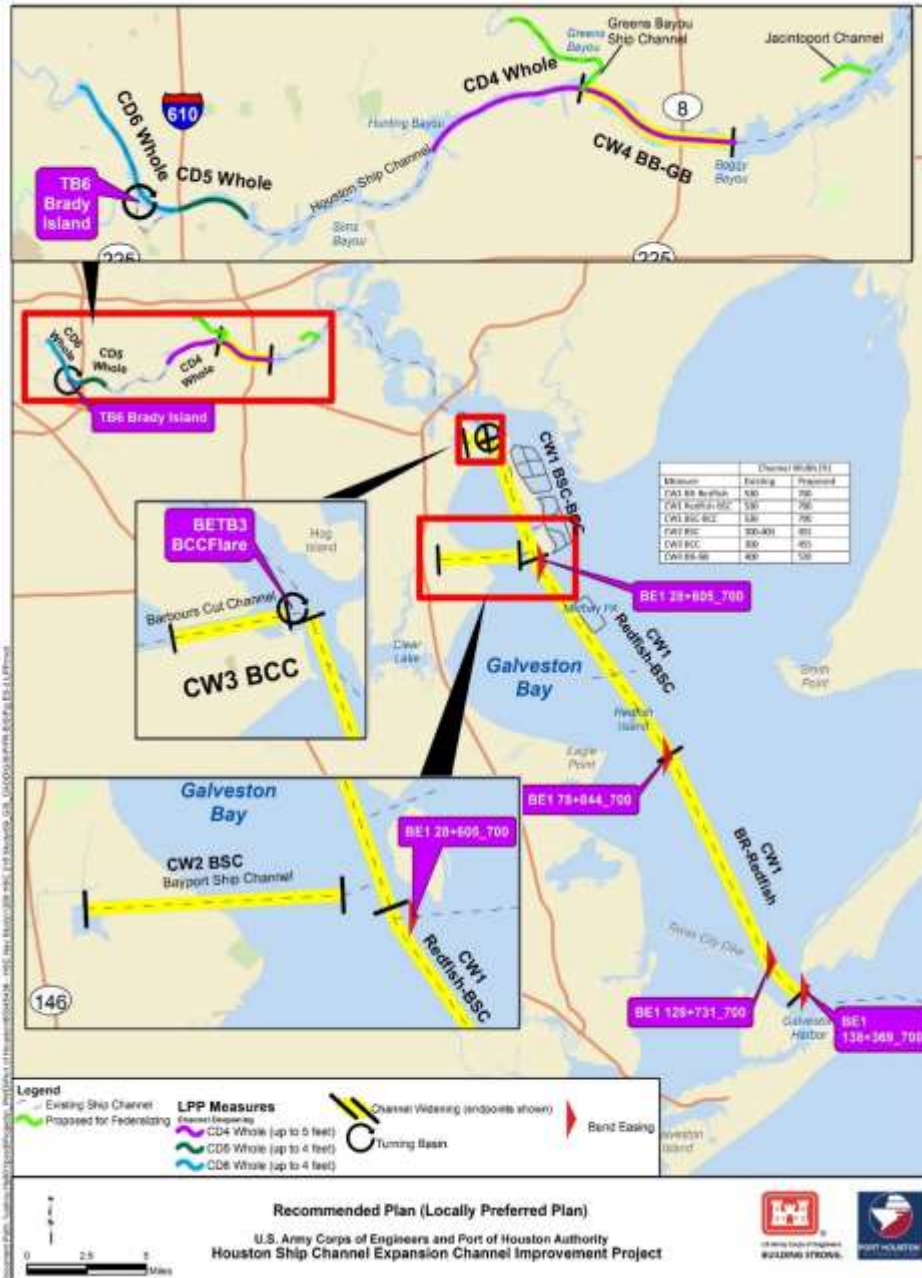
- Deepen HSC from I-610 Bridge to Main Turning Basin up to 41.5 feet
- Improvements to Turning Basin near Brady's Island

Federalization of Non-Federal Improvements for which the Government has already assumed maintenance (located in Segments 1, 2, 3 and 4)

Plan Economics

First Cost: \$862,987,000
BCR: 2.53 @ 2.75% (2019)
Annual O&M: \$16,983,000

Chief's Report Signed – Scheduled for April 2020





Corpus Christi Ship Channel, TX



Non-Federal Sponsor: Port of Corpus Christi Authority (PCCA)

Current Project Cost Estimate: \$569,398,000

Project Partnership Agreement (PPA) executed in 2017

Project Features

- Extend the La Quinta channel;
- Construct Ecosystem Restoration Features;
- Deepen the Corpus Christi Ship Channel to 54 feet MLLW4); widen to 530 feet
- Add barge lanes on both sides of the main channel across Corpus Christi Bay.



Corpus Christi Ship Channel, TX



Current Status:

Contract #1 – Entrance Channel

- \$92,551,470 awarded to Great Lakes Dredge and Dock on 31DEC18
- Construction underway; scheduled completion is 20FEB20

Contract #2 – Lower Bay Reach

- Plans and specifications completed
- Anticipated award in March 2020

Contract #3 – Upper Bay Reach

- Plans and specifications underway
- Scheduled Award in late 2020

Contract #4 – Inner Harbor Reach

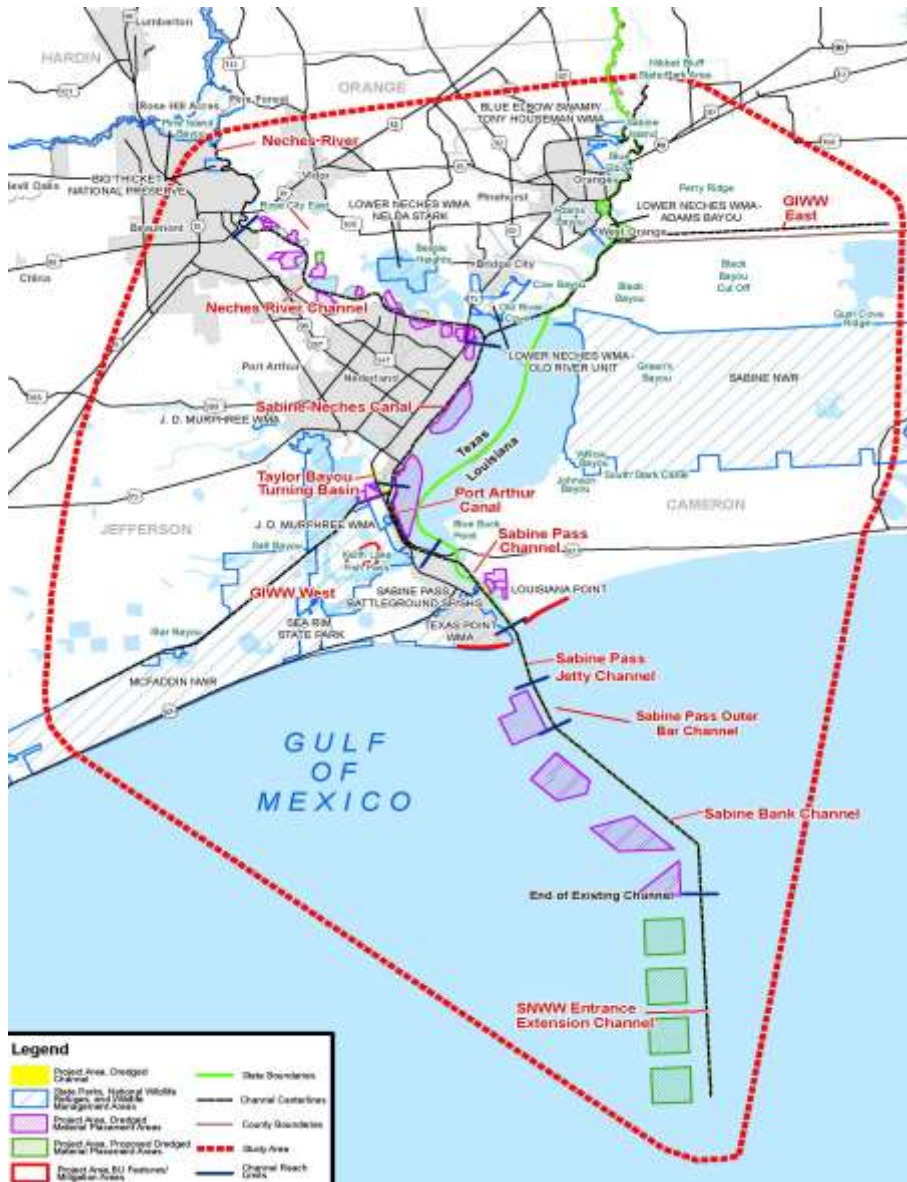
- Plans and specifications underway
- Scheduled Award in 2021

Expected completion of construction: 2024





Sabine-Neches Waterway Improvement Project



Non-Federal Sponsor: Sabine Neches Navigation District

Current Project Cost Estimate: \$1,450,486,000

Project Partnership Agreement (PPA) executed in 2019

Project Features

- Deepen channel to 48' feet
- Construct 3 anchorage basins
- Channel widening and bend easings
- Extend the entrance channel by 13 miles.

- Environmental Mitigation
 - Restore 2,783 acres of emergent marsh
 - Improve 957 acres of shallow water habitat
 - Nourish 4,355 acres of existing marsh





Sabine-Neches Waterway Improvement Project



Current Status:

Contract #1 – Anchorage Basin #1

- Bid opening on 14 Nov 2019
- Scheduled award in Jan 2020

Contract #2 – Entrance Channel to Sabine Pass

- Award in July 2020

Contract #3 - Sabine Channel to Taylors Bayou and Port Arthur Canal

- Award in 2020 (Navigation District Work-in-Kind)

Total # Contracts – 12 (3 are mitigation)

Dredging Methodology for Main Channel deepening:

- 1st phase: Dredge entire channel to 44 feet
- 2nd phase: Dredge to final 48 foot depth

Expected completion of construction: 2028





Cedar Bayou, TX



Non-Federal Sponsor: Cedar Bayou Navigation District

Current Project Cost Estimate: \$54,353,000

Project Partnership Agreement (PPA) executed in 2019

Project Features

- Widen channel to 200-ft (bottom width) by 1,300-foot long passing lane;
- Create a cutoff channel across a sharp bend in Devil's Elbow;
- Two bend easings;
- Environmental mitigation
 - Preservation of 51.8 acres of native hardwoods
 - Creation of 15 acres of estuarine marsh

Current Status

- FY19 work plan funding to be used to construct placement areas 1 and 2.
- Placement area 1 contract is scheduled to be awarded in February 2020
- Placement area 2 in June of 2020

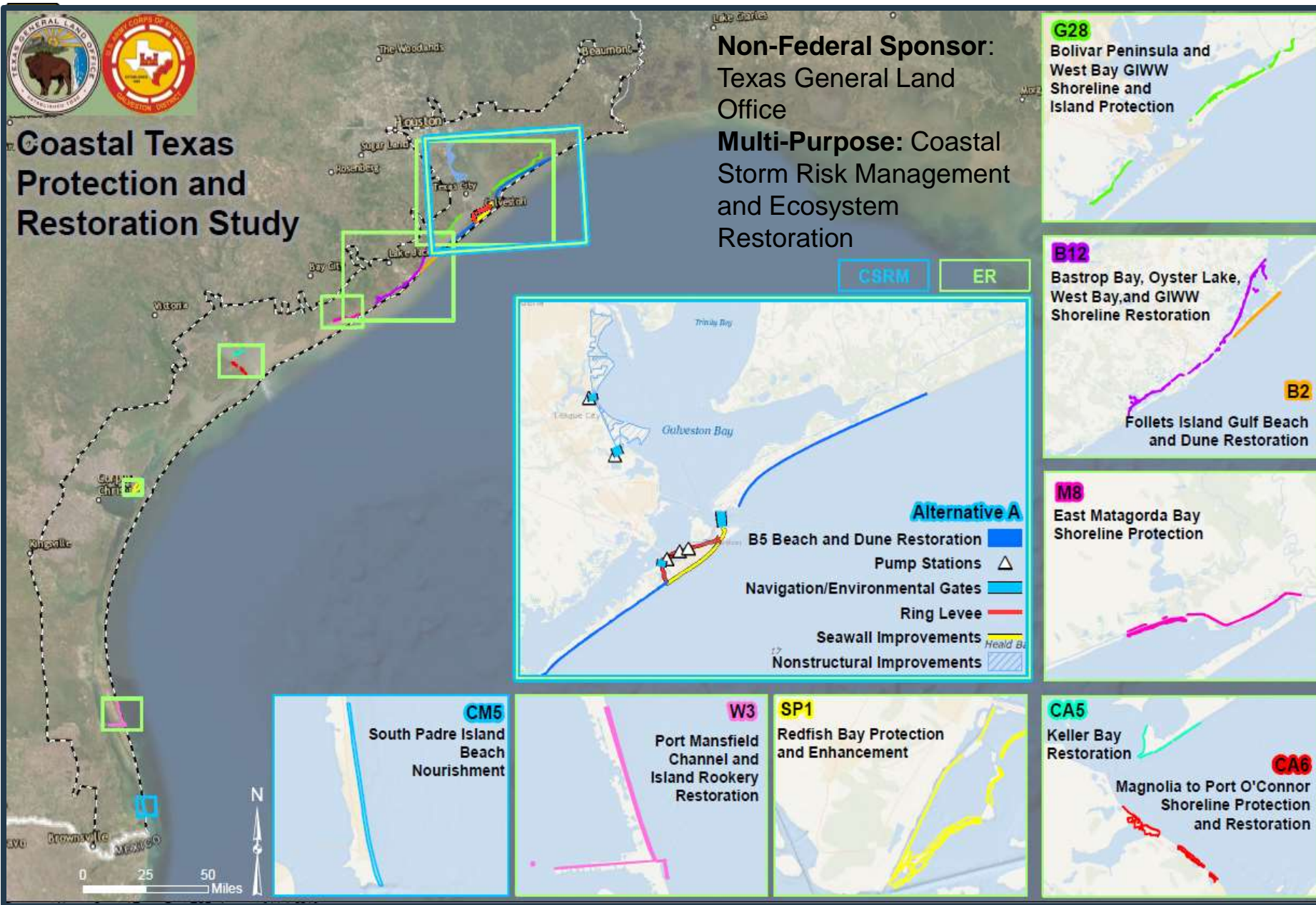
Expected completion of construction - 2023



Coastal Texas Protection and Restoration Study

Non-Federal Sponsor:
Texas General Land Office

Multi-Purpose: Coastal Storm Risk Management and Ecosystem Restoration



CSRM ER

Alternative A

- B5 Beach and Dune Restoration
- Pump Stations
- Navigation/Environmental Gates
- Ring Levee
- Seawall Improvements
- Nonstructural Improvements

0 25 50 Miles



STORM SURGE GATES (DESIGN IN PROGRESS)

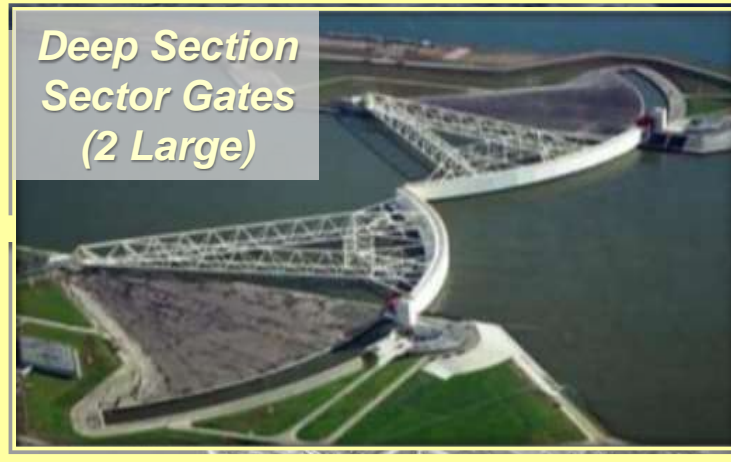


Galveston Island

Smaller Sector Gates (2 Small)

Galveston Bay

Deep Section Sector Gates (2 Large)



~2 miles (~3.2 km)

Intermediate Sections (15 Vertical Lift Gates)



Gulf of Mexico

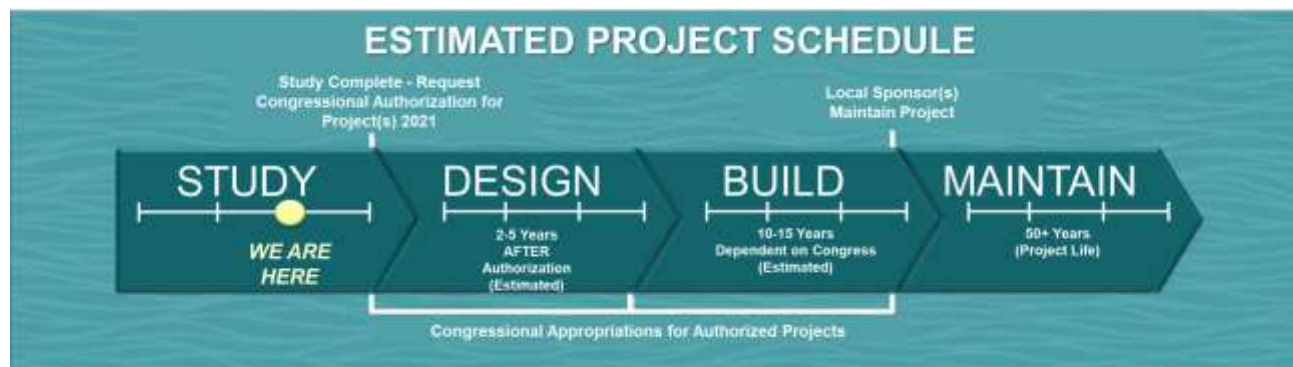
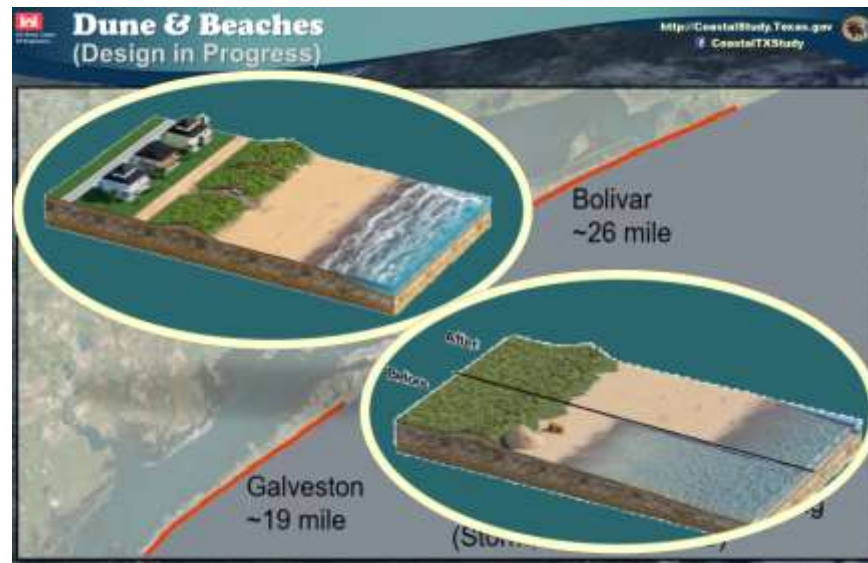
Shallow Section (16 Environmental Gates)



Bolivar Peninsula



Coastal Texas Protection and Restoration Study



Study Website: <http://CoastalStudy.Texas.gov>
 FB: CoastalTXStudy