

#### **14.4.1 Advance Maintenance**

The increase in inner harbor shoaling due to the closing of the sediment basin will change operations and maintenance dredging requirements. With the increase in shoaling, dredges used for maintenance will have to be in the 24- to 30-inch size cutterhead as opposed to the 18-inch cutterhead currently in use. This increase in cutterhead size will alleviate the need for additional advance maintenance in the areas experiencing increased shoaling due to closing of the sediment basin. Therefore, assuming that the existing level of service is maintained, the current inner harbor advance maintenance program is adequate to provide the authorized inner harbor depth.

### **15 Plan Implementation Requirements**

This chapter defines implementation responsibilities necessary to insure that the Selected Plan's goals and objectives are achieved. Included are discussions of the division of plan responsibilities between Federal and non-Federal interests, institutional requirements, cost sharing and analysis of non-Federal sponsor's financial capability.

#### **15.1 Section 902 Cost Limitation**

In August 1998, the GPA submitted the final Savannah Harbor Expansion Feasibility Study Report and Final Tier I EIS to the Assistant Secretary of the Army (Civil Works). Based on these documents, Congress conditionally authorized the SHEP to deepen the harbor by as much as six feet in Section 101(b)(9) of Public Law 106-53, the Water Resources Development Act (WRDA) of 1999. The authorization depends upon (1) completion of an EIS that evaluates depth alternatives from 42 through 48 feet; (2) approval of the selected plan by the Secretaries of Interior, Commerce, Army, and the Administrator of the Environmental Protection Agency and agreement that the mitigation plan adequately addresses the potential environmental impacts of the project; and (3) implementation of mitigation steps before or concurrent with construction of the project.

In accordance with Public Law 99-662, WRDA 86, Section 204(b) the Corps and GPA executed a Memorandum of Agreement (MOA) in April 2000. This MOA allowed the GPA to fund the Corps for technical support in the preparation of the GRR and EIS, with GPA taking the lead. Included in the Section 204(b) MOA was a provision that there was no promise for credit or reimbursement of GPA's cost for preparation of the GRR/EIS should the project be constructed. In July 2001, a Memorandum of Understanding (MOU) was executed between the Department of the Army, GPA, the EPA, Department of Commerce and the Department of the interior which designated the Corps as the lead Federal agency in preparing the EIS, the other three agencies as "Federal Cooperating Agencies," and the GPA as a "State Cooperating Agency" with specialized expertise in shipping. This agreement essentially removed the GPA as the project lead, but with the Section 204(b) agreement, they were still responsible for the bulk of the costs of technical support. Since 2001, Congressionally-appropriated

Federal funding has been used to prepare governmental decisions and reviews. There are no local cooperation agreements for the SHEP construction phase at this time. However, the Georgia Department of Transportation (GDOT) and the GPA entered into a November 15, 2007 Memorandum of Agreement specifying how any SHEP non-Federal funding would be addressed between these organizations. In addition, the GDOT provided a letter of intent to be the non-Federal cost share sponsor, dated July 18, 2010.

The selected channel deepening alternative of -47 feet is in the same location shown in the 1998 Feasibility Report, with subsequent design refinements including a channel extension from the existing -42 foot project terminus at Station -60+000B to Station -97+680B to ensure the channel meets deep water. The deepening would generally occur on the existing channel footprint. The SHEP incorporates approximately 40 miles of channel improvements consisting of:

- Maintaining existing side slopes and bottom width no less than 450 feet;
- Improving the bend wideners identified in the Ship Simulation Study;
- Constructing the Oglethorpe and Long Island meeting lanes;
- Continuing the existing advance maintenance features;
- Constructing and/or relocating Aids to Navigation as required;
- Deepening Container Berths 4 through 7 at the GPA facility; and
- Incrementally increase dredged material disposal area capacity.

The SHEP project has received Federal funds allocation through FY2012 as shown in Table 15-1:

**Table 15-1: SHEP Federal Funding Allocation**

<b>Fiscal Year</b>	<b>Construction</b>	<b>Investigation</b>	<b>Total</b>
FY 2000	\$0	\$163,000	\$163,000
FY 2001	\$0	\$177,000	\$177,000
FY 2002	\$0	\$540,000	\$540,000
FY 2003	\$0	\$648,000	\$648,000
FY 2004	\$483,000	\$534,000	\$1,017,000
FY 2005	\$0	\$883,000	\$883,000
FY 2006	\$0	\$880,000	\$880,000
FY 2007	\$0	\$1,194,000	\$1,194,000
FY 2008	\$0	\$796,000	\$796,000
FY 2009	\$1,970,000*	\$400,000	\$2,370,000
FY 2010	\$3,299,000*	\$0	\$3,299,000
FY 2011	\$2,994,000	\$0	\$2,994,000
FY 2012	\$588,000	\$0	\$588,000
<b>Total</b>	<b>\$9,334,000</b>	<b>\$6,215,000</b>	<b>\$15,548,000</b>

\*Includes American Recovery and Reinvestment Act Construction Funds

GPA-funded efforts since project authorization would be eligible for crediting under existing policy as the result of special legislation contained in Public Law 108-7, Division D: Energy and Water Development Appropriations Resolutions, 2003 – Title I: Department of Defense – Civil, Section 119. That section states that the Secretary of the Army, acting through the Chief of Engineers, is authorized to credit toward the non-Federal share of the cost of the Savannah Harbor Expansion Project, authorized by section 101(b)(9) of the Water Resources Development Act of 1999, an amount equal to the Federal share of the costs incurred by the non-Federal interests subsequent to project authorization to the extent that the Secretary determines that such costs were necessary to ensure compliance with the conditions of the project authorization. Based on an evaluation of the invoices provided by GPA, Savannah District concluded that \$23,441,730 of GPA's expenditures through June 2011 can be creditable as project costs.

The project was authorized in Section 101(b)(9) of WRDA 1999 to be carried out at a total cost of \$230,174,000, substantially in accordance with a Chief of Engineer's Report to be completed no later than December 31, 1999. The Chief's Report was signed on October 21, 1999. When escalated to October 2011 price levels in accordance with the procedure set out in ER 1105-2-100, Appendix G, implementing Section 902 of WRDA 1986, the authorized total project cost amounts to \$469 million. The current estimated first cost of \$652 million exceeds that amount by more than 20 percent, necessitating a statutory modification to the project to increase its authorized total cost as shown in the enclosed Section 902 Limit worksheets (Tables G-1 through G-4).

The following tables (Tables 15-2 through 15-5) and narrative discuss the changes in project costs and benefits since receipt of the WRDA 1999 authorization. Supplemental Tables G-1 through G-4 (from ER 1105-2-100 Appendix G) present the cost increase computations.

Table 15-2: SHEP Project Costs History

WBS	Feature	Authorized Costs WRDA 1999 (-48 ft)	Authorized Project Costs Updated to FY11 Price Levels	Selected NED FY11 Plan Costs (-47 ft )	Last Presented WRDA 2010 (FY 11)
01	Real Estate				
	12 - RE Nav.	\$960,000	\$1,809,000	\$160,000	\$3,631,000
	06 - RE Fish & Wildlife	\$1,225,000	\$2,308,000	\$18,446,000	\$12,698,000
06	Fish & Wildlife	\$79,612,000	\$149,990,000	\$212,316,000	\$189,833,000
	Nav, Ports & 12 Harbors	\$114,686,000	\$216,068,000	\$253,754,000	\$271,938,000
18	Cultural Resources	\$14,348,000	\$27,032,000	\$13,914,000	\$13,914,000
	Planning & Engr 30 Design	\$8,400,000	\$15,826,000	\$27,258,000	\$11,068,000
31	Const Management	3,844,000	\$7,242,000	\$73,824,000*	\$11,068,000
12	Aids to Navigation	\$811,000	\$1,528,000	\$5,025,000	\$5,025,000
	Interest During Construction	\$6,287,000	\$11,845,000	\$48,682,000	\$51,494,000
	Total**	\$230,174,000	\$433,648,000	\$653,379,000	\$570,669,000
	FY 2012 Project First Cost***	NA	NA	\$651,857,000	NA

\*Includes \$60,195,000 in Mitigation Monitoring and Adaptive Management;

\*\*Includes the Associated Costs of Non-Federal Berth Dredging and Aids to Navigation

\*\*\*Includes PED Sunk Cost but not the Associated Costs of Non-Federal Berth Dredging and Aids to Navigation or Interest During Construction

**Dredging:** The 1998 Feasibility Report cost included \$114.7M for a dredging to the 48-foot depth. Since project authorization, considerable engineering analysis has been conducted. Dredging costs have increased to account for the handling of new work materials containing naturally enriched cadmium, a seaward extension of the entrance channel, the addition of two meeting areas and the compliance with additional environmental requirements. The Selected Plan cost estimate includes \$257.3M for dredging to the 47-foot depth.

**Mitigation Real Estate:** Since project authorization, considerable environmental analyses have been conducted, such as chloride, aquifer, hydrodynamic, and dissolved oxygen modeling, to more clearly identify all environmental impacts while coordinating with the other cooperating Federal agencies. Mitigation plan costs have increased to mitigate for the impacts these additional analyses have identified. Principal among those, modeling has showed the project impacts would include the loss of freshwater tidal marsh. A total of 0.6% of Authorized Project Costs are for real estate required for mitigation while 2.8% of Current Project Costs are for real estate required for mitigation (separable real estate costs were not identified in the \$46M

chloride mitigation water line relocation estimate provided by the City of Savannah and used by the Georgia Ports Authority in the 1998 Feasibility Report). For the purposes of this cost comparison, real estate costs could not be identified in the 1998 Feasibility Report, so they are assumed to be zero in that report. Real estate costs have increased from \$400 per acre in the Corps' initial estimates to approximately \$7,800 per acre at this time, including administration and contingency.

**Construction Management:** Since project authorization, construction management costs have increased to incorporate more intensive contract management required to meet increased environmental requirements, quality assurance and better assure the avoidance of claims from \$3.8M to \$13.6M. In addition, a \$60.2M Mitigation Monitoring and Adaptive Management feature cost has been added under this Work Breakdown Structure, Code of Accounts.

**Aids To Navigation:** Since project authorization, considerable analysis of the needs of channel users has been conducted. The Aids to Navigation costs have increased from \$0.8M to \$5.0M to incorporate a seaward extension of the entrance channel and two meeting areas.

The following is a comparison of features between the authorized plan and the Selected Plan beyond the level of detail shown in the above table:

**Chlorides:** The 1998 Feasibility Report cost included \$46M for a water intake line relocation as mitigation for impacts to the City of Savannah's Abercorn Creek Municipal and Industrial water intake. The Selected Plan now includes a \$25.2M raw water storage impoundment as mitigation for this impact.

**Endangered Species:** The 1998 Feasibility Report included a habitat improvement feature which was to be constructed in the lower harbor as mitigation for impacts to the endangered Shortnose sturgeon. The Selected Plan now includes a \$29.6M fish passage as mitigation for these impacts. The 1998 Feasibility Report does not show the cost for this individual feature so a cost comparison is not possible.

**Dissolved Oxygen:** The 1998 Feasibility Report cost included a \$24M Oxygen injection system as mitigation for impacts to Dissolved Oxygen. The Selected Plan now includes a \$70.8M Oxygen injection system as mitigation for these impacts.

**Wetland Impacts:** The 1998 Feasibility Report cost included the acquisition of 3,000 acres of mostly freshwater wetland for incorporation into the Savannah National Wildlife Refuge and the restoration of 85 acres of marsh as mitigation for wetland impacts. The Selected Plan now includes the acquisition of 2245 acres of mostly freshwater marsh for incorporation into the Savannah National Wildlife Refuge and restoration of 40 acres of marsh as mitigation for these impacts. The 1998 Feasibility Report does not show the costs for these individual features so a cost comparison is not possible.

**Flow Re-Routing:** The 1998 Feasibility Report included flow re-routing measures as mitigation for salinity impacts. The Selected Plan now includes different flow re-routing measures for \$56.8M as mitigation for these impacts. The 1998 Feasibility Report does not show the costs for these individual features so a cost comparison is not possible.

**Striped Bass:** The 1998 Feasibility Report did not include any mitigation for impacts to the Striped bass. The selected Plan now includes providing \$3.3M to the Georgia Department of Natural Resources for these impacts.

**Recreational Boating:** The 1998 Feasibility Report did not include any mitigation for impacts to recreational boating. The selected Plan now includes \$0.6M for the construction of a boat ramp for these impacts.

**Old Fort Jackson Shoreline Protection:** The 1998 Feasibility Report cost included bank protection to protect Old Fort Jackson, a War of 1812 and Civil War era fort. However, since that time bank protection was constructed to protect the fort and this work is no longer necessary. The 1998 Feasibility Report does not show the costs for this individual feature so a cost comparison is not possible.

**Monitoring And Adaptive Management:** The 1998 Feasibility Report did not include a Monitoring and Adaptive Management component. The Selected Plan now includes a \$60.2M Monitoring and Adaptive Management plan.

**Contingency:** The 1998 Feasibility Report contingencies varied by expense and averaged 16%. The Selected Plan now includes a contingency of 25% across all project costs.

The Selected 47-foot NED Plan construction costs were provided to Congress on June 30, 2010 in response to a Senate request for an updated authorized total project cost for consideration in WRDA 2010. Those costs differ from the final costs included in this document as they were draft and were refined during the review process.

**Table 15-3: SHEP Project Average Annual Costs and Benefits History**

	<b>Annual Costs</b>	<b>Annual Benefits</b>	<b>Net Annual Benefits (FY12)</b>
Authorized (August 1999)	\$17,582,000	\$52,742,000	\$35,160,000
Last Reported WRDA Fact Sheet (30 June 2010)	\$32,790,000	\$148,732,000	\$115,942,000
Selected - 47-foot NED Plan (FY12)	\$38,897,000	\$213,144,000	\$174,227,000

Benefits for the project’s 1999 authorization documents were calculated for three categories using the FY 1999 Federal discount rate of 7.125 percent.

**Vessel Operation Costs:** Vessel operating costs were developed for each draft category with benefits accruing through the operation of larger more efficient vessels

**Tide Delay Costs:** Costs were determined for constrained vessels subject to tidal delays and considered how long they would be delayed and in-port operating costs impacts under both the with and without project conditions.

**Ship Beam/Channel Width Delay Costs:** Benefits were accrued through a model that estimated situations where two or more vessels would not have sufficient clearance to meet or pass in some sections of the channel.

Since project authorization, additional economic analysis has been conducted. Benefits were calculated using three different methods and using the FY 2012 Federal discount rate of 4.00 percent;

**Transportation Cost Savings:** Channel deepening reduces transportation cost by allowing a more efficient future fleet mix. As the Savannah Harbor channel is deepened, the reliability of the channel depth increases. The increased reliability is expected to encourage carriers to assign more of their large vessels to Savannah route

services. These benefits were calculated using the Transportation Cost Savings Model.

**Meeting Area and Tide Delay Benefits:** Meeting area and tide delay benefits were determined based on the reduction in transit time required to navigate Savannah Harbor as a result of channel modifications, which reduce congestion within the harbor. These benefits included those attributed to reduced delays to accommodate Liquid Natural Gas vessel movements. These benefits were calculated using the HarborSym model.

The BCR at the time of authorization was 3:1 and calculated using the FY 1999 federal discount rate of 7.125 percent. BCR for the Selected -47-foot NED Plan is 5.5 calculated using the FY 2012 federal discount rate of 4.00 percent.

**Table 15-4: SHEP Project Cost Comparison (1999 Authorized Plan and Selected Plan)**

Feature	Authorized	Authorized %	Selected 47-Foot Plan	Selected 47-Foot Plan %
Real Estate				
RE Nav. Ports & Harbors	\$960,000	0.4%	\$160,000	0.03%
RE Fish & Wildlife	\$1,225,000	0.5%	\$18,445,625	3%
Fish & Wildlife	**\$79,612,000	34.6%	*\$272,511,000	45%
Nav, Ports & Harbors	\$114,686,000	49.8%	\$253,754,000	42%
Cultural Resources	\$14,348,000	6.2%	\$13,914,000	2.3%
Planning & Engr Design	\$8,400,000	3.6%	\$27,258,000	4.5%
Const Management	3,844,000	1.7%	*\$13,629,000	2.25%
Aids to Navigation	\$811,000	0.4%	\$5,025,000	0.8%

\*For purposes of this comparison, \$60,195,000 in Mitigation Monitoring and Adaptive Management is included under Fish & Wildlife and not Construction Management costs.

\*\* Separable real estate costs were not identified in the \$46,000,000 chloride mitigation water line relocation estimate provided by the City of Savannah and used by the Georgia Ports Authority in the 1998 Feasibility Report. That level of detail was not included in that report. For the purposes of this cost comparison, real estate costs are assumed to be zero for the 1998 Feasibility Report cost. Real Estate costs for chloride mitigation are included in the Selected Plan.

The total cost of the project was expected to be \$230.2 million, of which approximately 41 percent was for mitigation-related features, including cultural resources. The amount identified to be spent on mitigation has grown from 1999 to 2010, but the relationship of those costs to the total project cost has not changed substantially. When viewed from the total project perspective, the percentage allocated for mitigation has not risen substantially more than any other type of project cost and the mitigation plan proposed in this report addresses most of the same natural resources. Mitigation for impacts to two additional resources are included in the 2010 plan (Striped Bass and Recreational Boaters), and mitigation for one resource was



reduced in cost (water quality at City of Savannah’s Abercorn Creek Water Intake). Extensive additional interagency collaboration that has occurred since 1999 has resulted in greater definition and agreement on the extent of the environmental impacts and the specific measures proposed to address those impacts.

**Table 15-5: SHEP Project Cost Sharing Comparison  
(1999 Authorized Plan and Selected NED Plan)**

Item	1999 Authorization		Selected Plan	
	Federal	Non-Federal	Federal	Non-Federal
General Navigation Features	\$86,800,000	\$39,600,000	\$442,366,000	\$195,103,000
LERR	\$100,000	\$2,100,000	\$0	\$163,000
Aids to Navigation	\$810,000	\$0	\$5,148,000	\$0
Dredge non-Federal Berths	\$0	\$450,000	\$0	\$2,647,000
Historic Preservation Mitigation & Data Recovery	\$11,000,000	\$3,400,000	\$11,276,000	\$2,948,000
Additional Funding Requirements (10% of GNF)		\$17,000,000	-\$65,169,000	\$65,169,000
<b>Totals</b>	<b>\$98,800,000</b>	<b>\$63,000,000</b>	<b>\$393,621,000</b>	<b>\$266,030,000</b>

Table G-1 (ER 1105-2-100 Appendix G)								
CWCCIS Index(s)								
			Index	Yearly Inflat Rate	Cumul Inflat Rate	Cumul rate to Begin FY	One Half rate of Infl FY	Tot Allow Inflat for FY
Item	(b)	(c)	(d)	(e)	(f)	(h)	(i)	(j)
Date of Price Level		FY 98						
Authorized Estimate		227,989	455.42		1			
First Fiscal year		FY 99		0.066268		1	1.033134	1.033134
1st Qtr, 2nd yr	FY 00		485.6		1.066268			
Second Fiscal year		FY 00		0.054757		1.066268	1.027379	1.095461
1st Qtr, 3rd yr	FY 01		512.19		1.124654			
Third Fiscal year		37165		-0.03958		1.124654	0.980212	1.1024
1st Qtr, 4th yr	FY 02		491.92		1.080146			
Fourth Fiscal year		FY 02		0.068588		1.080146	1.034294	1.117189
1st Qtr, 5th yr	FY 03		525.66		1.154231			
Fifth Fiscal year		FY 03		0.021991		1.154231	1.010996	1.166923
1st Qtr, 6th yr	FY 04		537.22		1.179614			
Sixth Fiscal year		FY 04		0.103328		1.179614	1.051664	1.240558
1st Qtr, 7th yr	FY 05		592.73		1.301502			
Seventh Fiscal year		FY 05		0.095828		1.301502	1.047914	1.363862
1st Qtr, 8th yr	FY 06		649.53		1.426222			
Eighth Fiscal year		FY 06		0.066309		1.426222	1.033155	1.473508
1st Qtr, 9th yr	FY 07		692.6		1.520794			
Ninth Fiscal year		FY 07		0.066503		1.520794	1.033252	1.571363
1st Qtr, 10th yr	FY 08		738.66		1.621931			
Tenth Fiscal year		FY 08		-0.06161		1.621931	0.969194	1.571967
1st Qtr, 11th yr	FY 09		693.15		1.522002			
Eleventh Fiscal year		FY 09		0.060088		1.522002	1.030044	1.567729
1st Qtr, 12th yr	FY 10		734.8		1.613456			
Twelfth Fiscal year		FY 10		0.000517		1.613456	1.000259	1.613873
1st Qtr, 13th yr	FY 11		735.18		1.61429			
Thirteenth Fiscal year		FY 11		0.123589		1.61429	1.061794	1.714044
1st Qtr, 14th yr	FY 12		826.04		1.813798			

Table G-2 (ER 1105-2-100 Appendix G)									
CPI Index(s)									
				Index	Yearly Inflat Rate	Cumul Inflat Rate	Cumul rate to Begin FY	One Half rate of Infl FY	Allow Inflat for FY
Item		(b)	(c)	(d)	(e)	(f)	(h)	(i)	(j)
Date of Price Level			10/1/1998						
Authorized Estimate			2,185	161.000		1			
First Fiscal year			FY 99		0.02236		1	1.01118	1.01118
1st Qtr, 2nd yr	FY 00			164.600		1.02236			
Second Fiscal year			FY 00		0.02916		1.02236	1.01458	1.03727
1st Qtr, 3rd yr	FY 01			169.400		1.05217			
Third Fiscal year			FY 01		0.03896		1.05217	1.01948	1.07267
1st Qtr, 4th yr	FY 02			176.000		1.09317			
Fourth Fiscal year			FY 02		0.03295		1.09317	1.01648	1.11118
1st Qtr, 5th yr	FY 03			181.800		1.12919			
Fifth Fiscal year			FY 03		0.022		1.12919	1.011	1.14161
1st Qtr, 6th yr	FY 04			185.800		1.15404			
Sixth Fiscal year			FY 04		0.02045		1.15404	1.01023	1.16584
1st Qtr, 7th yr	FY 05			189.600		1.17764			
Seventh Fiscal year			FY 05		0.0269		1.17764	1.01345	1.19348
1st Qtr, 8th yr	FY 06			194.700		1.20932			
Eighth Fiscal year			FY 06		0.05085		1.20932	1.02542	1.24006
1st Qtr, 9th yr	FY 07			204.600		1.27081			
Nineth Fiscal year			FY 07		0.04212		1.27081	1.02106	1.29757
1st Qtr, 10th yr	FY 08			213.217		1.32433			
Tenth Fiscal year			FY 08		0.03781		1.32433	1.01891	1.34937
1st Qtr, 11th yr	FY 09			221.279		1.3744			
Eleventh Fiscal year			FY 09		0.01224		1.3744	1.00612	1.38281
1st Qtr, 12th yr	FY 10			223.987		1.39122			
Twelfth Fiscal year			FY 10		0.14137		1.39122	1.07068	1.48956
1st Qtr, 13th yr	FY 11			255.651		1.58789			
Thirteenth Fiscal year			FY 11		-1		1.58789	0.5	0.79395
1st Qtr, 14th yr	FY 12			0.000		0			

<b>Table G-3 (ER 1105-2-100 Appendix G)</b>									
<b>Authorized Cost Increase Computation</b>									
<b>FY</b>	<b>Current Project Cost</b>			<b>Current Sched (%)</b>		<b>Authorized Cost</b>		<b>Cost Inflat</b>	
	<b>Total</b>	<b>Constr</b>	<b>R.E.</b>	<b>Constr</b>	<b>R.E.</b>	<b>Constr</b>	<b>R.E.</b>	<b>Constr</b>	<b>R.E.</b>
	<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>	<b>(e)</b>	<b>(f)</b>	<b>(g)</b>	<b>(h)</b>	<b>(i)</b>
<b>FY 00</b>	\$163.00	\$163.00	\$0	0.027	0.00	\$62.05	\$0.00	\$74.59	\$0.00
<b>FY 01</b>	\$177.00	\$177.00	\$0	0.030	0.00	\$67.38	\$0.00	\$81.51	\$0.00
<b>FY 02</b>	\$540.00	\$540.00	\$0	0.090	0.00	\$205.57	\$0.00	\$252.00	\$0.00
<b>FY 03</b>	\$648.00	\$648.00	\$0	0.108	0.00	\$246.68	\$0.00	\$315.86	\$0.00
<b>FY 04</b>	\$1,017.01	\$1,017.01	\$0	0.170	0.00	\$387.16	\$0.00	\$527.02	\$0.00
<b>FY 05</b>	\$882.50	\$882.50	\$0	0.147	0.00	\$335.96	\$0.00	\$502.77	\$0.00
<b>FY 06</b>	\$880.00	\$880.00	\$0	0.147	0.00	\$335.00	\$0.00	\$541.65	\$0.00
<b>FY 07</b>	\$1,194.00	\$1,194.00	\$0	0.199	0.00	\$454.54	\$0.00	\$783.72	\$0.00
<b>FY 08</b>	\$796.00	\$796.00	\$0	0.133	0.00	\$303.03	\$0.00	\$522.68	\$0.00
<b>FY 09</b>	\$2,370.00	\$2,370.00	\$0	0.396	0.00	\$902.23	\$0.00	\$1,552.03	\$0.00
<b>FY 10</b>	\$3,379.00	\$3,379.00	\$0	0.564	0.00	\$1,286.34	\$0.00	\$2,075.99	\$0.00
<b>FY 11</b>	\$2,993.00	\$2,993.00	\$0	0.500	0.00	\$1,139.39	\$0	\$1,952.97	\$0.00
<b>Balance to complet</b>	\$602,860	\$583,849	\$19,011	97.489	100.00	\$222,263	\$2,185	\$403,141	\$0
<b>Total</b>	\$617,900	\$598,889	\$19,011	100.00	100.00	\$227,989	\$2,185	\$411,867	\$0

<b>Table G-4 (ER 1105-2-100 Appendix G)</b>		
<b>MAXIMUM COST INCLUDING INFLATION THROUGH CONSTRUCTION</b>		
<b>FY 12</b>		<b>Thousands Dollars (000's)</b>
<b>Line 1</b>		
<b>a.</b>	Current Project estimate at current price levels:	\$617,900
<b>b.</b>	Current project estimate, inflated through construction:	\$703,087
<b>c.</b>	Ratio: Line 1b / line 1a	1.1379
<b>d.</b>	Authorized cost at current price levels:	\$411,867
(Column (h) plus (i) from table G-3)		
<b>e.</b>	Authorized cost, inflated through construction:	\$468,649
(Line c x Line d)		
<b>Line 2</b>	Cost of modifications required by law:	\$0
<b>Line 3</b>	20 percent of authorized cost:	\$46,035
.20 x (table G-3, columns (f) + (g))		
<b>Line 4</b>	Maximum cost limited by section 902:	\$514,684
Line 1e + line 2 + line 3		

## **15.2 Cost Sharing**

The costs for the Selected NED Plan will be shared in accordance with Section 101 of the WRDA 1986 and cost shared as a General Navigation Feature. The Recommended Plan requires a blended cost sharing structure as there are two cost sharing depth increments involved. Channel depths from -21 feet to -45 MLLW feet are cost shared 25 percent non-Federal and 75 percent Federal. Any depth greater than -45 feet MLLW is cost shared 50 percent non-Federal and 50 percent Federal. An additional 10 percent of the total costs of General Navigation Features, which includes dredged material disposal construction costs, will be repaid by the non-Federal sponsor over a period not to exceed 30-years. Sponsor costs for lands, easements, right-of-ways, and relocations, except utilities, are credited against the 10% cash contribution. For the purposes of allocating the cost by depth consistent with Planning Guidance Letter 62, the following costs are assigned to each depth zone in the same proportion that dredging costs are assigned to each zone (61% for depth alternatives of -45 feet MLLW and less; 39% for depth alternatives greater than -45 feet MLLW):

- Mobilization and Demobilization costs;
- Preconstruction Engineering and Design; and
- Supervision and Administration.

The costs listed above are not creditable against the additional 10% cash over 30 years.

The non-Federal sponsor will provide all Lands, Easements, Right-of-ways, and Relocations (LERR). The LERR for construction, operation, maintenance, and rehabilitation to mitigate damages to fish and wildlife will be cost shared to the same extent as General Navigation Features. Cost sharing for the Selected NED Plan is presented in Table 15-6. Explanatory notes are provided in Table 15-7. Costs are presented in FY 2012 price levels.

Table 15-6: Savannah Harbor Expansion Cost Allocation for the Selected NED 47-Foot Plan (FY12 Price Levels)

				COST SHARE ALLOCATION FOR 47-FOOT ALTERNATIVE			
				Federal Costs	Fed %	Non-Federal Costs	Non-Fed %
<b>1 Basic Project (w/o Mitigation)</b>							
<b>A Construction - Navigation Only</b>							
				Total Costs			
			\$124,547,788				
1.a.1	Dredged Material 42 to 45 =	13,860,800 cy	(61%)	\$93,410,841	75%	\$31,136,947	25%
1.a.2	Dredged Material 45 to 47 =	8,861,219 cy	(39%)	\$39,811,743	50%	\$39,811,743	50%
1.a.3	Dredging Mobilization (42 to 45)		(61%)	\$13,885,593	75%	\$4,628,531	25%
1.a.4	Dredging Mobilization (45 to 47)		(39%)	\$5,918,046	50%	\$5,918,046	50%
1.a.5	Disposal Area Capacity (42 to 45)			\$11,315,210	75%	\$3,771,737	25%
1.a.6	Disposal Area Capacity (45 to 47)			\$2,774,232	50%	\$2,774,232	50%
1.a.7	Debris Removal - 1/			\$1,621,239	75%	\$540,413	25%
<b>B</b>	<b>SUBTOTAL: 47-Foot Alternative</b>		\$257,318,552	\$168,736,904		\$8,581,648	
1.b.1	Incremental Subtotal (42 to 45)		\$160,310,511				
1.b.2	Incremental Subtotal (42 to 47)		\$97,008,041				

		COST SHARE ALLOCATION FOR 47-FOOT ALTERNATIVE			
		Federal Costs	Fed %	Non-Federal Costs	Non-Fed %
2	<b>Fish and Wildlife Mitigation</b>				
2a.	Construction (42 to 45)	\$206,527,461		\$154,895,595	75%
2.b	Construction (45 to 47)	\$9,857,524		\$4,928,762	50%
2.c	Monitoring & Adapt Mgt (42 to 45)	\$61,026,008		\$45,769,506	75%
2.d	Monitoring & Adapt Mgt (45 to 47)	\$383,843		\$191,922	50%
2.e	Mitigation Properties (42 to 45)	\$15,703,915		\$11,777,937	75%
2.f	Mitigation Properties (45 to 47)	\$3,113,978		\$1,556,989	50%
2.g	Utility Relocation	\$0		\$0	
2.h	CSS Georgia Preservation (1% of Fed GNF)	\$14,224,278		\$2,431,500	100%
2.i	CSS Georgia Preservation Remainder of \$14,224,278	\$11,792,778		\$8,844,584	75%
2.j	<b>SUBTOTAL: 47-Foot Alternative</b>	\$310,837,007		\$230,924,344	
	2.j.1 Incremental sub-total (42 to 45)	\$297,481,662			
	2.j.2 Incremental sub-total (45 to 47)	\$13,355,345			

<b>COST SHARE ALLOCATION FOR 47-FOOT ALTERNATIVE</b>					
		Federal Costs	Fed %	Non-Federal Costs	Non-Fed %
<b>3</b>	<b>Erosion or Shoaling Prevention</b>				
3.a	Construction -1/				
3.b	LERR	\$0.00		\$0.00	
3.c	Utility Relocation	\$0.00		\$0.00	
3.d	SUBTOTAL: 47-Foot Alternative	\$0.00		\$0.00	
<b>4</b>	<b>Other Costs</b>				
4.a	PED Sunk Costs	\$41,827,459			
4.b	Planning, Engineering, & Design	\$27,807,939			
4.c	Construction Supervision & Administration	\$13,903,970			
4.d	SUBTOTAL: 47-Foot Alternative	\$83,539,368			
		(61%)			
4.d.1	Incremental sub-total (42 to 45)	\$50,959,014	38,219,261	75%	12,739,754
		(39%)			
4.d.2	Incremental sub-total (45 to 47)	\$32,578,999	16,289,499	50%	16,289,499
5	TOTAL GNF for NED 47-Foot Alternative	\$651,693,573	<u>\$453,642,458</u>		<u>\$198,051,115</u>
6	LERR credited -1/	\$163,229	0%	\$163,229	100%
<b>7</b>	<b>PROJECT FIRST COST</b>	<b>\$651,856,802</b>	<b><u>\$453,642,458</u></b>	<b><u>69.59%</u></b>	<b><u>\$198,214,344</u></b>
					<b><u>30.41%</u></b>
<b>8</b>	<b>Other Associated Costs</b>				
8.a	Berthing Areas (42 to 45)	\$2,460,083	\$0	0%	\$2,460,083
8.b	Berthing Areas (45 to 47)	\$186,727	\$0	0%	\$186,727
8.c	Navigation Aids	\$5,148,011	\$5,148,011	100%	\$0
8.d	Sponsor's 10% of GNF Payback over 30 years	\$65,169,357	-\$65,169,357		\$65,169,357
8.e	Utility Relocation	\$0	\$0		\$0
9		\$659,651,622	<u>\$393,621,112</u>	<u>59.67%</u>	<u>\$266,030,510</u>
					<u>40.33%</u>

Note: Table assumes the non-Federal sponsor will be credited \$23,000,000 of the sunk costs for providing funds during PED.



<b>Table 15-7: Cost Sharing Explanations</b>	
<b>Explanatory Notes</b>	
1/All are required for the new work REGARDLESS OF THE NED alternative selected and will not vary by depth. Therefore all costs will be shared at the rate for the first depth alternative (i.e. 44 foot) that they would be incurred or 75% Federal/25% non-Federal	
2/Historic Preservation costs are shared as follows: 100% Federal up to 1% of the Federal General Navigation Feature costs. Any remaining balance will require a HQUSACE waiver for cost sharing. The CSS Georgia would need to be removed for any depth alternative. Therefore, the NED alternative rate of 50% Federal/50% Non-Federal is not applicable to the cost share amount. The rate for the first depth alternative that the CSS Georgia must be removed is the 44-foot alternative. Therefore, the cost share of 75% Federal/25% non-Federal has been used for the amount exceeding 1% of the Federal GNF Costs of the Selected Plan.	
Historic Preservation cost allocation (total amount)	\$14,224,278
1% of Federal GNF is 100% Federal cost	<u>\$2,431,500</u>
Balance to cost share	<u>\$11,792,778</u>
The Federal interest extends only to GNF (General Navigation Features): primary access channels, anchorages, turning basins, locks and dams, harbor areas, jetties and breakwaters	
Non-Federal sponsor may plan, design and construct navigation projects and be reimbursed with the Federal share. NOTE: Use of this authority requires advance approval and close coordination with HQUSACE	
Per Section 203 of WRDA 1986, for authorized projects, the Secretary shall credit toward the non-Federal share of the cost of construction of such project an amount equal to the portion of the cost of developing such study	
<b>Non-Federal sponsors must:</b>	
Provide, at their expense, all ancillary shore side harbor facilities such as docks, terminal and transfer facilities, berthing areas, and local access channels	
Provide all Lands Easements Right of way Relocations and Disposal for construction and maintenance	
For providing depths from 20 feet to 45 feet below mllw, the Non-Federal sponsor pays 25% of the GNF	
For providing depths beyond 45 feet below mllw, the Non-Federal sponsor pays 50% of the GNF	
Provide cash contributions toward the costs for construction of the GNF of the project, which includes the costs of constructing land-based and aquatic dredged material disposal facilities, paid during construction	
Hold and save the U.S. free from damages due to the construction, operation and maintenance dredging	
Contribute 50% of the incremental costs for maintenance dredging associated with project depths in excess of 45 feet	
For all depths, provide an additional cash contribution equal to 10% of GNF, which includes dredged material disposal construction costs. These costs may be paid over a period not exceeding 30 years	
The sponsor's costs for LERR, except utilities, are credited against the additional cash contribution	

### **15.3 Financial Analysis of Non-Federal Sponsor's Capabilities**

A financial analysis is required for any plan being considered for USACE implementation that involves non-Federal cost sharing. The purpose of the financial analysis is to ensure that the non-Federal sponsor understands the financial commitment involved and has reasonable plans for meeting that commitment. The financial analysis includes the non-Federal sponsor's statement of financial capability, the non-Federal sponsor's financing plan, and an assessment of the sponsor's financial capability.

A self-certification of financial capability signed by the Chief Financial Officer of the non-Federal Sponsor is required. The Self-Certification documentation is provided as an attachment to this report.

### **15.4 Land Requirements**

Land requirements for the NED -47-foot alternative plan include: (1) acquiring channel improvement/sloughing easements over approximately 6.6 acres of land necessary for the deepening phase of the project for channel wideners; (2) the execution of a Special Use Permit between the non-Federal Project Sponsor and the US Fish and Wildlife Service (USFWS) covering approximately 48 acres of land required for the construction of mitigations features proposed within the boundaries of the Savannah National Wildlife Refuge; (3) acquiring freshwater wetlands in fee simple (which would be deeded to the Savannah National Wildlife Refuge) whose value equals the land needed to expand the Kings Island Turning Basin within the Savannah National Wildlife Refuge; (4) acquiring approximately 2,245 acres of land in fee simple necessary for mitigation purposes to offset impacts to wetlands; (5) acquiring two additional properties, one 5.5 acres and one 3 acres, which will be acquired in fee simple by the non-Federal Project Sponsor for the construction of Dissolved Oxygen Injection Systems; (6) acquiring approximately 7 acres in fee simple for the construction of the fish bypass channel along with the acquisition of a perpetual road easement over approximately 6 acres for access to the proposed channel to be constructed on Federally and privately owned lands located at the New Savannah Bluff Lock and Dam in North Augusta, Aiken County, South Carolina and; (7) acquiring approximately 35 acres of land in fee simple for the construction of a raw water storage impoundment to mitigate for chloride impacts on the City of Savannah's municipal and industrial water intake on Abercorn Creek. The wetland mitigation lands and lands equal in value to lands at the Kings Island Turning Basin will be acquired in fee simple by the non-Federal Project Sponsor and deeded to the USFWS to become part of the Savannah National Wildlife Refuge. The Dissolved Oxygen facilities will be constructed and maintained by the Corps. The chloride mitigation lands will be acquired in fee simple by the non-Federal Project Sponsor and deeded to the City of Savannah after construction for operation and maintenance by the City.

## **15.5 Non-Federal Sponsor's Responsibilities**

The non-Federal sponsor would be responsible for the following actions:

a. Provide, during the period of construction, a cash contribution equal to the following percentages of the total cost of construction of the general navigation features:

i. Twenty-five percent of the costs attributable to dredging to a depth in excess of 20 feet, but not in excess of 45 feet; plus

ii. Fifty percent of the costs attributable to dredging to a depth in excess of 45 feet;

b. Provide 50 percent of the excess cost of operation and maintenance of the project over that cost which the Federal Government determines would be incurred for operation and maintenance for depths deeper than 45 feet;

c. Pay with interest, over a period not to exceed 30 years following completion of the period of construction of the project, up to an additional 10 percent of the total cost of construction of general navigation features. The value of LERRs, with the exception of utility relocations, provided by the Sponsor for the general navigation features, described below, may be credited toward this required payment. The owner of a utility requiring relocation as part of an improvement deeper than 45 feet below MLW must fund 50% of the cost;

If the amount of credit equals or exceeds 10 percent of the total cost of construction of the general navigation features, the Sponsor shall not be required to make any contribution under this paragraph, nor shall it be entitled to any refund for the value of LERRs and deep-draft utility relocations in excess of 10 percent of the total cost of construction of the general navigation features;

d. Provide all LERRs and perform or ensure the performance of all relocations and deep-draft utility relocations determined by the Federal Government to be necessary for the construction, operation, maintenance, repair, replacement, and rehabilitation of the general navigation features (including all lands, easements, and rights of way, relocations, and deep-draft utility relocations necessary for the dredged material disposal facilities);

e. Provide, operate, maintain, repair, replace, and rehabilitate, at its own expense, the local service facilities in a manner compatible with the project's authorized purposes and in accordance with applicable Federal and State laws and regulations and any specific directions prescribed by the Federal Government;

f. Accomplish all removals determined necessary by the Federal Government other than those removals specifically assigned to the Federal Government;

g. Give the Federal Government a right to enter, at reasonable times and in a reasonable manner, upon property that the Sponsor owns or controls for access to the project for the purpose of operating, maintaining, repairing, replacing, and rehabilitating the general navigation features;

h. Hold and save the United States free from all damages arising from the construction, operation, maintenance, repair, replacement, and rehabilitation of the project, any betterments, and the local service facilities, except for damages due to the fault or negligence of the United States or its contractors;

i. Keep, and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project, for a minimum of 3 years after completion of the accounting for which such books, records, documents, and other evidence is required, to the extent and in such detail as will properly reflect total cost of construction of the general navigation features, and in accordance with the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and local governments at 32 CFR, Section 33.20;

j. Perform, or cause to be performed, any investigations for hazardous substances as are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601-9675, that may exist in, on, or under lands, easements, or rights of way that the Federal Government determines to be necessary for construction, operation, maintenance, repair, replacement, or rehabilitation of the general navigation features. However, for lands that the Government determines to be subject to the navigation servitude, only the Government shall perform such investigation unless the Federal Government provides the Sponsor with prior specific written direction, in which case, the Sponsor shall perform such investigations in accordance with such written direction;

k. Assume complete financial responsibility, as between the Federal Government and the Sponsor, for all necessary cleanup and response costs of any CERCLA regulated materials located in, on, or under lands, easements, or rights of way that the Federal Government determines to be necessary for the construction, operation, maintenance, repair, replacement, and rehabilitation of the project;

l. To the maximum extent practicable, perform its obligations in a manner that will not cause liability to arise under CERCLA;

m. Comply with Section 221 of Public Law 91-611, Flood Control Act of 1970, as amended, and Section 103 of the Water Resources Development Act of 1986, Public Law 99-662, as amended, which provides that the Secretary of the Army shall not commence the construction of any water resources project or separable element thereof, until the Sponsor has entered into a written agreement to furnish its required cooperation for the project or separable element;

n. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987, and the Uniform Regulations contained in 49 CFR Part 24, in acquiring lands, easements, and rights of way, required for construction, operation, maintenance, repair, replacement, and rehabilitation of the general navigation features, and inform all affected persons of applicable benefits, policies, and procedures in connection with said act;

o. Comply with all applicable Federal and State laws and regulations, including, but not limited to, Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d), and Department of Defense Directive 5500.11 issued pursuant thereto, as well as Army Regulation 600-7, entitled “Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army.” The State is also required to comply with all applicable Federal labor standards requirements including, but not limited to, the Davis-Bacon Act (40 USC 3144 *et seq.*), the Contract Work Hours and Safety Standards Act (40 USC 3701 *et seq.*), and the Copeland Anti-Kickback Act (40 USC 3145 *et seq.*);

p. Provide the non-Federal share that portion of the costs of mitigation and data recovery activities associated with historic preservation, that are in excess of 1 percent of the total amount authorized to be appropriated for the project, in accordance with the cost sharing provisions of the agreement;

q. Prevent obstructions of or encroachments on the project (including prescribing and enforcing regulations to prevent such obstructions or encroachments) which might reduce the ecosystem restoration, hinder its operation and maintenance, or interfere with its proper function, such as any new development on project lands or the addition of facilities which would degrade the benefits of the project; and

r. Do not use Federal funds to meet the Sponsor’s share of total project costs unless the Federal granting agency verifies in writing that the expenditure of such funds is authorized.