**STRATEGY 1: pilings removed; dredge to CSL/maximum feasible depth in all SMUs; cap SQS exceedances to original elevation in all SMUs**

| Task | Quantity | Unit | Unit Cost | Total Cost |
|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | |
| Mobe/demobe | | | | |
| Dredge equipment-water based | 1 | LS | $15,000 | $15,000 |
| Dredge equipment-land based | 1 | LS | $10,000 | $10,000 |
| Demolition equipment | | | | |
| Barges | 3 | LS | $2,500 | $7,500 |
| Tugs | 1 | LS | $2,000 | $2,000 |
| Misc. upland equipment | 7 | LS | $300 | $2,100 |
| Specialized capping equipment | | LS | | $0 |
| Pile drivers | | LS | $500 | $0 |
| Site prep | 1 | LS | $25,000 | $25,000 |
| **DEMOLITION** | | | | |
| Piers | | | | |
| Deck removal | 128,600 | SF | $1.90 | $244,340 |
| Stringers, cords and cap removal | 60,000 | LF | $7.34 | $440,400 |
| Pile removal | 2,130 | EA | $130.62 | $278,221 |
| Shipways | | | | |
| Deck removal | 8,600 | SF | $4.54 | $39,044 |
| Stringers, cords and cap removal | 20,258 | LF | $10.93 | $221,420 |
| Pile removal | 3,280 | EA | $117.52 | $385,466 |
| Building and Pavement | 1 | LS | $50,000 | $50,000 |
| **DREDGING** | | | | $0 |
| Open water | 25,200 | CY | $9.60 | $241,920 |
| Enclosed water | 1,450 | CY | $9.60 | $13,920 |
| Shipways (piles removed) | 30,036 | CY | $14.13 | $424,409 |
| Under pier (piles removed) | 59,774 | CY | $14.13 | $844,359 |
| Land-based | | CY | $3.42 | $0 |
| Surficial debris removal (pier removed) | 11,100 | CY | $28.25 | $313,575 |
| Silt curtains | 1 | LS | $100,000 | $100,000 |
| **DISPOSAL-Subtitle D** | | | | |
| Dredged sediment | 116,460 | CY | $42 | $4,891,320 |
| Debris | 11,100 | CY | $42 | $466,200 |
| Dewatering and handling | 116,460 | CY | $9.14 | $1,064,444 |
| **CAPPING** | | | | |
| Purchase and transport of capping material | | | | |
| Sand/gravel | 37,453 | TON | $8.25 | $308,987 |
| Armor | 38,304 | TON | $15.25 | $584,136 |
| Habitat mix | 9,363 | TON | $8.25 | $77,245 |
| Place underpier/shipways (w/pier removed) | | | | |
| Sand/gravel | 21,415 | TON | $4.21 | $90,157 |

Notes

Does this include disposal of piles?

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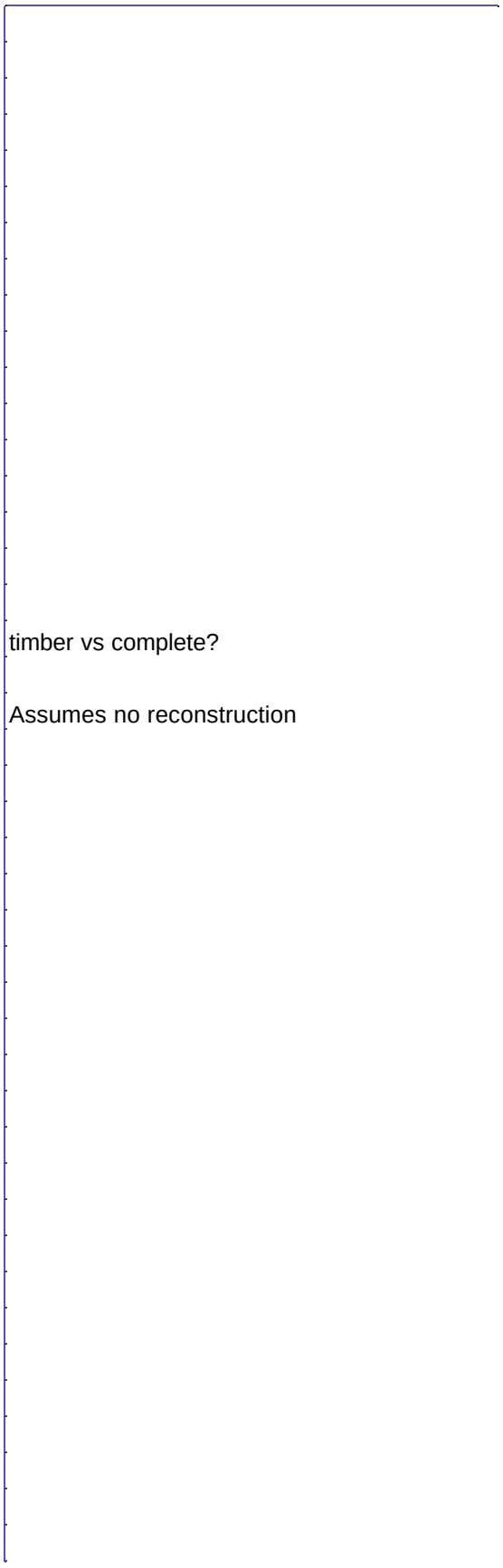
Need a debris est?

| | | | | | |
|---|---|---|---|---|---|
| | Armor | 21,902 | TON | $6.32 | $138,421 |
| | Habitat mix | 5,354 | TON | $5.47 | $29,286 |
| Place in enclosed water area | | | | | |
| | Sand/gravel | 2,094 | TON | $4.21 | $8,816 |
| | Armor | 2,141 | TON | $6.32 | $13,531 |
| | Habitat mix | 523 | TON | $5.47 | $2,861 |
| Place in open water | | | | | |
| | Sand/gravel | 13,944 | TON | $4.21 | $58,704 |
| | Armor | 14,260 | TON | $6.32 | $90,123 |
| | Habitat mix | 3,486 | TON | $5.47 | $19,068 |
| **RELATED CONSTRUCTION** | | | | | |
| Install sheet pile | | | | | |
| | Purchase sheetpile | | SF | $10.25 | $0 |
| | Drive sheetpile | | SF | $2.65 | $0 |
| | Remove sheet pile | | SF | $1.60 | $0 |
| Misc. site work | | 0.40 | PERC | | $0 |
| Timber bulkhead repair | | 1 | LS | $416,027 | $416,027 |
| Complete bulkhead reconstruction | | | LS | $432,254 | $0 |
| **PIER RECONSTRUCTION** | | | | | |
| Complete reconstruction | | | SF | $60 | $0 |
| Deck replacement | | | SF | $35 | $0 |
| **TOTAL PURCHASE AND INSTALLATION COSTS** | | | | | $11,918,000 |
| **INDIRECT COSTS** | | | | | |
| Contractor overhead and profit | | 0.18 | DEC. PER | PIC | $4,677,038 |
| Construction observation | | 20 | WKLY | $7,500 | $150,000 |
| Surveys | | | | | |
| | Pre-dredge and cap | 1 | EA | $10,000 | $10,000 |
| | Progress | 16 | EA | $3,000 | $48,000 |
| | Post-dredge and cap | 1 | EA | $10,000 | $10,000 |
| Water quality monitoring | | | | | |
| | Intensive | 4 | WKLY | $20,000 | $80,000 |
| | Routine | 14 | WKLY | $14,000 | $196,000 |
| Confirmational sediment monitoring | | 1 | LS | $35,000 | $35,000 |
| **SUBTOTAL** | | | | | $17,124,038 |
| **CONSTRUCTION CONTINGENCY** | | 0.20 | DEC. PER | | $3,424,808 |
| **TOTAL CONSTRUCTION COSTS** | | | | | $20,548,846 |
| **DESIGN ENGINEERING** | | 0.12 | DEC. PER | TCC | $2,465,861 |
| **CONSTRUCTION MANAGEMENT** | | 1 | $0 | $700,000 | $700,000 |
| **LONG-TERM MONITORING/MAINTENANCE*** | | | | | |
| | Capped areas | 1 | LS | | |
| | **TOTAL CAPITAL COST (1999 $$)** | | | | $23,714,707 |

* costs unknown at present



timber vs complete?

Assumes no reconstruction