

PRELIMINARY ASSESSMENT FOR MAINTENANCE
DREDGING SEARSPORT HARBOR FEDERAL
NAVIGATION PROJECT - SEARSPORT, MAINE

APPENDIX G
COST ENGINEERING REPORT

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Searsport Harbor, Searsport, Maine

Preliminary Assessment & Environmental Assessment
Finding of No Significant Impact (FONSI) for
Maintenance Dredging

APPENDIX C
COST ENGINEERING

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SEARSPORT HARBOR

FEDERAL NAVIGATION PROJECT

MAINTENANCE DREDGING

COST ESTIMATE, RISK ANALYSIS, TPCS DEVELOPMENT SUMMARY

COST ESTIMATE

The cost estimate is based upon the tentatively selected plan to build CAD CELLS A & B, and plans of the Federal Navigational Channel indicating where shoaling has taken place above the -35' MLLW mark. Several alternatives were analyzed at part of the selection process including upland disposal however, it was decided the most advantages was the multiple CAD CELL approach. Unsuitable material would be retained temporarily in scows, then placed in the CAD CELLS. Suitable materials removed from under the surface layers will be deposited in the Rockland Disposal Site, approximately 20 nautical miles from Searsport Harbor. The estimate was based upon USACE CEDEP software version 0, dated May 2023 and that a contractor would self-perform all the work. The estimated assumed one, 16 CY clamshell dredge, 2 – 6,000 CY scows, and one 3,000 HP tug for operational use. Estimate assumes mobilization and demobilization will take place from up to 1,000 miles away.

RISK ANALYSIS

Risk mitigation was conducted through an Abbreviated Risk Analysis (ARA) of the project as it is currently presented in addition to the acknowledgment of risk in the scope and estimated quantities. The District has mitigated this risk through a conservative approach to the excavation and hauling of dredge

material as well as utilizing a conservative cost for fuel. The values included in the project cost provide an amount that the PDT is confident will provide substantive cost to mitigate any issues. The District will continue to monitor and include all risks in continuing assessment of contingency and amend as necessary as an essential element to the continued development of the project. The potential risk areas identified through formal risk and sensitivity analysis were Mobilization and Demobilization, CAD CELL Construction, and Federal Navigational Channel Dredging and Disposal.

The Abbreviated Risk Analysis (ARA) was developed and updated relying on local District Staff to provide expertise and information gathering. The cost engineer facilitated a risk assessment meeting with the PDT in addition to a qualitative analysis to produce a risk register that serviced as a framework for the risk analysis. This risk analysis was updated as recently as May 7th, 2025.

The ARA assumes the Project Development Stage/Alternative is “Feasibility (Recommended Plan)” with a “Low Risk” risk category based on the experience of the cost engineer and vetted with the PDT. The resultant contingencies are 30% for Mobilization/Demobilization, 35% for CAD CELL Dredging, and 38% for the Federal Navigational Channel Dredging. Total Planning, Engineering & Design was 10%, and 10% for Total Construction Management. These contingency percentages were then utilized in the Total Project Cost Summary. It should be noted that no Lands and Damages are anticipated for this project.

TOTAL PROJECT COST SUMMARY (TPCS)

The Total Project Cost Summary (TPCS) was then computed to summarize the construction cost, project first cost, and the Total Project Cost or the Fully Funded Cost. The TPCS was utilized to calculate the construction cost estimate applied contingency and escalated to the midpoints of the features of work and the remaining work breakdown structure to include Planning, Engineering & Design (PED) and Construction Management. The inputs of the

TPCS were obtained from the project manager. The inputs for PED and Construction Management were obtained from both Engineering and Construction.

The resultant TPCS from the cost estimate, risk analysis, and escalation Fully Funded Costs are \$5,537,000 with an estimated federal cost of \$4,524,000 and non-federal cost of \$1,013,000 utilizing a 75%/25% federal/non-federal cost of project split between the Federal Navigational Channel and the CAD Cells.

PROJECT COST SHARING, FULLY FUNDED COSTS

Total, Fully Funded Cost (Rounded)		Federal Share		\$4,524,750.00
	\$5,537,380.00	Non-Federal Share		\$1,013,250.00
Federal / Non Federal Share	75% / 25%	100%		
	CAD Cell	FNP		
Mob / Demob	\$2,150,773.62	\$787,961.68		
CAD Cell Construction	\$1,034,037.59	\$0		
FNP Maintenance Dredgeing	\$0	\$378,832.06		
PED	\$468,063.36	\$171,480.62		
SIOH	\$399,772.83	\$146,461.57		
<hr/>				
Totals (Rounded to nearest \$100)	\$4,053,000.00	\$1,485,000.00	=	\$5,538,000.00
	FED	\$3,039,750.00	\$1,485,000.00	
	Non-FED	\$1,013,250.00		

PROJECT FULLY FUNDED COSTS

Table 2: Total Project Cost for the Searsport Maintenance Dredging Project Recommended Plan, Fully Funded 2

Feature Account	Description	Subtotal	Escalation %	Escalation \$	Total Cost \$
12	<u>Total Mobilization and Demobilization</u>	<u>\$2,789,937.63</u>	5.33%	<u>\$148,797.67</u>	<u>\$2,938,735.30</u>
12	<u>Dredging CAD CELLS</u>	<u>\$981,680.93</u>	5.33%	<u>\$52,356.67</u>	<u>\$1,034,037.59</u>
12	<u>Dredging Federal Navigational Channel</u>	<u>\$359,650.57</u>	5.33%	<u>\$19,181.49</u>	<u>\$378,832.06</u>
30	<u>Planning, Engineering, and Design</u>	<u>\$617,120.00</u>	3.63%	<u>\$22,423.98</u>	<u>\$639,543.98</u>
31	<u>Total Construction Management</u>	<u>\$513,880.00</u>	6.3%	<u>\$32,354.40</u>	<u>\$546,234.40</u>
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	Total, Recommended Plan, Fully Funded Costs	\$5,262,269.13	5.23%	\$275,114.20	<u>\$5,537,383.34</u>

PROJECT FIRST COSTS

Table 1: The First Cost for the Searsport Maintenance Dredging Project Recommended Plan, (Baselined, FY26/ October 1, 2025 dollars)

Feature Account	Description	Subtotal	Contingency %	Contingency \$	Total Cost
12	Total Mobilization and Demobilization	\$2,063,139.82	35.23%	\$726,797.81	\$2,789,937.63
12	Dredging CAD CELLS	\$725,946.34	35.23%	\$255,734.59	\$981,680.93
12	Dredging Federal Navigational Channel	\$265,959.14	35.23%	\$93,691.43	\$359,650.57
30	Planning, Engineering, and Design	\$551,000.00	12.00%	\$66,120.00	\$617,120.00
31	Total Construction Management	\$443,000.00	16.00%	\$70,880.00	\$513,880.00
Total, Recommended Plan		\$4,049,045.30	29.96%	\$1,213,223.83	\$5,262,269.13

**** TOTAL PROJECT COST SUMMARY ****

PROJECT: **Searsport Harbor Maintenance Dredging**
 PROJECT NO: **324953**
 LOCATION: **Searsport, Maine**

DISTRICT: **New England District**

PREPARED: **3/13/2026**

POC: **CHIEF, COST ENGINEERING, Christopher Tilley**

This Estimate reflects the scope and schedule in report; PA & EA for FONSI for Maintenance Dredging Searsport Harbor, Searsport, Maine

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)					TOTAL PROJECT COST (FULLY FUNDED)				
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	REMAINING COST (\$K)	2026 1-Oct-25 Spent Thru: 1-Oct-25 (\$K)	TOTAL FIRST COST (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
12	CAD CELL Dredging	\$726	\$256	35%	\$982		\$726	\$256	\$982		\$982	5.3%	\$765	\$269	\$1,034
12	Maintenance Channel Dredging	\$266	\$94	35%	\$360		\$266	\$94	\$360		\$360	5.3%	\$280	\$99	\$379
	CONSTRUCTION ESTIMATE TOTALS:	\$3,055	\$1,076		\$4,131		\$3,055	\$1,076	\$4,131		\$4,131	5.3%	\$3,218	\$1,134	\$4,352
01	LANDS AND DAMAGES			-											
30	PLANNING, ENGINEERING & DESIGN	\$551	\$66	12%	\$617		\$551	\$66	\$617		\$617	3.6%	\$571	\$69	\$640
31	CONSTRUCTION MANAGEMENT	\$443	\$71	16%	\$514		\$443	\$71	\$514		\$514	6.3%	\$471	\$75	\$546
	PROJECT COST TOTALS:	\$4,049	\$1,213	30%	\$5,262		\$4,049	\$1,213	\$5,262		\$5,262	5.2%	\$4,260	\$1,277	\$5,537

CHIEF, COST ENGINEERING, Christopher Tilley

PROJECT MANAGER, Patrick Mcnamara

CHIEF, REAL ESTATE, Tim Shugert

CHIEF, PLANNING, Wendy Gendron

CHIEF, ENGINEERING, David Margolis

CHIEF, OPERATIONS, Eric Pedersen

CHIEF, CONSTRUCTION, Ray Goff

CHIEF, CONTRACTING, Sheila Winston-Vincuilla

CHIEF, PM-PB, Jannet Harrington

CHIEF, DPM, Janet Harrington

ESTIMATED TOTAL PROJECT COST:

ESTIMATED FEDERAL COST: **\$4,524**

ESTIMATED NON-FEDERAL COST: **\$1,013**

	CAD Cell	FNP
Mob/ Demob	\$2,150.77	\$787.96
CAD Cell Construction	\$1,034.04	\$0
FNP Maintenance Dredging	\$0	\$378.83
PED	\$468.06	\$171.48
SIOH	\$399.77	\$146.46
Total	\$4,052.65	\$1,484.74
Federal / Non-Federal Share	75% / 25%	100%

**** TOTAL PROJECT COST SUMMARY ****

**** CONTRACT COST SUMMARY ****

PROJECT: Searsport Harbor Maintenance Dredging
LOCATION: Searsport, Maine
This Estimate reflects the scope and schedule in report;

PA & EA for FONSI for Maintenance Dredging Searsport Harbor, Searsport, Maine

DISTRICT: New England District
POC: CHIEF, COST ENGINEERING, Christopher Tilley

PREPARED: 3/13/2026

WBS Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared: 13-Mar-26		Estimate Price Level: 1-Oct-25		Program Year (Budget EC): 2026		Effective Price Level Date: 1-Oct-25		867609.7				
		RISK BASED												
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST (\$K)	CNTG (\$K)	CNTG (%)	TOTAL (\$K)	ESC (%)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	Mid-Point Date	ESC (%)	COST (\$K)	CNTG (\$K)	FULL (\$K)
A	B	C	D	E	F	G	H	I	J	P	L	M	N	O
12	Mobilization and Demobilization	\$2,063	\$727	35.2%	\$2,790		\$2,063	\$727	\$2,790	2028Q1	5.3%	\$2,173	\$766	\$2,939
12	CAD CELL Dredging	\$726	\$256	35.2%	\$982		\$726	\$256	\$982	2028Q1	5.3%	\$765	\$269	\$1,034
12	Maintenance Dredging FNC	\$266	\$94	35.2%	\$360		\$266	\$94	\$360	2028Q1	5.3%	\$280	\$99	\$379
CONSTRUCTION ESTIMATE TOTALS:		\$3,055	\$1,076	35.2%	\$4,131		\$3,055	\$1,076	\$4,131			\$3,218	\$1,134	\$4,352
01	LANDS AND DAMAGES			25.0%										
30	PLANNING, ENGINEERING & DESIGN													
2.5%	Project Management	\$76	\$9	12.0%	\$85		\$76	\$9	\$85	2027Q1	3.1%	\$78	\$9	\$88
1.0%	Planning & Environmental Compliance	\$31	\$4	12.0%	\$35		\$31	\$4	\$35	2027Q1	3.1%	\$32	\$4	\$36
7.5%	Engineering & Design	\$229	\$27	12.0%	\$256		\$229	\$27	\$256	2027Q1	3.1%	\$236	\$28	\$264
1.0%	Reviews, ATRs, IEPs, VE	\$31	\$4	12.0%	\$35		\$31	\$4	\$35	2027Q1	3.1%	\$32	\$4	\$36
1.0%	Life Cycle Updates (cost, schedule, risks)	\$31	\$4	12.0%	\$35		\$31	\$4	\$35	2027Q1	3.1%	\$32	\$4	\$36
1.0%	Contracting & Reprographics	\$31	\$4	12.0%	\$35		\$31	\$4	\$35	2028Q1	6.3%	\$33	\$4	\$37
2.0%	Engineering During Construction	\$61	\$7	12.0%	\$68		\$61	\$7	\$68	2028Q1	6.3%	\$65	\$8	\$73
2.0%	Planning During Construction	\$61	\$7	12.0%	\$68		\$61	\$7	\$68	2027Q1	3.1%	\$63	\$8	\$70
3.0%	Adaptive Management & Monitoring			12.0%										
1.0%	Project Operations			12.0%										
	Real Estate (All Federal Labor)			25.0%										
31	CONSTRUCTION MANAGEMENT													
10.0%	Construction Management	\$306	\$49	16.0%	\$355		\$306	\$49	\$355	2028Q1	6.3%	\$325	\$52	\$377
2.0%	Project Operation:	\$61	\$10	16.0%	\$71		\$61	\$10	\$71	2028Q1	6.3%	\$65	\$10	\$75
2.5%	Project Management	\$76	\$12	16.0%	\$88		\$76	\$12	\$88	2028Q1	6.3%	\$81	\$13	\$94
CONTRACT COST TOTALS:		\$4,049	\$1,213		\$5,262		\$4,049	\$1,213	\$5,262			\$4,260	\$1,277	\$5,537

Abbreviated Risk Analysis

Searsport Harbor O&M Dredging Feasibility (Recommended Plan)

Meeting Date: [1/5/2015 \(Updated 5/7/25, 12/12/25, 3/13/26\)](#)

PDT Members

Note: PDT involvement is commensurate with project size and involvement.

Represents	Name
Project Management:	Patrick Mcnamara 5/7/25 Update
Planner:	Keith Hannon 5/7/25 Update
Study Manager:	NAME
Contracting:	NAME
Real Estate:	NAME
Relocations:	NAME
OTHER:	Daniel Vellone
Engineering & Design:	NAME
Technical Lead:	Bennet Newlove (5/7/25 Update)
Geotech:	Rose Schmidt
H&H	NAME
Civil:	(Romina Gugo 5/7/25 Update)
Structural:	NAME
Mechanical:	NAME
Electrical:	NAME
Cost Engineering:	Christopher Tilley/ Haile Ephrem 5/7/25 & 3/13/26 Updates
Construction:	Nicholas Skaines 5/7/25 Update
Operations:	NAME
Environmental:	Todd Randal
VE	NAME
DOT & PF Sponsor	NAME
DOT & PF Sponsor	NAME
OTHER:	Aaron Hopkins
OTHER:	Helen Jones
OTHER:	Nekeisha Hubert
	NAME

Term

Definition

Terminology	Risk Analysis ER 1110-2-1302, 15 Sep 08, page 19	<p>a. Cost risk analysis is the process of identifying and measuring the cost impact of project uncertainties on the estimated TPC. It shall be accomplished as a joint analysis between the cost engineer and the designers or appropriate PDT members that have specific knowledge and expertise on all possible project risks.</p> <p>(1) PDTs are required to prepare a formal cost risk analysis for all decision documents requiring Congressional authorization for projects exceeding \$40 million (TPC)(see appendix B). Where cost risk analysis is required, it is anticipated that the cost risk analysis will be performed once the recommended plan is identified prior to the alternative formulation briefing milestone.</p>
	Typical Risk Elements	Factors that can introduce risk to items listed in the Selected Work Breakdown Structure Items. The ones listed are the most typical for Civil Works Projects. These Risk Elements should be reviewed and established for each project.
	Potential Risk Areas	<p>These are items from the estimate's Work Breakdown Structure, either broad or detailed, that are believed to contain some risk.</p> <p>The cost estimator defines the Work Breakdown Structure. It is recommended that the PDT select the appropriate Selected Work Breakdown Structure Items and considers all Features. Focus should be placed on the items with the significant risks. Appropriately identifying the Selected Work Breakdown Structure Items will lead to a more confident development of contingency.</p>

	Risk Element	Typical Concerns	Max Potential Cost Growth
Typical Risk Elements	Project Management & Scope Growth	<ul style="list-style-type: none"> • Potential for scope growth, added features? • Project accomplishes intent? • Funding Difficulties? • Sufficient Staffing/Support? 	40%
	Acquisition Strategy	<ul style="list-style-type: none"> • Contracting plan firmly established? • 8a or small business likely? • Requirement for subcontracting? • Accelerated schedule or harsh weather schedule? • High-risk acquisition limits competition, design/build? • Limited bid competition anticipated? • Bid schedule developed to reduce quantity risks? 	30%
	Construction Elements	<ul style="list-style-type: none"> • Accelerated schedule or harsh weather schedule? • High risk or complex construction elements, site access, in-water? • Water care and diversion plan? • Unique construction methods? • Special mobilization? • Special equipment or subcontractors needed? • Potential for construction modification and claims? 	15%
	Specialty Construction or Fabrication	<ul style="list-style-type: none"> • Atypical construction elements, unusual material or equipment manufactured or installed? • Confidence in constructibility or methodology? • One of a kind and confidence in fabrication and installation? • Ability to reasonably transport? • Risk of specialty equipment functioning first time? Testing? 	50%
	Technical Design & Quantities	<ul style="list-style-type: none"> • Level of confidence based on design and assumptions? • Possibility for increased quantities due to loss, waste, or subsidence? • Appropriate methods applied to calculate quantities? • Sufficient investigations to develop quantities? • Quality control check applied? 	20%
	Cost Estimate Assumptions	<ul style="list-style-type: none"> • Reliability and number of key quotes? • Assumptions related to prime and subcontractor markups/assignments? • Assumptions regarding crew, productivity, overtime? • Site accessibility, transport delays, congestion? • Overuse of Cost Book, lump sum, allowances? • Lack confidence on critical cost items? 	25%
	External Project Risks	<ul style="list-style-type: none"> • Potential for severe adverse weather? • Political influences, lack of support, obstacles? • Unanticipated inflations in fuel, key materials? • Potential for market volatility impacting competition, pricing? • Funding Constraints 	20%

Abbreviated Risk Analysis

Project (less than \$40M): **Searsport Harbor O&M Dredging**
 Project Development Stage/Alternative: **Feasibility (Recommended Plan)**
 Risk Category: **Low Risk: Typical Construction, Simple**

Alternative: Dual CAD Cell Alternative

Meeting Date: 9/21/2022
Update: 3/13/2026

Total Estimated Construction Contract Cost = \$ **3,055,045**

	<u>CWWBS</u>	<u>Feature of Work</u>	<u>Estimated Cost</u>	<u>% Contingency</u>	<u>\$ Contingency</u>	<u>Total</u>	
	01 LANDS AND DAMAGES	Real Estate	\$ -	25%	\$ -	\$ -	
1	12 NAVIGATION, PORTS AND HARBORS	Mobilization and Demobilization	\$ 2,063,140	33%	\$ 671,694	\$ 2,734,834	
2	12 NAVIGATION, PORTS AND HARBORS	CAD Cell Dredging	\$ 725,946	42%	\$ 302,741	\$ 1,028,687	
3	12 NAVIGATION, PORTS AND HARBORS	Maintenance Dredging 35' Channel	\$ 265,959	38%	\$ 101,788	\$ 367,747	
4			\$ -	0%	\$ -	\$ -	
5			\$ -	0%	\$ -	\$ -	
6			\$ -	0%	\$ -	\$ -	
7			\$ -	0%	\$ -	\$ -	
8			\$ -	0%	\$ -	\$ -	
9			\$ -	0%	\$ -	\$ -	
10			\$ -	0%	\$ -	\$ -	
11			\$ -	0%	\$ -	\$ -	
12	All Other	Remaining Construction Items	\$ -	0.0%	\$ -	\$ -	
13	30 PLANNING, ENGINEERING, AND DESIGN	Planning, Engineering, & Design	\$ 488,186	12%	\$ 59,028	\$ 547,214	
14	31 CONSTRUCTION MANAGEMENT	Construction Management	\$ 260,497	16%	\$ 41,347	\$ 301,844	
XX	FIXED DOLLAR RISK ADD (EQUALLY DISPERSED TO ALL, MUST INCLUDE JUSTIFICATION SEE BELOW)					\$ -	

Totals						
	Real Estate	\$ -	0%	\$ -	\$ -	\$ -
	Total Construction Estimate	\$ 3,055,045	35%	\$ 1,076,224	\$ 4,131,269	
	Total Planning, Engineering & Design	\$ 488,186	12%	\$ 59,028	\$ 547,214	
	Total Construction Management	\$ 260,497	16%	\$ 41,347	\$ 301,844	
	Total Excluding Real Estate	\$ 3,803,728	31%	\$ 1,176,599	\$ 4,980,327	
				Base	50%	80%
	Confidence Level Range Estimate (\$000's)			\$3,804k	\$4,510k	\$4,980k

* 50% based on base is at 5% CL.

<p>Fixed Dollar Risk Add: (Allows for additional risk to be added to the risk analysis. Must include justification. Does not allocate to Real Estate.</p>	
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Searsport Harbor O&M Dredging Dual CAD Cell Alternative

Feasibility (Recommended Plan)

Abbreviated Risk Analysis

Meeting Date: 21-Sep-22

		Risk Level				
Very Likely	2	3	4	5	5	
Likely	1	2	3	4	5	
Possible	0	1	2	3	4	
Unlikely	0	0	1	2	3	
	Negligible	Marginal	Moderate	Significant	Critical	

Risk Register

Risk Element	Feature of Work	Concerns	PDT Discussions & Conclusions (Include logic & justification for choice of Likelihood & Impact)	Impact	Likelihood	Risk Level
Project Management & Scope Growth				Maximum Project Growth		40%
PS-1	Mobilization and Demobilization			Negligible	Unlikely	0
PS-2	CAD Cell Dredging	Significant public opposition to placing materials in-water within a CAD cell.	There is likely to be some schedule impact. No cost impact is expected. Schedule impact would	Moderate	Likely	3
PS-3	Maintenance Dredging 35' Channel	Dredging to occur during winter months when difficult weather conditions are present.	Time of year restrictions allow dredging mid-Oct - 1 April for CAD cell creation. Historically, nearly	Marginal	Possible	1
PS-4				Negligible	Unlikely	0
PS-5				Negligible	Unlikely	0
PS-6				Negligible	Unlikely	0
PS-7				Negligible	Unlikely	0
PS-8	0			Negligible	Unlikely	0
PS-9	0			Negligible	Unlikely	0
PS-10	0			Negligible	Unlikely	0
PS-11	0			Negligible	Unlikely	0
PS-12	Remaining Construction Items			Negligible	Unlikely	0
PS-13	Planning, Engineering, & Design	Change in conditions, alternate design path for CAD Cell	Current CAD Cell design calls for a starter CAD Cell and a main/larger CAD Cell, it is possible that	Marginal	Possible	1
PS-14	Construction Management			Negligible	Unlikely	0
Acquisition Strategy				Maximum Project Growth		30%
AS-1	Mobilization and Demobilization	What will be bidding climate be at the time of solicitation? Will the market be saturated or dry and how might that	No impact anticipated for schedule. Poor bid results and/or market conditions are always a	Moderate	Likely	3

AS-2	CAD Cell Dredging	What will be bidding climate be at the time of solicitation? Will the market be saturated or dry and how might that	No impact anticipated for schedule. Poor bid results and/or market conditions are always a	Moderate	Likely	3	
AS-3	Maintenance Dredging 35' Channel	What will be bidding climate be at the time of solicitation? Will the market be saturated or dry and how might that	No impact anticipated for schedule. Poor bid results and/or market conditions are always a	Moderate	Likely	3	
AS-4	0			Negligible	Unlikely	0	
AS-5	0			Negligible	Unlikely	0	
AS-6	0			Negligible	Unlikely	0	
AS-7	0			Negligible	Unlikely	0	
AS-8	0			Negligible	Unlikely	0	
AS-9	0			Negligible	Unlikely	0	
AS-10	0			Negligible	Unlikely	0	
AS-11	0			Negligible	Unlikely	0	
AS-12	Remaining Construction Items			Negligible	Unlikely	0	
AS-13	Planning, Engineering, & Design			Negligible	Unlikely	0	
AS-14	Construction Management	CWCCIS can't capture market conditions during unprecedented economic times. It's possible the market	Civil Works Construction Cost Index System (CWCCIS) data hasn't captured the current	Marginal	Likely	2	
Construction Elements					Maximum Project Growth		15%
CON-1	Mobilization and Demobilization	Fuel costs can vary over time.	Fuel costs carried in the cost estimate are already near the recent record highs. It's	Marginal	Likely	2	
CE-2	CAD Cell Dredging	There is a risk to the dredge volumes fluctuating from what is currently assumed.	Last survey Oct 21 and this is the first maintenance event in Searsport since the 60s.	Marginal	Likely	2	
CE-3	Maintenance Dredging 35' Channel	There is a risk to the dredge volumes fluctuating from what is currently assumed.	Last survey Oct 21 and this is the first maintenance event in Searsport since the 60s.	Marginal	Likely	2	
CE-4	0			Negligible	Unlikely	0	
CE-5	0			Negligible	Unlikely	0	
CE-6	0			Negligible	Unlikely	0	
CE-7	0			Negligible	Unlikely	0	
CE-8	0			Negligible	Unlikely	0	

CE-9	0			Negligible	Unlikely	0
CE-10	0			Negligible	Unlikely	0
CE-11	0			Negligible	Unlikely	0
CE-12	Remaining Construction Items			Negligible	Unlikely	0
CE-13	Planning, Engineering, & Design			Negligible	Unlikely	0
CE-14	Construction Management			Negligible	Unlikely	0
Specialty Construction or Fabrication				Maximum Project Growth		50%
SC-1	Mobilization and Demobilization			Negligible	Unlikely	0
SC-2	CAD Cell Dredging			Negligible	Unlikely	0
SC-3	Maintenance Dredging 35' Channel			Negligible	Unlikely	0
SC-4	0			Negligible	Unlikely	0
SC-5	0			Negligible	Unlikely	0
SC-6	0			Negligible	Unlikely	0
SC-7	0			Negligible	Unlikely	0
SC-8	0			Negligible	Unlikely	0
SC-9	0			Negligible	Unlikely	0
SC-10	0			Negligible	Unlikely	0
SC-11	0			Negligible	Unlikely	0
SC-12	Remaining Construction Items			Negligible	Unlikely	0
SC-13	Planning, Engineering, & Design			Negligible	Unlikely	0
SC-14	Construction Management			Negligible	Unlikely	0
Technical Design & Quantities				Maximum Project Growth		20%

T-1	Mobilization and Demobilization	Geotechnical borings have not been performed; results may show rock requiring removal during CAD cell	There's limited info on subsurface conditions and rock is unknown. Borings will be done in PED	Moderate	Likely	3
T-2	CAD Cell Dredging	Geotechnical borings have not been performed; results may show rock requiring removal during CAD cell	There's limited info on subsurface conditions and rock is unknown. Borings will be done in PED	Moderate	Likely	3
T-3	Maintenance Dredging 35' Channel	Geotechnical borings have not been performed; results may show rock requiring removal during CAD cell	There's limited info on subsurface conditions and rock is unknown. Borings will be done in PED	Moderate	Likely	3
T-4	0			Negligible	Unlikely	0
T-5	0			Negligible	Unlikely	0
T-6	0			Negligible	Unlikely	0
T-7	0			Negligible	Unlikely	0
T-8	0			Negligible	Unlikely	0
T-9	0			Negligible	Unlikely	0
T-10	0			Negligible	Unlikely	0
T-11	0			Negligible	Unlikely	0
T-12	Remaining Construction Items			Negligible	Unlikely	0
T-13	Planning, Engineering, & Design			Negligible	Unlikely	0
T-14	Construction Management			Negligible	Unlikely	0
Cost Estimate Assumptions					Maximum Project Growth	25%
EST-1	Mobilization and Demobilization			Negligible	Unlikely	0
EST-2	CAD Cell Dredging			Negligible	Unlikely	0
EST-3	Maintenance Dredging 35' Channel	Fed and/or non-Fed sponsor funding can cause delays to project execution (design and/or construction.	FLAG FOR FOLLOW-UP: Craig, this is likely a question for you. Can you fill this in with any	Moderate	Possible	2
EST-4	0			Negligible	Unlikely	0
EST-5	0			Negligible	Unlikely	0
EST-6	0			Negligible	Unlikely	0
EST-7	0			Negligible	Unlikely	0

EST-8	0			Negligible	Unlikely	0
EST-9	0			Negligible	Unlikely	0
EST-10	0			Negligible	Unlikely	0
EST-11	0			Negligible	Unlikely	0
EST-12	Remaining Construction Items			Negligible	Unlikely	0
EST-13	Planning, Engineering, & Design			Negligible	Unlikely	0
EST-14	Construction Management			Negligible	Unlikely	0

External Project Risks				Maximum Project Growth		20%
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EX-1	Mobilization and Demobilization			Negligible	Unlikely	0
EX-2	CAD Cell Dredging			Negligible	Unlikely	0
EX-3	Maintenance Dredging 35' Channel			Negligible	Unlikely	0
EX-4	0			Negligible	Unlikely	0
EX-5	0			Negligible	Unlikely	0
EX-6	0			Negligible	Unlikely	0
EX-7	0			Negligible	Unlikely	0
EX-8	0			Negligible	Unlikely	0
EX-9	0			Negligible	Unlikely	0
EX-10	0			Negligible	Unlikely	0
EX-11	0			Negligible	Unlikely	0
EX-12	Remaining Construction Items			Negligible	Unlikely	0
EX-13	Planning, Engineering, & Design			Negligible	Unlikely	0
EX-14	Construction Management			Negligible	Unlikely	0

Searsport Harbor O&M Dredging Dual CAD Cell Alternative
 Feasibility (Recommended Plan)
 Abbreviated Risk Analysis

Risk Evaluation

<u>WBS</u>	<u>Potential Risk Areas</u>	Project Management & Scope Growth	Acquisition Strategy	Construction Elements	Specialty Construction or Fabrication	Technical Design & Quantities	Cost Estimate Assumptions	External Project Risks	Cost in Thousands
01 LANDS AND DAMAGES	Real Estate								\$0
12 NAVIGATION, PORTS AND HARBORS	Mobilization and Demobilization	0	3	2	0	3	0	0	\$2,063
12 NAVIGATION, PORTS AND HARBORS	CAD Cell Dredging	3	3	2	0	3	0	0	\$726
12 NAVIGATION, PORTS AND HARBORS	Maintenance Dredging 35' Channel	1	3	2	0	3	2	0	\$266
0	0	0	0	0	0	0	0	0	\$0
0	0	0	0	0	0	0	0	0	\$0
0	0	0	0	0	0	0	0	0	\$0
0	0	0	0	0	0	0	0	0	\$0
0	0	0	0	0	0	0	0	0	\$0
0	0	0	0	0	0	0	0	0	\$0
0	0	0	0	0	0	0	0	0	\$0
0	0	0	0	0	0	0	0	0	\$0
0	0	0	0	0	0	0	0	0	\$0
0	0	0	0	0	0	0	0	0	\$0
0	0	0	0	0	0	0	0	0	\$0
All Other	Remaining Construction Items	0	0	0	0	0	0	0	\$0
30 PLANNING, ENGINEERING, AND DESIGN	Planning, Engineering, & Design	1	0	0	0	0	0	0	\$488
31 CONSTRUCTION MANAGEMENT	Construction Management	0	2	0	0	0	0	0	\$260
									\$3,804
Risk		\$ 82	\$ 620	\$ 280	\$ -	\$ 184	\$ 10	\$ -	\$1,177
Fixed Dollar Risk Allocation		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0
	Risk	\$ 82	\$ 620	\$ 280	\$ -	\$ 184	\$ 10	\$ -	\$1,177
							Total		\$4,980

Design Maturity Determination for Cost Certification – Version 3, Revised 12 Sept 2024

Date: 12/12/25

P2 Designation/Project Name: 324953/ Searsport Harbor O&M Dredging

The Chief of Engineering is responsible for the technical content and engineering sufficiency for all engineering products produced by the command. As such, I have performed the Management Control Evaluation per Engineer Regulation (ER) 1110-2-1150, Engineering and Design for Civil Works Projects, Appendix H, Internal Management Control Review Checklist.

The current design **DOES NOT** require HQ approval (i.e., engineering waivers), requiring a deviation from mandatory requirements and mandatory standards, as defined in ERs, Engineering Manuals, Engineering Technical letters, and Engineering Circulars.

The current hydrology and hydraulics modeling is at 100 % design maturity, per reference (h) below.

The current geotechnical data and subsurface investigations are at 50 % design maturity, per reference (h) below. Subsurface investigations shall also include investigations of potential borrow and spoil areas.

The current survey data is at 100 % design maturity, per reference (h) below.

Other major technical and/or scope assumptions and risks include the following, which will be refined as the design progresses.

Survey data collected March 2025 and sufficient for development and solicitation of the project. Given the timeli

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The aggregate for all features is 35 % design maturity. Therefore, per Engineer Regulation 1110-2-1302, Civil Works Cost Engineering, I certify that the design deliverables used to generate the cost products for this project and the estimate meet the requirements for a CLASS 3 estimate, as per reference (a) below. Design risks, impacts and remaining efforts are summarized on page 2.

The total project baseline schedule for this project is 40 months. This schedule was coordinated with the Project Manager, Project Delivery Team, and Non-Federal Sponsor, and takes into consideration the project constraints, including district execution capacity, capability of providing real estate in a timely fashion, and cost-share budget requirements, along with the market conditions, including industry capability to execute the project.

Considering risks and assumptions noted above, along with all other concerns documented in the Risk Register, the Cost and Schedule Risk Analysis has developed a contingency of 35 % at the 80 % confidence level for the defined project scope.

Chief of Engineering

David Margolis

Printed Name



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Signature

Design Maturity Determination for Cost Certification, Remaining Work

If an engineering waiver is required, list the risks and remaining design work needed to mitigate this issue in the current design. Identify remaining effort to complete the design required for 100% design.

N/A

Identify remaining effort to complete geotechnical design effort required for 100% design. List the risks and cost and schedule impacts needed to mitigate this issue in the current design.

Confirmatory analysis is required during design phase. No additional anticipated geotechnical investigation is required for this project. There is minimal cost and schedule risk to design.

Identify remaining effort required to complete H&H required for 100% design. List the risks and cost and schedule impacts needed to mitigate this issue in the current design.

No H&H modeling is required for this project.

Identify remaining effort needed to complete survey data required for 100% design. List the risks and cost and schedule impacts needed to mitigate this issue in the current design.

Survey data collected March 2025 is sufficient for design. However, given the project timeline, additional survey may be warranted before the solicitation package is issued. Historical shoal rates are available to assess need for additional survey.

If the project is anticipated to be executed in parts, provide a design assessment (percent complete) of each part/phase below.

N/A. The project design will be for execution of a single maintenance dredging cycle using a single CAD cell system (starter and main cell).

References:

- a. ER 1110-2-1302 – Civil Works Cost Engineering
- b. CECW-EC memorandum dated 05-June-2023MFR, Guidance on Cost Engineering Products update for Civil Works Projects in accordance with Engineer Regulation 1110-2-1302 – Civil Works Cost Engineering
- c. ER 1165-2-217 – Civil Works Review Policy
- d. ER 1110-2-1150 – Engineering and Design for Civil Works Projects
- e. ER 1110-345-700 – Design Analysis, Drawings and Specifications
- f. EM 5-1-11 – Project Delivery Business Process (PDBP)
- g. Engineering and Construction Bulletin (ECB) 2023-9 – Civil Works Design Milestone Checklists

Design Maturity Determination for Cost Certification – Instructions

Paragraph 1 – Design Date: Use the drop-down menu to populate the date of the design.

Paragraph 1 – Project Information: Enter the P2 Project number and Project name.

Paragraph 3 – Engineering Waivers: Use the drop-down menu to populate this field with either “Does,” or “Does not.” If an engineering waiver is needed, or anticipated to be needed, provide the specific waiver required for the Project. A waiver is any deviation from current mandatory standards, as indicated.

Paragraph 4 – Hydrology and Hydraulics: Populate this field with the % design maturity.

Paragraph 5 – Geotechnical Information: Populate this field with the % design maturity.

Paragraph 6 – Survey Data: Populate this field with the % design maturity.

Paragraph 7 – Other Technical Assumptions and/or Scope: Enter any other major technical assumptions or scope assumptions here. Only include assumptions that pertain to design. Template discussion fields are provided as a courtesy. Please include additional pages as necessary.

Paragraph 8 – Signature: Print the name and provide the title and signature for the District's Chief of Engineering. This authority cannot be delegated; however, the Deputy Chief of Engineering and Design may sign the form in the absence of the Chief of Engineering. All fillable fields must be populated (use N/A if not applicable) in order for the document to be signed.

Page 2 – Remaining Work: Identify the current baseline design assumptions and the remaining design effort and risks to complete 100% design for the authorized project. If the project is to be broken into parts or phases, provide details on the aggregate design level of each phase and anticipated timeline for completion.