GIWW Brazos River Floodgates and Colorado River Locks Feasibility Study

Stakeholder Partnering Forum
Modernizing of the GIWW
August 4, 2016

Partnering Under a Systems Approach for Sustaining Commercial Navigation and the Environment

USACE- Galveston District
Galveston, Texas

“Activities that require USACE Regulatory authorization under Section 404 of the Clean Water Act are not part of this study.”
Welcome

- This presentation includes:
  - A general project overview
  - Description of the Brazos River Floodgates and Colorado River Locks
  - Identified problems, objectives, and constraints
  - General feasibility study process
  - Environmental Opportunities along the GIWW
  - USACE Authorities

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The U.S. Army Corps of Engineers (USACE) Galveston District is leading a feasibility study to:

- Investigate and recommend solutions to improve safety and navigation efficiency on the Gulf Intracoastal Waterway (GIWW) at the Brazos River Floodgates and the Colorado River Locks
- Identify and evaluate possible structural and navigation alternatives to reduce traffic accidents and navigation delays

The non-Federal sponsor for the project is the Texas Department of Transportation (TxDOT).

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Project Location

<table>
<thead>
<tr>
<th>Brazos River Floodgates</th>
<th>Colorado River Locks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Located where the GIWW intersects with the Brazos River southwest of the city of Freeport in Brazoria County, Texas</td>
<td>Located where the GIWW intersects with the Colorado River at the city of Matagorda in Matagorda County, Texas</td>
</tr>
<tr>
<td>Located 40 miles northeast of the Colorado River Locks</td>
<td>Located 40 miles southwest of the Brazos River Floodgates</td>
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</tbody>
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There are no ports between the Brazos River Floodgates and the Colorado River Locks.

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PROJECT LOCATION

USACE Galveston District Office

Brazos River Floodgates

Colorado River Locks

Brazos River Floodgate Dimensions
750 feet long by 75 feet wide
Maximum tow length: 1,180 feet
Maximum tow width: 55 feet

Colorado River Locks Dimensions
1,200 feet long by 75 feet wide
Maximum tow length: 1,180 feet
Maximum tow width: 55 feet

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Brazos River Floodgates

- Constructed in September 1943
- Dimensions: 750 feet long by 75 feet wide
- Max Tow Length: 1,180 feet
- Max Tow Width: 55 feet
- Prevent excessive tidal action and silting in the GIWW
- Average 38 tows/day transit

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Colorado River Locks

- 1st Operating Navigation Lock in Texas: May 1951
- Dimensions: 1,200 feet long by 75 feet wide
- Max Tow Length: 1,180 feet
  Max Tow Width: 55 feet
- Prevent excessive tidal action and silting in the GIWW
- Average 38 tows/day transit

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Identified Problems

- Inadequate channel width/crossings for modern vessels
- Outdated floodgate construction and width in floodgate chambers
- Outdated lock construction at Colorado River leads to mechanical failure, presents security concerns
- High river flows due to flood events impact traffic navigation
- Marine buildup on mechanical equipment leads to increased O&M cost
- Sedimentation increases at mouth of rivers
- Shoreline erosion

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Study Objectives

- Improve/modernize critical infrastructure at the floodgates/locks
- Reduce operational delays of structures that contribute to economic impacts to navigation industry
- Improve navigation in channel/crossings
- Minimize environmental impacts
- Reduce risks to life, health, and safety of shipping crews

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Key Considerations

- **Navigation/Transportation**
  - Impacts to navigation during construction
  - Nearby roadway bridges

- **Existing Federal Projects**
  - Flood-protection levees
  - Dredged material placement areas
  - Increased silting in navigation channels

- **Energy and Mineral Resources**
  - Bryan Mound Strategic Petroleum Reserve
  - Existing pipelines/wells

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Key Considerations

- Environmental
  - Wetlands and other local habitats
  - Floodplains
  - Wildlife refuges/management areas and recreation areas
  - Ongoing ecological recovery in West Matagorda Bay
  - Protected wildlife, marine mammals, fisheries
  - Cultural and historic resources
  - Changes in salinity, bank erosion, sedimentation/shoaling

- Land Requirements

- Other – *Seeking Public Input*

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### Potential Measures

#### Brazos River Floodgates
- Remove floodgates and dredge channel
- Relocate gates further from river
- Widen gates/structure lift
- Create guide wall on river side (lessen angle)
- Straighten crossings
- Construct lock system
- Assess effects of flows from San Bernard River (west of floodgates)
- Raise walls/gates/adjoining levee to match Colorado River Locks

#### Colorado River Locks
- Relocate locks further from river
- Widen locks
- Move intersection of bypass channel east
- Build gate at the dam to serve as water control structure
- Modify operation at dam to allow for split flow through old channels to Gulf
- Restore/replace southwest point
- Modify scheduled maintenance
- Create openings/outlets to reduce flow/currents through locks

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Overview of Feasibility Study/NEPA Process

**Record of Decision**

**Project Implementation**

**Overview of Feasibility Study/NEPA Process**

- **Develop non-Federal Sponsor Agreement**
- **Notice of Intent (June 22, 2016)**
- **Public Scoping Period**

**Public Scoping Period**

- **Alternatives Development**
- **Impact Evaluation**
- **Preparation of Draft EIS**

**Preparation of Draft EIS**

- **Public Review of Draft EIS**
- **Preparation of Final EIS**

**Preparation of Final EIS**

- **Notice of Availability of Final EIS**

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- **Record of Decision**
- **Project Implementation**

* Opportunities for public comment

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Beneficial Use Opportunities

- Environmental Opportunities along the GIWW
  - Marsh / Seagrasses
  - Bird Islands
  - Beach Nourishment

- USACE Authorities (Section 203, CAP studies, USACE / GLO MOA, Regulatory Permits)
  - Examples: Pierce Marsh (multiple agencies), Rollover Beach Nourishment, SPI beach nourishment, Bird Islands (USAFWS led using Regulatory permits), multiple opportunities (kmz file map showing
Beneficial Use Opportunities
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