The use of ship simulators to establish final design parameters for deep draft navigation channels is the standard practice worldwide and ensures that channels are safe and economical and result in minimal environmental impact and long term maintenance requirements. The use of ship simulators also provides the Savannah Harbor Pilots that work the channel on a daily basis with the opportunity to provide input into the design and ensure the navigability and safety of the channel. The ship simulation study verified that the channel could be deepened and widened at three bends to maintain two-way traffic capability for the design vessel and a smaller vessel. Two meeting areas are also included to provide for meeting of two design vessels.

Currently, the Savannah Harbor Pilots safely bring in vessels with a minimum of 4 feet of underkeel clearance. The Corps expects this practice to continue with the deepened channel. The vertical motion study, which included the channel extension out to a maximum of Station -98+600B, showed that the pilots can safely navigate the design vessel through the deepened Ocean Bar Channel at a ship speed of 14 knots or less. Documentation for both the ship simulation and vertical motion studies can be found in Engineering Appendix Supplemental Materials.

With respect to economics, most respondents commented or asked questions about how deepening the harbor is economically justified if the cargo volume growth rate remains the same in both the with- and without- project conditions. As indicated by the commodity forecast discussed in Section 5 of the GRR, under both the without- and with-project conditions, the District expects the Garden City Terminal to reach its build-out capacity near 2030 when the total number of TEUs processed reaches 6.5 million. The Corps anticipates that without deepening, more vessels would be required to transport a given volume of cargo, when compared to the with-project condition in which vessels could load more completely (thereby requiring fewer vessels).

No increase in cargo is expected to occur as a result of the proposed harbor deepening. As a result, the number of containers that transit the areas that surround the port would not change as a result of a deeper harbor. The project's economic benefits accrue from the use of larger, more cost-effective container ships, not an increase in the number of containers moving through the port. These transportation cost savings are predicted to result in an average net benefit of over $170 million annually to the Nation.

14 Selected Plan

The current Savannah Harbor Expansion Project authorization in Section 101(b)(9) of the Water Resources Development Act of 1999 authorized a deep-draft navigation project up to a depth of -48 feet subject to further evaluation and concurrence by the Secretaries of the Army, Commerce and Interior, and the Administrator of the Environmental Protection Agency (EPA). Given the unique authorization of this project, any final recommendation of a preferred plan must meet the requirements of

the legislation. Therefore, the final General Reevaluation Report (GRR) considered depths alternatives between -42 and -48 feet (impacts/benefits).

The Selected Plan is the NED plan of -47 feet because it maximizes net benefits at an average annual equivalent of $174 million (FY 2012 price levels and discount rate of 4.00%). The Selected Plan complies with Army policy, the Water Resources Development Act of 1999 authorization, and is supported by the non-Federal cost share sponsor.

The Selected Plan includes navigation improvements to the existing Savannah Harbor Navigation Project and mitigation that extends into the upper harbor beyond the extent of the navigation improvements. Several features of the existing Navigation Project would continue and would not be affected by the present improvements.

The navigation components of the Selected Plan consist of:

- 47-foot deepening alternative, which includes channel bend wideners, oceanward extension of the entrance channel, and expansion of the Kings Island Turning Basin;
- Long Island Meeting Area at 47-feet; and
- Oglethorpe Meeting Area at 47-feet.

The Plan includes an extensive natural resource mitigation plan, which is described in Section 14.2.

The Selected Plan costs and benefits were updated in December 2011 to reflect FY 2012 price levels and the FY 2012 Federal discount rate of 4.00% for Corps projects (Economic Guidance Memorandum 12-01). The benefit update includes incorporation of the most recent vessel operating costs (Economic Guidance Memorandum 11-05).

The FY 2012 Project First Cost is $652,000,000 (Table 14-1). The Selected Plan FY 2012 annual average equivalent cost (including annual maintenance) is $39,000,000. The Selected Plan FY 2012 average annual equivalent benefits are $213,000,000, which result in average annual equivalent net benefits of $174,000,000 and a benefit-to-cost ratio of 5.5. The project was authorized in Section 101(b)(9) of WRDA 1999 to be carried out at a total cost of $230,174,000. 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 $469,000,000. The current estimated Project First Cost of $652,000,000 exceeds that amount by more than 20 percent, necessitating a statutory modification to the project to increase its authorized total cost.

Table 14-1: Selected Plan (47-Foot Deepening) Economic Highlights

Description	Total Cost
FY11 (At Oct 2010 Levels)	
M-CACES Cost Estimate	$604,000,000
M-CACES w/o Nav Aids & Non-Fed Berth Dredging	$596,000,000
PED Sunk Costs	$ 41,000,000
Project First Cost	$636,000,000
FY12 (At Oct 2011 Levels)	
Project First Cost	$652,000,000
Project First Cost with Other Associated Costs	$660,000,000
Interest During Construction	$ 49,000,000
Total Project Investment Cost	$709,000,000
Average Annual Cost	$ 34,000,000
Annual O&M Cost	$ 5,000,000
Total Average Annual Cost	$ 39,000,000
Average Annual Benefits	$213,000,000
Average Annual Net Benefits	$174,000,000
BCR (4.0% Discount Rate)	5.5
BCR (7.0% Discount Rate)	3.8
Inflated to Midpoint of Construction	$750,000,000

Other Associated Costs: Navigation Aids & Non-Federal Berth Dredging
Note: Totals may be affected by rounding.

The existing condition and Selected Plan widths by channel ranges (Table 14-2) and existing condition and Selected Plan controlling depths, advance maintenance dredging depths, and total dredging depths by channel ranges (Table 14-3) are presented below.

Table 14-2: Existing and Selected Plan Widths (feet)

Range Name	Station Limits Lower	Station Limits Upper	Existing Project Width	Recommended Project Width
S8	97+680B [A]	60+000B	*Not Applicable*	570
Tybee	60+000B	40+522B	600	570
0A	40+522B	38+186B	800	770
Bloody Point	38+186B	23+475B	600	570
1A	23+475B	20+832B	800	858[B]
Jones Island	20+832B	16+142B	700	758 [B]
2A	16+142B	13+771B	800	861[B]
Tybee Knoll Cut	13+771B	1+380B	500	470
4	1+380B	1+552	Varies	Varies
New Channel	1+552	9+526	500	470
6	9+526	11+385	600	600
Long Island Crossing	11+385	24+920	500	470
Long Isl. Meeting Lane[1]	*13+000*	*23+000*	*Not Applicable*	*570*
8	24+920	27+317	800	770
Lower Flats	27+317	31+037	600	661 [B]
10 through 12	31+037	36+948	600 to 700	735 to 835 [C]
Upper Flats	36+948	40+437	550	535
14	40+437	41+693	500 to 700	485 to 685
Bight Channel	41+693	49+489	700	700
Ft. Jackson Channel	49+489	53+127	Varies	Varies [C]
21	53+127	54+481	600	661 [B]
Oglethorpe	54+481	61+405	500	485
Oglethorpe Meeting Lane[2]	*54+080*	*60+700*	*Not Applicable*	*585*
23	61+405	63+277	Varies	Varies
24 through 25	63+277	69+734	500	467
26	69+734	71+128	600	585
City Front Channel	71+128	76+537	500	470
28	76+537	77+283	550	535
Marsh Island Channel	77+283	87+642	500	470
32	87+642	90+701	Varies	Varies
33 through 35	90+701	93+933	500	470
34	93+933	95+378	500	446
35	95+378	97+543	500	434
Kings Is. Turning Basin	97+543	103+000	Varies	Varies [B]
Whitehall Channel	103+000	105+500	400	400
Port Wentworth Channel	105+500	112+500	200	200

Notes:
[1] Includes 1,000-foot transition, [2] Includes 500-foot transition
[A] Existing project starts at 60+000B, recommended project requires 38,600 linear feet of channel extension to 97+6800B
[B] Width expansion on north side of channel only
[C] Width expansion on south side of channel only

Table 14-3: Existing and Selected Plan Depths (feet below MLLW)

Station Limits		Existing Project Depths			Selected Project Depths		
Lower	Upper	Auth. Depth	Adv. Maint	Total Depth	Auth. Depth	Adv. Maint	Total Depth
-97+680B	-60+000B	*	*	*	49	0	49
-60+000B	-14+000B	44	0	44	49	0	49
-14+000B	+24+000	42	2	44	47	2	49
+24+000	+35+000	42	4	46	47	4	51
+35+000	+37-000	42	6	48	47	6	53
+37-000	+70+000	42	4	46	47	4	51
+70+000	+102+000	42	2	44	47	2	49
+102+000	+103+000	42	0	42	47	0	47
Kings Island Turning Basin		42	8	50	47	8	55
+103+000	+105+500	36	2	38	36	2	38
+105+500	+112+500	30	2	32	30	2	32

*Stations -98+600B to -60+000B are not currently part of the Savannah Harbor Navigation Project.
Up to an additional 2-feet of volume is paid as Allowable Overdepth.

14.1 Environmental Effects

Chapter 8: Alternative Plan Evaluation: Environmental Impacts describes the project environmental impacts of the alternative plans and describes the methods used to assess those impacts. The expected environmental effects of the Selected Plan (with mitigation features) are shown in Table 14-4. A discussion of the mitigation plan and mitigation planning effort follows.

Table 14-4: Environmental Effects of the Selected Plan

Resource or Resource Element	Mitigated Impact
Salinity	Moves farther up the estuary
Freshwater Wetlands Conversion	-223 acres
Brackish Marsh Conversion	+964 acres
Salt Marsh Conversion	-740 acres
Brackish Marsh Loss	15.68 acres
Dissolved Oxygen	Minor incidental improvement
Fisheries	Change in Acceptable Habitat
- Striped bass spawning	- 14 %
- Striped bass eggs	- 11 %
- Striped bass larvae	- 5 %
- American shad (Jan)	0 %
- American shad (May)	0 %
- American shad (Aug)	0 %
- Shortnose sturgeon adult (January)	- 7 %
- Shortnose sturgeon adult (August)	+ 6 %
- Shortnose sturgeon juvenile (January)	- 8 %
- Southern flounder	+57 %
Chlorides in Abercorn Creek	Periodic increases
Chlorides at City's M&I Water Treatment Plant	No significant effects
Drinking Water Aquifer	No discernible impacts
Hurricane Surge	Minor, max increase of 0.8 feet
Beach Erosion	Minor; within accuracy of evaluation
Bank Erosion Due to Ship Traffic	No measurable addition to ongoing erosion
Shoaling	Minimal upstream shift
Velocity	Theoretical reduction, but not measurable

14.2 Mitigation Details

The natural resource mitigation plan consists of the following components:

- Constructing and operating flow re-routing features in and near the Savannah National Wildlife Refuge to reduce salinity impacts to tidal freshwater and brackish wetlands;
- Acquiring bottomland hardwoods/freshwater wetlands (223 acres) to compensate for salinity increases to tidal freshwater wetlands. The acquired lands would become part of the Savannah National Wildlife Refuge and be managed by the USFWS;
- Restoring marsh at former Disposal Area 1S;

- Constructing and operating an oxygen injection system to remove the incremental effects of this harbor deepening project;
- Constructing and operating a fish bypass channel at the New Savannah Bluff Lock and Dam to compensate for impacts to Shortnose sturgeon habitats;
- Funding an existing Striped bass stocking program to compensate for adverse impacts to Striped bass spawning and nursery habitats within the estuary;
- Constructing a raw water impoundment to supply the City of Savannah water treatment plant intake with water during periods of high chloride concentration; and
- Implementing adaptive management features if post-construction monitoring shows them to be needed. Those features consist of removing the Tidegate sill, enlarging the diversion structure at the mouth of McCoys Cut, a diversion structure at the junction of Middle and Back Rivers, and acquisition of up to another 10 percent of freshwater wetland acreage to compensate for wetland impacts. Implementation of any or all of these features may not be needed, but the project would include funding sufficient to implement all of them. Which of these features would be implemented would depend on the findings of the monitoring.

Other mitigation features include:

- Construction of a recreational boat ramp on Hutchinson Island, and
- Removal and curation of the CSS *Georgia*.

Corps guidance (ER 1105-2-100, Appendix C) states: "Monitoring is appropriate for all mitigation actions to insure that those actions have achieved the objective. The level of monitoring should be consistent with the magnitude of the project and the degree of risk and uncertainty with the probable success of the mitigation." Section 2039 of WRDA 2007 states that post-construction monitoring "shall continue until such time as the Secretary determines that the criteria for ecosystem restoration success will be met." It goes on to say that "For a period of 10 years from completion of construction of a project (or a component of a project) for ecosystem restoration, the Secretary shall consider the cost of carrying out the monitoring as a project cost. If the monitoring plan under subsection (b) requires monitoring beyond the 10-year period, the cost of monitoring shall be a non-Federal responsibility." As a result, post-construction monitoring of up to 10 years can be considered a cost-shared project cost.

Monitoring would be conducted to ensure that (1) the impacts described in the EIS are not exceeded, and (2) the mitigation plans described in this document function as intended. The following list provides an overview of the monitoring that would be performed:

- Multi-phase monitoring program (Pre-Construction, During Construction, and Post-Construction);
- Post-Construction monitoring includes the following:
    - Continuous data recorders
    - Intensive biological monitoring
    - Model assessments
    - Bathymetry surveys
    - Freshwater interface determination
    - Chloride monitoring
    - Groundwater monitoring
    - Monitor 12 marsh sites
    - Monitoring of marsh restoration site
    - Shortnose sturgeon-harbor monitoring
    - Shortnose sturgeon-New Savannah Bluff Lock and Dam monitoring
    - Fish distribution monitoring along marshes
    - Impact assessment review
    - Bird use of confined disposal facilities monitoring
    - Monitoring of dredged material containment area effluents (dewatering)
    - Avian field counts
    - Terrestrial field counts
    - Vegetation sampling
    - Vegetation removal
    - Bird tissue analysis
    - Sampling exposed Miocene layer for Cadmium
    - Striped bass habitat monitoring
    - Oversight and Reporting.

The Post-Construction Monitoring activities would be performed for different durations, some extending up to 10 years. Some Post-Construction Monitoring activities would be performed if initial monitoring indicates they are warranted.

14.2.1 Mitigation Costs

Table 14-5 presents the estimated costs of mitigation for the Selected NED Plan in FY 2012 price levels. The State of Georgia has indicated that it would place its share of the Adaptive Management costs in an escrow account so they would be available if/when needed. The Savannah District intends to obtain its share of the Adaptive Management costs at the same time as the funds for the dredging work are obtained. By obtaining the funds as the construction progresses, they would be available to make adjustments to the project's mitigation if/when needed. In this way, all the funds identified in the final project documents for Adaptive Management would be obtained by the time the dredging is complete.

Table 14-5: Selected NED Plan Mitigation Costs

Mitigation Plan Element	Total Cost	
Real Estate	$	18,445,625
Dissolved Oxygen	$	70,803,750
CSS Georgia	$	13,914,375
McCoys Cut Modifications	$	13,437,024
Rifle Cut Modifications	$	828,914
Tidegate & Embankment	$	21,545,225
Sediment Basin Modifications	$	29,392,561
Fish Passage	$	29,577,470
Boat Ramp	$	624,953
Salt Marsh Restoration	$	17,594,949
Striped Bass	$	3,300,000
Monitoring and Adaptive Mgt	$	60,195,000
Chlorides	$	25,187,500
Total	$	304,847,345

14.3 Plan Construction

The initial construction will be to raise dikes to have adequate capacity for dredged material disposal quantities. Construction of Dissolved Oxygen systems, raw water storage impoundment, and removal of the CSS *Georgia* will be concurrent with raising of the dikes.

The Ocean Bar Channel contract was assumed to begin November 2013 and disposal will be in the ODMDS. The Ocean Bar is assumed to be constructed with both hopper dredges and/or hydraulic cutterhead pipeline dredges. Either pipeline (filling dump scows and tug hauled) and/or the hopper dredges would place material in the ODMDS.

For the Outer Ocean Bar, cutterhead pipeline dredges (filling dump scows and tug hauled to the ODMDS for disposal) would not be restricted to work only during the winter dredging season. Hopper dredges would be allowed to work during the months of December 15 thru March 31.

The Inner Harbor contractor was assumed to place dredged material into existing confined disposal areas 13, 14A, 14B and Jones Oyster Island. The Inner Harbor contractor would be required to avoid upstream of Station 63+000 during the period April 1 – May 15 to avoid impacts to Striped bass fishery resources. Dredging the Inner Harbor between June 1 and September 30 may also be impacted if dissolved oxygen levels fall below 4 to 5 ppm.

Several areas to be dredged within the Inner Harbor contain cadmium-laden sediments. Material from these areas would be placed in disposal areas 14A and/or 14B. These sediments will then be covered with non-cadmium dredged materials. Construction sequence will be important to dredge cadmium-laden sediments first and then cover with non-cadmium dredged sediments.

There will be limited debris removal in both contracts made necessary because of sinkers and other miscellaneous debris which may have accumulated since the last deepening.

Disposal of 12 to 15 million cubic yards of material from the Inner Harbor, Stations +4+000 to +103+000 would be into existing Confined Disposal Facilities labeled 13A, 14A, 14B, and Jones/Oysterbed Island.

Disposal of 11 to 13 million cubic yards of material from the Outer Harbor Bar Stations +4+000 to -97+680B would be into the existing EPA-approved ODMDS.

The Fish Passage at the New Savannah Bluff lock and dam will be constructed by excavating around the end of the dam and placement of rock ramp rip rap and weir stone. The contract time period was assumed to be 700 calendar days. There will be no downstream in-water construction during the months of February through May.

Rip rap features for the Diversion Structure at McCoy's Cut; Closure of lower Arm at McCoy's Cut; Rifle Cut closure; and the stone weir at Sediment Basin broad berm were assumed to be constructed by loading rip rap onto material barges from docks and hauled by tug to the individual sites. Rip rap will be dumped and/or placed using barge mounted cranes with rock boxes or buckets. The contract time period assumed for these contracts are listed below:

- Diversion Structure at McCoy's Cut (includes 140 LF sheetpile) – 150 calendar days;
- Western Lower Arm at McCoy's Cut – 150 calendar days;
- Rifle Cut closure (Rip rap + Fill) – 150 calendar days; and
- Broad Berm – 420 calendar days.

Deepening excavation for McCoy's Cut, Middle and Little Back River channels was assumed to be by barge mounted clamshell/shovels loading material into hopper barges. Hopper barges will then be tugged to the existing confined disposal sites and unloaded or pumped out into the disposal areas. The contract time period assumed for this contract is 510 calendar days.

Suitable fill material for Rifle Cut closure was assumed to come from within existing confined dredge disposal areas. The material to be suitable must be mostly sand. Material would be excavated from the existing disposal areas and loaded into hopper barges for transport. Hopper barges would be transported by tug and then unloaded/pumped out at the construction fill site.

Removal of Tidegate Abutments and Piers – It was assumed the 15 concrete piers, walkways, and abutments will be broken down by blasting/mechanical methods. Concrete pieces would be loaded by barge mounted cranes onto material barges and/or land for stockpiling and removal from the site. Removal of earthen abutments/embankments, existing rip rap, stacked gates, conduit hardware, lighting, handrails and utilities are also required. The contract time period was assumed to be 365 calendar days.

Tidegate embankments (approximately 1,000,000 cubic yards) are to be excavated to widen the river. Suitable embankment (sandy) material may be excavated by barge mounted equipment and placed into the nearby Broad Berm fill. One half of material (525,000 cubic yards) was assumed to be placed onto flat or confined hopper barges and then unloaded by dumping or pump-out into the Broad Berm. Turbidity limits cannot be exceeded when performing this work. The remaining unsuitable material from embankments was assumed to be pumped or dredged into the existing confined disposal facilities. The contract time period was assumed to be 540 calendar days.

Broad Berm fill material, 1,200,000 cubic yards, was assumed to come from either/or Tidegate embankment removal or existing confined dredge disposal areas. It was assumed suitable material in the disposal areas would be excavated from the existing disposal areas and loaded into hopper barges for transport. Hopper barges would be transported by tug and then unloaded/pumped out at the construction fill site areas. Small portable pipeline cutterhead dredges may also be used in the disposal areas or at the Tidegate location to pump suitable material into the fill area.

Marsh Restoration at Area 1S (Onslow Island) – Areas designated to be restored must be cleared and grubbed. It was assumed that an entrance channel will be excavated from Middle River into the island area using barge mounted crane clamshell/shovels and material loaded into hopper barges. Hopper barges will be towed to the existing confined disposal areas and unloaded/pumped out. The entrance channel excavation will continue into the interior of the island and remove approximately 425,000 cubic yards of material with disposal into the existing DMCAs. Land equipment will then backfill the excavated area and grade to elevation +7.6 MLLW. Suitable material may

be used to fill Broad Berm near existing sedimentation basin. The contract time period was assumed to be 540 calendar days.

A new public access boat ramp will be constructed on the North side of Hutchinson Island (at the site where the Tidegate embankment abutment is removed). The public access Boat Ramp includes a two-lane concrete boat ramp with floating dock, 20 space trailer parking, handicap-accessible and single car parking spaces. The contract time period was assumed to be 365 calendar days.

The oxygen injection systems will be land based at two locations to supply oxygen for three injection sites, with water being withdrawn from the river, super-saturated with oxygen, and returned to the river. The sites will require development of access roads, concrete platform for work areas and to support Speece cones, intake/discharge piping systems, electrical service, perimeter fencing and 11 to 13 Speece cones per site. The contract time period was assumed to be 365 calendar days for each location.

A raw water storage impoundment will be constructed of earthen embankment with HDPE liner, mechanical mixing system, four pump stations rated at 21 MGD each, and a powered activated carbon treatment system will be included in the construction. The contract time period was assumed to be 365 calendar days.

Overall, the average dredging production (18,000 to 21,000 cy/day) and unit costs appear reasonable when compared to historical information for production and pricing (adjusted to October 2010). Contingencies for construction were estimated at 25% for this level of design and detail to represent unanticipated conditions or uncertainties not known at the time the estimate was developed. This includes uncertainties relating to multiple year mobilization/de-mobilization, fuel price fluctuations, competitive bid environment situations, and representative contingency to carry forward during construction.

Construction of the Selected Plan would commence as soon as all the approvals are obtained and funds are obtained to begin construction. Pre-construction monitoring may commence in Fiscal Year 2012 during the Pre-Engineering and Design phase. If sufficient funds are made available to construct the project in an efficient manner, the deeper channel could be operational in October 2016. Post-construction monitoring and adaptive management, including monitoring of adaptive actions which may be necessary, would be conducted through Fiscal Year 2029. Figure 14-1 presents the project's preliminary construction schedule.

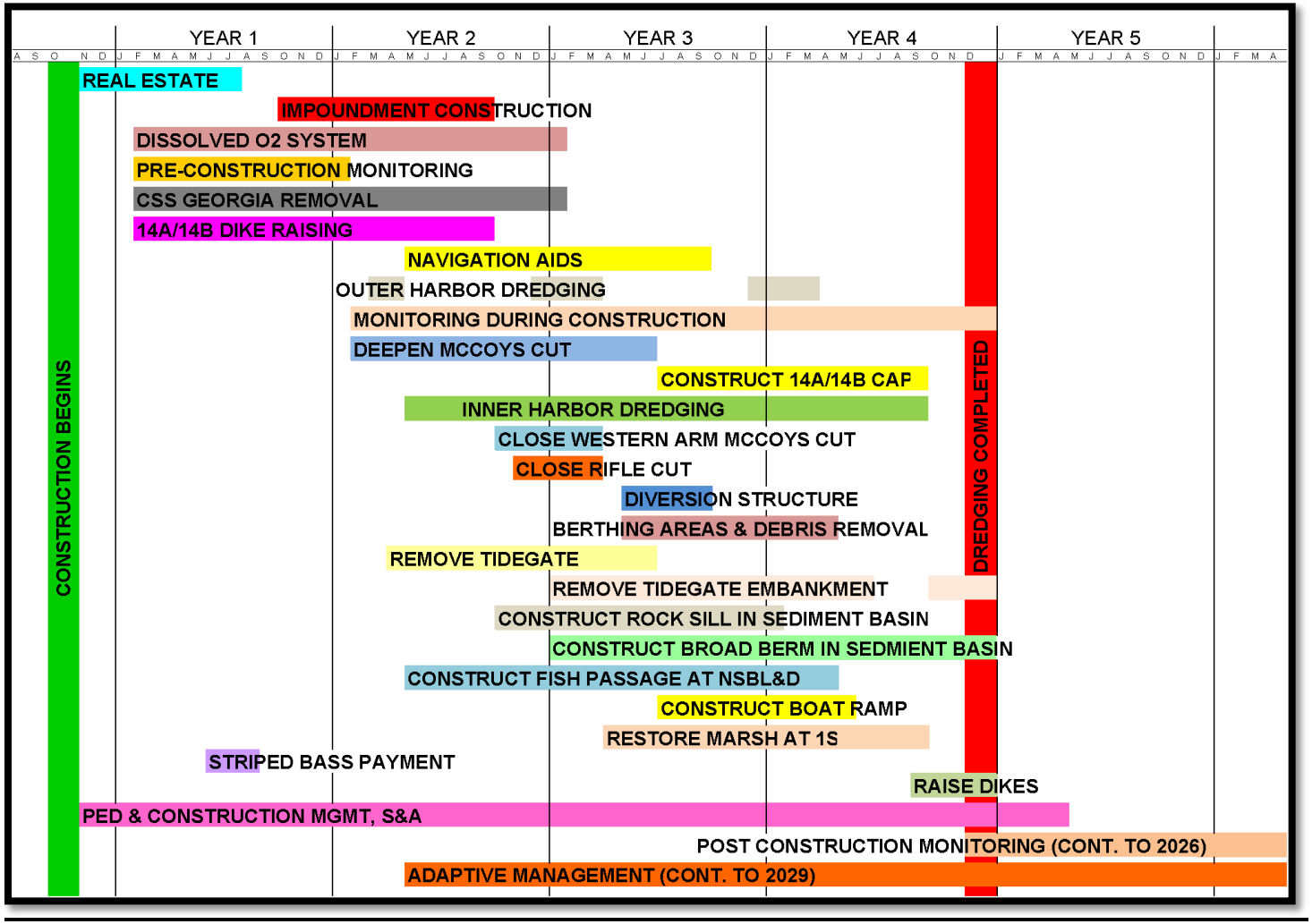

Figure 14-1: Selected Plan Construction Schedule

14.4 Operation and Maintenance

Currently, Savannah District annually receives approximately $13 million for O&M dredging and maintenance of the upland disposal areas. This does not include funds for dike raising, dike maintenance, and mosquito control. With these funds, the center two quadrants of the Federal channel are kept clear. However, under current and without-project conditions, with the Sediment Basin operational, if the entire channel prism were to be maintained the cost would be $22,204,230 (Oct 2007 price levels), an increase of approximately $9.2 million (59%) over the present O&M funding. This information is based on a Sedimentation Analysis done on the Savannah Harbor Expansion Project in June 2007. As a part of the Selected Plan, Sediment Basin modifications will result in the sediment currently being captured in the Sediment Basin (~1,932,000 cubic yards) being deposited in the navigation channel mainly in the range from Stations 24+000 to 70+000. This will result in an increase of O&M dredging and maintenance costs attributable to the project of $2,730,0300 in FY 2012 price levels. A total of $50,300 (FY12) in additional O&M dredging maintenance is attributed to the Bar Channel. Overall, an increase of $2,780,600 (FY12) is expected in dredging maintenance costs attributable to the Selected Plan to maintain the existing level of service (clearing the center two quadrants of the channel).

The annual operating costs for the on-site oxygen generation systems are $1,236,800 (FY12). The costs for operating the oxygen injection systems are based on their continued operation for a period of 180 days per year. Operational costs are projected to be uniform throughout that 180-day period. Adjustments should be made to those operating costs if the systems would be operated for shorter or longer durations. Variations in dissolved oxygen discharges could be made to respond to changes in the harbor's dissolved oxygen regime. Such changes could be identified through operational hydrodynamic/water quality modeling. Also included in the annual O&M costs are the replacement costs for the Speece Cone and intake and discharge lines at 40-year intervals; and replacement of the oxygen flow control, oxygen generator and side stream pump at 20-year intervals.

Additional operations and maintenance costs in FY 2012 price levels include:

- Maintenance dredging at McCoys Cut on a 10-year cycle at an average annual cost of $116,500;
- Annual debris removal at the New Savannah Bluff Lock & Dam fish passage at an average annual cost of $51,100;
- Annual maintenance of CSS *Georgia* artifacts at an annual cost of $20,400;
- Long-term monitoring to ensure performance of mitigation features at an average annual cost of $437,700.

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