U.S. Army Corps of Engineers (USACE) Galveston District Coastal Programs and Projects

Joint Interim Committee to Study a Coastal Barrier System

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10 October 2017

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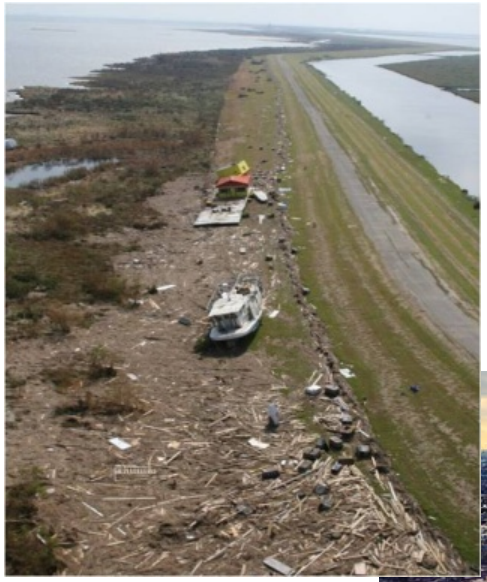
Coastal Risk Reduction and Resiliency

The Corps of Engineers is a leader in developing and executing large-scale programs and projects that increase resiliency and reduce risks from hurricanes and storm surge in Coastal Texas

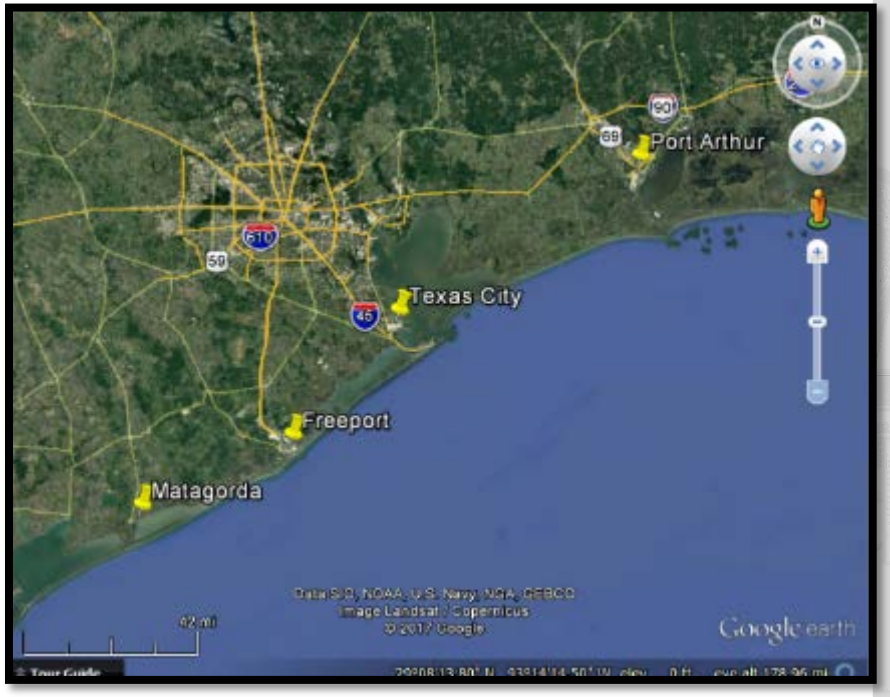


Coastal Storm Risk Management (CSRM):

- Federal Levees
- Beneficial Use Program
- Sabine Pass to Galveston Bay Study
- Coastal Texas Study
- **Ecosystem Restoration:**
- Jefferson County Study
- Coastal Texas Study

Harvey Impacts to Existing CSRM Levee Systems

- **Port Arthur Hurricane Flood Protection Project**
  - Pump capacity exceeded
  - Electrical motors and controls need to be replaced
  - Pre-Harvey Flood Wall failure
- **Texas City Hurricane Flood Protection Project**
  - Stone shore protection damaged
- **Freeport Hurricane Flood Protection Project**
  - One pump had mechanical failure
  - East Brazos River Levee erosion
- **Matagorda Levee System**
  - Gate operators damaged from wind
  - Minor levee erosion



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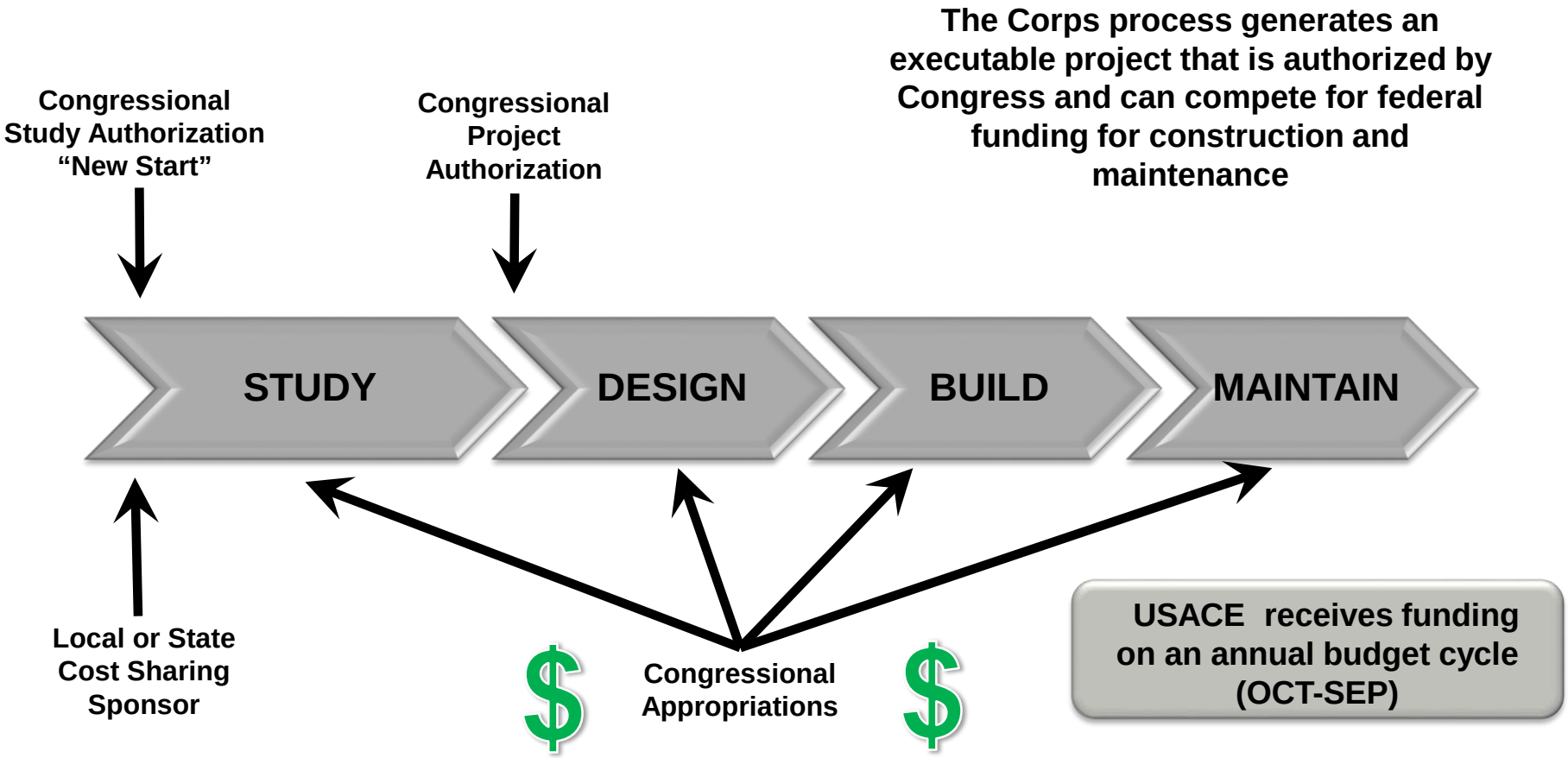
On-going Navigation Channel Dredged Materials Beneficial Use Program

Roll-over Pass (~1YR)……	150,000 CY
Pierce Marsh (GIWW, ~3YR)....	150,000 CY
Sargent Beach (~3YR)……..	100,000 CY
Sundown Island (~1YR)……..	650,000 CY
San Antonio Bay BU……	400,000 CY
South Padre Island (~1-2YR).....	600,000 CY
TOTAL FY17:	**2,050,000 CY**

Corps Project Development and Implementation Process



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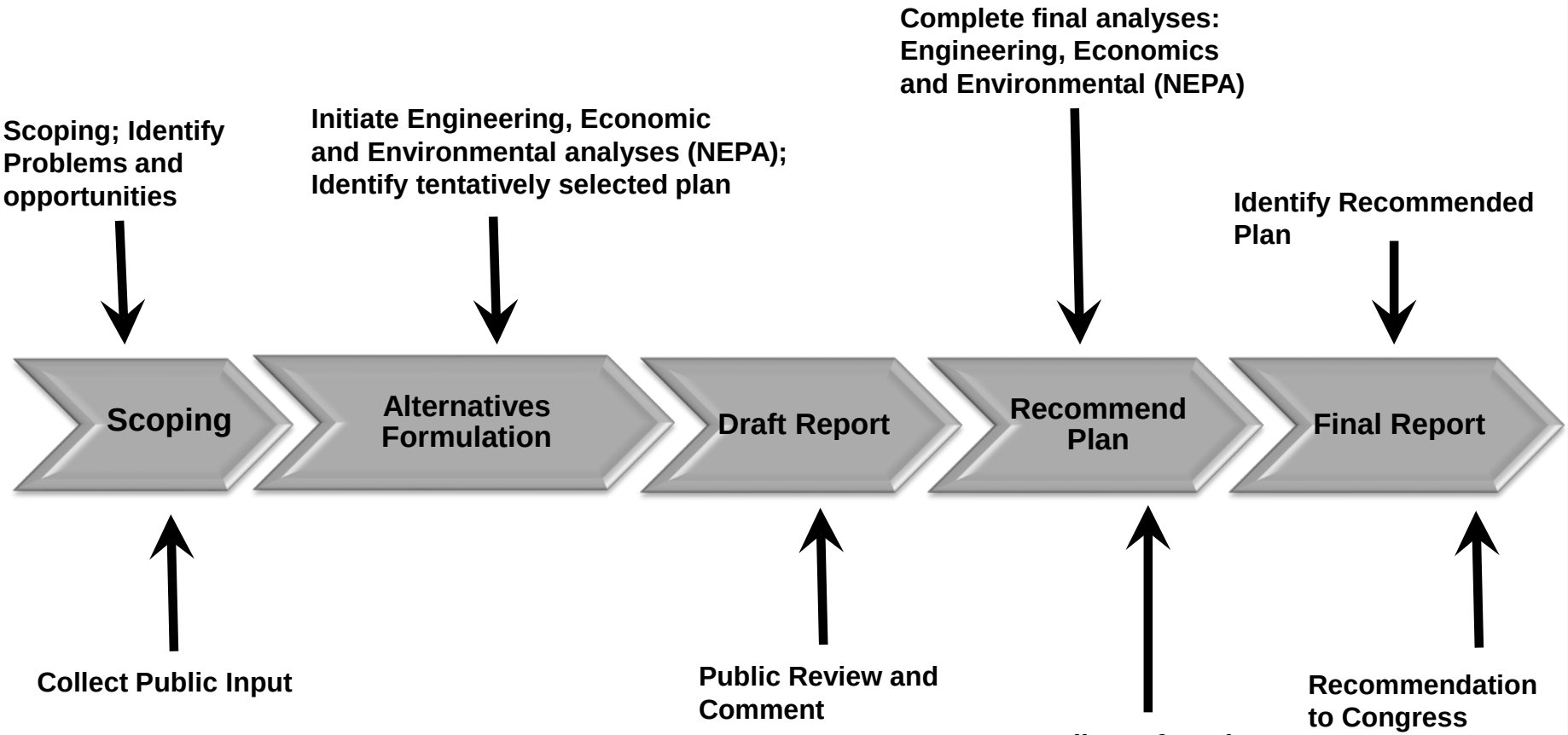
Corps Feasibility Study Process



Public input is critical for understanding needs/opportunities and reaching a implementable plan for authorization

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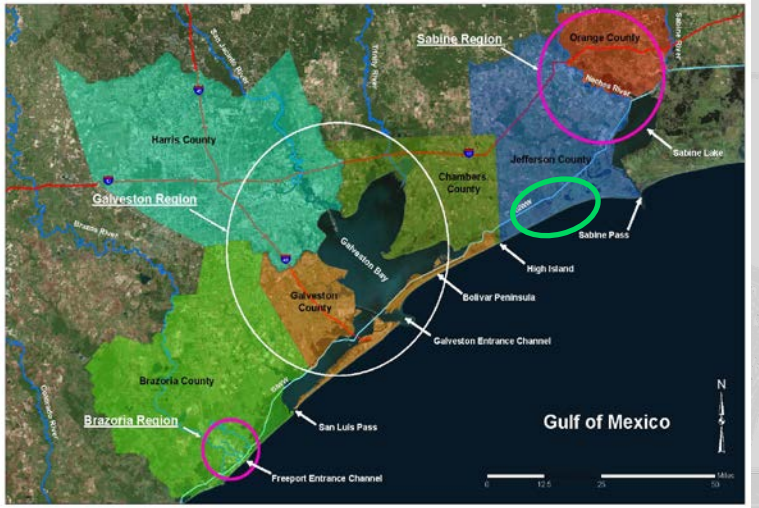
Sabine Pass to Galveston Bay Study

Recommended Plan

- Improvements to Freeport and Port Arthur Hurricane Flood Ris Reductions Systems and 1ft raise
- Proposed 27 miles of new levee/floodwalls in Orange County



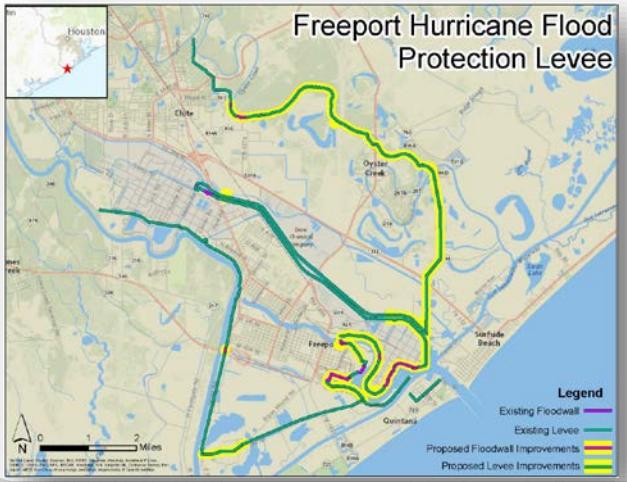
Costs

- Estimated First Cost: $3,248,606,000
- NED Net Benefits: $300,043,000
- Benefit to Cost Ratio of 3.1 @ 2.875%
- Annual O&M: $5,467,000

Construction Sponsors (Letters of Intent)

- Velasco Drainage District for Freeport
- Jefferson County Drainage District #7
- Orange County for Orange 3 Levee

Freeport and Vicinity

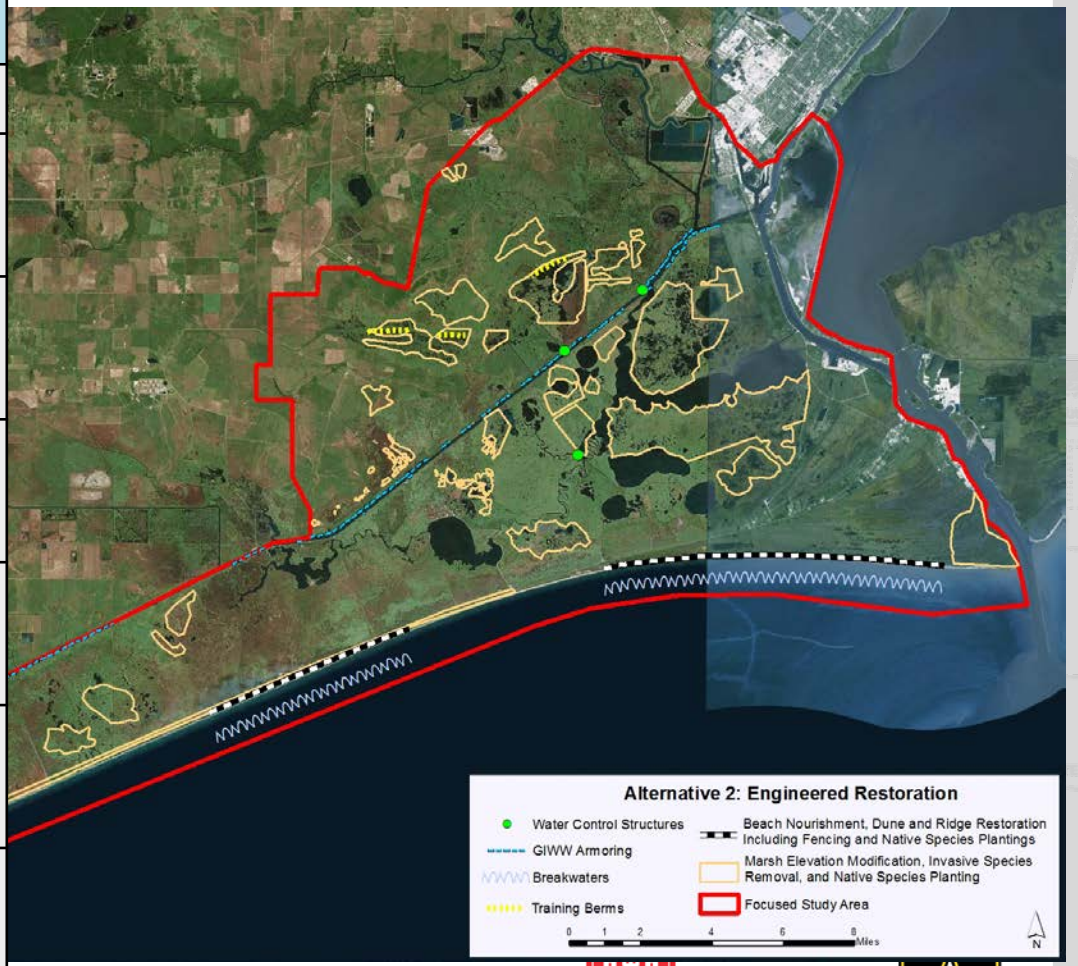


Jefferson County

Orange County

Jefferson County Ecosystem Restoration Study

Milestone/Event	Current Schedule
FCSA Signed	20 JUL 2016
Study Kickoff Meeting	8 NOV 2016
Alternatives Milestone	9 MAR 2017
Tentatively Selected Plan	JUN 2018
Draft FR/EA Public Review	AUG 2018
Agency Decision Milestone	NOV 2018
Division Engineer Transmittal Memo	MAY 2019
Chief's Report	OCT 2019



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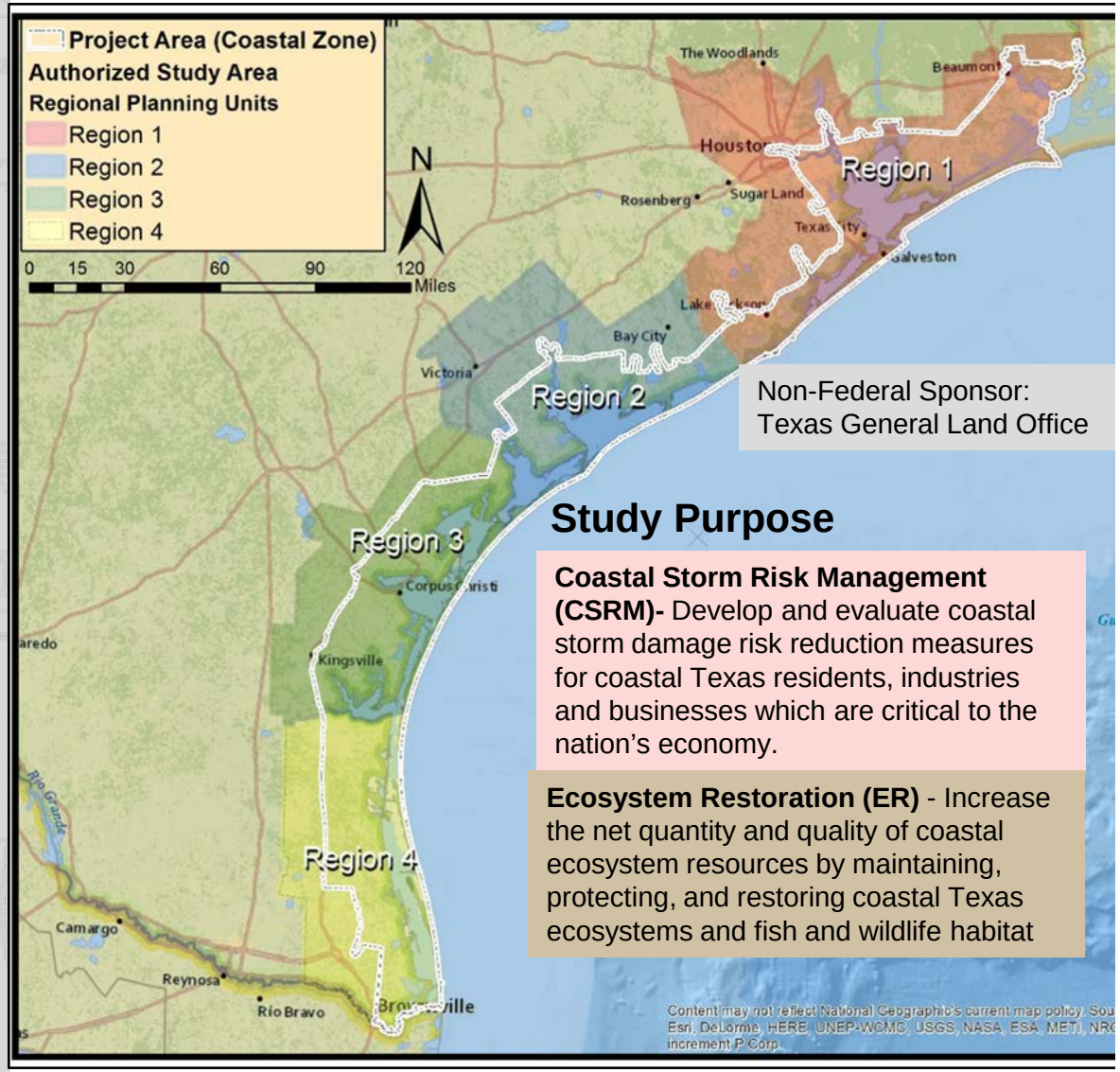
Coastal Texas Protection and Restoration Study



Non-Federal Sponsor:
Texas General Land Office

Study Purpose

Coastal Storm Risk Management (CSRM)- Develop and evaluate coastal storm damage risk reduction measures for coastal Texas residents, industries and businesses which are critical to the nation's economy.

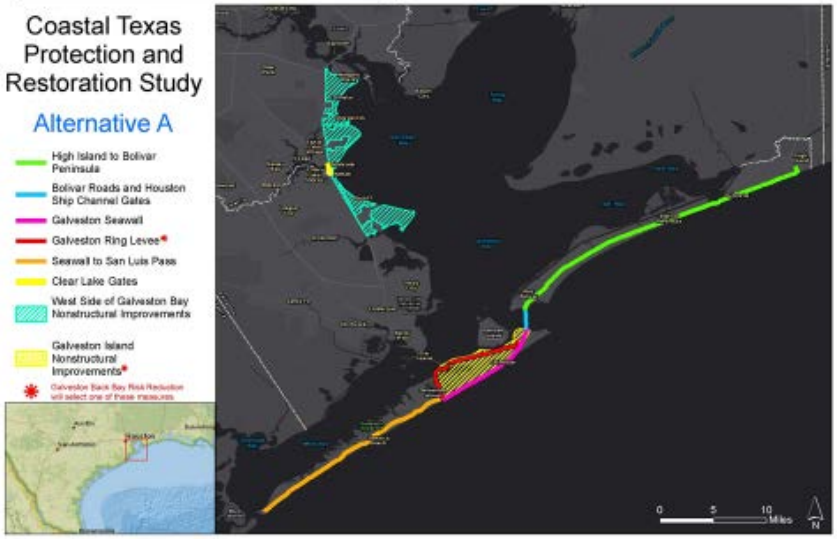
Ecosystem Restoration (ER) - Increase the net quantity and quality of coastal ecosystem resources by maintaining, protecting, and restoring coastal Texas ecosystems and fish and wildlife habitat

	Milestone	Date
Scoping	Exemption Approval by USACE	Sep 2015
	Exemption Approval by ASA(CW)/OMB	Nov 2015
	Execute FCSA w/GLO	Nov 2015
Alt. Eval./ Analysis	Alternatives Milestone	June 2016
	Tentatively Selected Plan (TSP) Milestone	May 2018
Feasibility Level Analysis	Agency Decision Milestone (ADM)	Oct 2018
	Feasibility Report Complete	Oct 2020
	Civil Works Review Board (CWRB)	Jan 2021
	S&A Review	Feb 2021
	Chief's Report	Apr 2021

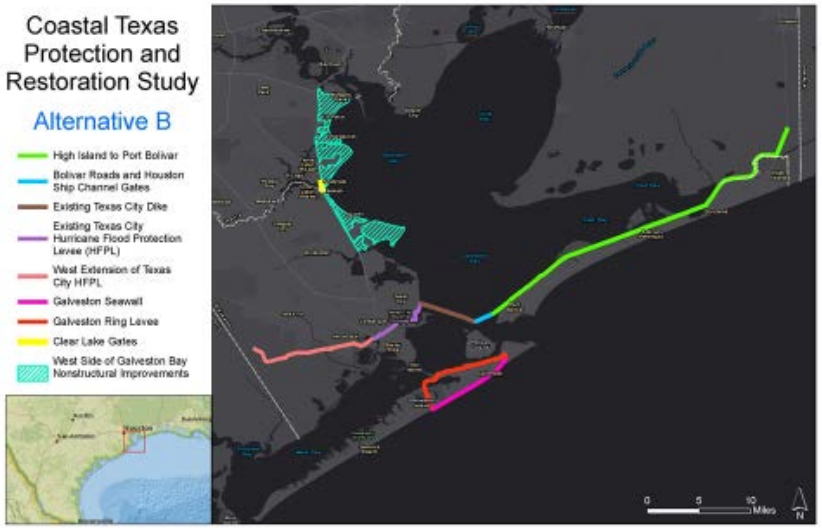
Fiscal Year*	Total Funding ($)	Federal Funding ($)	Non-Federal Funding*** ($)
2016	2,506,000	1,253,000	1,253,000
2017	3,650,000	1,825,000	1,825,000
2018	3,950,000	2,175,000**	1,775,000
2019	5,350,000	2,675,000	2,675,000
2020	4,244,000	2,122,000	2,122,000
2021	100,000	50,000	50,000
Total	19,800,000**	10,100,000	9,700,000

CSRM Alternatives

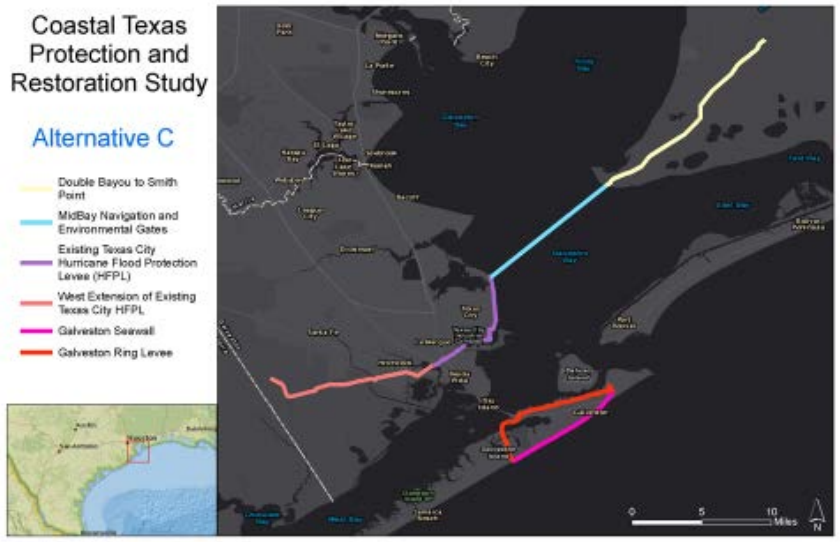
Region 1: Alternative A - Coastal Barrier/Nonstructural System



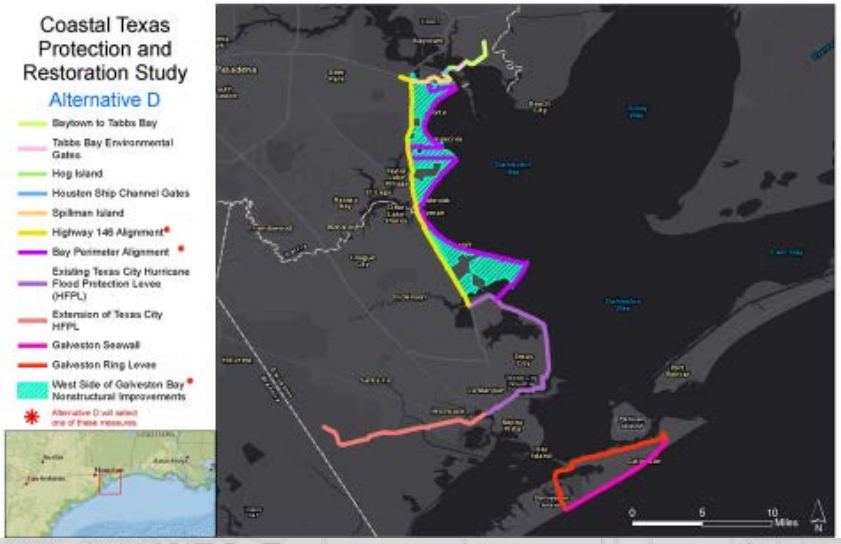
Region 1: Alternative B - Coastal Barrier



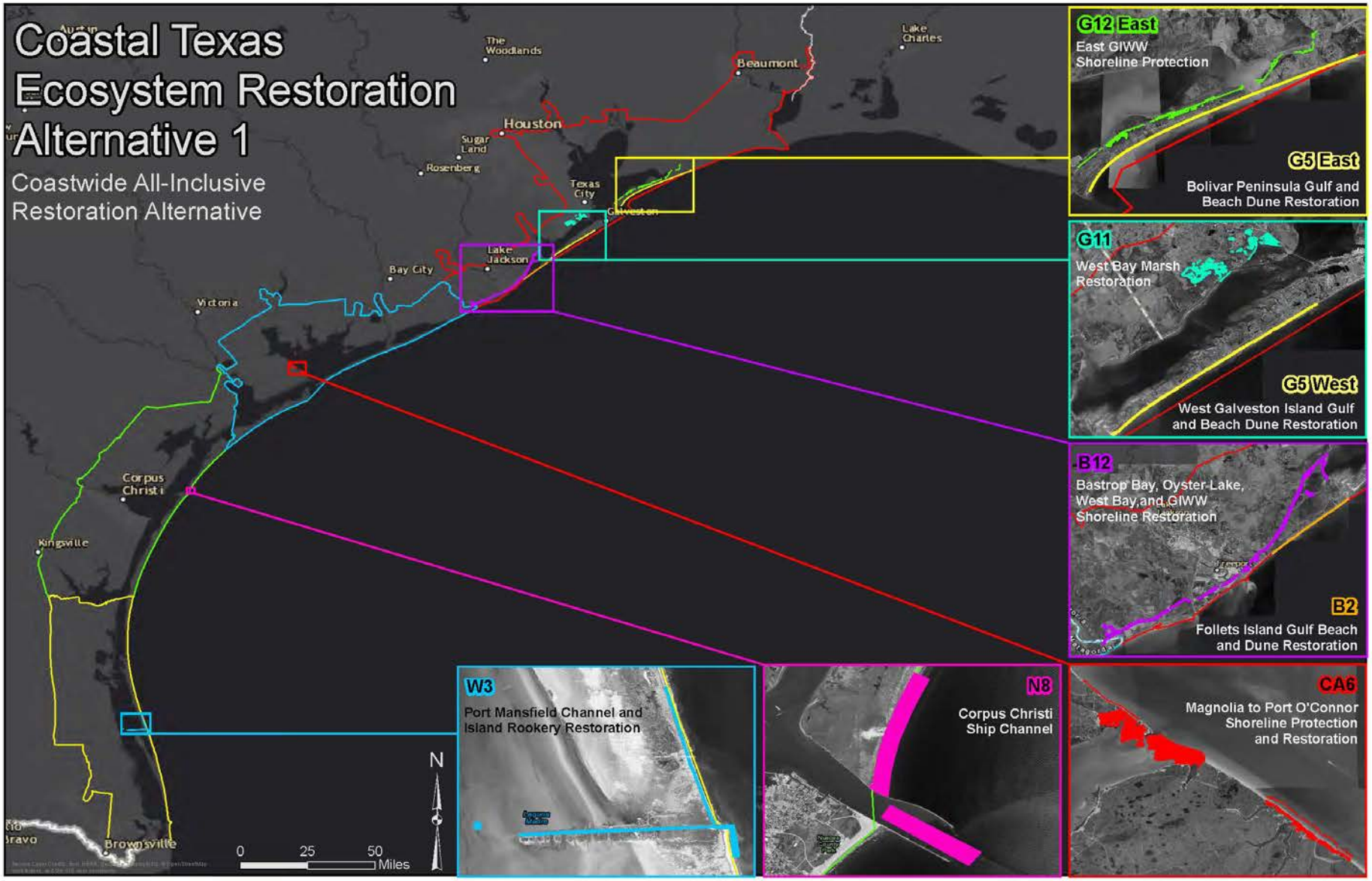
Region 1: Alternative C – Mid Bay



Region 1: Alternative D Upper Bay Barrier/ Nonstructural System



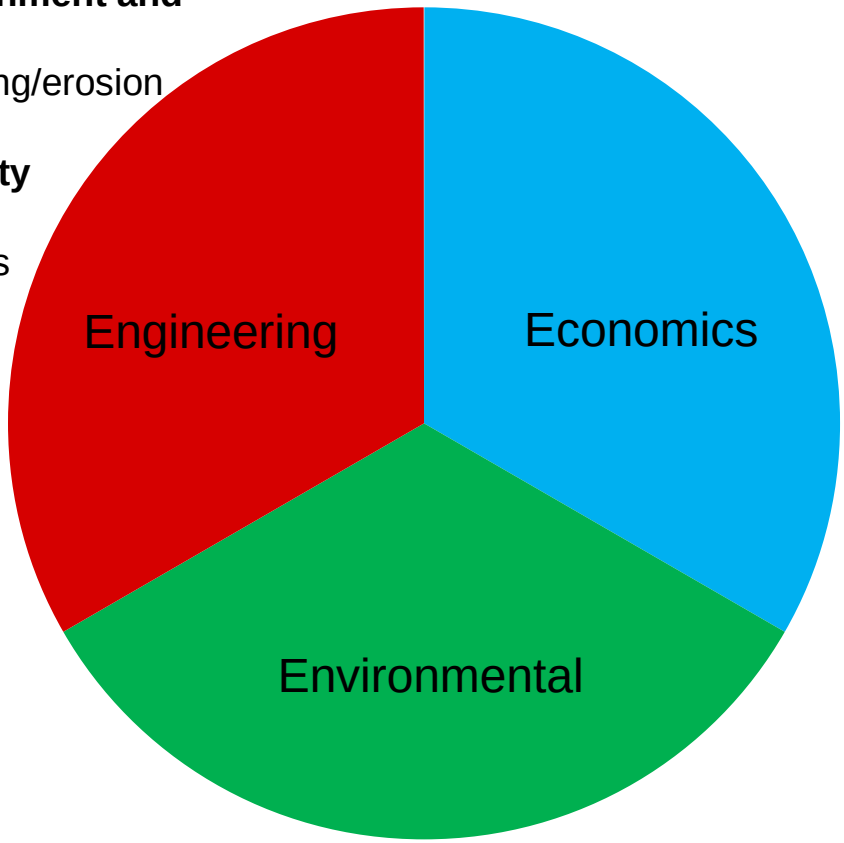
ER Alternatives



Path Forward: Detailed Feasibility Study Analyses

Impacts to physical environment and processes
- Circulation/salinity/flooding/erosion

Constructability / operability
- Engineering feasibility
- Real Estate requirements



Damages to property
- Personal and public damages from flooding

Project costs
- Study, design, construction and O&M

Benefit-to-cost ratio
- National Economic Development (NED)

Life/health
- Social impacts

NEPA compliance
Impacts to natural environment
Hazardous material spills
National Ecosystem Restoration (NER) Plan

Habitat
Fish and wildlife
Cultural Resources

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SWG Value Proposition for Partnering and Collaboration

- ***Shared Visioning and Partnering*** for a vibrant national/regional economy, resilient coastal communities, and healthy ecosystem that support non-Federal investment

- ***Engineering Solutions on America's Energy Coast*** for addressing infrastructure challenges across navigation, flood risk management, and ecosystem restoration business lines

- Addressing authority, policy, resourcing, and business process challenges for ***Strengthening the Foundation***

- Leveraging new authorities for studies and projects to derive Value to the Nation in ***Delivering the Program***
- Competing strong for sustainable budgets to ***Achieve the Vision*** of Integrated Water Resources Management

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