HOUSTON SHIP CHANNEL EXPANSION CHANNEL IMPROVEMENT PROJECT

CONFINED AQUATIC DISPOSAL (CAD) CELLS

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October 25, 2018

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HOUSTON SHIP CHANNEL
PROJECT OVERVIEW
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- 4.0 – 6.5 MCY / year
- 3 Pipeline Contracts / year
- 1 Hopper contract / 18 mo.
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PIPELINE DREDGING
HOUSTON SHIP CHANNEL
PROJECT OVERVIEW

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- 1st Mechanical Contract 2018
MECHANICAL DREDGING
HOUSTON SHIP CHANNEL
PROJECT OVERVIEW

HOUSTON-GALVESTON-TEXAS CITY
NAVIGATION COMPLEX

HOUSTON SHIP
CHANNEL-46ft.

BAYPORT-46.5ft.

BARBOURS-46.5ft.

1-610 Bridge
Beltway-8 Bridge

TEXAS
CITY-46ft.

GIWW-13ft.

GIWW-13ft.

GALVESTON
ENTRANCE
CHANNEL

GALVESTON HARBOR-46ft.

Clear Lake
San Jacinto River
Trinity Bay

U.S. Army Corps of Engineers
Galveston District
HOUSTON SHIP CHANNEL
PROJECT OVERVIEW

HOUSTON-GALVESTON-Texas City Navigation Complex

I-610 Bridge
Beltway-8 Bridge
BARBOURS 46.5ft.
BAYPORT 46.5ft.

HOUSTON SHIP CHANNEL 46ft.

U.S. Army Corps of Engineers
Galveston District

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U.S. Army
ULTIMATE CAPACITY OF EXISTING CDFs:  ~180 MCY

Before Expansion (Current Needs)

- O&M Requirements:  ~6.5 MCY / year
  ~27 years of capacity

After Expansion

- O&M Requirements:  ~7.5 MCY / years
  ~24* years of capacity

* This assumes that CDF capacity is preserved for Maintenance
## CURRENT OPERATIONS

### COST
- 3 Pipeline Maintenance contracts / year
- Medium-sized Pipeline Dredges
- 3 – 5 miles of pipeline
- No Booster Pumps
- (~$10 / CY)

### OPERATIONAL FEASIBILITY
- Ship traffic able to flow with minimal disruptions during dredging operations

## FUTURE OPERATIONS w/out CDF Capacity

### COST
- 3 Pipeline Maintenance contracts / year
- Large-sized Pipeline Dredges
- 10+ miles of pipeline
- 1-4 Booster Pumps
- (~$30 / CY)

### OPERATIONAL FEASIBILITY
- Ship traffic will be significantly inhibited from excess pipeline and dredging equipment
Houston Ship Channel Feasibility Study
- Reducing transportation costs while providing safe, reliable navigation on the Houston Ship Channel

Identify disposal alternatives for:

- 50+ MCY of new work material from Federal Channel and non-Federal Berthing Areas.

- 350 MCY of maintenance material from Federal Channel and non-Federal Berthing Areas.
Long Distance Conveyance of Dredged Material

- Pipeline Dredging:
  - Large Dredges
  - Long Pipelines
  - Limited to 10 miles +-  
  - Not operationally feasible

- Hopper Dredging
  - Cannot dredge berthing areas
  - Not dredging when it’s sailing
  - Not operationally nor economically feasible
  - North of Morgans Point
  - Unable to maneuver in tight areas
MECHANICAL DREDGING
MECHANICAL DREDGING
Long Distance Conveyance of Dredged Material (cont…)

- Mechanical Dredging:
  - Great for berthing area dredging
  - Works well in tight areas
  - Preferred dredging method for new work
  - Able to continuously dredge with multiple scows
  - Scows draw ~15 ft of water
HOUSTON SHIP CHANNEL
PROJECT OVERVIEW

Bayou Reach to ODMDS
57 miles or 114 mi round trip
HOUSTON SHIP CHANNEL
PROJECT OVERVIEW

- Bayou Reach to ODMDS
  57 miles or 114 mi round trip

- Bayou Reach to Mid-Bay
  25 miles or 50 mi round trip
CONFINED AQUATIC DISPOSAL (CAD) CELLS WITH ASSOCIATED ENVIRONMENTAL FEATURES
SUMMARY

- CAD Cells proposed for:
  - New Work (Federal Channel & non-Federal Berths)
  - Future Maintenance (Federal Channel & non-Federal Berths)
- All Environmental (Mitigation) features constructed upfront
- Keeps material in the system
- Available for multiple simultaneous dredging operations
- Environmental features built with pristine new work material
- Mechanical dredging best method for compromised material
- CAD Cell disposal best disposal method for compromised material
- Once constructed; quick and easy approvals for non-Federal material
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