Dredging Industry Day Notification and Update

October 5, 2020
AGENDA:

- Introduction — Tara Davis (Hollaway Environmental)
- Project Overview — Rich Byrnes, Charlie Jenkins and Lori Brownell (Port Houston)
- Design Package Overview — Gahagan & Bryant Associates, Inc., AECOM and HDR
- Questions — Port Houston
Project Overview

Purpose:

To inform the dredging industry of the Houston Ship Channel Expansion Channel Improvement Project (Project 11)

• Provide current schedule, relative size, and project location
• Allow the dredging industry to ask questions and determine interest in the project
• This information does not initiate any type of procurement

Project 11 is under design; therefore, this information is subject to change and some details may not be available at this time.
Project Overview

• Port Houston is the non-Federal sponsor to the **USACE Feasibility Study** to allow for Federal investment of deepening and widening improvements to the entire HSC.

• The **USACE Feasibility Study** was completed between **November 2015 and April 2020**, with an anticipated Congressional Authorization by **December 2020**.

• Award of the Port-led contracts will allow for an accelerated implementation (by **June 2021**) of the Feasibility Study for construction before the anticipated start in **2024** or later.
Project Overview

Activities:
- Channel Widening and Deepening
- Dredged Material Placement Areas (DMPA) Construction (new development)
- Shoreline Protection
- Cutoff Wall Construction
- Marsh, Bird Island, and Oyster Reef Construction

For more details, please refer to the design package handout
Project Overview

Segment 1 – Bolivar Roads to Boggy Bayou
- Houston Ship Channel (HSC) bend easing (4) with associated barge lane relocation
- Widen HSC from 530 feet to 700 feet from Bolivar Roads to Barbours Cut Channel (BCC) with associated barge lane relocation

Segment 2 – Bayport Ship Channel (BSC)
- Widen BSC from existing 400 feet to 455 feet

Segment 3 – Barbours Cut Channel
- Widen BCC from existing 400 feet to 455 feet
- BCC Combined Flare and Turning Basin

Segment 4 – Boggy Bayou to Sims Bayou
- Deepen HSC from 41.5 feet to 46.5 feet from Boggy Bayou to Hunting Turning Basin
- Widen HSC from 400 feet up to 530 feet from Boggy to Greens Bayou
- Hunting Turning Basin Improvements

Segment 5 – Sims Bayou to I-610 Bridge
- Deepen HSC from 37.5 feet up to 41.5 feet from Sims Bayou to I-610 Bridge

Segment 6 – I-610 Bridge to Main Turning Basin
- Deepen HSC from 37.5 feet up to 41.5 feet from I-610 Bridge to Main Turning Basin
- Improvements to Turning Basin near Brady’s Island
<table>
<thead>
<tr>
<th>Project Number</th>
<th>Project Name</th>
<th>Dredging</th>
<th>Existing PA</th>
<th>New PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>C90-D13-P11-002</td>
<td>Beltway 8 DMPA Bunker removal and Clear and Grubbing</td>
<td>--</td>
<td>Remove 54 WWII Bunkers, Clear and Grub Beltway 8</td>
<td>Preparation of New PA</td>
</tr>
<tr>
<td>C90-D13-P11-003</td>
<td>Bolivar Roads to Redfish HSC Station 138+369 to HSC Station 98+000</td>
<td>Widen existing 530-FT HSC to 700-FT from approximate Station 138+369 to 98+000</td>
<td>New Evia Island II</td>
<td>New Long Bird Island</td>
</tr>
<tr>
<td>C90-D13-P11-004</td>
<td>Redfish to South Boaters Cut HSC Station 98+000 to HSC Station 57+000</td>
<td>Widen existing 530-FT HSC to 700-FT from approximate Station 98+000 - 57+000</td>
<td>ODMDS</td>
<td>Bird Island Marsh</td>
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<td></td>
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<td></td>
<td>Bird Island Marsh San Leon Oyster Mitigation</td>
<td>New Long Bird Island</td>
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<td>Dollar Reef Oyster Mitigation</td>
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<tr>
<td>C90-D13-P11-005</td>
<td>South Boaters Cut to Bayport (Beacon 76) HSC Station 57+000 to 20+000 &amp; Bayport Ship Channel Station 241+87 to 25+58</td>
<td>Widen existing 530-FT HSC to 700-FT from approximate Station 57+000 - 20+000</td>
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<td>Widen existing 4,000-FT BSC Flare to align with 700-FT HSC widening from approximate Station 26+750 to 28+605.05</td>
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<td>Widen existing 350/400-FT existing BSC to 455-FT from approximate Station 422+07.80 to 222+75.87</td>
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<td>Dredging of BSC Dock 7 (BSC Station 45+59.70 to 60+00) and Dock 1 (BSC Station 110+00 to 122+31.79)</td>
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<td>C90-D13-P11-006</td>
<td>Bayport (Beacon 76) to Morgans Point HSC Station 20+000 to HSC Station -0+003.94</td>
<td>Widen existing 530-FT HSC to 700-FT from approximate Station 20+000 to -0+003.94 and HSC Bayou Station 00+00 to 27+48.18</td>
<td>Dike Rehabilitation of M7/8/9 &amp; M10</td>
<td>M11</td>
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<tr>
<td>C90-D13-P11-007</td>
<td>Barbours Cut Terminal CIP</td>
<td>Widen existing to 455 FT from Station 8+28 to 67+11 and Flare easing, bulkheads for Morgans Point and Spilman Island</td>
<td>New work 3,925,000 yds Overdepth 160,500 yds</td>
<td>M12</td>
</tr>
<tr>
<td>C90-D13-P11-008</td>
<td>DMPA Development E2 Clinton and Beltway 8</td>
<td>Develop new DMPAs at Beltway 8 and E2 Clinton. New outfalls, site drainage and capacity for one time use of channel deepening</td>
<td>Beltway 8 DMPA 315 acres 3,490,000 CY capacity E2 Clinton DMPA 73 Acres 2,600,000 CY capacity</td>
<td>Beltway 8 and E2 Clinton</td>
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<tr>
<td>C90-D13-P11-009</td>
<td>Boggy Bayou to Sims Bayou Channel Widening and Deepening</td>
<td>Widen existing channel to 530-FT and deepen to 46.5 ft MLLW from Station 677+52 to 823+35 and Deepen Existing Channel from Station 677+52 to 930+00 to 46.5 ft.</td>
<td>New Work 3,521,000 yds Overdepth 726,000 yds</td>
<td>Beltway 8 and E2 Clinton</td>
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</tbody>
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Package 1: Bolivar Roads to Redfish Reef

Activities:

• Dollar Reef Oyster Mitigation
• Standard rock construction using 270,000 tons of crushed limestone/no dredging activities
• New work dredging impacts to Segment 1A addressed
Package 2: Boggy Bayou to Sims Bayou

Activities:
- Site was a WWII Ammo storage site
- ~450 acres, heavily wooded tract
- Has multiple pipeline easements
- Difficult site access
Package 2: Boggy Bayou to Sims Bayou

Activities:

• Demolition and removal of ~8.5 miles of concrete pavement
• Demolition and removal of 54 WWII Concrete Ammo Bunkers
• Clearing and Grubbing of ~450 acres
• Difficult site access required multiple easement agreements
• Access is coordinated with adjacent HCTRA big bridge project
• Temporary access road that crosses multiple pipelines
Package 3: Bolivar Roads to Redfish, Station 138+369-98+00

Activities:

- Channel widening: 530 to 700 feet wide (hydraulic dredging)
  - Excavating 1.9 MCY of dredged material
- Shoreline protection
  - 30,000 tons of material for rip rap
- Bird island construction:
  - New Evia Island II
  - New Long Bird Island
Package 3: Bolivar Roads to Redfish, Station 138+369-98+00

Typical Breakwater Section at Evia Island II

Typical Shore Protection Section at Evia Island II

Evia Island II Typical Section
Package 3: Bolivar Roads to Redfish, Station 138+369-98+00

Typical Shore Protection at LBI

Long Bird Island Typical Section
Package 4: Redfish, Station 98+00-57+00

Activities:

• Channel widening: 530 to 700 feet wide (mechanical dredging)
  ➢ Excavating 5.4 MCY of material
• Offshore material disposal to Ocean Dredged Material Disposal Site (ODMDS)
• Relocation of barge lanes
Package 5: Redfish to Bayport (HSC 57+00-20+000 & BSC 241+87-25+58)

Activities:

- Channel widening from 530 feet to 700 feet (HSC) and 350/400 feet to 455 feet wide (BSC) (hydraulic dredging)
  - Excavating 9.7 MCY (6.9 MCY HSC, 2.7 MCY BSC) of dredged material
- Relocation of barge lanes (HSC)
- Shoreline Protection
  - 95,000 tons of material to construct rip rap
- Construct bird island/marsh complex and oyster mitigation beds
  - 400,000 tons of crushed limestone for 20 oyster mitigation pads placed as a veneer on a raised bed constructed with dredged material

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Package 5: Redfish to Bayport (HSC 57+00-20+000 & BSC 241+87-25+58)
Package 5: Redfish to Bayport (HSC 57+00-20+000 & BSC 241+87-25+58)

Mechanical Fill Oyster Pad Typical Section
Package 5: Redfish to Bayport (HSC 57+00-20+000 & BSC 241+87-25+58)

Bird Island Marsh Island and Wave Trip Typical Section

Bird Island Marsh Dike Typical Section

Typical Shore Protection Section at Bird Island Marsh
Package 6: Bayport to Morgans Point (HSC Station 20+000-
(-0+003.94)

Activities:

- Relocation of barge lanes (HSC)
  - Excavating 4.0 MCY of dredged material
- Construction of Marsh Cell 11 and repair of existing dikes
- Shoreline protection
- Changes since Feasibility
- Elimination of Shoaling Attenuation Feature
  - Material diverted to BIM and rock diverted to M10/7,8,9

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Package 6: Bayport to Morgans Point (HSC Station 20+000-(-0+003.94)

Typical Dike Section

Typical Shore Protection Section of M11
Package 6: Bayport to Morgans Point (HSC Station 20+000-(-0+003.94))

Typical Dike Rehabilitation Section

M10 Dike Rehabilitation Typical Section
Package 7: Barbours Cut Channel (BCC 9+63-67+11)

Activities:
- Channel widening by 155 ft
- Barbours Cut Flare Relief
- M12 Beneficial Use Site
- Cedar Bayou Sweep
- Spilman Island Improvements
- Morgan's Point Shoreline Stabilization
Package 7: Barbours Cut Channel (BCC 9+63-67+11)  
Barbours Cut Flare Relief
Package 7: Barbours Cut Channel (BCC 9+63-67+11)
Barbours Cut Relief

Typical Cross-Section, BCC

Typical Cross-Section, BCC
Package 7: Barbour's Cut Channel (BCC 9+63-67+11) M12 Beneficial Use

Activities:
- Avoid impacts to Atkinson WMA
- Hydraulically placed Berm A
- Mechanically placed Berm B
- Borrow for Berm B – tidal connection to Atkinson and existing Cells
Package 7: Barbours Cut Channel (BCC 9+63-67+11)
M12 Beneficial Use

Typical Cross-Section, M12
Package 7: Barbours Cut Channel (BCC 9+63-67+11)
Cedar Bayou Sweep

Activities:

- Monitoring surveys STA
- Review for shoaling
- Mechanical dredge
Package 7: Barbours Cut Channel (BCC 9+63-67+11)  
Spilman Island
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Package 7: Barbours Cut Channel (BCC 9+63-67+11) Spilman Island
Package 7: Barbours Cut Channel (BCC 9+63-67+11)
Morgans Point
Package 7: Barbours Cut Channel (BCC 9+63-67+11)
Morgans Point
Package 7: Barbours Cut Channel (BCC 9+63-67+11) Morgans Point Bulkhead
## Package 8: Boggy Bayou to Sims Bayou
### East Clinton 2 and Beltway 8 DMPE

<table>
<thead>
<tr>
<th>Placement Area</th>
<th>Acreage (AC)</th>
<th>Perimeter (FT)</th>
<th>Dike Ht. (FT)</th>
<th>Dike Qty. (CY)</th>
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<tbody>
<tr>
<td>BW8</td>
<td>335</td>
<td>17,800</td>
<td>10</td>
<td>212,000</td>
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<tr>
<td>E2C</td>
<td>73</td>
<td>7,840</td>
<td>35</td>
<td>730,000</td>
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</tbody>
</table>

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Package 8: Boggy Bayou to Sims Bayou
East Clinton 2 DMPA
Package 8

Boggy Bayou to Sims Bayou

E2 Clinton Drainage Outfall & Representative Cross-Section

Wetlands Discharge

Representative Keyway

Borrow Excavation for Dike

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Package 8

Boggy Bayou to Sims Bayou

Beltway 8
DMPA Overview

Segments 3-4, Design Packages 2, 7, 8 and 9
Package 8

Boggy Bayou to Sims Bayou

Beltway 8 Drainage Realignment & Typical Section
Package 9: Boggy Bayou to Sims Bayou

Activities:

- Approx. 2.8 miles of channel deepening and selective widening.
- Deepening from -41.5 ft to -46.5 ft MLLW from Boggy Bayou (677+52) to Hunting Turning Basin (930+00).
- Widening from 300 ft to 530 ft from Boggy Bayou (677+52) to Greens Bayou (823+35).
- No dredging between Hunting Turning Basin and Sims Bayou because of Washburn Tunnel, a nationally registered historic place.

- New Work Material = 3,521,000 CY
- Allowable Overdepth = 726,000 CY
- Total Dredging = 4,247,000 CY
Package 9: Boggy Bayou to Sims Bayou
Package 9: Boggy Bayou to Sims Bayou

- Proposed 86 ft Shift
- Dredging Offset at Pylon
- Feasibility Study Configuration

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Package 9: Boggy Bayou to Sims Bayou
Design Package Summary

Project 11 – Design Packages:
• Packages 1 – 9 advertised during the second quarter of 2021
• Packages 10-12 advertised in 2024 or after

Package 1: PHA/USACE
Packages 2 - 9: Port Houston Authority
Packages 10 - 12: USACE, Galveston
Questions

Questions?

Visit the Project 11 Resource Page
https://www.expandthehoustonshipchannel.com/

Email the Project Team
ChannelImprovement@PortHouston.com