FLOOD PLAIN ASSESSMENT

184. Executive Order 11988 requires the Federal Government to avoid, if possible, adverse impacts associated with the occupancy and modification of flood plains as well as direct or indirect support of development in those areas where there is a practical alternative. The existing port facilities at Miami Harbor are already in the 100 year flood plain. Federal improvement of the existing navigation project will encourage continued use of existing facilities on those lands as well as those already planned for future growth in commerce. Port development will occur with or without the proposed improvement.

185. Relocation of cargo facilities such as the gantry cranes, piers, bulkheads, and paved storage areas for containers is not practical for a port serving deep draft ships. The port facilities are about at the 100 year elevation to avoid any serious damages from flooding. Use of alternative Florida ports is impractical as most are in similar flood plain situations. In addition, maintenance dredging activities will cause no flood plain or wetland impacts and consequently no gains or losses of acreages realized in the flood plain or coastal zone. Therefore, the proposed plan is in compliance with the Executive Order calling for enumeration of those possible impacts.

SEA LEVEL RISE

186. Throughout geologic history, global sea level variations, both rise and fall, have occurred. Some authorities have found evidence to indicate that we may be entering a new ice age with a resultant sea level drop. Others argue that increasing atmospheric concentrations of carbon dioxide and other gases are causing the earth to warm, contributing to a sea level rise. Eustatic sea level change is defined as a global change of the oceanic water level. Total relative sea level change is the sum of the eustatic sea level and any local change in land elevation.

187. The National Ocean Service (NOS) has compiled relatively long-term (approximately 50-year duration) records of measured water surface elevations

at various locations along United States coastlines. Sea level rise rates based on long-term data gathered at Mayport, Florida, were estimated to be 2.2 mm/yr. This estimated to be 2.2 mm/yr. This estimated rate should be applicable to the study area.

PLAN IMPLEMENTATION

188. To implement a plan at Miami Harbor, certain conditions and requirements are necessary to meet State, Local, and Federal standards set by law. A discussion of those responsibilities is in the subsequent paragraphs. The Cost Sharing and Recommendations sections contain the Sponsor's cost sharing requirements and related responsibilities. Initial discussion of those responsibilities occurred at the Alternative Formulation Briefing (AFB) on June 20, 2002, at the Port of Miami, Miami-Dade County Seaport Department.

STATE REQUIREMENTS

189. The proposed action affects seagrass and hardbottom/reef communities and other waters of the United States subject to Section 404 of the Clean Water Act (CWA). A Section 404(b)(1) Evaluation Report has been completed and is included in the Draft Environmental Impact Statement (DEIS) – Appendix C to comply with the CWA. State approval is required for certification of water quality through Section 401 of the CWA and concurrence. A Coastal Zone Management Consistency Determination was prepared by the USACE and will be submitted to the State for concurrence (DEIS - Appendix D).

COST SHARING

190. Under the Water Resources Development Act (WRDA) 1986, as amended by Section 201 of WRDA 1996, Federal participation in navigation projects is limited to sharing costs for design and construction of the general navigation features (GNF) consisting of breakwaters and jetties, entrance and primary access channels, widened channels, turning basins, anchorage areas, locks, and dredged material disposal areas with retaining dikes. Non-federal interest are responsible for and bear all costs for acquisition of necessary lands, easements, rights-of-way and relocations; terminal facilities; and dredging berthing areas and interior access channels to those berthing areas.

191. Section 101 of WRDA 1986 as amended, requires the project sponsor to bear a percentage share of harbor construction costs for project components that are cost-shared (general navigation features, mitigation) that varies according to the range of water depths where the work is done. That variable cost share is paid during construction.

192. Section 101 (a)(1)(A) of WRDA 1986 specifies that for commercial navigation projects with a depth up to 20 feet, cost sharing for construction of the project's GNF is 90 percent Federal and 10 percent non-Federal. For a depth in excess of 20 feet but not in excess of 45 feet, cost sharing for construction of the project's GNF is 75 percent Federal and 25 percent non-Federal. This cash contribution is to be paid during construction.

193. Furthermore, Section 101 (a)(2) of WRDA 1986 specifies that non-Federal interests shall pay an additional 10 percent of the cost of the GNF in cash over a period not to exceed 30 years, at an interest rate determined pursuant to Section 106 of WRDA 1986. The value of lands, easements, and rights-of-way necessary for the project shall be credited toward this 30-year cash payment. Aids to navigation (operated and maintained by the U.S. Coast Guard) are a 100 percent Federal cost. Section 103(c)(4) of WRDA 1986 also mandates a non-Federal share equal to 50 percent of joint and separable costs allocated to recreational navigation. That cost share is paid during construction. The recommended plan for Miami Harbor does not include any recreational navigation features.

194. Policy Guidance Letter (PGL) No. 62, "Navigation (Harbors) Cost Sharing Policy Applications" provides guidance on the application of navigation cost sharing as contained in Section 101 of the Water Resources Development Act of 1986, as amended. **Table 22** shows the current Federal cost sharing percentages allocated to specified depth zones. This table is derived from ER 1105-2-100, April 2000 (Table E-12: Navigation, Construction and O&M).

Table 22 - Cost Allocation

Feature	Federal Cost %[1]	Non-Federal Cost % [1]
General Nav. Features (GNF)	• 90% from 0' to 20' • 75% from >20' to 45' • 50% > 45'and deeper	• 10% from 0' to 20' • 25% from > 20' to 45' • 50% > 45' and deeper
GNF's costs for this project include: mobilization/demobilization, all dredging costs, all disposal area construciton costs, mitigation costs.		
Associated Costs [2]	• 0%	• 100%
Associated costs for this project are: dredging of Port berthing areas; port infrastructure construction; lands, easements, and rights of way, and acquisition of disposal sites; all utility relocations; costs for features requested by Port in excess of NED.		
Navigation Aids	• 100%	0%
Operation and Maintenance		
GNF	• 100% except cost share 50% costs for maint. > 45 feet	• 0% except cost share 50% for maint. > 45 feet
Port berths, Port , Infrastruc.	• 0%	• 100%
Mitigation	• 0%	• 100%

195. For the increment to depth of 45 feet, the total first cost of construction of the general navigation features is the amount used for cost sharing. From a total first cost and mitigation monitoring cost of $112,966,000 the amount of $84,242,000 is eligible for cost sharing. **Table 23** displays all of the cost features and cost sharing for the increment from that of the without project condition to the 45 ft. depth increment.

Table 23 - Cost Apportionment for increment up to 45 ft.

Cost Apportionment for increment up to 45 ft.(for NED plan of 49 ft.)

Cost for 45 ft. Plan Construction Item	**Total Cost allocated >20-45 ft.**	**Fedeal Share GNF 75%**	**Non-Fed GNF 25%**
Dredging --			
Mob & Demob	$2,398,312	$1,798,734	$599,578
Alternative 1C (Cut 1/2 intersection widening)	8,711,971	$6,533,978	$2,177,993
Alternative 1C (Cut 1)	4,801,903	$3,601,427	$1,200,476
Alternative 1C (Cut 2)	4,467,520	$3,350,640	$1,116,880
Alternative 2A (Cut 3 Widener)	210,763	$158,072	$52,691
Alternative 3B (Cut 3)	11,891,700	$8,918,775	$2,972,925
Alternative 5A (Fisherman Channel)	17,749,669	$13,312,252	$4,437,417
Alternative 5A (Lummus Is. Turning Basin)	21,269,810	$15,952,358	$5,317,453
Disposal Area (Virginia Key)	647,402	$485,552	$161,851
Environmental Mitigation	1,983,292	$1,487,469	$495,823
Mitigation Monitoring (Construction)	120,000	$90,000	$30,000
Mitigation Monitoring (Post-Construction)	150,000	$112,500	$37,500
Planning, Engineering, and Design	2,570,000	$1,927,500	$642,500
Construction Management (S&I)	7,270,000	$5,452,500	$1,817,500
Subtotal GNF	**$84,242,342**	**$63,181,757**	**$21,060,586**
Aids to Navigation 1/	**$165,300**	$165,300	$0
Lands, Easements, Rights of Way, and Relocations		$0	$0
Real Estate, Administrative (Federal)	**$12,500**	$9,375	$3,125
Utility Relocations 2/	**$4,944,308**	***not applicable.***	
Associated Non-Federal Costs			
Berthing Area Dredging (Alt. 5A)	$3,069,004		
Port Bulkhead Construction	20,520,000		
Real Estate, Administrative (non-Federal)	12,500		
Total Project First Cost and mitigation	**$112,965,954**		$23,601,504
Additional 10% of GNF		($8,424,234)	$8,424,234
LERR Adjustment 3/		$12,500	($12,500)
Cost Sharing for deepening to 45 feet		**$54,944,697**	**$53,076,949**

1/ Navigation Aids -- 100% Federal
2/ Utility relocations are not cost shared by the Federal Government
3/ LERR adjustment not to exceed 10% of GNF. Adjusted for administrative real estate relocation and utility relocation

196. The first cost of construction for cost sharing applies to the NED plan depth of 49 feet has an initial cost of $162,140,000. Including mitigation monitoring the cost sharing amount is $162,290,000. The additional cost for the general navigation features from that of the 45-foot plan is about $20,047,000 and is displayed in **table 24**. The GNF is apportioned according to the 50% Federal, 50% non-Federal with the appropriate LERR adjustment against the ten percent cash contribution. For a project depth greater than 45 feet the utility relocations costs is borne 50% by the utility owner and 50% by the non-Federal sponsor in accordance to Section 101(a)(4) of WRDA 1986.

197. The increments from **tables 26** and **27** are added together to get the total cost sharing for the NED plan presented in **table 25**.

Table 24 - Incremental Cost Sharing for depth from 45 to 49 feet

Construction Item	Total Cost allocated >45-49 ft.	Fedeal Share GNF 50%	Non-Fed GNF 50%	
Dredging --				
Mob & Demob	0	$0	$0	
Alternative 1C (Cut 1/2 intersection widening)	8,935,068	$4,467,534	$4,467,534	
Alternative 1C (Cut 1)	7,492,731	$3,746,366	$3,746,366	
Alternative 1C (Cut 2)	2,343,860	$1,171,930	$1,171,930	
Alternative 2A (Cut 3 Widener)	78,644	$39,322	$39,322	
Alternative 3B (Cut 3)	6,630,559	$3,315,280	$3,315,280	
Alternative 5A (Fisherman Channel)	8,861,133	$4,430,567	$4,430,567	
Alternative 5A (Lummus Is. Turning Basin)	3,793,576	$1,896,788	$1,896,788	
Disposal Area (Virginia Key)	0	$0	$0	
Environmental Mitigation	0	$0	$0	
Mitigation Monitoring (Construction)	0	$0	$0	
Mitigation Monitoring (Post-Construction)	0	$0	$0	
Planning, Engineering, and Design	1,120,000	$560,000	$560,000	
Construction Management (S&I)	3,230,000	$1,615,000	$1,615,000	
Subtotal GNF	**$42,485,571**	$21,242,786	$21,242,786	
Aids to Navigation	**$0**			
Lands, Easements, Rights of Way, and Relocations				
Real Estate, Administrative (Federal)	**$0**			
				Utility owner
Utility Relocations 1/	**$6,106,041**		$3,053,021	$3,053,021
Associated Non-Federal Costs				
Berthing Area Dredging (Alt. 5A)	**$3,396,279**		$3,396,279	
Port Bulkhead Construction	**$2,280,000**		$2,280,000	
Real Estate, Administrative (non-Federal)	**$0**			
Additional 10% of GNF		($4,248,557)	$4,248,557	
LERR Adjustment 2/		$3,053,021	($3,053,021)	
Incremental Cost Sharing for 45 to 49 ft.		**$20,047,249**	**$31,167,622**	

1/ Utility relocations costs for projects authorized at depths greater than 45 feet, in accordance to Section 101(a)(4) of WRDA 86 is borne as follows: 50% by the the utility owner and 50% by the non-Federal sponsor. Therefore, for this line item total cost is shown -- not incremental.

2/ LERR adjustment not to exceed 10%
of GNF. GNF for NED plan = $126,577,913.
10% = $12,657,791. Adjustment is total of Real Estate
administrative cost and Utility Relocation.
Real Estate administrative cost recognized at 45 ft.
increment; no incremental cost at 49 ft.

Table 25 - Total Cost Sharing for NED Plan

	Total Cost For 49 ft.	Fedeal Share GNF	Non-Fed GNF	
Construction Item				
Dredging --				
Mob & Demob	$2,398,312	$1,798,734	$599,578	
Alternative 1C (Cut 1/2 intersection widening)	$17,647,039	$11,001,512	$6,645,527	
Alternative 1C (Cut 1)	$12,294,634	$7,347,793	$4,946,841	
Alternative 1C (Cut 2)	$6,811,380	$4,522,570	$2,288,810	
Alternative 2A (Cut 3 Widener)	$289,407	$197,394	$92,013	
Alternative 3B (Cut 3)	$18,522,259	$12,234,055	$6,288,205	
Alternative 5A (Fisherman Channel)	$26,610,802	$17,742,818	$8,867,984	
Alternative 5A (Lummus Is. Turning Basin)	$25,063,386	$17,849,146	$7,214,241	
Disposal Area (Virginia Key)	$647,402	$485,552	$161,851	
Environmental Mitigation	$1,983,292	$1,487,469	$495,823	
Mitigation Monitoring (Construction)	$120,000	$90,000	$30,000	
Mitigation Monitoring (Construction)	$150,000	$112,500	$37,500	
Planning, Engineering, and Design	$3,690,000	$2,487,500	$1,202,500	
Construction Management (S&I)	$10,500,000	$7,067,500	$3,432,500	
Subtotal GNF	**$126,727,913**	**$84,424,542**	**$42,303,371**	
Aids to Navigation 1/	**$165,300**	**$165,300**	**$0**	
Lands, Easements, Rights of Way, and Relocations				
Real Estate, Administrative (Federal)	**$12,500**	**$9,375**	**$3,125**	
				Utility Owner
Utility Relocations	**$6,106,041**	**$0**	**$3,053,021**	$3,053,021
Associated Non-Federal Costs				
Berthing Area Dredging (Alt. 5A)	$6,465,283		$6,465,283	
Port Bulkhead Construction	$22,800,000		$22,800,000	
Real Estate, Administrative (non-Federal)	$12,500		$12,500	
Total Project First Cost	**$162,289,537**	$84,599,217	$74,637,300	
Additional 10% of GNF		($12,672,791)	$12,672,791	
LERR Adjustment 2/		$3,065,521	($3,065,521)	
Cost Sharing for NED Plan		**$74,991,946**	**$84,244,570**	

1/ Navigation Aids -- 100% Federal
2/ LERR adjustment not to exceed 10%
of GNF. Adjusted for administrative real estate
Relocation and utility relocation

198. The Federal and non-Federal shares of the GNF for the NED plan has an estimated cost of $126,728,000, including all environmental mitigation costs. The cost sharing is $84,425,000 Federal, and $42,303,000, non-Federal. The non-Federal portion includes a repayment of 10 percent of the cost to construct the GNF, less allowable credits for the values of lands, easements, rights-of-way and relocations (LERR) necessary for the Federal project. The 10 percent of GNF is $12,673,000; the LERR credit is estimated at $3,066,000. The difference is $9,607,000, which may be paid with interest over a period not to exceed 30 years. The non-Federal interests would also be responsible for all the berthing areas and associated disposal area capacity. Total estimated costs for local service facilities are $29,278,000 (Berthing area dredging for component 5A -- $6,465,000, port bulkhead construction --$22,800,000, and non-Federal Real Estate Cost of $12,500).

199. The cost for the LP plan has been estimated at about $172,549,000 as previously displayed. As the LP plan is a larger plan than the NED plan, the non-Federal Sponsor pays for the difference in increased cost. This difference alone is $10,409,000. **Table 26** displays the cost apportionment for the Locally Preferred plan. The federal cost sharing of about $84,192,000 remains the same as per the NED plan which includes the 10% payments toward GNF and the LERR credit. The portion of the non-Federal cost of the LP plan $97,654,000, which includes the owner cost of the utility relocation of $3,053,000. With this cost excluded, the amount of $94,601,000 is to be paid by the non-Federal Sponsor.

Table 26 - Cost Apportionment for the Locally Preferred Plan

		Federal	Non-Federal
NED PLAN			
Cost Sharing for deepening to 45 feet		$54,847,197	$53,024,449
Incremental Cost Sharing for 45 to 49 ft.		20,047,249	31,167,622
Total Cost Sharing for NED plan		$74,894,446	$84,192,070
Utility owner expense for relocation			
Cost Sharing Percentage for NED plan		46.2%	51.9%
LOCALLY PREFFERED PLAN			
Locally Prefered Plan is 50'/52'			
First Cost of LP plan	$172,548,785		
NED Plan First Cost	$162,139,537		
Difference from LP plan and NED Plan	$10,409,248	100% non-fed	$10,409,248
LOCALLY PREFERRED PLAN			
FEDERAL SHARE		**$74,894,446**	
NONFEDERAL SHARE			**$94,601,318**
Owner Cost for Utility Relocation		-	**$3,053,021**
Cost Sharing of First Cost		$74,894,446	$97,654,339
MCACES RECONCILIATION			
ADD:			
Mitigation Monitoring -- Non-Federal			$150,000 *
Annual Navigation Maintenance -- Federal		$15,000 *	
FEDERAL		$74,909,446	
NONFEDERAL			$97,804,339
TOTAL FEDERAL AND NONFEDERAL	$172,713,785		
Overall First Cost Percentage per LP plan:		43.4%	56.6%

* Post Construction items for Mitigation Monitoring
and Annual Navigation Maintenance are non-Federal Costs.

SUMMARY OF COORDINATION

200. An environmental scooping letter was sent to interested parties on January 6, 2000 (Draft EIS - Appendices A and B). In addition, all parties were invited to participate in the plan formulation process by identifying any additional concerns on issues, studies needed, alternatives, procedures, and other matters related to the project. A local, state, and Federal resource agency meetings occurred on March 13, 2000, and May 13, 2000, to determine the areas of coverage for an

environmental baseline resource survey. A meeting followed on November 1, 2000, with those resource agencies to review preliminary results.

201. Federal agencies involved included the USACE, USCG, EPA, FWS, and NMFS. State agencies include FDEP, FFWCC, SHPO, and FDOT. Local agencies include DERM, SFRPC, and the City of Miami. Non-Government Organizations/Institutions include the Biscayne Bay Pilots and Biscayne Bay Regional Coordination Team (Biscayne Bay Partnership Initiative).