

GALVESTON DISTRICT OVERVIEW

WEDA - GULF COAST CHAPTER

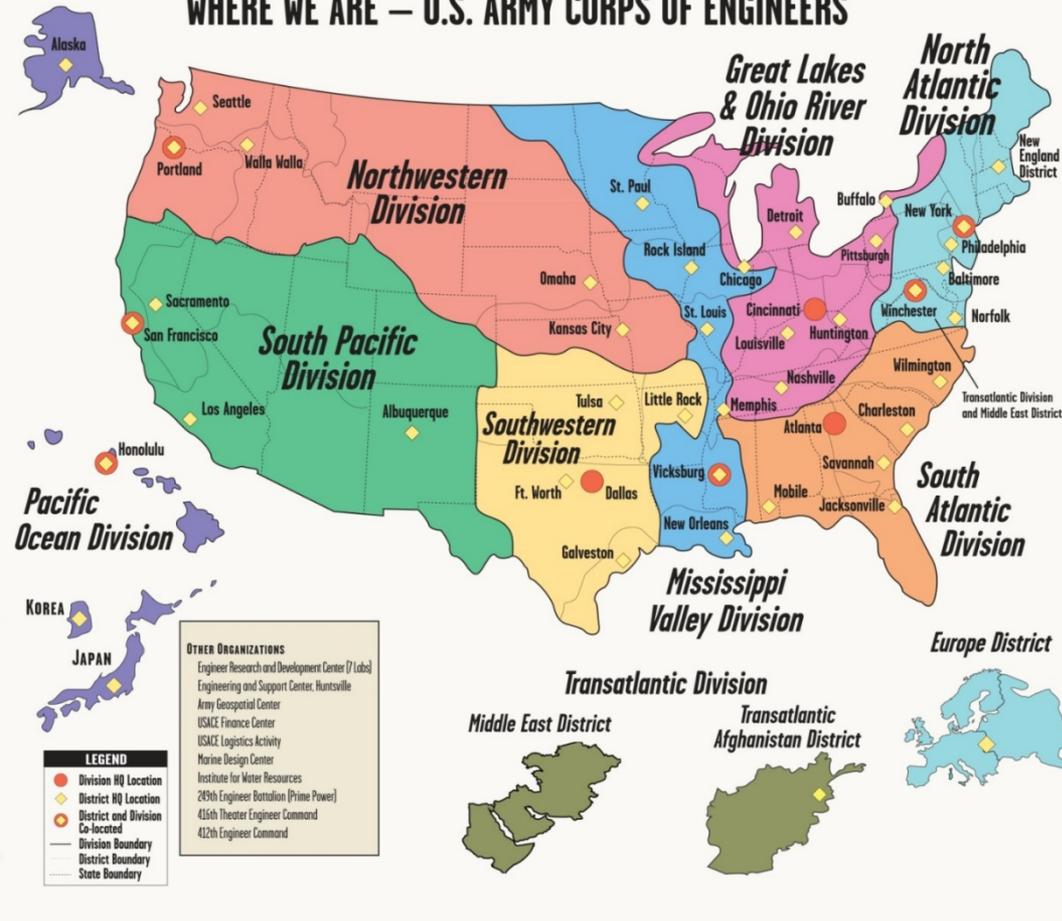
November 15, 2016

COL Lars Zetterstrom
District Commander, Galveston District
U.S. Army Corps of Engineers



GULF COAST DISTRICTS

WHERE WE ARE – U.S. ARMY CORPS OF ENGINEERS

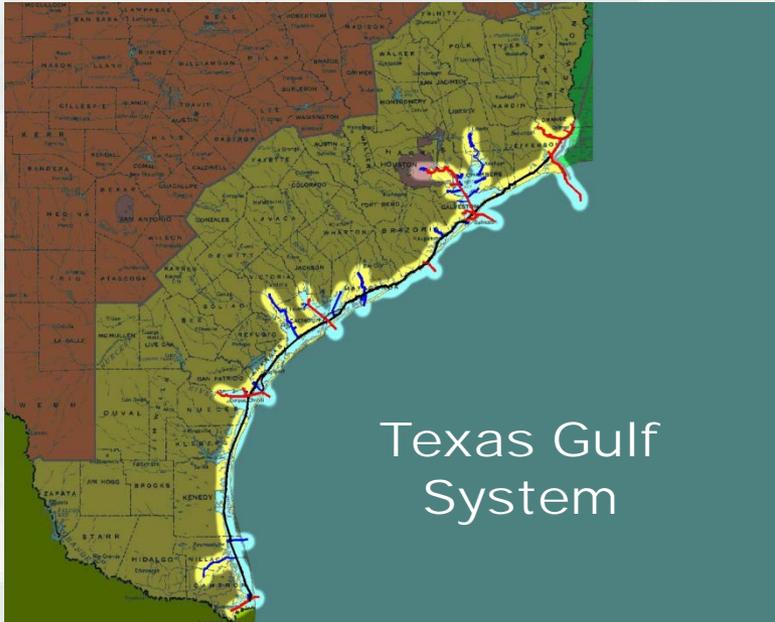


Gulf Intracoastal Waterway



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GALVESTON DISTRICT MISSIONS



- ~320 full time employees
- 50,000 sq-mile district boundary
- Galveston District Missions
 - Navigation
 - Flood Risk Management
 - Regulatory
 - Environmental Restoration
 - Emergency Management
- 18 Counties – Coastal Bay Estuaries
- Texas Ports and Waterways moved 600M+ tons of Commercial Cargo during 2014
- Maintenance Dredge 20M cubic yards / year
- 3 Strategic Ports
- Addicks & Barker Reservoirs

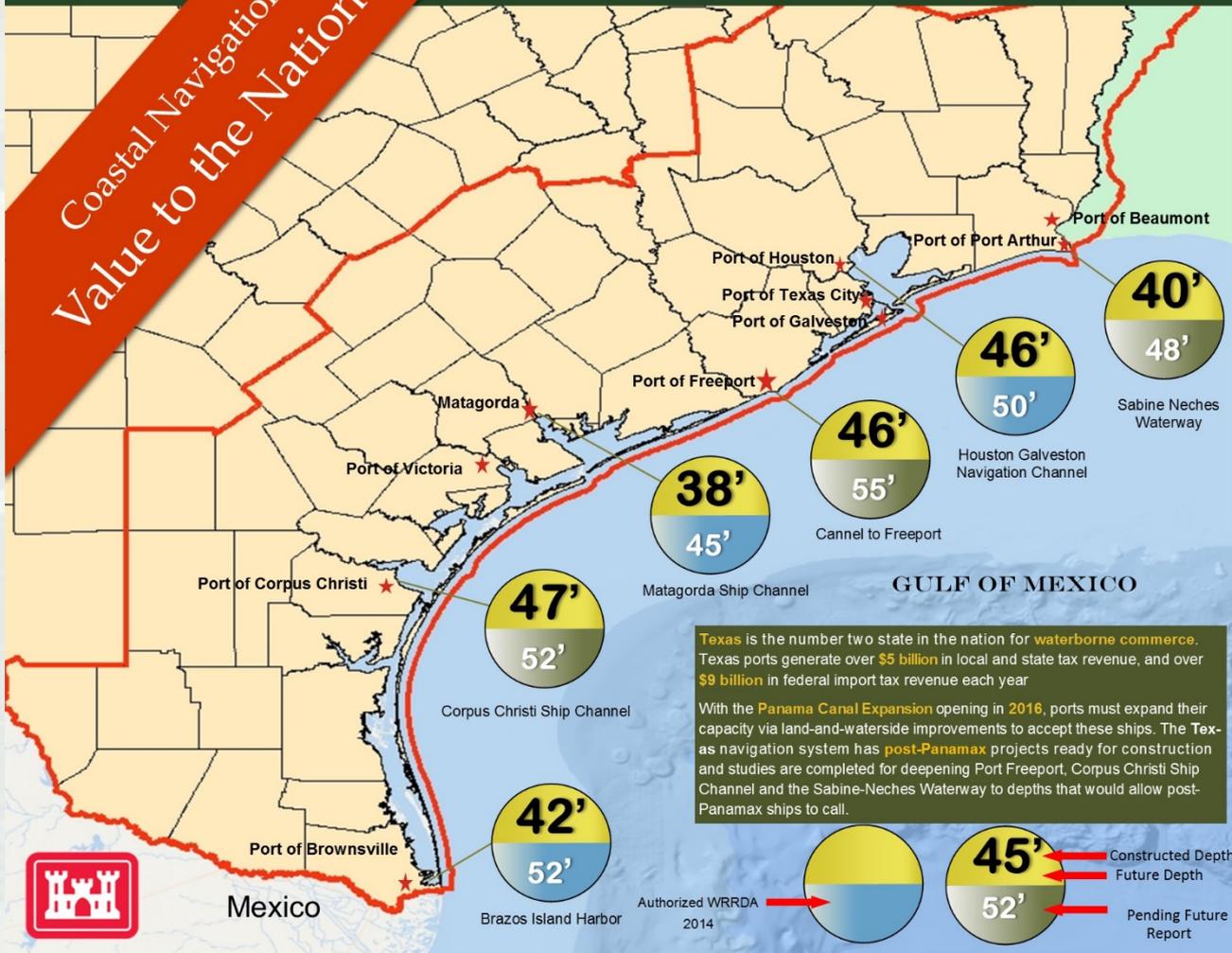




Vision & Strategy for Texas Coast

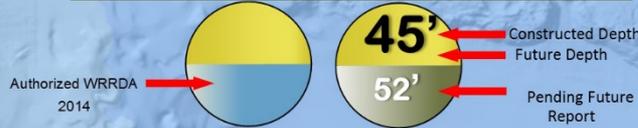
Coastal Navigation:
Value to the Nation

USACE Southwestern Division Regional Priority



Texas is the number two state in the nation for **waterborne commerce**. Texas ports generate over **\$5 billion** in local and state tax revenue, and over **\$9 billion** in federal import tax revenue each year.

With the **Panama Canal Expansion** opening in 2016, ports must expand their capacity via land-and-waterside improvements to accept these ships. The Texas navigation system has **post-Panamax** projects ready for construction and studies are completed for deepening Port Freeport, Corpus Christi Ship Channel and the Sabine-Neches Waterway to depths that would allow post-Panamax ships to call.



LEADING U.S. PORTS (2014 TONAGE)

- Houston (#2—234.3 million tons)**
#1 Foreign Tonnage & #2 Total Tonnage
- Beaumont (#4—87.3 million tons)**
#1 Military Port in the World
- Gulf Intracoastal Waterway (79 million tons - Texas portion)**
#3 Inland Waterway
- Corpus Christi (#6—84.9 million tons)**
Americas Energy Gateway
- Texas City (#15—47.9 million tons)**
Services Largest Petrochemical Complex
- Port Arthur (#20—36.7 million tons)**
Vital Break-Bulk Port
- Freeport (#32—22.3 million tons)**
Connecting Global Services Via Caribbean Relay Port
- Matagorda to include Port of Port Lavaca and Port of Point Comfort (#48—11.3 million tons)**
Generates Annual Business Revenues of Nearly \$2 Billion
- Galveston (#52—10.7 million tons)**
#4 Cruise Ship Port
- Brownsville (#67—6.9 million tons)**
#1 Ship Recycling Port
- Victoria (#70—6.5 million tons)**
#2 Shallow-Draft Port for Domestic Crude Petroleum





Relative Deep Draft Tonnage

Where do decisions on infrastructure have the greatest impact?



Rest of Pacific Coast (219MT)

LA
Long Beach

Rest of Lakes (132MT)

Duluth/Superior D.S.

NY/NJ (123MT)

Balt Baltimore
Norfolk Norfolk

Rest of Atlantic Coast (206MT)

Sav Savannah

Houston (229MT)

South Louisiana (238MT)

Rest of Texas (303MT)

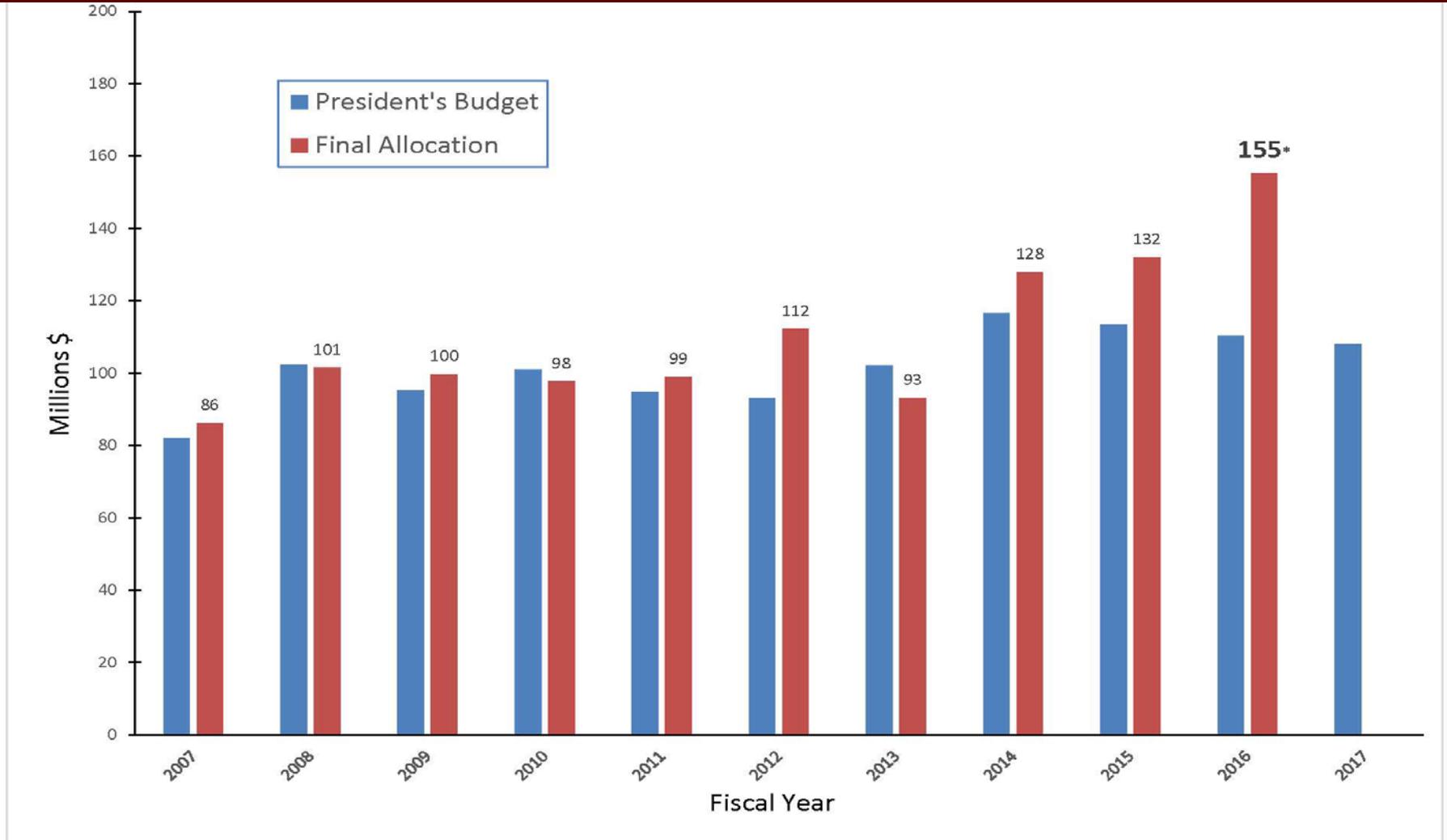
Rest of Louisiana (268MT)

Rest of Gulf (145MT)



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Operations and Maintenance Funding History Galveston District



Galveston District Hydrographic Survey Website

<http://www.swg.usace.army.mil/Missions/Navigation.aspx>

GALVESTON DISTRICT



US Army Corps of Engineers

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Navigation on the Texas Coast



Coastal Custodians



The USACE Galveston District plays a key role in America's well-being by keeping waterways open for navigation and commerce. A priority is deepening and widening waterways, such as ports, ship channels, and the Gulf Intracoastal Waterway, for the safe and expeditious accommodation of commercial waterborne traffic. The Galveston District is directly responsible for maintaining more than 1,000 miles of channel, including 270 miles of deep draft and 750 miles of shallow draft. Dredges are constantly at work keeping vital marine arteries open for waterborne traffic carrying

cargo ranging from crude oil to coffee. Other priorities include construction of jetties or breakwaters to protect harbor and inlet entrances and the locks along the Gulf Intracoastal Waterway at the crossing of the Brazos and Colorado rivers.

Hydrographic Surveys

Channel and Waterways
Hydrographic Surveys

HSC Deferred Environmental
Restoration of M-7/8/9 and
M-10

Notice to Navigation

Dredging/Marine Construction

Deep Draft Condition Report

Shallow Draft Condition Report

Navigation Links



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Galveston District Hydrographic Survey Website



US Army Corps of Engineers

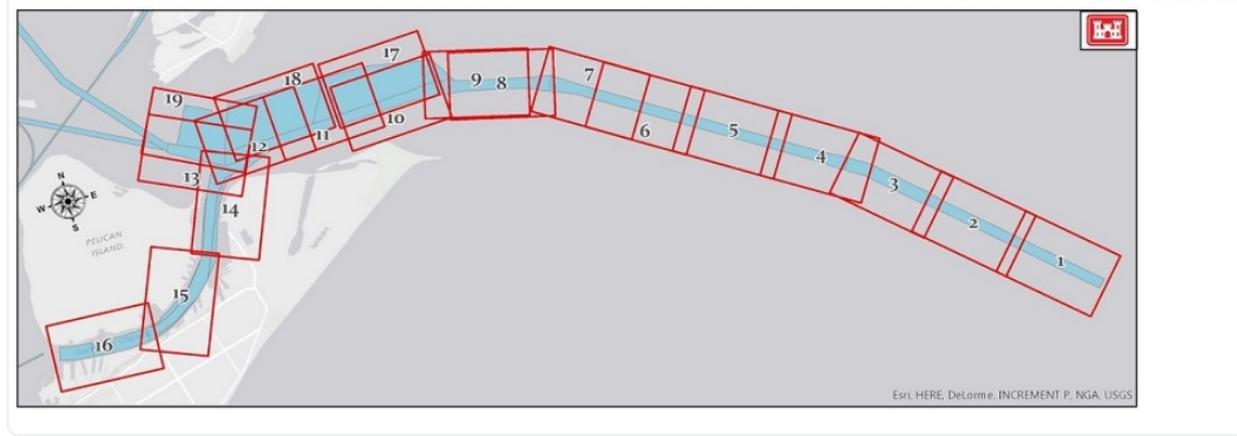
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Galveston Harbor/Channel Map Index



Galveston Harbor/Channel Maps

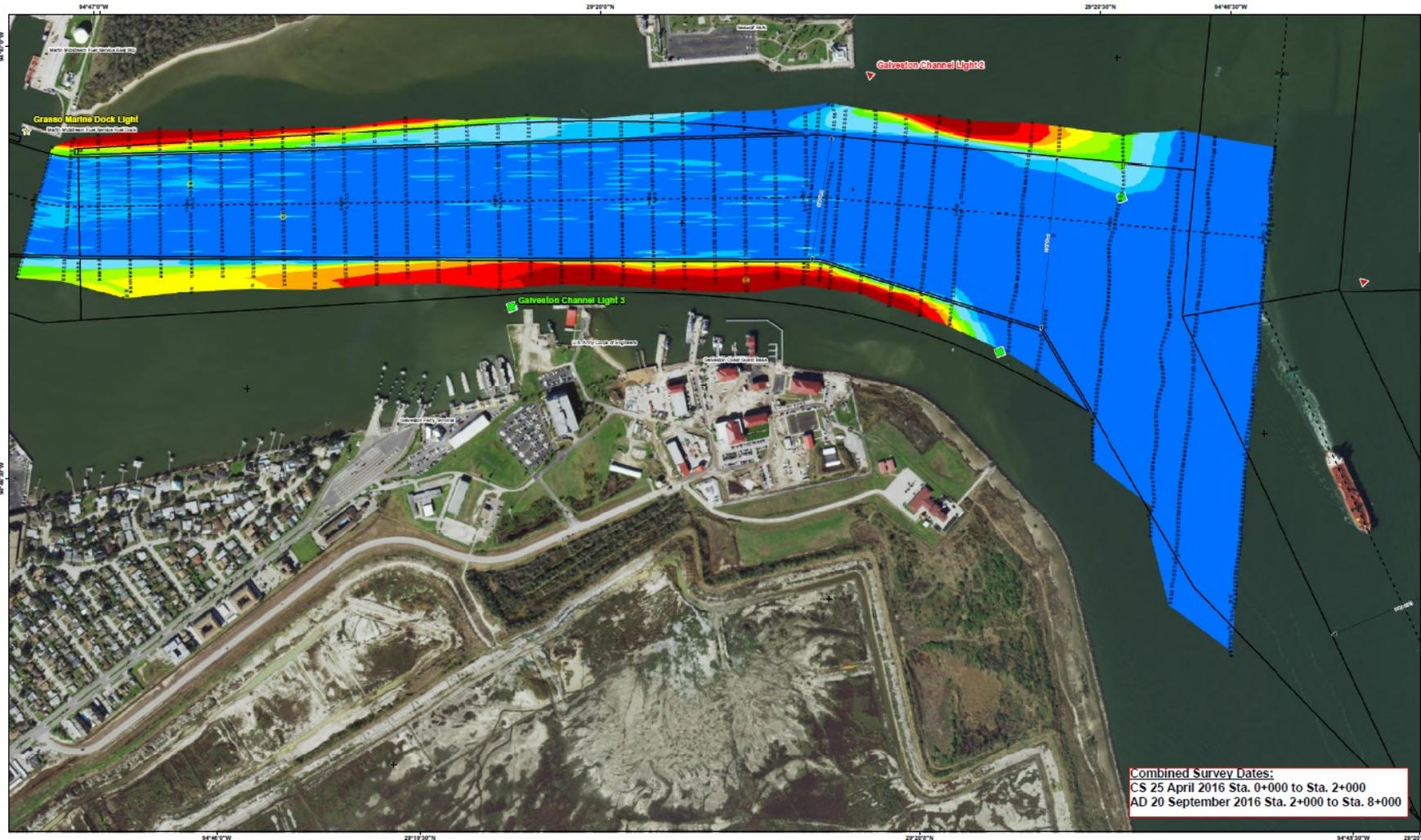
Channel Reaches	Station to Station	Survey Date	Channel Maps	XYZ Data
Pages 1 - 3 Extended Entrance Channel	76+000 55+840.58	March 1, 2016	Survey Maps	XYZ
Pages 4 - 6 Entrance Channel	55+840.58 30+515.474	March 25, 2016	Survey Maps	XYZ
Page 7 - 9 Outer Bar Channel	30+515.474 21+752.821	July 1, 2016	Survey Maps	XYZ
Pages 10 - 12 Inner Bar Channel	21+752.821 4+490.072	July 1, 2016	Survey Maps	XYZ
Page 13 Bolivar Roads Channel	4+490.121 0+000	March 30, 2016	Survey Maps	XYZ
Page 14 Bolivar Roads to Exxon Oil Dock	0+000 7+879.53	April 25, 2016 & September 20, 2016	Survey Maps	XYZ
Page 15 Exxon Oil Dock to Todds Shipyard	7+879.53 15+600	March 15, 2016 & September 2 & 16, 2016	Survey Maps	XYZ
		March 15, 2016	Survey Maps	XYZ



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Galveston District Hydrographic Survey Website

Bolivar Roads to Exxon Oil Dock



Survey Date(s): 25 April 2016	Authorized Depth: -4ft. to -40ft.
Page: 14 of 19	Scale: 1:3,400
Map: 14	Scale: 1:3,400
Mapped by: M3AOPAC	
Imagery Date: October 27, 2013 © DigitalGlobe, Inc.	

Combined Survey Dates:
 CS 25 April 2016 Sta. 0+000 to Sta. 2+000
 AD 20 September 2016 Sta. 2+000 to Sta. 8+000

Aids to Navigation

- Station Line
- Channel Center Line
- Navigation Channel
- Dimensions
- Light
- Red Side Aids
- Green Side Aids
- Mooring Buoy

Depth in Feet (MLLW Datum)

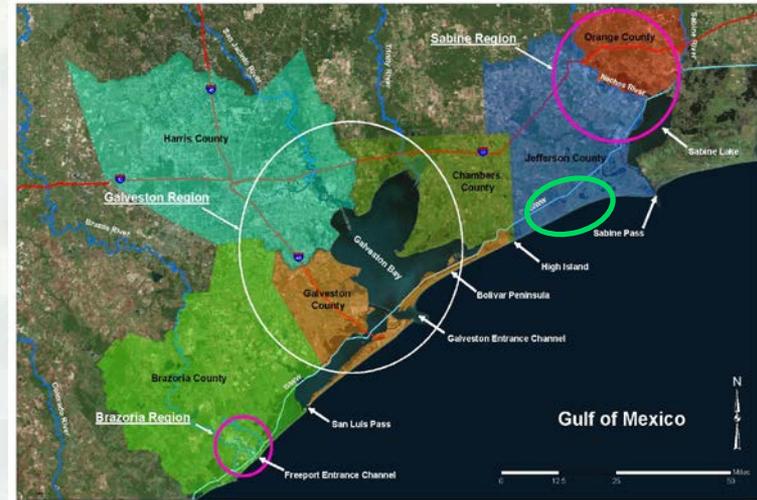
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Sabine Pass to Galveston Bay Study

- Improvements to Freeport and Port Arthur Hurricane Flood Protection Systems
- Proposed 27 miles of new levee/floodwalls in Orange County

Implementation Sponsors

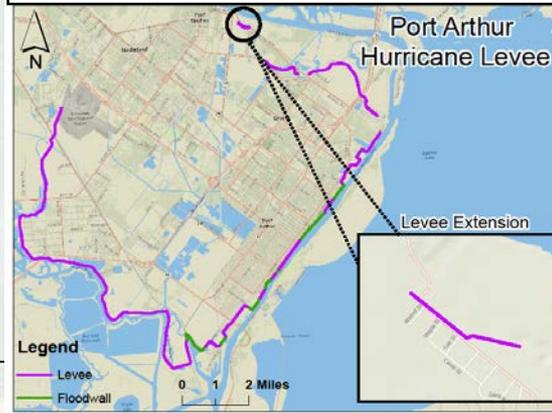
- Letters of Intent from:
 - Velasco Drainage District for Freeport
 - Jefferson County Drainage District #7
 - Orange County for Orange 3 Levee



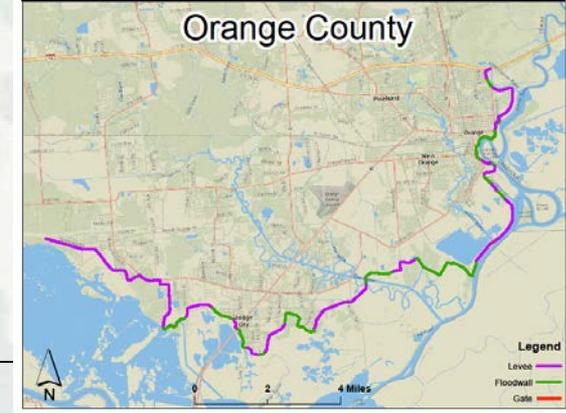
Freeport and Vicinity



Jefferson County



Orange County



Coastal Texas Protection and Restoration Study

Coastal TX Study Authorization

- Water Resources Development Act (WRDA) of 2007 Section 4091, Coastal Texas Ecosystem Protection and Restoration, Texas.

"In General.—The Secretary shall develop a comprehensive plan to determine the feasibility of carrying out projects for flood damage reduction, hurricane and storm damage reduction, and ecosystem restoration in the coastal areas of the State of Texas"

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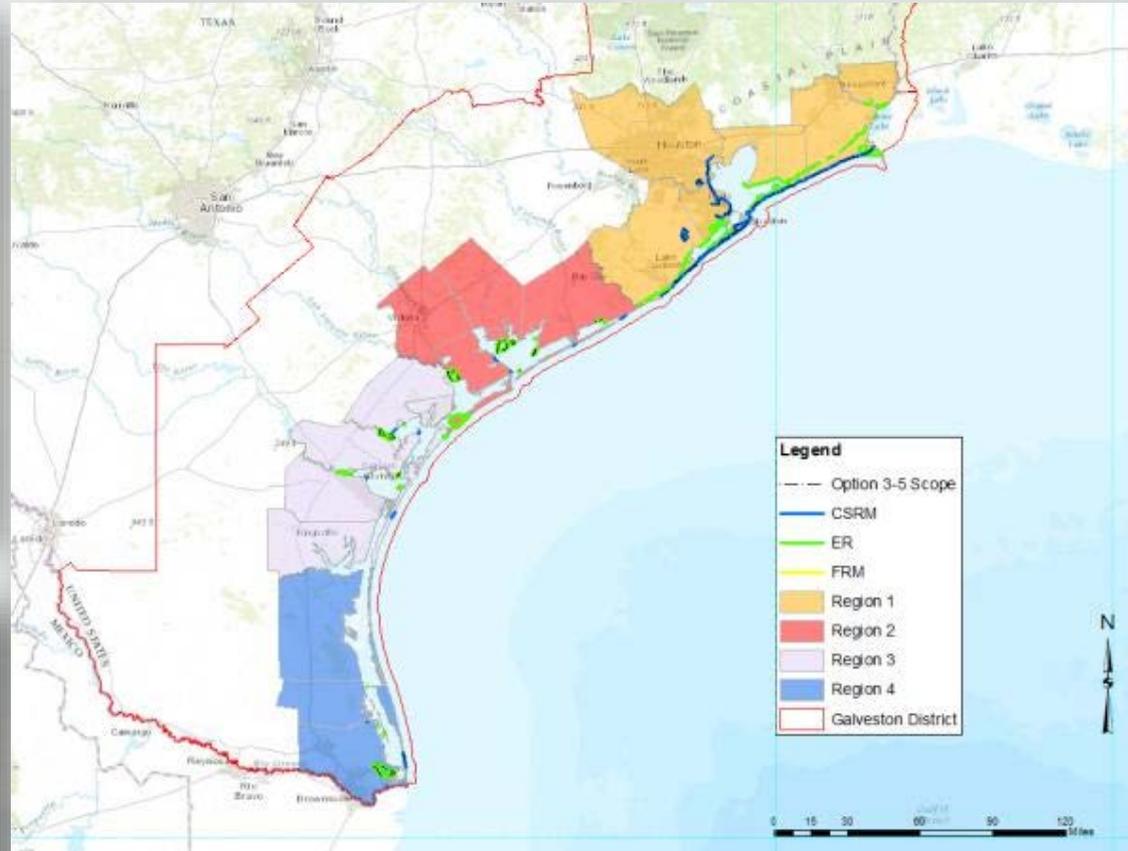
Study Objectives



1. Develop a Comprehensive Plan for the Texas Coast
2. Recommend Coastal Storm Risk Management Projects for Authorization
3. Recommend Ecosystem Restoration Projects for Authorization



12



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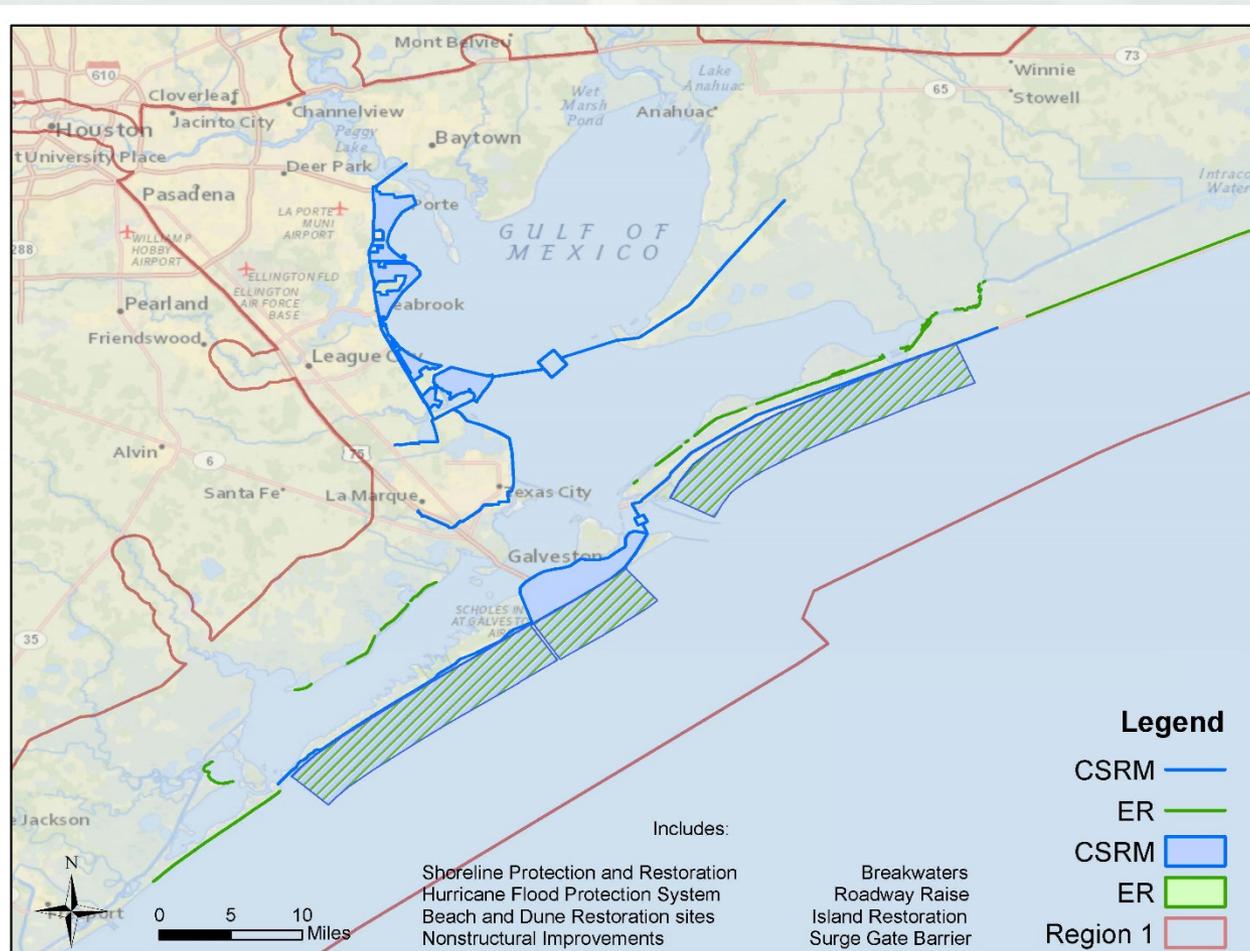


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Coastal Texas Protection and Restoration Study

Region 1 Coastal Storm Risk Management

- The study will evaluate a coastal barrier, as well as a mid-bay barrier, west bay levees, ring levees and beach nourishment
- The recommended plan could be a single measure or a combination of multiple measures



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