

Sabine Pass to Galveston Bay, TX, Coastal Storm Risk Management and Ecosystem Restoration Feasibility Study

Public Comment Meetings

October 6, 2015 – Beaumont, TX

October 8, 2015 – Freeport, TX

Sharon Tirpak, Project Manager

Lauren Kruse, Planning

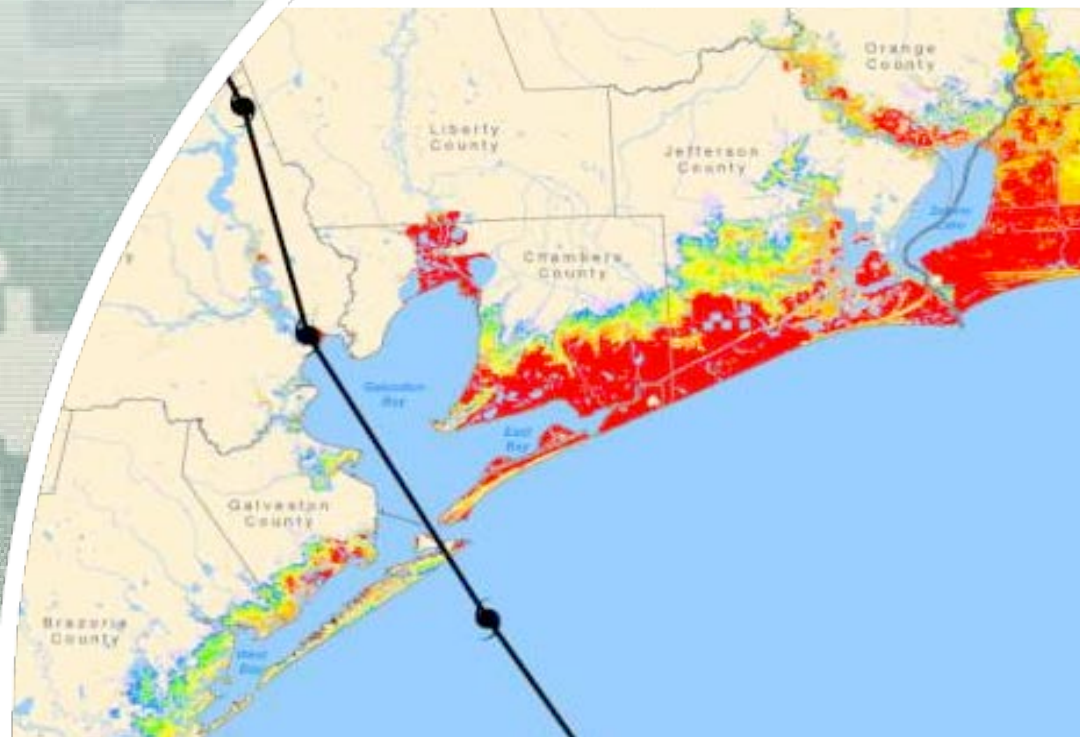
Jodie Foster, Economics

Jon Plymale, Engineering

Janelle Stokes, Environmental



US Army Corps of Engineers
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Purpose of Public Meeting

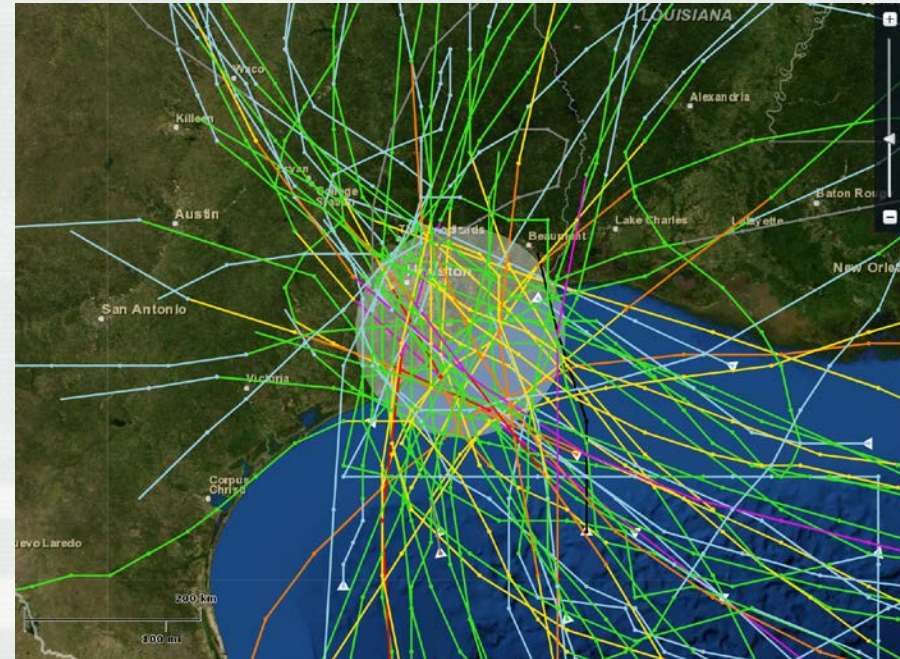
- Present the Tentatively Selected Plan (TSP)
- Gather comments from the public on the TSP and its environmental impacts



Threat to Health and Well Being

Since 1854, 61 tropical storms have hit the Upper TX Coast

- 2008 Hurricane Ike
 - 3rd most destructive in US history
 - 112 deaths
 - Thousands of homes destroyed
 - \$29 billion in losses
- 2005 Hurricane Rita
 - 111 deaths/\$10 billion in losses
- Tropical Storm Allison
 - 41 deaths/\$5 billion in losses
- 1900 Galveston Storm
 - 6000 deaths/\$20 million in losses



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Study Background

Authority:

Feasibility study conducted in response to the 2004 “Coastal Texas Protection and Restoration Study” resolution from the House of Representatives’ Committee on Environmental and Public Works

Sponsors:

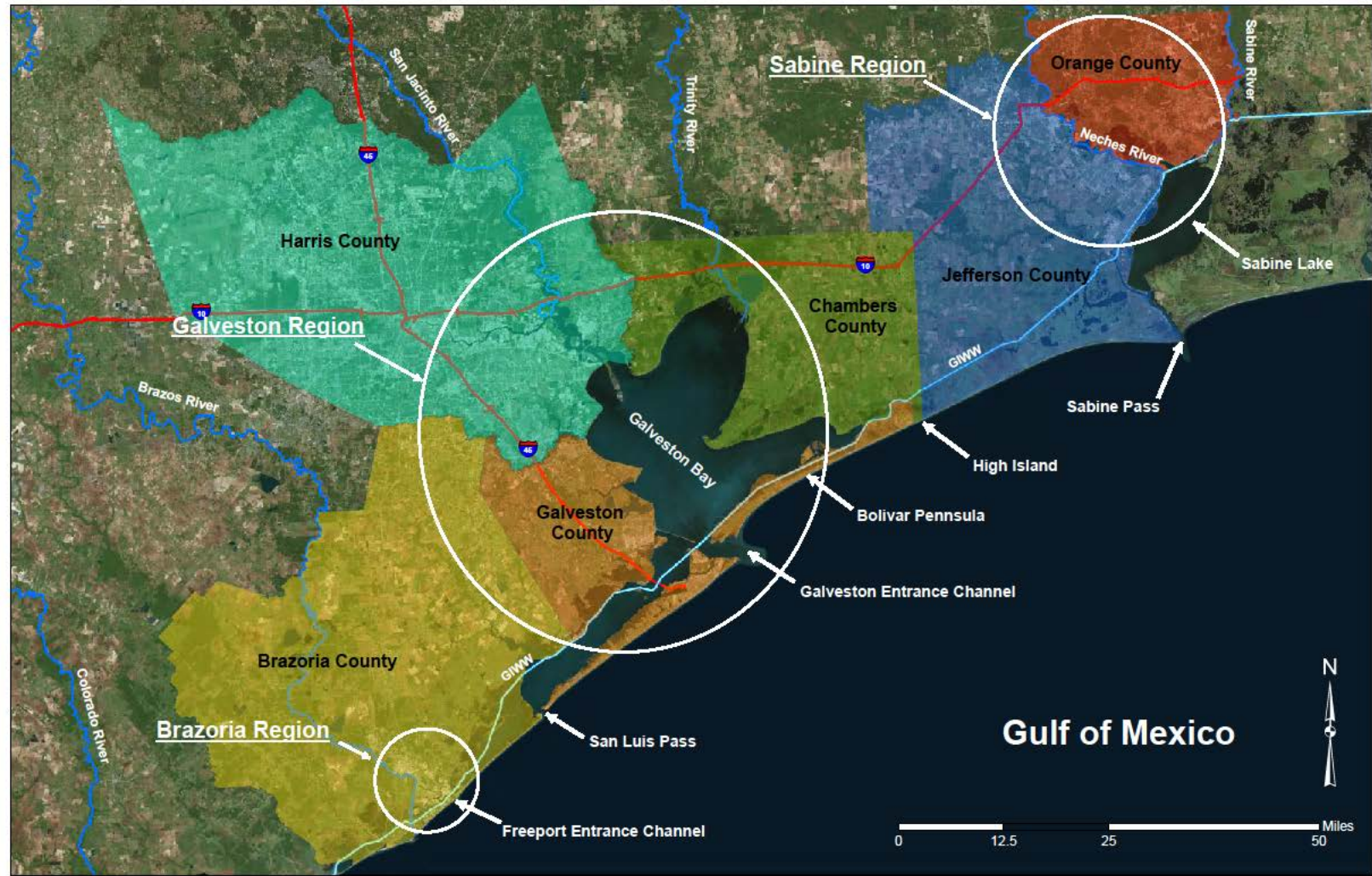
U.S. Army Corps of Engineers (USACE), Galveston District
Texas General Land Office

Purpose:

Recommend Coastal Storm Risk Management (CSRM) and Ecosystem Restoration (ER) projects for Congressional approval in the six counties on the upper Texas coast (Orange, Jefferson, Chambers, Harris, Galveston and Brazoria).



Sabine Pass to Galveston Bay Project Areas

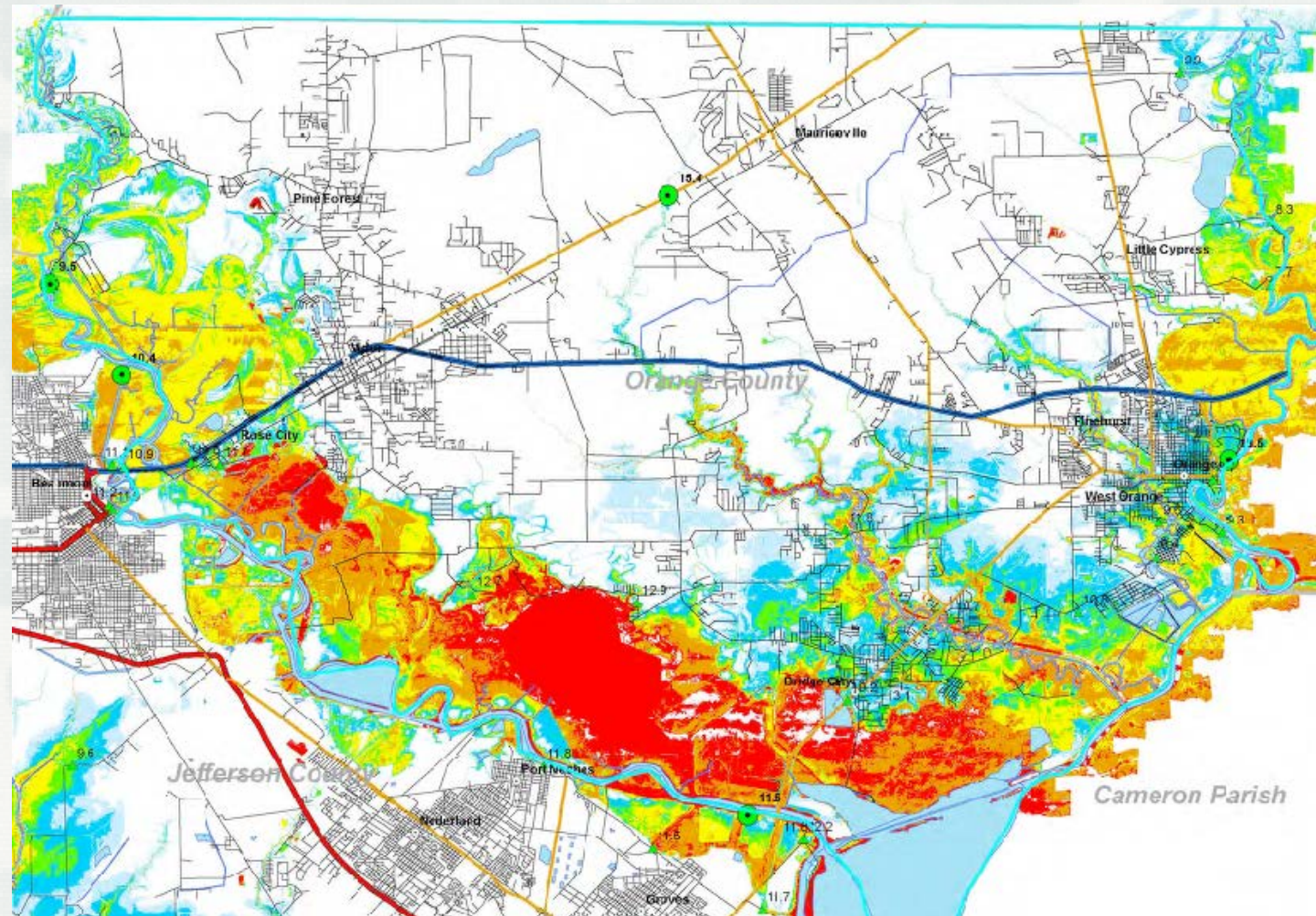


Revised Study Scope

- Programmatic discussion on entire six-county area
- Focused study effort on Sabine and Brazoria Regions for \$4.4 million and 3.9 years
- CSRM problems evaluated and projects recommended for:
 - ▶ Sabine Region (Orange and Jefferson Counties)
 - ▶ Brazoria Region (Freeport area)

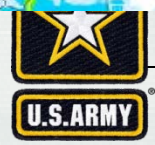


Hurricane Ike Surge Impacts Orange-Jefferson Counties



Inundation (Feet)

- >10 Feet
- 8-10 Feet
- 6-8 Feet
- 4-6 Feet
- 2-4 Feet
- < 2 Feet
- No Inundation
- Measure Water Level
- FEMA High Water Marks

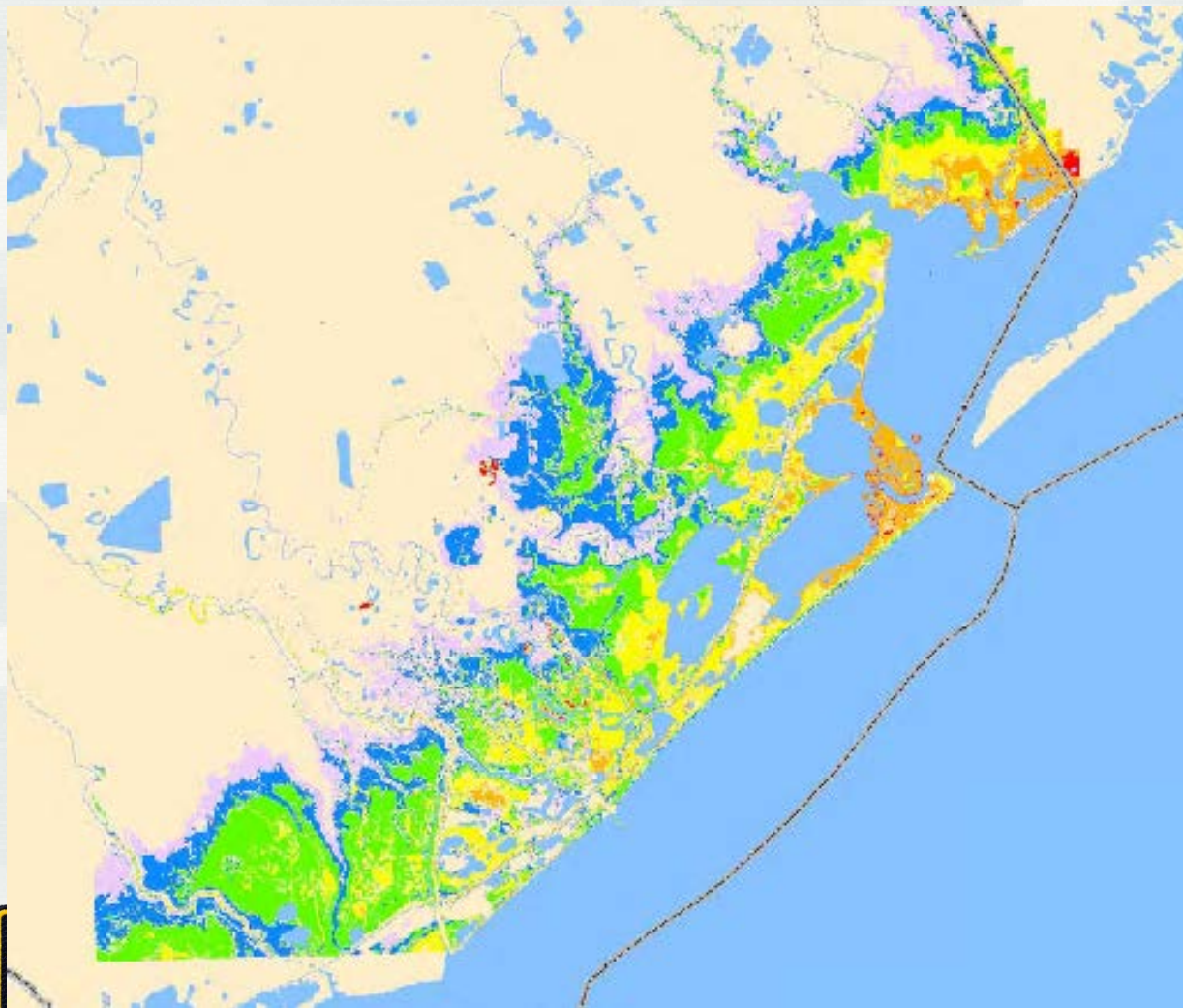


Existing Port Arthur and Vicinity Hurricane Flood Protection Project



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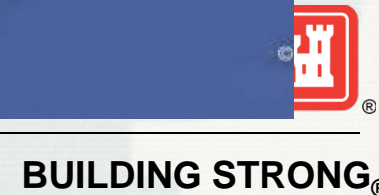
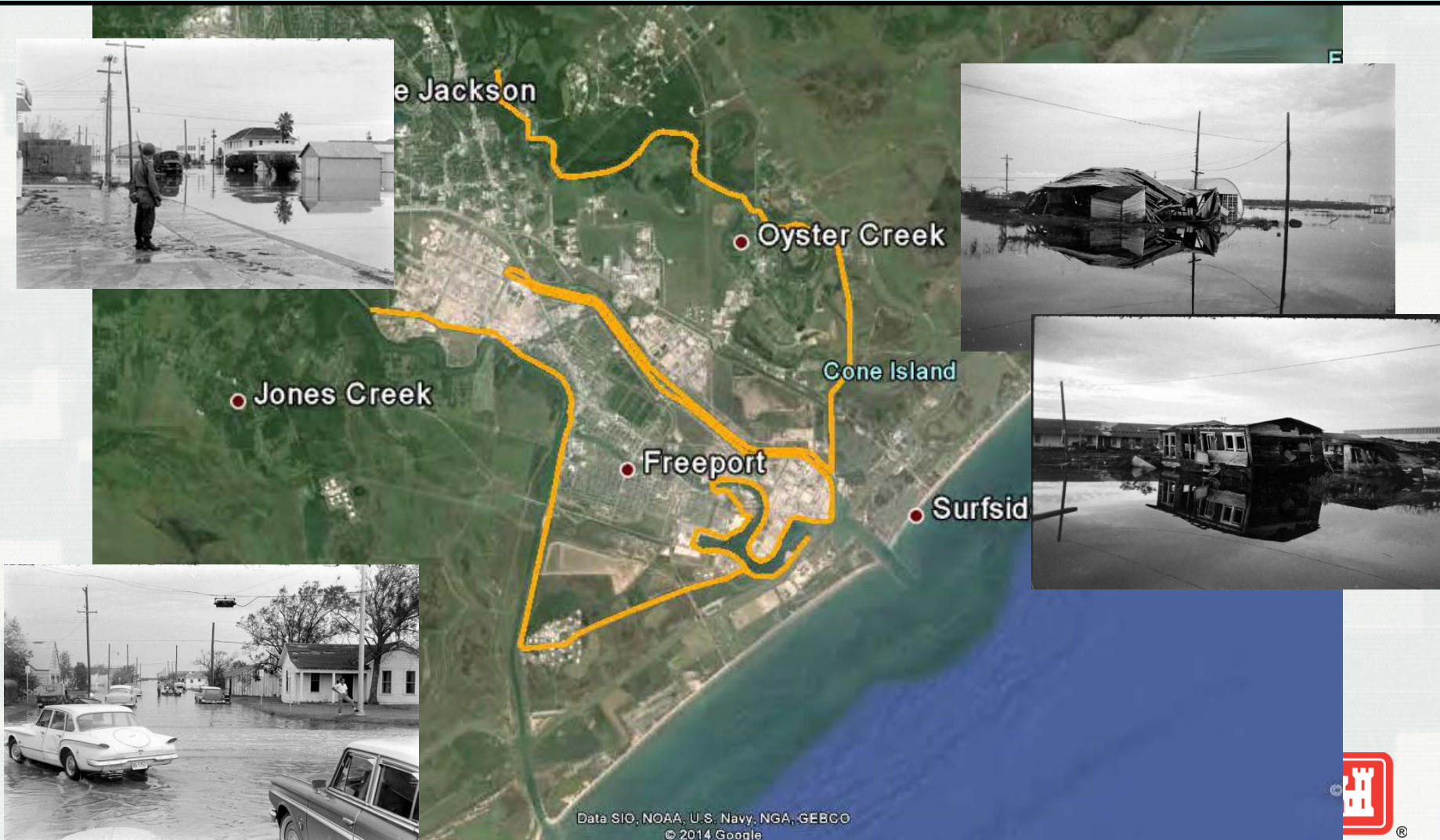
Hurricane Ike Surge Impacts Brazoria County



Inundation (Feet)

- >10 Feet
- 8-10 Feet
- 6-8 Feet
- 4-6 Feet
- 2-4 Feet
- < 2 Feet
- No Inundation
- Measured Water Level
- FEMA High Water Marks

Existing Freeport and Vicinity Hurricane Flood Protection Project



Evaluation of Alternative Plans

No Action or Future Without Project (FWOP) Alternative

Sabine Region Alternatives

- Sabine Inland Barrier CSRM Focus (new Neches Surge Gate/new Sabine and Neches Levees/existing Port Arthur Hurricane Flood Protection Project (HFPP))
- Sabine Nonstructural Alternative

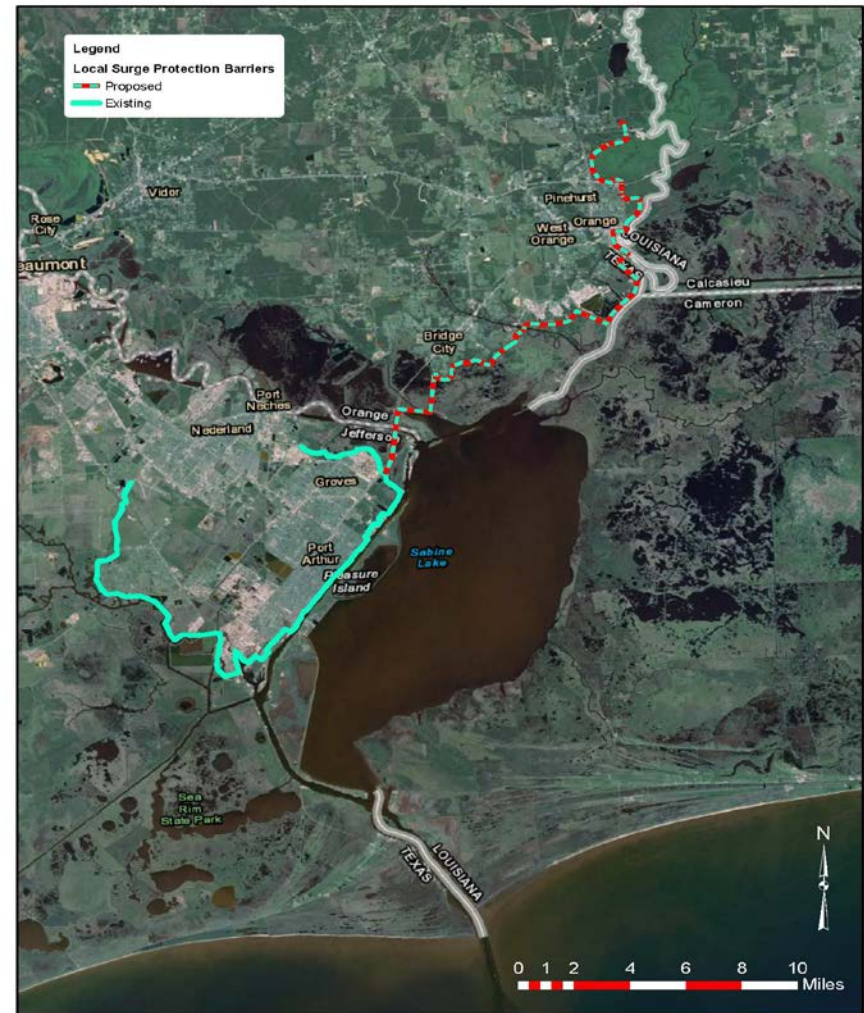
Brazoria Region Alternatives

- Brazoria Coastal Barrier CSRM Focus (existing Freeport HFPP)
- Brazoria Nonstructural Alternative



Neches River Surge Gate Alternative

- New levee/floodwall system along the Sabine River and Sabine Lake
- Large, navigable surge gate in the Neches River
- Improvements to Port Arthur HFPP



Final Array Alternatives

Project Area

Final Array

No Action (FWOP) Alternative

Brazoria Region Alternatives

Freeport and Vicinity
CSRM

Improvements to existing Freeport HFPP

Brazoria Region Nonstructural

Sabine Region Alternatives

Orange-Jefferson
CSMR

New Levees/Floodwalls in Orange and Jefferson
Counties

Port Arthur and Vicinity
CSRM

Improvements to existing Port Arthur HFPP

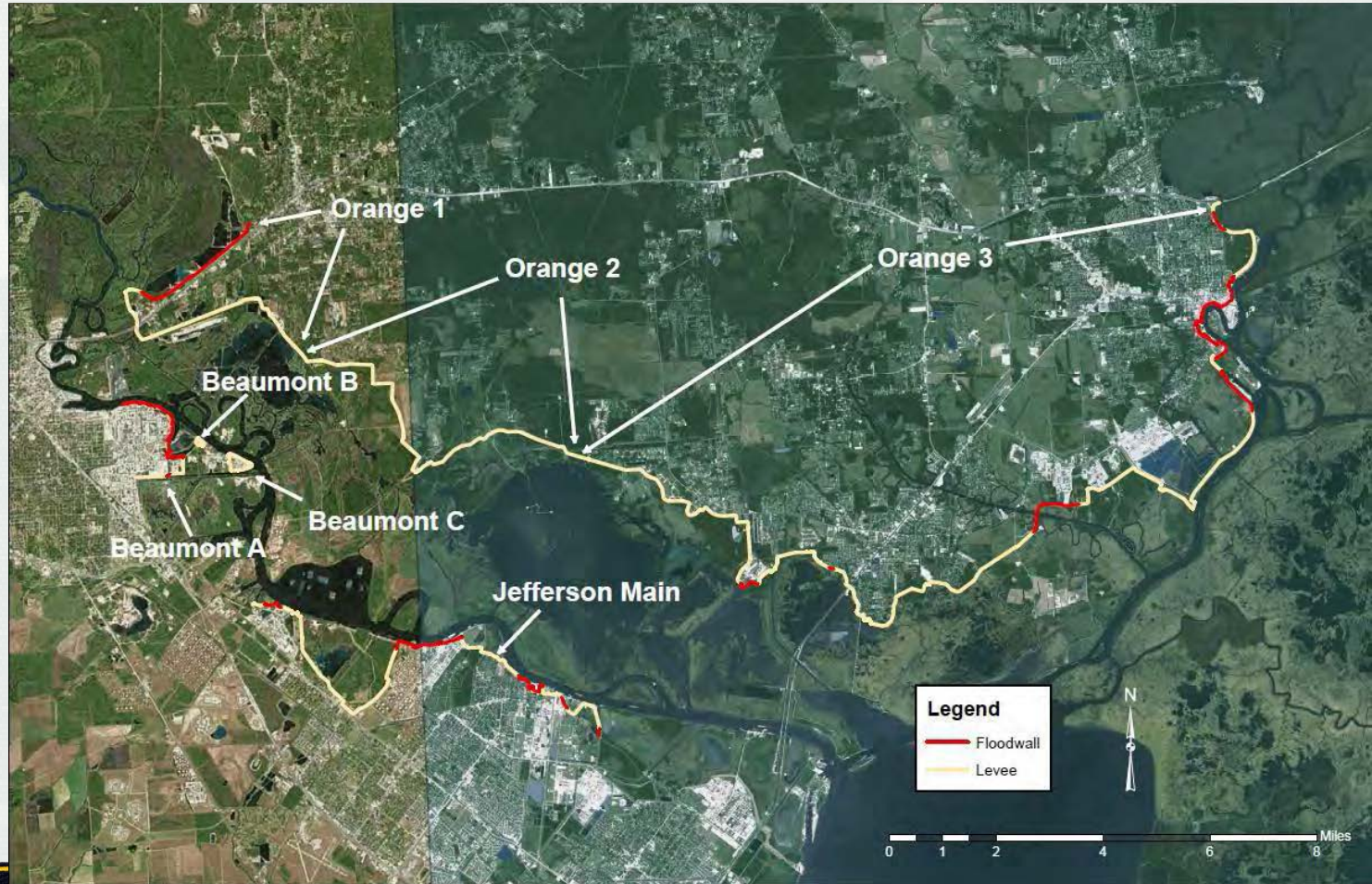
Sabine Region Nonstructural



Proposed TSP for Freeport and Vicinity CSRM



Orange-Jefferson CSRM: Alternative Reaches Evaluated



Proposed TSP for Orange-Jefferson CSRM



Proposed TSP for Port Arthur and Vicinity CSRM



Environmental Impacts of TSP

- Port Arthur and Freeport CSRM Plans have negligible environmental impacts
- Orange-Jefferson CSRM Plan avoids and minimizes wetland impacts to greatest extent possible
 - Direct impacts about 300 acres of wetlands
 - Indirect fisheries access impacts to about 2,200 acres of marsh in Adam's and Cow Bayou floodplains
 - Value of direct and indirect wetland impacts determined with Wetland Value Assessment Model in coordination with resource agencies
- No known hazardous or toxic waste releases, violations, or sites of concern
- No significant cultural resource impacts
- No endangered species impacts

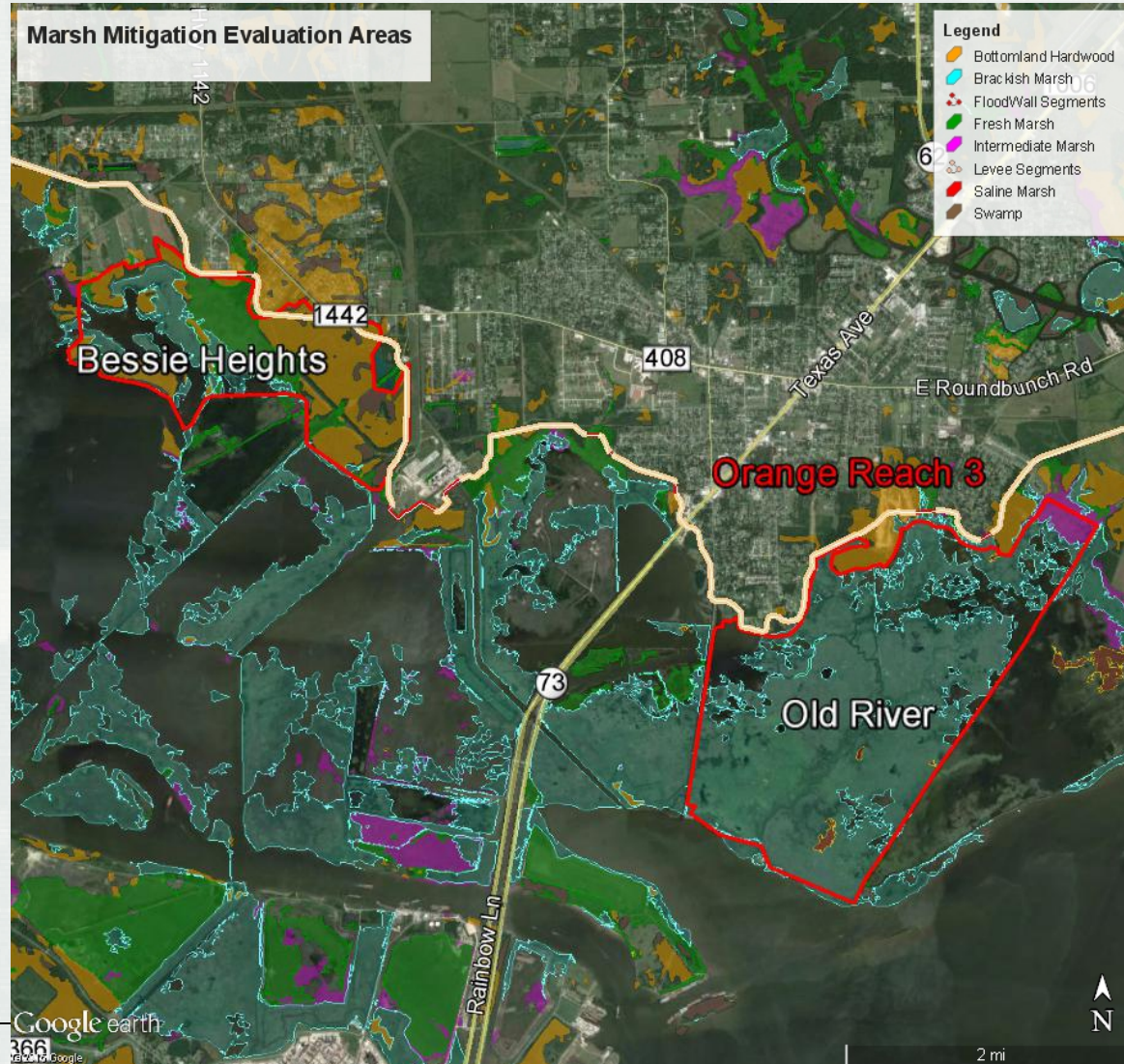


Conceptual Mitigation Plan

- All impacts fully mitigated as required by law and USACE regulations
- Impacts to marsh compensated with marsh restoration
- Impacts to forested wetlands compensated by preservation and improvement of wetland forest
- Impacts to wetlands on Texas Parks and Wildlife Department (TPWD) property will be mitigated on TPWD property

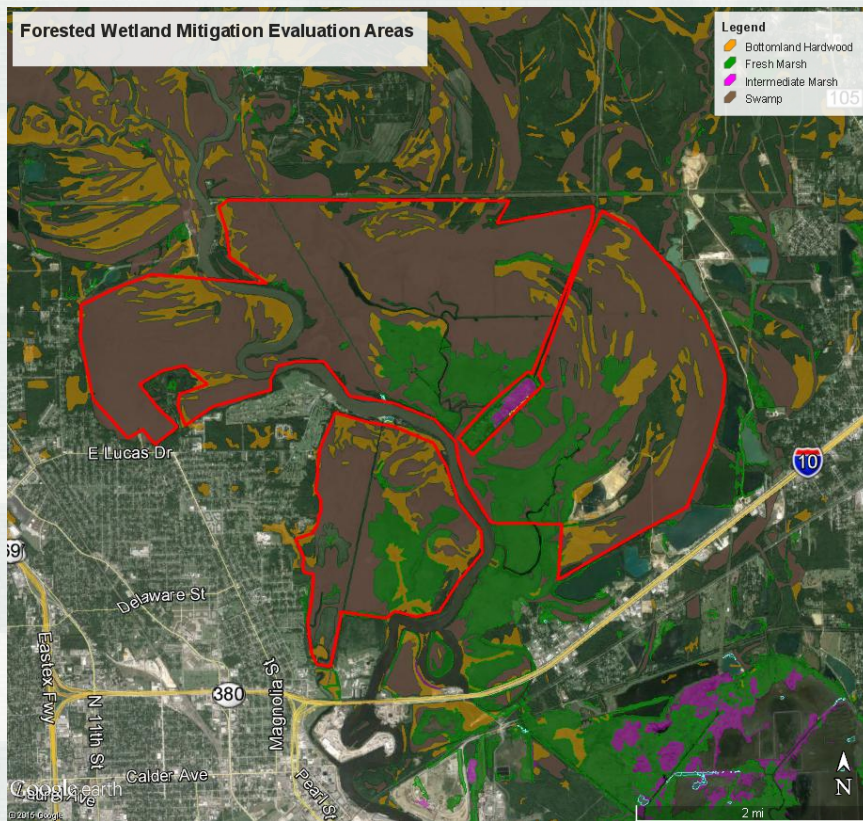


Marsh Mitigation Evaluation Areas



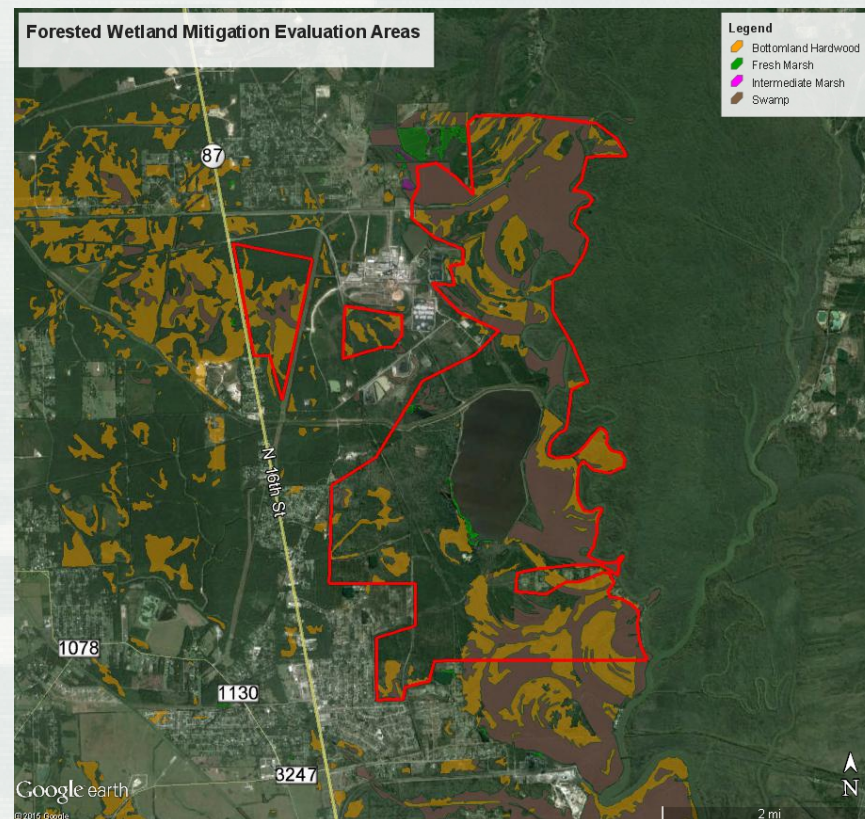
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Forested Wetlands Mitigation Evaluation Areas



Neches River

Sabine River



Preliminary Project Cost

Orange-Jefferson CSRM Plan	\$382,739,000
Port Arthur and Vicinity CSRM Plan	\$ 33,144,000
Freeport and Vicinity CSRM Plan	\$156,343,000
Total	\$572,226,000



Next Steps

- Final Feasibility Analysis
 - ▶ Potential changes in levee alignment location
 - ▶ Development of feasibility-level engineering design
 - ▶ Analysis of effects of relative sea-level rise could result in increases to the recommended height and width of new Orange-Jefferson CSRM plan, and Port Arthur and Freeport CSRM plans
 - ▶ Analysis of potential changes in environmental impacts
 - ▶ Development of environmental mitigation and monitoring plan



Relative Sea Level Change (RSLC)

Estimated RSLC over the first 50 years of the project life
(2030 – 2080)

Tide Gage	Measured Relative SLR Rate	Low (ft)	Intermediate (ft)	High (ft)
Sabine Pass, TX	0.22 in/yr	0.93	1.49	3.26
Freeport, TX	0.17 in/yr	0.72	1.27	3.05





Schedule for Study Completion

- Concurrent Review Oct/Nov 2015
- Recommended Plan Jan 2016
- Final Feasibility Report Apr 2016
- Civil Works Review Board Jul 2016
- State and Agency Review Aug 2016
- Chief of Engineer's Final Report Sep 2016



Comments

- Galveston District Website
<http://www.swg.usace.army.mil/>
- Comments must be submitted by October 26, 2015
- Submit comments to:
U.S. Army Corps of Engineers, Galveston District
Attn: Janelle Stokes, SWF-PEC-TN at SWG
P.O. Box 1229
Galveston, Texas 77553
Janelle.S.Stokes@usace.army.mil



Public Comments Will Now Be Accepted

