

APPENDIX B - COST ESTIMATES

TABLE B - 1: M-CACES COST ESTIMATE

TABLE B - 2: MAINTENANCE DREDGING NEEDS (CUBIC YARDS)

TABLE B - 3: ANNUAL MAINTENANCE COST

TABLE B - 1: M-CACES Cost Estimate

TOTAL PROJECT COST SUMMARY
ALL CONTRACTS

THIS ESTIMATE IS BASED ON THE 2001 PCA

PROJECT: BALTIMORE HARBOR AND ANCHORAGES
LOCATION: BALTIMORE, MARYLAND

PREPARED BY: CENAB-EN-C OLIVER LEIMBACH
P.O.C.: FRANK C. BENVENGA, ACT. CHIEF, COST ENGINEERING BRANCH

ACCOUNT NUMBER	ITEM DESCRIPTION	CURRENT VICES ESTIMATE AUGUST 2001			AUTHORIZ./BUDGET YEAR 2001			FULLY FUNDED ESTIMATE				
		COST (\$K)	CNTG (\$K)	%	EFFECTIVE PRICING LEVEL 1 OCT 00	TOTAL (\$K)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	COST (\$K)	CNTG (\$K)	FULL (\$K)
12	NAVIGATION PORTS & HARBORS	\$21,920	\$3,288	15.0%		\$25,208	\$21,920	\$3,288	\$25,208	\$22,621	\$3,393	\$26,014
	TOTAL CONSTRUCTION COST	\$21,920	\$3,288	15.0%		\$25,208	\$21,920	\$3,288	\$25,208	\$22,621	\$3,393	\$26,014
30	PLANNING, ENGINEERING AND DESIGN	\$1,214	\$33	2.8%		\$1,247	\$1,214	\$33	\$1,247	\$1,214	\$33	\$1,247
31	CONSTRUCTION MANAGEMENT	\$814	\$81	10.0%		\$895	\$814	\$81	\$895	\$814	\$81	\$895
	TOTAL PROJECT COSTS	\$23,948	\$3,403	14.2%		\$27,350	\$23,948	\$3,403	\$27,350	\$24,649	\$3,508	\$28,157

DISTRICT APPROVED:

Frank C. Benvenga
John J. [Signature]
William S. [Signature]
[Signature]
Christine L. [Signature]
Cheryl E. [Signature]
[Signature]
 CHIEF, COST ENGINEERING BRANCH
 CHIEF, REAL ESTATE DIVISION
 CHIEF, PLANNING DIVISION
 CHIEF, ENGINEERING DIVISION
 CHIEF, OPERATIONS DIVISION
 CHIEF, PROGRAMS MANAGEMENT BRANCH
 PROJECT MANAGER
 DDE (PM)

APPROVED DATE:

24 Aug 01

Cost Engineering

1. General. The following methodology was used in the preparation of the **Baseline Cost Estimate** for Baltimore Harbor, Anchorages and Channels, Baltimore, Maryland.

a. The estimate is in accordance with the guidance contained in ER 1110-2-1302, Civil Works Cost Engineering.

b. The estimate is presented in the standard Work Breakdown Structure.

c. The price level for the estimate is 1 October 2000.

d. Construction costs developed by Cost Engineering Branch are based on quantities from Navigation Branch, Operations Division. Unit costs were developed using the Corps of Engineers Dredge Estimating Program (CEDEP) and the M-CACES for Windows estimating software containing the 2000 Unit Price Book. The estimate is documented with notes to explain the assumed construction methods, crews, productivity, and other specific information.

e. Labor costs are based on the prevailing Davis-Bacon wage rates for dredging.

f. Navigation Branch, Operations Division provided costs for Construction Management and Engineering and Design based on Historical data from similar projects.

g. PPMD provided the Planning, Engineering and Design costs.

h. Escalation factors were provided by Programs Management Branch.

2. Estimate Scope. The estimate reflects the cost for the improvements to the anchorages and branch channels serving the Port of Baltimore.

3. Contingency. Contingency amounts for the construction cost items are based on uncertainties within individual project elements. Considering these uncertainties, contingencies were assigned to individual cost items or groups of related cost items to protect against the risk of potential cost increases. The following is a list by element of the uncertainties that were identified and the corresponding contingency percentage.

a. Planning, Engineering, and Design - 10%.

The uncertainty associated with the planning, engineering and design costs are low to moderate. However, design changes could be triggered by a variety of future conditions, including local sponsor requested changes due to unanticipated public pressure, new Federal or local regulations, and site changes due to storm damage prior to construction. For now, a contingency of 10 percent is considered reasonable. Please note that the M-CACES estimate includes \$900,000 in sunk costs.

b. Construction Management -- 10%.

The uncertainty associated with the construction management cost is moderate. Since construction is a future task, and plans and specifications are not completed, changes in the proposed administration of the construction contracts may occur. For now, a contingency of 10 percent is considered reasonable.

c. Dredging Cost Items -- 15%. The uncertainty associated with the quantities are relatively high since they were based on partially completed designs and are likely to change significantly. The final detailed design, however, will reduce the uncertainty of these cost items even farther. For now, a contingency of 15 percent is considered reasonable.

Mon 20 Aug 2001
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Tri-Service Automated Cost Engineering System (TRACES)
PROJECT BHALRR: Baltimore Harbor - Anchorages and Channels
Baseline Cost Estimate (FY 01 Price Level)

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TITLE PAGE 1

Baltimore Harbor
Anchorages and Channels
Baltimore, Maryland

Designed By: U.S. Army Corps of Engineers
Estimated By: Baltimore District

Prepared By: CENAB-EN-C
Oliver Leimbach

Preparation Date: 08/20/01
Effective Date of Pricing: 10/01/00

Sales Tax: 5.00%

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Release 1.2c

LABOR ID: NAT00A EQUIP ID: RG0299

Currency in DOLLARS

CREW ID: NAT00A UPB ID: UPO0EA

Mon 20 Aug 2001
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PROJECT NOTES

Tri-Service Automated Cost Engineering System (TRACES)
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The assumed construction award is December 2001 with a mid-point of construction of August 2002. Escalation factors were provided Sandy Gore, CENAB-PP.

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Baseline Cost Estimate (FY 01 Price Level)
** PROJECT OWNER SUMMARY - Contract **

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SUMMARY PAGE 1

	QUANTITY	UOM	CONTRACT	CONTINGN	ESCALATN	TOTAL COST	UNIT COST
12	Navigation, Ports & Harbors	1.00 EA	21,919,707	3,287,956	806,645	26,014,308	26014308
30	Planning, Engineering and Design	1.00 EA	1,214,000	33,400	0	1,247,400	1247400
31	Construction Management	1.00 EA	814,000	81,400	0	895,400	895400.00

TOTAL	Baltimore Harbor	1.00 EA	23,947,707	3,402,756	806,645	28,157,108	28157108

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Tri-Service Automated Cost Engineering System (TRACES)
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 Baseline Cost Estimate (FY 01 Price Level)
 ** PROJECT OWNER SUMMARY - Feature **

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 SUMMARY PAGE 2

	QUANTITY	UOM	CONTRACT	CONTINGN	ESCALATN	TOTAL COST	UNIT COST

12 Navigation, Ports & Harbors							
12 01 Ports	1.00	EA	21,919,707	3,287,956	806,645	26,014,308	26014308
TOTAL Navigation, Ports & Harbors	1.00	EA	21,919,707	3,287,956	806,645	26,014,308	26014308

30 Planning, Engineering and Design							
30 5 Surveys	1.00	EA	103,000	10,300	0	113,300	113300.00
30 10 Contracting	1.00	EA	20,000	2,000	0	22,000	22000.00
30 15 Government Estimate	1.00	EA	6,000	600	0	6,600	6600.00
30 20 Environmental Compliance	1.00	EA	5,000	500	0	5,500	5500.00
30 25 PED Sunk Costs	1.00	EA	900,000	0	0	900,000	900000.00
30 30 Economic Model Update	1.00	EA	180,000	20,000	0	200,000	200000.00
TOTAL Planning, Engineering and Design	1.00	EA	1,214,000	33,400	0	1,247,400	1247400

31 Construction Management							
31 5 Construction Management	1.00	EA	690,000	69,000	0	759,000	759000.00
31 10 Program and Project Management	1.00	EA	124,000	12,400	0	136,400	136400.00
TOTAL Construction Management	1.00	EA	814,000	81,400	0	895,400	895400.00

TOTAL Baltimore Harbor	1.00	EA	23,947,707	3,402,756	806,645	28,157,108	28157108

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Tri-Service Automated Cost Engineering System (TRACES)
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SUMMARY PAGE 3

	QUANTITY	UOM	DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
12	Navigation, Ports & Harbors	1.00 EA	21,919,707	0	0	0	0	21,919,707	21919707
30	Planning, Engineering and Design	1.00 EA	1,214,000	0	0	0	0	1,214,000	1214000
31	Construction Management	1.00 EA	814,000	0	0	0	0	814,000	814000.00
	Baltimore Harbor	1.00 EA	23,947,707	0	0	0	0	23,947,707	23947707
	CONTINGENCY							3,402,756	
	SUBTOTAL							27,350,463	
	ESCALATION							806,645	
	TOTAL INCL OWNER COSTS							28,157,108	

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	QUANTITY	UCM	DIRECT	OVERHEAD	HOME	OFC	PROFIT	BOND	TOTAL COST	UNIT COST

12	Navigation, Ports & Harbors									
12 01	Ports	1.00 EA	21,919,707	0	0	0	0	0	21,919,707	21919707

	TOTAL Navigation, Ports & Harbors	1.00 EA	21,919,707	0	0	0	0	0	21,919,707	21919707

30	Planning, Engineering and Design									
30 5	Surveys	1.00 EA	103,000	0	0	0	0	0	103,000	103000.00
30 10	Contracting	1.00 EA	20,000	0	0	0	0	0	20,000	20000.00
30 15	Government Estimate	1.00 EA	6,000	0	0	0	0	0	6,000	6000.00
30 20	Environmental Compliance	1.00 EA	5,000	0	0	0	0	0	5,000	5000.00
30 25	PED Sunk Costs	1.00 EA	900,000	0	0	0	0	0	900,000	900000.00
30 30	Economic Model Update	1.00 EA	180,000	0	0	0	0	0	180,000	180000.00

	TOTAL Planning, Engineering and Design	1.00 EA	1,214,000	0	0	0	0	0	1,214,000	1214000

31	Construction Management									
31 00	Construction Management	1.00 EA	690,000	0	0	0	0	0	690,000	690000.00
31 00	Program and Project Management	1.00 EA	124,000	0	0	0	0	0	124,000	124000.00

	TOTAL Construction Management	1.00 EA	814,000	0	0	0	0	0	814,000	814000.00

	TOTAL Baltimore Harbor	1.00 EA	23,947,707	0	0	0	0	0	23,947,707	23947707

	CONTINGENCY								3,402,756	

	SUBTOTAL								27,350,463	
	ESCALATION								806,645	

	TOTAL INCL OWNER COSTS								28,157,108	

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Tri-Service Automated Cost Engineering System (TRACES)
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** PROJECT DIRECT SUMMARY - Contract **

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SUMMARY PAGE 5

	QUANTITY UOM	LABOR	EQUIPMT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
12	Navigation, Ports & Harbors	1.00 EA	0	0	0	21,919,707	21,919,707
30	Planning, Engineering and Desig	1.00 EA	1,214,000	0	0	1,214,000	1214000
31	Construction Management	1.00 EA	814,000	0	0	814,000	814000.00
	Baltimore Harbor	1.00 EA	2,028,000	0	0	21,919,707	23,947,707
	CONTINGENCY					3,402,756	
	SUBTOTAL					27,350,463	
	ESCALATION					806,645	
	TOTAL INCL OWNER COSTS					28,157,108	

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	QUANTITY UOM	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
12 Navigation, Ports & Harbors							
12 01 Ports	1.00 EA	0	0	0	21,919,707	21,919,707	21919707
<hr/>							
TOTAL Navigation, Ports & Harbors	1.00 EA	0	0	0	21,919,707	21,919,707	21919707
30 Planning, Engineering and Desig							
30 5 Surveys	1.00 EA	103,000	0	0	0	103,000	103000.00
30 10 Contracting	1.00 EA	20,000	0	0	0	20,000	20000.00
30 15 Government Estimate	1.00 EA	6,000	0	0	0	6,000	6000.00
30 20 Environmental Compliance	1.00 EA	5,000	0	0	0	5,000	5000.00
30 25 PED Sunk Costs	1.00 EA	900,000	0	0	0	900,000	900000.00
30 30 Economic Model Update	1.00 EA	180,000	0	0	0	180,000	180000.00
<hr/>							
TOTAL Planning, Engineering and De	1.00 EA	1,214,000	0	0	0	1,214,000	1214000
31 Construction Management							
31) Construction Management	1.00 EA	690,000	0	0	0	690,000	690000.00
31 10 Program and Project Managem	1.00 EA	124,000	0	0	0	124,000	124000.00
<hr/>							
TOTAL Construction Management	1.00 EA	814,000	0	0	0	814,000	814000.00
<hr/>							
TOTAL Baltimore Harbor	1.00 EA	2,028,000	0	0	21,919,707	23,947,707	23947707
CONTINGENCY						3,402,756	
SUBTOTAL						27,350,463	
ESCALATION						806,645	
TOTAL INCL OWNER COSTS						28,157,108	

 12 01. Ports QUANTY UOM LABOR EQUIPMNT MATERIAL QUOTES TOTAL COST UNIT COST

12. Navigation, Ports & Harbors

12 01. Ports

12 01 01. Mob, Demob and Preparatory Work

12 01 01 AA. Mob and Demob First Year

USR	Description	QUANTY UOM	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
	Unloader Mob/Demob Costs were developed using the CEDEP.	1.00 EA	0.00 0	0.00 0	0.00 0	680581.00 680,581	680581.00 680,581	680581.00 680581.00
	Mechanical Dredge Mob/Demob Costs were developed using the CEDEP	1.00 EA	0.00 0	0.00 0	0.00 0	1072811.00 1,072,811	1072811.00 1,072,811	1072811 1072811
TOTAL Mob and Demob First Year			0	0	0	1,753,392	1,753,392	1753392

12 01 01 BB. Mob and Demob Second Year

	Unloader Mob/Demob Costs were developed using the CEDEP.	1.00 EA	0.00 0	0.00 0	0.00 0	680581.00 680,581	680581.00 680,581	680581.00 680581.00
	Mechanical Dredge Mob/Demob Costs were developed using the CEDEP.	1.00 EA	0.00 0	0.00 0	0.00 0	1072811.00 1,072,811	1072811.00 1,072,811	1072811 1072811
TOTAL Mob and Demob Second Year			0	0	0	1,753,392	1,753,392	1753392
TOTAL Mob, Demob and Preparatory			0	0	0	3,506,784	3,506,784	3506784

12 01 15. Mechanical Dredging

12 01 15 02. Site Work

12 01 15 02 AA. Dredging First Year

12 01 15 02 AA 01. Turning Basin

USR	Mechanical Dredging Unit cost were developed using the CEDEP. Assume that two dredges will be working and one unloader will be at the Hart/Miller Island placement site.	322253 CY	0.00 0	0.00 0	0.00 0	4.89 1,575,817	4.89 1,575,817	4.89 4.89
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12 01. Ports		QUANTY UOM	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
TOTAL Turning Basin		322253 CY	0	0	0	1,575,817	1,575,817	4.89
12 01 15 02 AA 02. East Dundalk								
USR	Mechanical Dredging Unit cost	62470 CY	0.00 0	0.00 0	0.00 0	4.90 306,103	4.90 306,103	4.90
were developed using the CEDEP. Assume that two dredges will be working and one unloader will be at the Hart/Miller Island placement site.								
TOTAL East Dundalk		62470 CY	0	0	0	306,103	306,103	4.90
12 01 15 02 AA 03. Seagirt/Connecting/West Dundalk								
USR	Dundalk West Channel Mechanical	128162 CY	0.00 0	0.00 0	0.00 0	5.54 710,017	5.54 710,017	5.54
Dredging Unit cost were developed using the CEDEP. Assume that two dredges will be working and one unloader will be at the Hart/Miller Island placement site.								
USR	Connecting Channel Mechanical	259139 CY	0.00 0	0.00 0	0.00 0	4.55 1,179,082	4.55 1,179,082	4.55
Dredging Unit cost developed								
TOTAL Seagirt/Connecting/West Dun		387301 CY	0	0	0	1,889,100	1,889,100	4.88
12 01 15 02 AA 04. South Locust Point								
USR	Mechanical Dredging Unit cost	187861 CY	0.00 0	0.00 0	0.00 0	5.75 1,080,201	5.75 1,080,201	5.75
were developed using the CEDEP. Assume that two dredges will be working and one unloader will be at the Hart/Miller Island placement site.								
TOTAL South Locust Point		187861 CY	0	0	0	1,080,201	1,080,201	5.75
TOTAL Dredging First Year		959885 EA	0	0	0	4,851,221	4,851,221	5.05

12 01. Ports		QUANTY UOM	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
12 01 15 02 BB. Dredging Second Year								
12 01 15 02 BB 01. Anchorage #3 Modifications (USER)								
USR	Mechanical Dredging Unit cost	1477100 CY	0.00 0	0.00 0	0.00 0	4.48 6,617,408	4.48 6,617,408	4.48
were developed using the CEDEP. Assume that two dredges will be working and one unloader will be at the Hart/Miller Island placement site.								
TOTAL Anchorage #3 Modifications 1477100 CY			0	0	0	6,617,408	6,617,408	4.48
12 01 15 02 BB 02. Anchorage #3B Modifications								
USR	Mechanical Dredging Unit cost	919809 CY	0.00 0	0.00 0	0.00 0	4.49 4,129,942	4.49 4,129,942	4.49
were developed using the CEDEP. Assume that two dredges will be working and one unloader will be at the Hart/Miller Island placement site.								
TOTAL Anchorage #3B Modifications 919809 CY			0	0	0	4,129,942	4,129,942	4.49
12 01 15 02 BB 03. Anchorage #4 Modifications								
USR	Mechanical Dredging Unit cost	683095 CY	0.00 0	0.00 0	0.00 0	4.12 2,814,351	4.12 2,814,351	4.12
were developed using the CEDEP. Assume that two dredges will be working and one unloader will be at the Hart/Miller Island placement site.								
TOTAL Anchorage #4 Modifications 683095 CY			0	0	0	2,814,351	2,814,351	4.12
TOTAL Dredging Second Year 3080004 EA			0	0	0	13,561,702	13,561,702	4.40
TOTAL Site Work 1.00 EA			0	0	0	18,412,923	18,412,923	18412923
TOTAL Mechanical Dredging 1.00 EA			0	0	0	18,412,923	18,412,923	18412923
TOTAL Ports 1.00 EA			0	0	0	21,919,707	21,919,707	21919707
TOTAL Navigation, Ports & Harbors 1.00 EA			0	0	0	21,919,707	21,919,707	21919707

30 5. Surveys		QUANTY UOM	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
30. Planning, Engineering and Design								
30 5. Surveys								
30 5 5. Contract								
USR	Linthicum and Survey Crew	1.00 EA	16000.00 16,000	0.00 0	0.00 0	0.00 0	16000.00 16,000	16000.00
USR	Processing -- Staff and Overhead	1.00 EA	7000.00 7,000	0.00 0	0.00 0	0.00 0	7000.00 7,000	7000.00
TOTAL Contract			23,000	0	0	0	23,000	23000.00
30 5 10. Immediately Before Dredging								
USR	Linthicum and Survey Crew	1.00 EA	31000.00 31,000	0.00 0	0.00 0	0.00 0	31000.00 31,000	31000.00
USR	Processing -- Staff and Overhead	1.00 EA	8000.00 8,000	0.00 0	0.00 0	0.00 0	8000.00 8,000	8000.00
TOTAL Immediately Before Dredging			39,000	0	0	0	39,000	39000.00
30 5 15. After Dredging								
USR	Linthicum and Survey Crew	1.00 EA	31000.00 31,000	0.00 0	0.00 0	0.00 0	31000.00 31,000	31000.00
USR	Processing -- Staff and Overhead	1.00 EA	10000.00 10,000	0.00 0	0.00 0	0.00 0	10000.00 10,000	10000.00
TOTAL After Dredging			41,000	0	0	0	41,000	41000.00
TOTAL Surveys			103,000	0	0	0	103,000	103000.00

30 10. Contracting		QUANTY UOM	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
30 10. Contracting								
USR	Printing of plans and specs for advertisement	1.00 EA	10000.00 10,000	0.00 0	0.00 0	0.00 0	10000.00 10,000	10000.00
USR	Advertisement Labor	1.00 EA	10000.00 10,000	0.00 0	0.00 0	0.00 0	10000.00 10,000	10000.00
TOTAL Contracting		1.00 EA	20,000	0	0	0	20,000	20000.00

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DETAILED ESTIMATE

Tri-Service Automated Cost Engineering System (TRACES)
PROJECT BHALRR: Baltimore Harbor - Anchorages and Channels
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30. Planning, Engineering and Design

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30 15. Government Estimate		QUANTY UOM	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
30 15. Government Estimate								
USR	Government Estimate		6000.00	0.00	0.00	0.00	6000.00	
		1.00 EA	6,000	0	0	0	6,000	6000.00
TOTAL Government Estimate		1.00 EA	6,000	0	0	0	6,000	6000.00

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DETAILED ESTIMATE

Tri-Service Automated Cost Engineering System (TRACES)
PROJECT BHALRR: Baltimore Harbor - Anchorages and Channels
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30. Planning, Engineering and Design

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DETAIL PAGE 7

30 20. Environmental Compliance		QUANTY UOM	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
30 20. Environmental Compliance								
USR	Environmental compliance		5000.00	0.00	0.00	0.00	5000.00	
		1.00 EA	5,000	0	0	0	5,000	5000.00
<hr/>								
	TOTAL Environmental Compliance	1.00 EA	5,000	0	0	0	5,000	5000.00

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DETAILED ESTIMATE

Tri-Service Automated Cost Engineering System (TRACES)
PROJECT BHALRR: Baltimore Harbor - Anchorages and Channels
Baseline Cost Estimate (FY 01 Price Level)
30. Planning, Engineering and Design

TIME 13:52:09
DETAIL PAGE 8

30 25. PED Sunk Costs		QUANTY UOM	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
30 25. PED Sunk Costs								
USR	PED sunk costs		900000.00	0.00	0.00	0.00	900000.00	
		1.00 EA	900,000	0	0	0	900,000	900000.00
TOTAL PED Sunk Costs		1.00 EA	900,000	0	0	0	900,000	900000.00

30 30. Economic Model Update		QUANTY UOM	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
30 30. Economic Model Update								
USR	Economic model update		180000.00	0.00	0.00	0.00	180000.00	
		1.00 EA	180,000	0	0	0	180,000	180000.00

	TOTAL Economic Model Update	1.00 EA	180,000	0	0	0	180,000	180000.00

	TOTAL Planning, Engineering and D	1.00 EA	1,214,000	0	0	0	1,214,000	1214000

Mon 20 Aug 2001
Eff. Date 10/01/00
DETAILED ESTIMATE

Tri-Service Automated Cost Engineering System (TRACES)
PROJECT BHALRR: Baltimore Harbor - Anchorages and Channels
Baseline Cost Estimate (FY 01 Price Level)
31. Construction Management

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31	5. Construction Management	QUANTY UOM	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST
	31. Construction Management							
	31 5. Construction Management							
USR	Construction Management		2300.00	0.00	0.00	0.00	2300.00	
		300.00 DAY	690,000	0	0	0	690,000	2300.00
	TOTAL Construction Management	1.00 EA	690,000	0	0	0	690,000	690000.00

31 10. Program and Project Management		QUANTITY	UOM	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST	UNIT COST	
31 10. Program and Project Management										
USR	PP-P			6000.00	0.00	0.00	0.00	6000.00		
		4.00	YR	24,000	0	0	0	24,000	6000.00	
USR	PP-C			25000.00	0.00	0.00	0.00	25000.00		
		4.00	YR	100,000	0	0	0	100,000	25000.00	
TOTAL Program and Project Manage				1.00	EA	124,000	0	0	124,000	124000.00
TOTAL Construction Management				1.00	EA	814,000	0	0	814,000	814000.00
TOTAL Baltimore Harbor				1.00	EA	2,028,000	0	21,919,707	23,947,707	23947707

TABLE B - 2: MAINTENANCE DREDGING NEEDS (CUBIC YARDS)

Project Year	Without Project				With Project			
	Anchorage #3 and 4	Branch Channels	Turning Basin*	Total	Anchorage #3 and 4	Branch Channels	Turning Basin	Total
1	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0
5	0	0	65,000	65,000	0	0	65,000	65,000
6	0	202,425	0	202,425	0	243,750	0	243,750
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	320,000	0	65,000	385,000	415,700	0	65,000	480,700
11	0	0	0	0	0	0	0	0
12	0	202,425	0	202,425	0	243,750	0	243,750
13	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
15	0	0	65,000	65,000	0	0	65,000	65,000
16	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0
18	0	202,425	0	202,425	0	243,750	0	243,750
19	0	0	0	0	0	0	0	0
20	320,000	0	65,000	385,000	415,700	0	65,000	480,700
21	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0
24	0	202,425	0	202,425	0	243,750	0	243,750
25	0	0	65,000	65,000	0	0	65,000	65,000
26	0	0	0	0	0	0	0	0

* Represents the area of the authorized turning basin that is currently in the existing Fort McHenry Channel and Anchorage 1.

TABLE B – 2 (continued): MAINTENANCE DREDGING NEEDS (CUBIC YARDS)

Project Year	Without Project				With Project			
	Anchorage #3 and 4	Branch Channels	Turning Basin*	Total	Anchorage #3 and 4	Branch Channels	Turning Basin	Total
27	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0
30	320,000	202,425	65,000	587,425	415,700	243,750	65,000	724,450
31	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0
35	0	0	65,000	65,000	0	0	65,000	65,000
36	0	202,425	0	202,425	0	243,750	0	243,750
37	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0
40	320,000	0	65,000	385,000	415,700	0	65,000	480,700
41	0	0	0	0	0	0	0	0
42	0	202,425	0	202,425	0	243,750	0	243,750
43	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0
45	0	0	65,000	65,000	0	0	65,000	65,000
46	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0
48	0	202,425	0	202,425	0	243,750	0	243,750
49	0	0	0	0	0	0	0	0
50	320,000	0	65,000	385,000	415,700	0	65,000	480,700
	1,600,000	1,619,400	650,000	3,869,400	2,078,500	1,950,000	650,000	4,678,500

- Represents the area of the authorized turning basin that is currently in the existing Fort McHenry Channel and Anchorage 1.

TABLE B - 3: ANNUAL MAINTENANCE COST *

Project Year	O&M Dredging Need (cubic yards)				Cost (\$4.92/cy)	Present Value	Present Worth
	Anchorage #3 and 4	Branch Channels	Turning Basin	Total			
1	0	0	0	0	0	0.940070505	\$0.00
2	0	0	0	0	0	0.883732555	\$0.00
3	0	0	0	0	0	0.830770909	\$0.00
4	0	0	0	0	0	0.780983229	\$0.00
5	0	0	0	0	0	0.734179298	\$0.00
6	0	41,325	0	41,325	203,319	0.690180304	\$140,326.77
7	0	0	0	0	0	0.648818147	\$0.00
8	0	0	0	0	0	0.609934803	\$0.00
9	0	0	0	0	0	0.573381719	\$0.00
10	95,700	0	0	95,700	470,844	0.539019242	\$253,793.98
11	0	0	0	0	0	0.506716091	\$0.00
12	0	41,325	0	41,325	203,319	0.476348852	\$96,850.77
13	0	0	0	0	0	0.447801506	\$0.00
14	0	0	0	0	0	0.420964988	\$0.00
15	0	0	0	0	0	0.395736769	\$0.00
16	0	0	0	0	0	0.372020464	\$0.00
17	0	0	0	0	0	0.349725466	\$0.00
18	0	41,325	0	41,325	203,319	0.328766595	\$66,844.50
19	0	0	0	0	0	0.309063780	\$0.00
20	95,700	0	0	95,700	470,844	0.290541743	\$136,799.84
21	0	0	0	0	0	0.273129723	\$0.00
22	0	0	0	0	0	0.256761197	\$0.00
23	0	0	0	0	0	0.241373628	\$0.00
24	0	41,325	0	41,325	203,319	0.226908229	\$46,134.75
25	0	0	0	0	0	0.213309733	\$0.00

* Values are at October 1999 price levels; using an interest rate of 6 3/8%.

TABLE B - 3 (continued): ANNUAL MAINTENANCE COST *

Project Year	O&M Dredging Need (cubic yards)				Cost (\$4.92/cy)	Present Value	Present Worth
	Anchorage #3 and 4	Branch Channels	Turning Basin	Total			
26	0	0	0	0	0	0.200526189	\$0.00
27	0	0	0	0	0	0.188508756	\$0.00
28	0	0	0	0	0	0.177211521	\$0.00
29	0	0	0	0	0	0.166591324	\$0.00
30	95,700	41,325	0	137,025	674,163	0.156607590	\$105,579.04
31	0	0	0	0	0	0.147222177	\$0.00
32	0	0	0	0	0	0.138399226	\$0.00
33	0	0	0	0	0	0.130105030	\$0.00
34	0	0	0	0	0	0.122307902	\$0.00
35	0	0	0	0	0	0.114978051	\$0.00
36	0	41,325	0	41,325	203,319	0.108087474	\$21,976.24
37	0	0	0	0	0	0.101609847	\$0.00
38	0	0	0	0	0	0.095520420	\$0.00
39	0	0	0	0	0	0.089795929	\$0.00
40	95,700	0	0	95,700	470,844	0.084414505	\$39,746.06
41	0	0	0	0	0	0.079355586	\$0.00
42	0	41,325	0	41,325	203,319	0.074599846	\$15,167.57
43	0	0	0	0	0	0.070129115	\$0.00
44	0	0	0	0	0	0.065926312	\$0.00
45	0	0	0	0	0	0.061975382	\$0.00
46	0	0	0	0	0	0.058261228	\$0.00
47	0	0	0	0	0	0.054769662	\$0.00
48	0	41,325	0	41,325	203,319	0.051487344	\$10,468.36
49	0	0	0	0	0	0.048401734	\$0.00
50	95,700	0	0	95,700	470,844	0.045501042	\$21,423.89
	478,500	330,600	0	809,100	3,980,772	PRES. VALUE	\$955,111.76
						ANNUAL COST	\$63,790.96

* Values are at October 1999 price levels; using an interest rate of 6 3/8%.