HOUSTON SHIP CHANNEL EXPANSION
CHANNEL IMPROVEMENT PROJECT (HSC ECIP)

Public Meeting
19 October 2017

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Project Manager

“The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation.”
STUDY PURPOSE & AUTHORITY

STUDY PURPOSE: NAVIGATION

Reduce transportation costs while providing for safe, reliable navigation on the Houston Ship Channel (HSC) system

NON-FEDERAL SPONSOR:

Port of Houston Authority

STUDY AUTHORITY:

Section 216 of The Flood Control Act of 1970, P.L. 91-611
Dated December 31, 1970
(33 U.S.C. 569a)
HOUSTON SHIP CHANNEL SYSTEM

**Segment** | **Existing Channel Characteristics & Problems**
--- | ---
Boggy Bayou to Turning Basin | • Narrow Channel,  
• Insufficient channel depth  
• Constrained vessel size  
• Light loading, one-way traffic
Barbours Cut Channel | • Narrow channel  
• Challenging configurations (flare)
Bayport Ship Channel | • Narrow channel  
• challenging configurations (flare)  
• High shoaling
Bay Reach | • Narrow channel  
• Challenging configurations (bends)  
• Congestion  
• Constrained vessel size, one-way traffic

<table>
<thead>
<tr>
<th>Segment</th>
<th>Type</th>
<th>Class</th>
<th>LOA</th>
<th>Beam</th>
<th>Draft</th>
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<td>Bulk Carrier</td>
<td>70k-110k Bulker</td>
<td>750</td>
<td>106</td>
<td>45</td>
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<td>Tanker</td>
<td>Panamax size</td>
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<td>Suezmax</td>
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<td>Aframax</td>
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<td>138</td>
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<tr>
<td>Containership</td>
<td>Gen III</td>
<td>1,100</td>
<td>158</td>
<td>49</td>
<td></td>
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<tr>
<td>Containership</td>
<td>Gen III</td>
<td>1,200</td>
<td>140</td>
<td>49</td>
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</table>
INITIAL SCREENING:
- Do measures meet study objectives?

SECONDARY SCREENING:
- Environmental
- Engineering
- Infringes on Other Federal Projects
- Regulatory Permits Issued?
- Houston Pilot Input

45 Measures

- Terminal Improvements
- Additional Tug Assist
- Traffic Management (Vessel Tracking System or VTS)
- Adjusting Vessel Speed
- Use of Tides & Lightering

NON-STRUCTURAL

STRUCTURAL

- Channel Deepening
- Channel Widening
- New/Improved Turning Basins
- Multipurpose Moorings
- Flare Modifications or Bend Easings
- Shoaling Attenuation or Sediment Barrier
- Offshore Oil Pipeline (ex. LOOP)

Carried Forward to Develop Alternative Plans

- Channel Deepening
- Channel Widening
- New/Improved Turning Basins
- Multipurpose Moorings
- Flare Modifications or Bend Easings
- Shoaling Attenuation or Sediment Barrier
**Alternative 1**

"Minimum System-Wide Plan" (No Bay Widening)
Minimum plan that benefits all target vessels

**Alternative 2**

"Bay Plan"
Addresses container ships more completely and efficiently

**Alternative 3**

"Suezmax Plan"
Targets increased use of Suezmax-sized bulk liquid tankers

**Alternative 4**

"Aframax Plan"
For future increased use of Aframax tankers in upper channel

Legend:
- Turning Basin
- Channel Deepening
- Channel Widening
- Mooring
- Bend Easing
- Additional Flare Modifications
**Alternative 5**
“Bulkers, Tankers, & Vehicle Carrier Plan”
Targets more efficient use of the uppermost part of the HSC by these vessels.

**Alternative 6**
“Bay Mooring Plan”
Reduces frequent tanker trips back out to Gulf anchorages & refuge for disabled ships.

**Alternative 7**
“Upper Channel Mooring Plan”
Same as Alternative 6, but closer to source of most trips to further reduce total trip distance.

**Alternative 8**
“Comprehensive Plan”
The best parts of Alternatives 1-7.
## BENEFIT-COST ANALYSIS ($000)

<table>
<thead>
<tr>
<th>Alt</th>
<th>First Cost</th>
<th>Project Cost + OMRR&amp;R</th>
<th>AAEQ Costs</th>
<th>AAEQ Benefits</th>
<th>Net Benefits</th>
<th>BCR ≥1.0</th>
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<tr>
<td>1</td>
<td>$513,900</td>
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<td>$8,500</td>
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<td>7</td>
<td>$47,600</td>
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<td>$3,300</td>
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<td>8 (650')</td>
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<tr>
<td>8 (820')</td>
<td>$1,451,800</td>
<td>$2,727,200</td>
<td>$84,700</td>
<td>$123,100</td>
<td>$38,400</td>
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</tbody>
</table>

1. Alternative 8 includes bay widening to 650 feet plus measures for further evaluation; lower range.
2. Alternative 8 includes bay widening to 820 feet plus measures for further evaluation; higher range.

- **Future Without Project**
- **Does not meet the study objectives.**
- **Baseline scenario against which benefits, costs and impacts of all other alternatives are compared.**
THE TENTATIVELY SELECTED PLAN

Alternative 8
"Comprehensive Plan"
The best parts of Alternatives 1-7

- Turning Basin
- Channel Deepening
- Channel Widening
- Mooring
- Bend Easing
- Additional Flare Modifications

★ Shoaling Attenuation Feature (location and type TBD)
FUTURE WITHOUT PROJECT VS. WITH PROJECT VESSEL CALLS

<table>
<thead>
<tr>
<th>2012-2014 Average</th>
<th>2029</th>
<th>2034</th>
<th>2039</th>
<th>2044</th>
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<tbody>
<tr>
<td>FWOP</td>
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<tr>
<td>FWP (ALT 8)</td>
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</tr>
</tbody>
</table>

- Load vessels deeper
- Reduces total yearly vessel calls
- Reduces shipping costs
- Reduces congestion
- Reduces average wait and transit times by 3 hours

➢ *Delay time reductions would be more significant in the future when congestion is expected to grow.*
POTENTIAL IMPACTS AND MITIGATION

### TSP IMPACTS

<table>
<thead>
<tr>
<th></th>
<th>w/ 650-foot wide bay channel</th>
<th>w/ 820-foot wide bay channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Work</td>
<td>50-Year O&amp;M</td>
<td>New Work</td>
</tr>
<tr>
<td>28 MCY</td>
<td>79 MCY</td>
<td>53 MCY</td>
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<tr>
<td>474 acres</td>
<td>543 acres</td>
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<tr>
<td>427 - 551 acres</td>
<td>487 - 632 acres</td>
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</table>

### DREDGED MATERIAL QUANTITIES

- Modern (TPWD 2011)
- Historical (TAMUG 1991)

### PERMANENT OYSTER REEF IMPACTS

- 474 acres
- 543 acres

### OYSTER MITIGATION

- 427 - 551 acres
- 487 - 632 acres

### OTHER IMPACTS:

- Temporary impacts from deepening unvegetated estuarine bay/river bottom
- Salinity, surge & other hydrodynamic effects (being modeled by ERDC)
- Threatened and Endangered Sea Turtles
  - potential impacts from limited use of hopper dredging
  - standard BMPs would help in an effort to minimize adverse impacts
- Impacts to seagrasses, wetlands or their T&E Species not anticipated

INPUT FROM:
TPWD, USFWS, NMFS, TGLO, NRCS
NEXT STEPS

- Public Participation
  - 25 October 2017 – 2nd Public Meeting (Galena Park High School)
  - 13 November 2017 – written comments due on Draft Report – EIS
- Dec 2017 through May 2019
  - Detailed Engineering and Environmental Analysis and Further Refinement of TSP
  - Development of Dredged Material Placement Plan
- May 2019 - Final Feasibility Study and Environmental Impact Statement
- October 2019 – Chief of Engineer’s Report
PUBLIC PARTICIPATION AND COMMENTS:

Who do I contact for more information or to provide comments?

MAIL: U.S. Army Corps of Engineers, Galveston District
Attn: Dr. Kelly Burks-Copes, Coastal Section,
Regional Planning & Environmental Center
P.O. Box 1229
Galveston, Texas 77553 1229

E-MAIL: HSC-ECIP@usace.army.mil

All comments must be received or postmarked by November 13, 2017

More information available online at:

http://www.swg.usace.army.mil/Missions/Projects/HoustonShipChannelExpansion.aspx