

## **IHNC Lock Replacement, Shallow Draft Study**

**Cost comparison**

**Landfill versus Confined Disposal Facility (CDF)**

**November 3, 2016**

**VENICE LANDFILL OPTION - Cost for 110 x 900 x El. -22.0**

|   | <u>Description</u>                                                                                                                     | <u>Quantity</u> | <u>Unit</u> | <u>Unit Cost</u> | <u>Project Cost</u>     |
|---|----------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------|------------------|-------------------------|
| 1 | <b>Mobilization and Demobilization of Env. Bucket Dredge</b><br>*(Env. Bucket Dredge will be used for DMMU's 5 & 7; & 9 & 10)          | 1.00            | LS          | \$500,000.00     | \$ 500,000.00           |
| 2 | <b>Mobilization and Demobilization of Cutterhead Dredge (Hydraulic Dredge)</b>                                                         | 1.00            | LS          | \$2,115,832.00   | \$ 2,115,832.00         |
| 3 | <b>Dredge, New Lock Excavation - (Dispose in MS River)</b><br>*(DMMU Areas #3 & #4; Hydraulically Dredged)                             | 278,393.00      | CY          | \$7.69           | \$ 2,140,842.17         |
| 4 | <b>Dredge, Bypass Channel - (Dispose in MS River)</b><br>*(DMMU Area #6; Hydraulically Dredged)                                        | 69,959.00       | CY          | \$3.83           | \$ 267,942.97           |
| 5 | <b>Pump Good Material in MS River</b><br>*(Material From DMMU Area #3, 4, & 6, using hydraulic dredge )                                | 348,352.00      | CY          | \$3.63           | \$ 1,264,517.76         |
| 6 | <b>Dredge, Material (Contaminated) &amp; Haul To Venice</b><br>*(DMMU Areas #5 & #7; via Environmental Bucket Dredge)                  | 104,909.00      | CY          | \$150.00         | \$ 15,736,350.00        |
| 7 | <b>Excavation (For Existing Lock Struc. Demo &amp; Bypass)</b><br>*(DMMU Areas #9 & #10; Both Bucket Dredge Excavation on East & West) | 265,600.00      | CY          | \$12.33          | \$ 3,274,848.00         |
| 8 | <b>Assistance Tugs</b>                                                                                                                 | 60.00           | MO          | \$157,059.07     | \$ 9,423,544.20         |
|   |                                                                                                                                        | <b>Total</b>    |             |                  | <b>\$ 34,723,877.10</b> |

**Notes:**

1. For the Venice Landfill Option, an Environmental Bucket Dredge will be used to excavate DMMU's 5 & 7, which has contaminants. This material will become the property of the Contractor and hauled to Venice landfill.
2. Non-contaminated material (Good Material) within DMMU's 3, 4, & 6, will be dredged via cutterhead (hydraulic dredge).
3. The DMMU areas near the existing lock will be excavated via the environmental bucket dredge. Due to current construction sequencing, the bucket dredge is assumed to mob & demob twice.
4. Mob & demob cost for the Cutterhead dredge was taken from the MII estimate prepared by MVN Cost Branch dated 11/12/2015.

| CDF OPTION - Cost for 110 x 900 x El. -22.0                                                                                                        |            |      |                 |                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------|------------|------|-----------------|------------------|
| Description                                                                                                                                        | Quantity   | Unit | Unit Cost       | Project Cost     |
| 1 Clearing and Grubbing of CDF Site                                                                                                                | 1.00       | LS   | \$730,000.00    | \$ 730,000.00    |
| 2 Mobilization and Demobilization of Env. Bucket Dredge<br>*(For this option, the Environmental Bucket Dredge will be used for DMMU's 9 & 10 ONLY) | 1.00       | LS   | \$500,000.00    | \$ 500,000.00    |
| 3 Mobilization and Demobilization of Cutterhead Dredge (Hydraulic Dredge)                                                                          | 1.00       | LS   | \$2,115,832.72  | \$ 2,115,832.72  |
| 4 Construct Retention Dikes - 81 Acres<br>*(Perimeter of CDF is 8,050 LF)                                                                          | 173,000.00 | CY   | \$7.78          | \$ 1,345,940.00  |
| 5 Water Treatment/Handling of Effluent<br>*(For water treatment and handling of effluent at the CDF site)                                          | 1.00       | LS   | \$20,800,000.00 | \$ 20,800,000.00 |
| 6 Dredge, New Lock Excavation - (Dispose in MS River)<br>*(DMMU Areas #3 & #4; Hydraulically Dredged)                                              | 278,393.00 | CY   | \$7.69          | \$ 2,140,842.17  |
| 7 Dredge, Bypass Channel - (Dispose in MS River)<br>*(DMMU Area #6; Hydraulically Dredged)                                                         | 69,959.00  | CY   | \$3.83          | \$ 267,942.97    |
| 8 Pump Good Material in MS River<br>*(Material From DMMU Area #3, 4, & 6 using hydraulic dredge)                                                   | 348,352.00 | CY   | \$3.63          | \$ 1,264,517.76  |
| 9 Dredge, Material (Contaminated) & Pump to CDF<br>*(DMMU Areas #5 & #7; using hydraulic dredge)                                                   | 104,909.00 | CY   | \$7.68          | \$ 805,701.12    |
| 10 Excavation (For Existing Lock Struc. Demo & Bypass)<br>*(DMMU Areas #9 & #10; Both Bucket Dredge Excavation)                                    | 265,600.00 | CY   | \$12.33         | \$ 3,274,848.00  |
| 11 Assistance Tugs                                                                                                                                 | 60.00      | MO   | \$157,059.07    | \$ 9,423,544.20  |
| 12 Mitigation of Using CDF                                                                                                                         | 66.78      | ACRE | \$40,431.27     | \$ 2,700,000.21  |
| 13 Real Estate Acquisition of CDF Site                                                                                                             | 1.00       | EA   |                 |                  |
| 14 Future Maintenance of CDF (By USACE)                                                                                                            | 1.00       | EA   |                 |                  |
| Total                                                                                                                                              |            |      | \$              | 45,369,169.15    |

Notes:

- For the CDF Option, we used the Cutterhead (hydraulic dredge) to excavate DMMU's 3,4,5,6&7. The material excavated from 5 & 7 will be pumped into the CDF. Water Treatment/Handling of Effluent is also included within the estimate.
- DMMU's 9 & 10, near the existing lock will be bucket dredged due to the small quantity and the complexity/obstructions within the area. The excavation is primary land-based in lieu of open channel.
- Costs for the Mob & demob cost for the Cutterhead dredge was taken from the MII estimate prepared by MVN Cost Branch dated 11/12/2015.
- Note that this estimate does not include costs for the Real Estate acquisition of the CDF, and the future maintenance of the CDF by USACE.