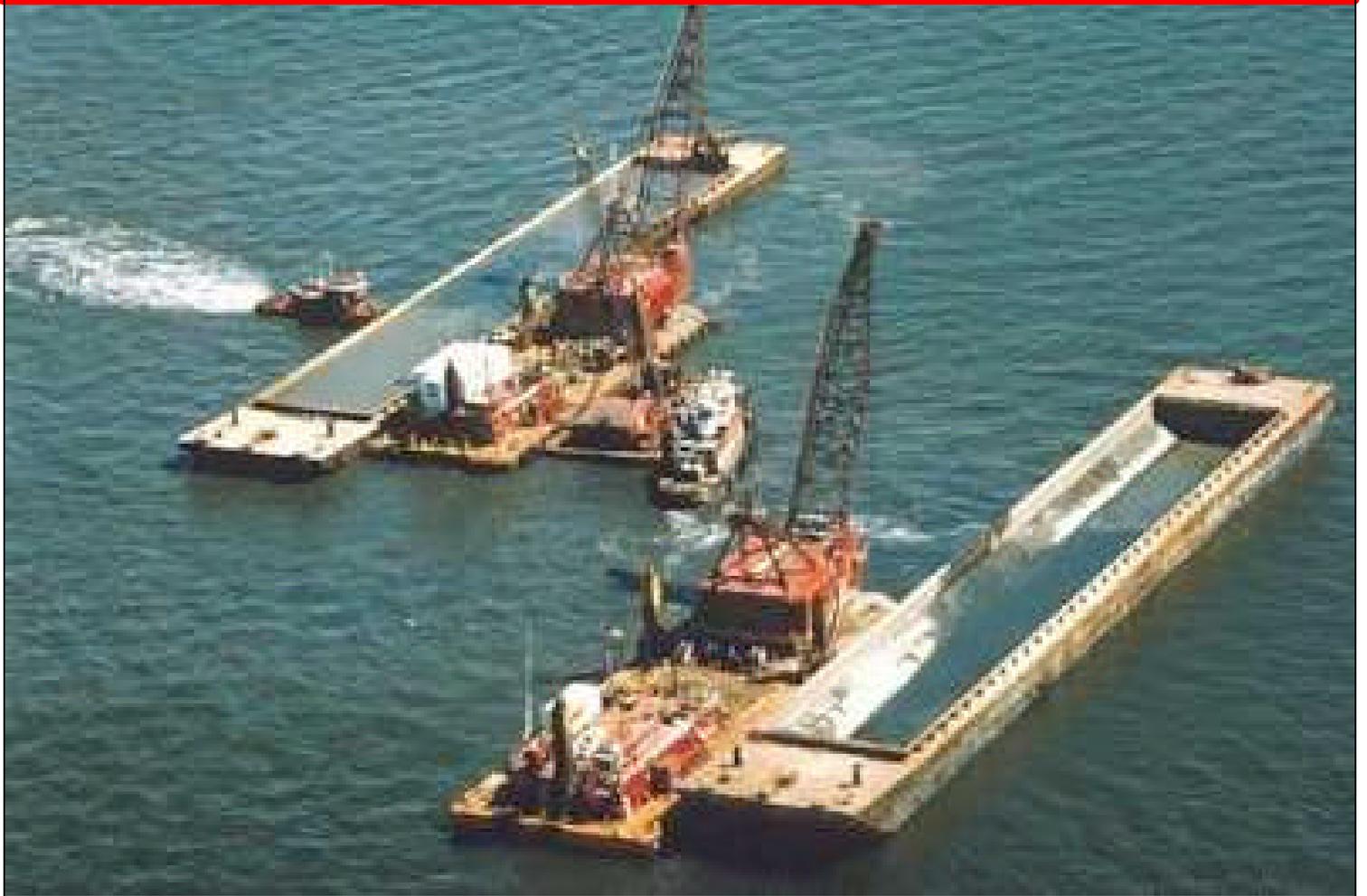


US Army Corps
of Engineers
Baltimore District

Baltimore Harbor and Channels

Dredged Material Management Plan

PRELIMINARY ASSESSMENT



July 2001

**Baltimore Harbor and Channels
Dredged Material Management Plan
Preliminary Assessment
July 2001**

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INTRODUCTION

The purposes of this dredged material management plan (DMMP) preliminary assessment (PA) are to document the continued economic viability of the Baltimore Harbor and Channels project and to determine whether there is dredged material placement capacity sufficient to accommodate 20 years of maintenance and new work dredging. If this PA determines that there is insufficient capacity to accommodate dredging for the next 20 years, then a dredged material management plan study will be recommended.

This DMMP PA is provided under the authority of U.S. Army Corps of Engineers (USACE) Engineer Regulation (ER) 1105-2-100, Planning, Planning Guidance Notebook, dated 22 April 2000.

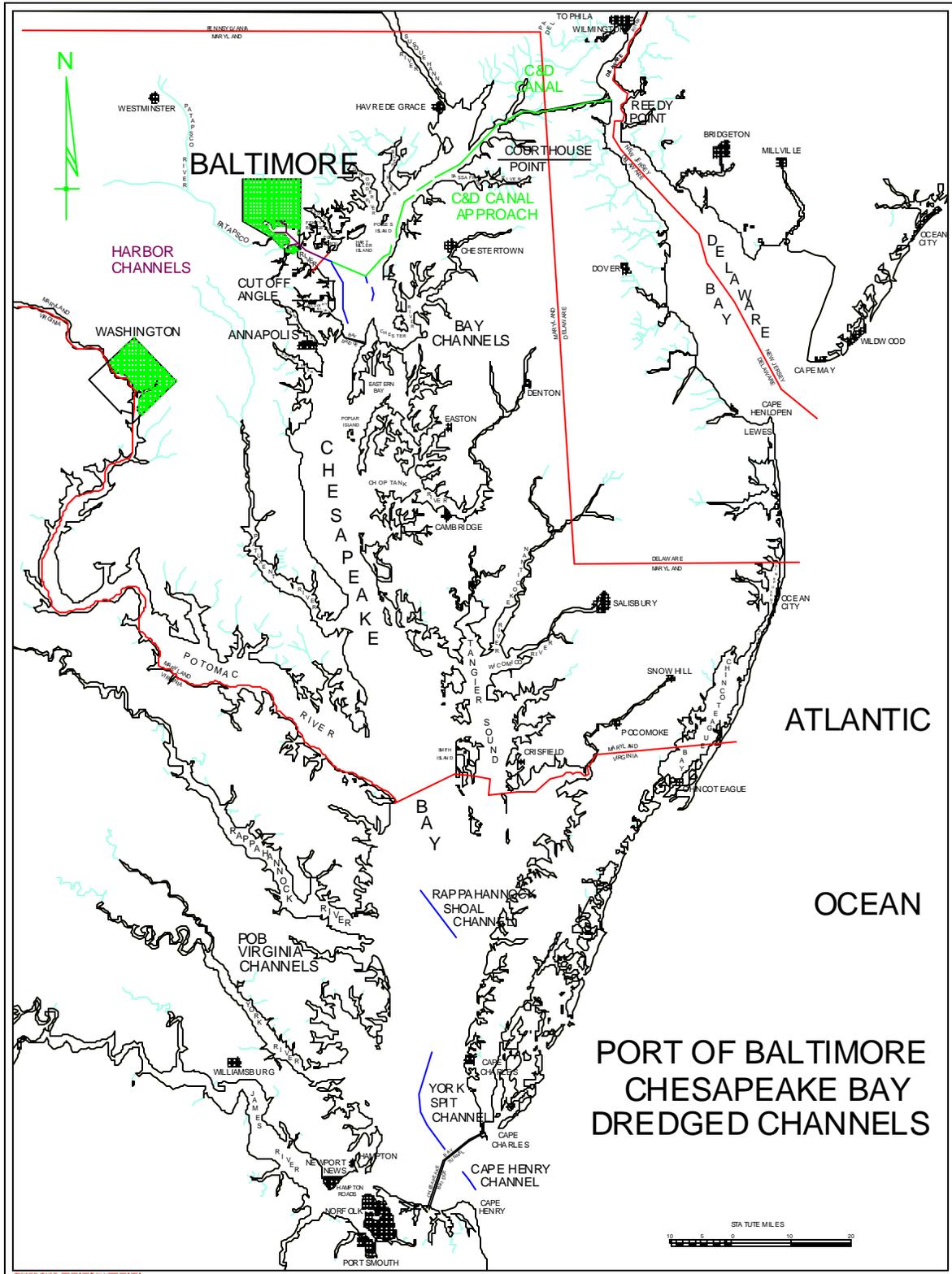
DREDGED MATERIAL MANAGEMENT PLANS

The Dredged Material Management Plan (DMMP) framework is a consistent and logical procedure by which dredged material management alternatives can be identified, evaluated, screened, and recommended so that dredged material placement operations are conducted in a timely, environmentally sensitive, and cost-effective manner. The overall framework for a DMMP development is shown as Attachment A. Dredged material management options can be implemented pursuant to several existing authorities. The base plan for navigation purposes is to accomplish the placement of dredged material associated with the construction or maintenance of navigation projects in the least costly manner that is consistent with sound engineering practice and that meets all applicable Federal environmental laws. This plan is referred to as the "base plan" and is currently funded through the Operations and Maintenance (O&M) Program. When options other than the base plan are selected, non-Federal cost sharing requirements are established. Section 204 of the Water Resources Development Act (WRDA) of 1992, and later amended by Section 207 of WRDA 1996, provides authority for the Corps of Engineers to implement projects for the protection, restoration, and creation of aquatic and ecologically related habitats, including wetlands, in connection with construction, operation, or maintenance dredging of an authorized Federal navigation project. Section 201 of WRDA 1996 provides for Corps of Engineers cost sharing in the construction of new disposal sites and the improvement/expansion of existing disposal sites.

GEOGRAPHIC EXTENT OF THE DMMP

The PA will address dredged material management needs for four authorized navigation projects in the region: the Baltimore Harbor and Channels 42-Foot Project, the Baltimore Harbor and Channels 50-Foot Project, the Baltimore Harbor Anchorages and Channels Project, and the Inland Waterway From Delaware River To Chesapeake Bay, DE & MD, Chesapeake and Delaware Canal (C&D Canal Project) (in part). Figure 1 depicts these channels. ER 1105-2-100 also requires DMMP studies to include non-Federal dredging within the related geographic area of the Federal project. In addition, where two or more Federal projects are physically inter-related or economically complementary, the ER provides for consideration of

Figure 1: PA and DMMP Geographic Area of Consideration



dredged material placement capacity in the same study. Consequently, this PA includes consideration of non-Federal dredging and the Southern Approach Channel to the C&D Canal, which are economically complementary to the Baltimore Harbor and Channels project.

Authorized Projects

The Baltimore Harbor and Channels 42-Foot Project (authorized in Section 101 of the River and Harbor Act of 1958) includes, in part: the southern approach and connecting channels, 35 feet deep and 600 feet wide, leading to the C&D Canal project; branch channels of 22, 35 and 42 feet deep and 200 to 600 feet wide in Curtis Creek and Ferry Bar; and anchorages 30 and 35 feet deep. All of this has been constructed except for the widening of the eastern five miles of the Brewerton Channel Eastern Extension to 600 feet, which is currently under construction.

The Baltimore Harbor and Channels 50-Foot Project (authorized in Section 101 of the River and Harbor Act of 1970) includes a uniform main channel 50 feet deep, and generally 800 (in Maryland) or 1,000 (in Virginia) feet wide through the Chesapeake Bay from the Virginia Capes to Fort McHenry in the Port of Baltimore, a distance of 175 miles. Depths of 50, 49, and 40 feet are authorized in the 600-foot wide channels of Curtis Bay, Northwest Branch East Channel, and Northwest Branch West Channel, respectively. All of the improvements have been constructed except widening of the York Spit and Rappahannock Shoal Channels from 800 to 1000 feet, widening the Maryland Channels from 700 to 800 feet, and widening the Curtis Bay Channel from 400 to 600 feet.

The Baltimore Harbor Anchorages and Channels Project (authorized in Section 101a(22) of WRDA 1999) is not yet constructed but the recommended plan has been designed to reduce delays and increase efficiency and safety through the construction and maintenance of the following improvements: (1) widen and deepen Federal Anchorages 3 and 4; (2) widen and provide flared corners for the State's East Dundalk, Seagirt, Connecting, and West Dundalk branch channels; (3) dredge a new branch channel at South Locust Point; and (4) dredge a turning basin at the head of the Fort McHenry Channel. Fiscal year 2001 construction funds have been appropriated for this project and construction is estimated to start in the Fall of 2001 and be completed in the Spring 2003.

The C&D Canal Project is under the jurisdiction of the Philadelphia District and was adopted as House Document 63-196 in 1919 and modified by Section 3 of the River and Harbor Act of 1927, by River and Harbor Committee Document 71-41 and Senate Document 71-151 in 1930, by House Document 72-201, House Document 73-18, and House Document 73-24 in 1935, and by Senate Document 83-123 in 1954. The project provides for, in part, a channel 35 feet deep and 450 feet wide from the Delaware River through Elk River to water of natural 35-foot depth in the Chesapeake Bay. Dredged material from the approach channels south of the Sassafras River has been placed in open water placement sites in the Chesapeake Bay. Since limited capacity for the approach channels south of the Sassafras River remains, these channels are included in this analysis. This PA and subsequent management plans do not consider the C&D Canal proper or the approach channels north of the Sassafras River since dredged material from these channels is placed in upland sites owned and operated by the Philadelphia District, which have adequate capacity for the next twenty years.

ECONOMIC ASSESSMENT

In recent years the Corps of Engineers has conducted several studies of interest to the Port of Baltimore including the Brewerton Channel Eastern Extension Limited Re-evaluation Report dated August 1997, the Baltimore Harbor Anchorages and Channels Project feasibility report dated March 1997, the Tolchester Channel S-Turn Straightening navigation assessment dated April 1997, and the Tolchester Channel S-Turn Straightening Environmental Assessment dated May 2001 prepared by the Baltimore District, and the C&D Canal Deepening feasibility study that was conducted by the Philadelphia District. The Brewerton and Anchorages studies both showed that improvements to the system were warranted, and the benefit to cost ratios of both projects were high (11.5 and 4.3, respectively). The Tolchester S-Turn project, though not economically justified, has been directed by Congress to be constructed due to safety concerns. The C&D Canal study has been temporarily halted due to uncertainties in future projections of vessel traffic. The Anchorages and Brewerton reports show that the Port continues to be healthy, and further improvements are justified. Even though the C&D Canal deepening has been put on hold, the continued maintenance of that portion of the system is justified at this time.

Below is an economic assessment on the continued maintenance of the Baltimore Harbor and Channels projects. Although costs could be segregated by channel, data regarding commodity movements is not delineated by channel depth. Therefore, separate justifications are not provided for the 42-foot and 50-foot projects. The Baltimore Harbor Anchorages and Channels Project is not yet constructed, but the economic evaluation completed in the feasibility report of March 1997 as part of that project effort justifies not only the initial construction but also the continued maintenance of the improvements.

Justification of Continued Maintenance

Based on the findings and recommendations of the Baltimore Harbor & Channels Review Report, dated June 1969, modifications to the Baltimore Harbor & Channels project were authorized by Section 101 of the River and Harbor Act of 1970. The primary feature of the project modification was deepening of the main shipping channel to the Port of Baltimore to a depth of 50 feet, with channel widths of 1,000 feet in the Virginia channels and 800 feet in the Maryland channels. The modification also included deepening of the Curtis Bay Channel to 50 feet (width of 600 feet) and deepening of the East and West Channels of the Northwest Branch to 49 feet and 40 feet respectively (width of 600 feet).

Projected Traffic

The 1969 Baltimore Harbors and Channels Review Report presents commodity forecast data in the context of evaluating the need for channel deepening and widening projects to increase the physical capacity of the harbor and channels. Within that framework, the projections were made only for those commodities for which navigation benefits were anticipated on deeper and wider channels.

The commodity projections from the 1969 report were updated and revised for inclusion in the 1981 Combined Phase I and II General Design Memorandum (GDM). Similar to the 1969 projections, detailed investigations were made only of the prospective commerce at the Port of Baltimore for commodities expected to benefit from further deepening of the shipping

channels. Table 1 presents the projections for those commodities from the GDM for the 1986 project base year, for 2000 and for 2036.

Table 1: Commodity Projections (1,000 tons)

Commodity	Base Year 1986	2000	2036
Iron Ore	9,200	9,200	9,200
Residual Fuel	1,830	2,050	850
Coal	38,000	54,800	54,800
Grain	5,470	6,420	9,760
Sugar	650	700	780
Total	55,150	73,170	75,390

Source: Baltimore Harbor and Channels, Maryland and Virginia, Combined Phase I and II General Design Memorandum, Main Report & Environmental Statement, August 1981.

Actual Traffic

Table 2 presents actual commerce data from 1995 to 1999, by commodity, for the major commodity types projected in the 1981 GDM forecast. The annual average over the five-year period from 1995 through 1999 is 24,400,000 tons for the projected commodity types.

Table 2: 1995-1999 Actual Traffic by Commodity (1,000 tons)

Commodity	1995	1996	1997	1998	1999	Annual Avg
Iron Ore	4,932	4,595	4,808	4,779	3,779	4,579
Residual Fuel	1,976	1,940	1,875	3,060	2,429	2,256
Coal	20,139	19,036	15,427	14,801	12,850	16,451
Grain	1,058	293	55	150	46	320
Sugar	547	1,076	1,305	529	702	832
Total	28,652	26,940	23,470	23,319	19,802	24,438

Source: Waterborne Commerce of the United States, 1995-1999, Part 1, Waterways and Harbors Atlantic Coast.

Project Benefits

In the 1981 GDM, benefits were defined as the expected transportation cost savings with implementation of the 50-foot deepening project. The savings were evaluated for each of the commodities expected to benefit by project construction. In the GDM evaluation, the projected unit savings vary depending on the trade route of the movement for each commodity. These discrete unit savings for each trade route were averaged for each commodity based on the movement's proportion of the total savings for that commodity. Table 3 presents a weighted average for the expected unit savings per ton by commodity. The average unit savings per ton were updated to current price levels using the Fiscal Year 2000 Vessel Operating Cost index published by HQUSACE. The hourly operating cost for a 60,000 dead weight ton (DWT) bulk carrier was used as a basis to update the average unit savings per ton to current price levels. This vessel was the average size used in the 1981 fleet forecast, particularly for coal, which was the commodity that produced over 90 percent of the benefits for the 50-foot channel project justification. The across the board decrease in average unit savings per ton at current

price levels reflects a decrease in the hourly operating cost of 36 percent at sea and of 26 percent in port compared to the GDM data.

Table 3: Average Unit Savings \$/ton by Commodity

<u>Commodity</u>	1981 GDM Average	Updated 2000 Price Level
Iron Ore	\$1.30	\$.90
Residual Fuel	\$2.22	\$1.50
Coal	\$2.79	\$1.90
Grain	\$6.50	\$4.30
Sugar	\$9.03	\$6.00

To compute benefits at the current price level, the average tonnage for each commodity over the 5-year period from 1995-1999 was multiplied by the updated average savings per ton for that commodity. Table 4 presents the process and result of this computation methodology. The annual savings for the five commodities at the current price level amounts to \$45,129,000.

Table 4: Computation of Benefits by Commodity

<u>Commodity</u>	Avg. Annual Tonnage 1995-1999 (1,000 tons)	Unit Savings per Ton 2000 Price Level	Total Savings 2000 Price Level (\$1,000)
Iron Ore	4,579	\$.90	\$4,120
Residual Fuel	2,256	\$1.50	\$3,384
Coal	16,451	\$1.90	\$31,256
Grain	320	\$4.30	\$1,378
Sugar	832	\$6.00	\$4,991
Totals	24,438		\$45,129

Project Operation and Maintenance Cost

The Baltimore Harbor and Channels projects are maintained by annual dredging of its channels as needed to maintain authorized channel depths. During the period from 1995-1999, the cost to maintain the Baltimore Harbor and Channels projects has ranged from \$11,268,500 to \$17,162,500 as shown in Table 5. To compare project benefits to project costs, the annual costs were escalated to 2000 price levels using construction cost indices and an annual average cost of \$14,588,500 at the 2000 price level was calculated.

Table 5: Maintenance Costs and Quantity by Fiscal Year

<u>Year</u>	<u>Quantity</u>	<u>Cost</u>	<u>2000 Price Level</u>
1995	2,583,400	\$12,842,000	\$14,605,000
1996	2,550,600	\$11,411,400	\$12,633,800
1997	2,199,500	\$11,268,500	\$12,036,500
1998	4,174,800	\$15,267,200	\$16,046,000
1999	<u>2,839,800</u>	<u>\$17,162,500</u>	<u>\$17,621,300</u>
Average	2,435,800	\$12,717,500	\$14,588,500

Current Benefit to Cost Ratio

Based on the results of the benefit analysis, the annual project benefits for the Baltimore Harbor and Channels project amount to \$45,129,000. The average annual operation and maintenance cost is \$14,588,500. Using these figures, the current benefit to cost ratio for the project is 3.1. Even using the most recent data for 1999 only, the benefit (\$35,869,400) to cost (\$17,621,300) ratio is 2.0.

As reported by the WCSC, total foreign commerce increased by 14 percent from 23 million tons in 1999 to 26.2 million tons in 2000. Foreign general cargo increased by eight percent and bulk cargoes rose by almost sixteen percent. The bulk cargo increase was a function of a rebound in the exports of coal, which had been declining for several years. Baltimore's foreign twenty-foot-equivalent units (TEUs) increased by eight 8 percent, raising its ranking among container ports from 15 to 13. With several new long-term agreements, including one with Mediterranean Shipping, the Port of Baltimore should continue to see gains in its container traffic.

In 2000, there was a six percent increase in steel imports, a 25 percent increase in forest product imports, a 54 percent increase in forest product exports, and an increase in auto/truck imports of four percent from 1999 values. There was a decline in auto/truck exports of 40 percent, representative of all East Coast ports. Finally, the Port of Baltimore increased its RORO tonnage by one percent and now holds a 46 percent share of the East Coast market.

DREDGING NEEDS

The Maryland Port Administration (MPA) and the Baltimore District continually assess the dredging needs of the Port, both new construction and maintenance, and the available placement capacity. Table 6 shows the anticipated dredging needs for Federal and non-Federal navigation projects for the next 20 years. The annual maintenance need of 4.5 million cubic yards (mcy) and the new work projects result in a 20-year dredging need of just over 111 mcy.

DREDGED MATERIAL PLACEMENT SHORTFALLS AND IMPEDIMENTS TO CONTINUED DREDGING

The three Baltimore Harbor Channels Federal navigation projects require the non-Federal sponsor (State of Maryland) to provide suitable dredged material placement sites, including necessary retaining dikes for the 50-foot project. The State of Maryland has provided the dredged material placement areas for the 42-foot channels and associated anchorages, and the 50-foot channels. The same is true for the portions of the channels that are within the Commonwealth of Virginia. The State of Maryland has also approved placement at open water sites and the continued use of USACE-owned upland sites in the upper Chesapeake Bay, for the C&D Canal Project. The State through the auspices of the MPA has provided, or has provided non-Federal sponsorship for, dredged material capacity sufficient to handle the ongoing maintenance of the projects as well as new construction. The Dam Neck and Norfolk Ocean sites, Wolf Trap Alternate, and Rappahannock Deep Alternate placement sites have adequate capacity for the Virginia channels for the next 20 years. Current placement sites for Maryland channels include Hart-Miller Island Containment Facility, Pooles Island open water site, Poplar Island environmental restoration, and the yet to be rehabilitated upland Cox Creek site.

Table 6: Baltimore Harbor and Channels Dredging Needs

Channels	Annual Maintenance (cy)	20 Year Total (cy)
Virginia	500,000	10,000,000
Maryland (Baltimore)		
50-foot Project Approach	1,100,000	22,000,000
42-foot Project Approach	900,000	18,000,000
Patapsco River & Inner Harbor	500,000	10,000,000
Non-Federal	300,000	6,000,000
Maryland (Philadelphia)		
Southern Approach	1,200,000	24,000,000
New Work		
Dundalk & Seagirt 50' Berth	---	6,200,000
Baltimore Harbor Anchorages and Channels	---	4,400,000
Tolchester S-Turn	---	3,000,000
Brewerton Extension	---	2,500,000
Masonville Terminal	---	5,000,000
TOTAL	4,500,000	111,100,000

Note: Annual maintenance requirements are not expected to be affected by construction of the new work projects.

These sites are shown on Figure 2 and existing capacity at these sites is shown in Table 7.

**Table 7: Capacity of Existing Placement Sites (mcy)
As of June 2001**

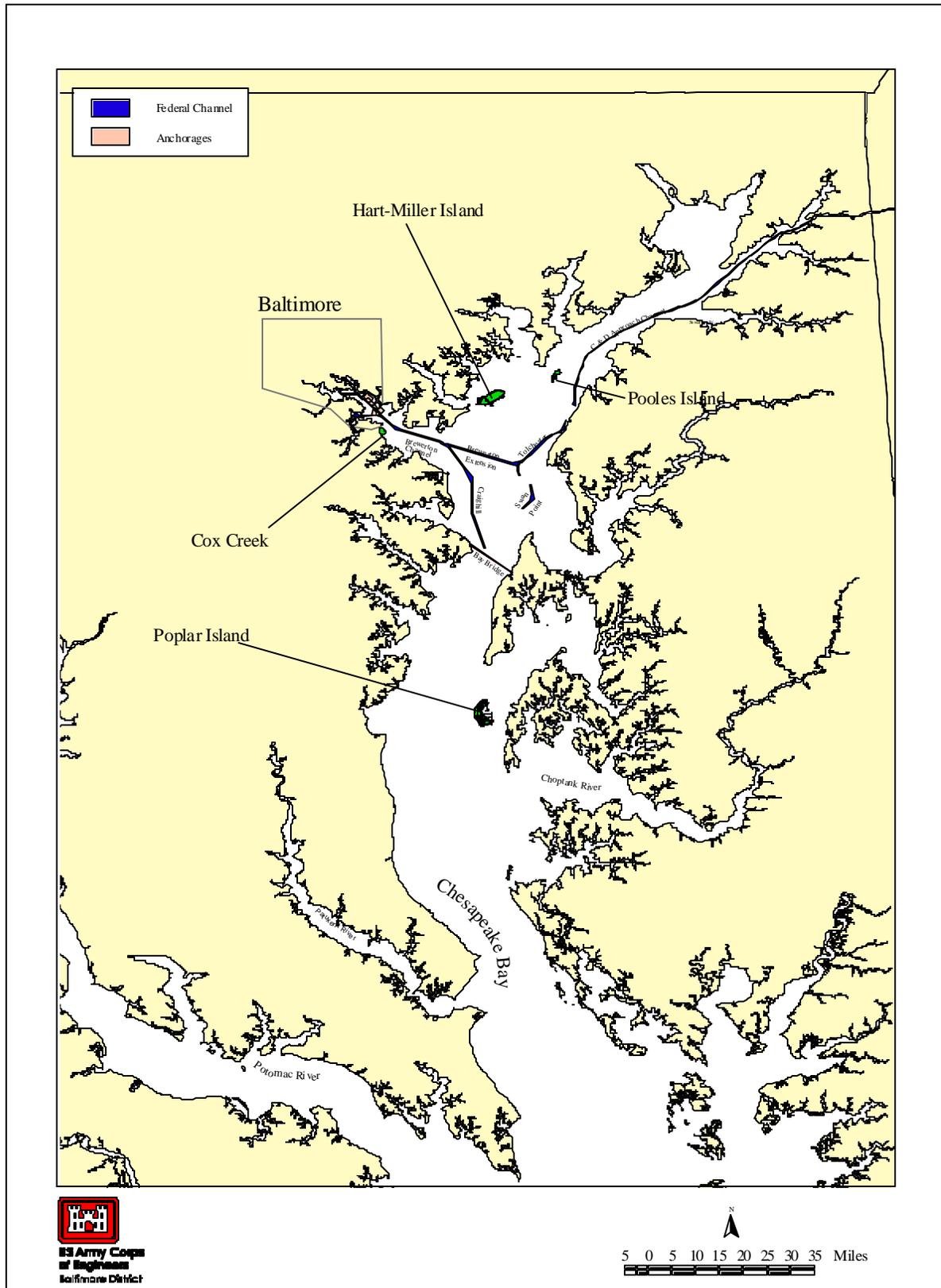
Pooles Island	6.0
Hart-Miller Island	18.0
Poplar Island*	30.2
Cox Creek**	6.0
<u>VA Sites***</u>	<u>Large</u>
Total	60.2

* Estimated total capacity reduced from 40 mcy to 32.7 mcy due to anticipated overloading of site. The current capacity represents 16.2 mcy in Phase I and 14.0 mcy in Phase II.

** Permit pending

*** Includes Dam Neck and Norfolk Ocean sites, Wolf Trap Alternate, and Rappahannock Deep Alternate. Total specific capacity is unknown, but is well beyond what is required for 20 years of placement from the Virginia channels.

Figure 2: Existing Operating and Feasible Placement Sites



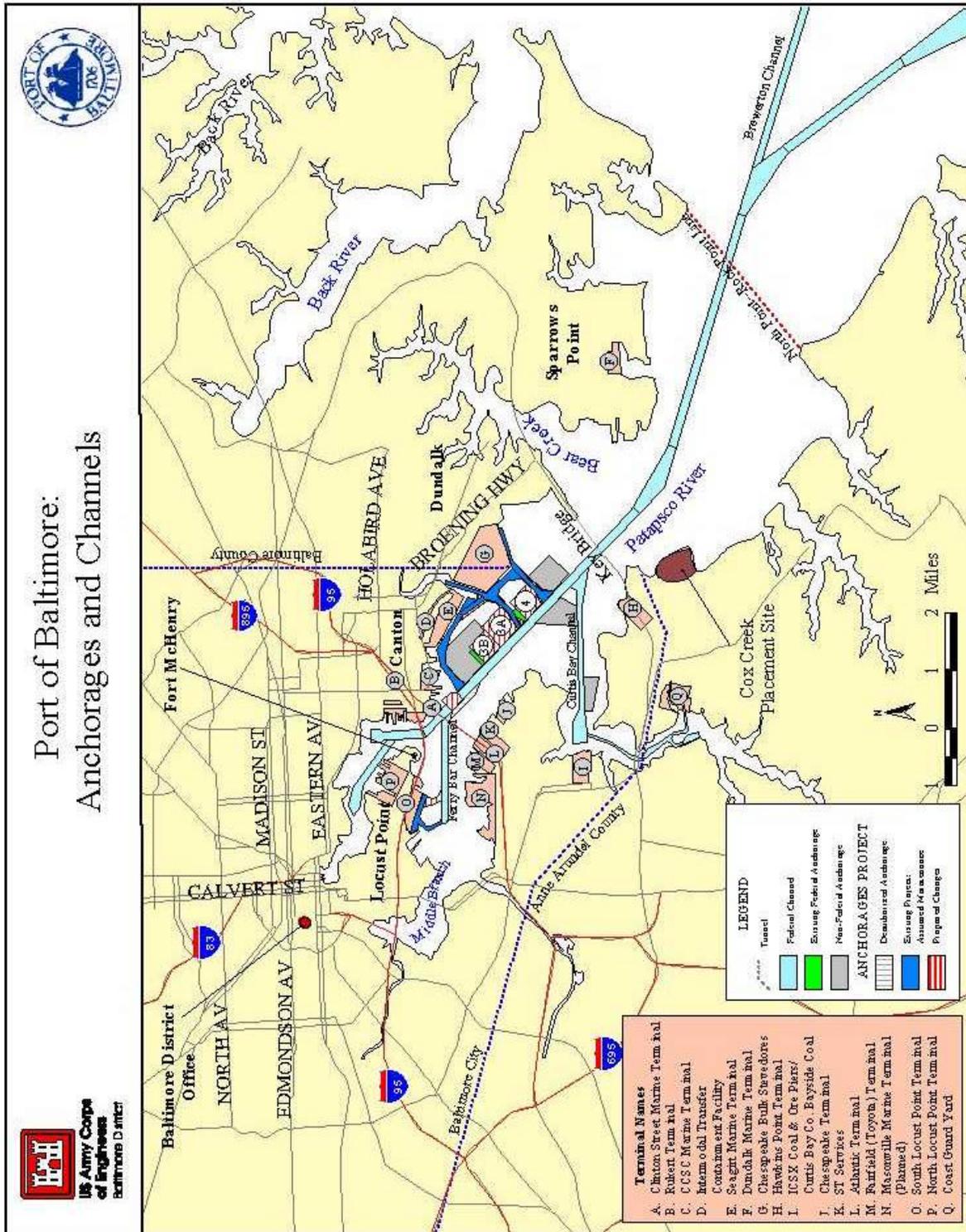
The MPA continues to examine potential sites and options as part of their regular business process through their Dredging Needs and Placement Options Program. The most current assessment by the State of Maryland has been set forth in the Governor of Maryland's Strategic Plan for Dredged Material, dated October 2000, and is currently being updated. The strategic plan addresses the same geographic area, physical infrastructure, improvements, and planning windows as this PA, save for the channels in Virginia. The most recent State and Corps data suggest that the Port of Baltimore will have a capacity shortfall for the upper Bay channels within the next 10 years, which is within the 20-year period of analysis that a Dredged Material Management Plan (DMMP) is to consider. It is this shortfall that is the primary impediment to continued maintenance. There are additional factors that make the development of new sites more difficult. The State of Maryland has passed laws that severely restrict the placement of material in the open waters of the Bay. Any material taken from the inner harbor areas of the Port, which includes the Patapsco River within a line drawn between North Point and Rock Point (Figure 3), is defined by State law to be contaminated and must be placed in a confined site. Currently, only the Hart-Miller Island Containment Facility can accept this material.

The Hart-Miller Island Containment Facility has an estimated 18 mcy remaining capacity and State law requires the site to stop accepting material after 2009. The cost per cubic yard is currently estimated to be \$3.76/cyd. The upland Cox Creek site is planned to be brought on line by the State of Maryland in 2002 and will be reserved for this inner harbor material. The upland Cox Creek site will have an estimated capacity of 6 mcy and would last for 12 years at an average fill rate of 500,000 cy per year, which is typical for the inner harbor's annual dredged material requirement. The MPA, however, is considering options to extend the life of the site through reuse and possible recycling of the material. If these options are successful, the site could provide capacity in perpetuity.

Phase I of the Poplar Island Environmental Restoration Project (640 acres) is complete and was designed to provide an estimated 23 mcy of capacity. Placement started in April 2001. Phase II (500 acres) is under construction and was designed to provide an estimated 17 mcy of capacity. Phase II is expected to be finished in late 2001 or early 2002. This 40 mcy of capacity is no longer attainable. Due to the State's withdrawal of a potentially large capacity open-water site that was previously part of the State's 20-year dredged material placement plan, known as Site 104, the MPA and the Baltimore District will be forced to place material in Poplar Island and Hart-Miller Island at a faster rate than previously planned. This placement rate will reduce the effective capacity of those sites by not allowing for sufficient de-watering activities. Therefore, the 22-years of placement capacity that was planned originally for Poplar Island will only last an estimated 9 years, and the estimated total capacity of Phase I and Phase II will be reduced to 18.7 and 14.0, respectively. The cost per cubic yard is currently estimated to be \$11.46/cyd.

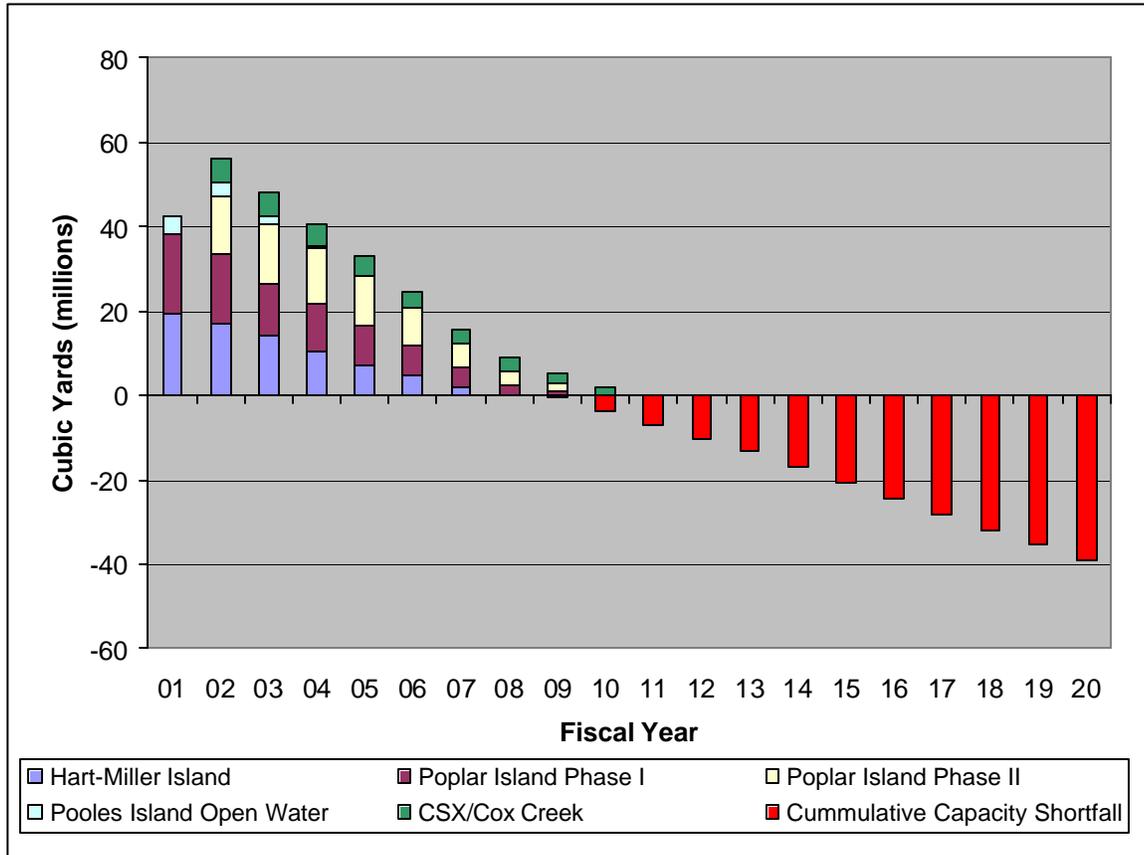
The only active open-water site, Pooles Island, is used for placement of material from the approach channels to the C&D Canal south of the Sassafas River that are the responsibility of the Philadelphia District. Pooles Island has an estimated 6 mcy of capacity remaining and due to a State law passed in 2001, cannot be expanded to accept any more material after the capacity is exhausted. The cost per cubic yard is currently estimated to be \$1.83/cyd.

Figure 3: North Point – Rock Point Line



Therefore, the capacity at the Hart-Miller Island Containment Facility, Poplar Island, and the Pooles Island open water site will be totally consumed by 2009. These are the only current options for placement of material dredged from channels outside of the inner harbor area. Inner harbor capacity will be exhausted by 2014 if the life of the Cox Creek site can not be extended. In either scenario, there is a severe need for increased placement capacity within the 20-year window of this assessment. This need is reflected in Figure 4.

Figure 4: Total Available Placement Capacity Per Year, 2001 through 2020



CONCLUSIONS

A Management Plan Study is recommended for the Port of Baltimore. The Poplar Island environmental restoration project and Hart-Miller Island facility have capacity for only 9 more years for dredged material from the Chesapeake Bay channels. There is approximately 2 mcy of material dredged annually that is placed in Hart-Miller or Poplar Islands. Inner harbor material that must be considered contaminated by law will run out of placement capacity within the 20-year window of the DMMP. The Management Plan Study will analyze the potential for reuse and recycling of the material to be placed in the upland Cox Creek site, since this could stretch capacity beyond 20-years. Otherwise, a site will need to be located and developed expeditiously.

The DMMP objective is to develop a strategy for dredged material placement for the next twenty years based on newly required and maintenance dredging for Federal, State, and local navigation projects necessary for the Port of Baltimore. Potential placements sites will be evaluated based on technical feasibility, with an emphasis on need, beneficial use, cost-effectiveness, environmental acceptability, capacity, and ease of implementation. The DMMP will identify the Federal and non-Federal mechanisms for project implementation. Other

objectives include the development of a cooperative atmosphere among parties to the dredged material placement issue and education of the concerned public about the complex physical, chemical, and biological processes involved in dredging and dredged material placement.

Three overall goals of the DMMP are:

- 1) to maintain in an economically and environmentally sound manner those channels necessary for navigation for the Port of Baltimore and eliminate unnecessary dredging activities in the system;
- 2) to conduct dredged material placement in the most environmentally sound and cost-effective manner; and
- 3) to maximize the use of dredged material as a resource.

Early Start Initiatives

In light of the immediate capacity constraints, it is recommended that site-specific alternatives that have already been identified as highly feasible alternatives be evaluated for execution under existing authorities. These capacity expanding projects are shown on Figure 5 and include:

Poplar Island Environmental Restoration Site

Raise Existing Upland Dikes

It may be feasible to raise the existing upland dikes to an elevation of +35 feet without any significant change to the project purpose (beneficial use) or increase in cost above the authorized limit. This change can be investigated through a General Re-evaluation Report (GRR) under the existing Poplar Island authorization. The project modification could be implemented without further Congressional authorization, subject to Section 902 of WRDA 1986. Possible additional capacity: 18 mcy. Cost per cubic yard: \$11 - \$13.

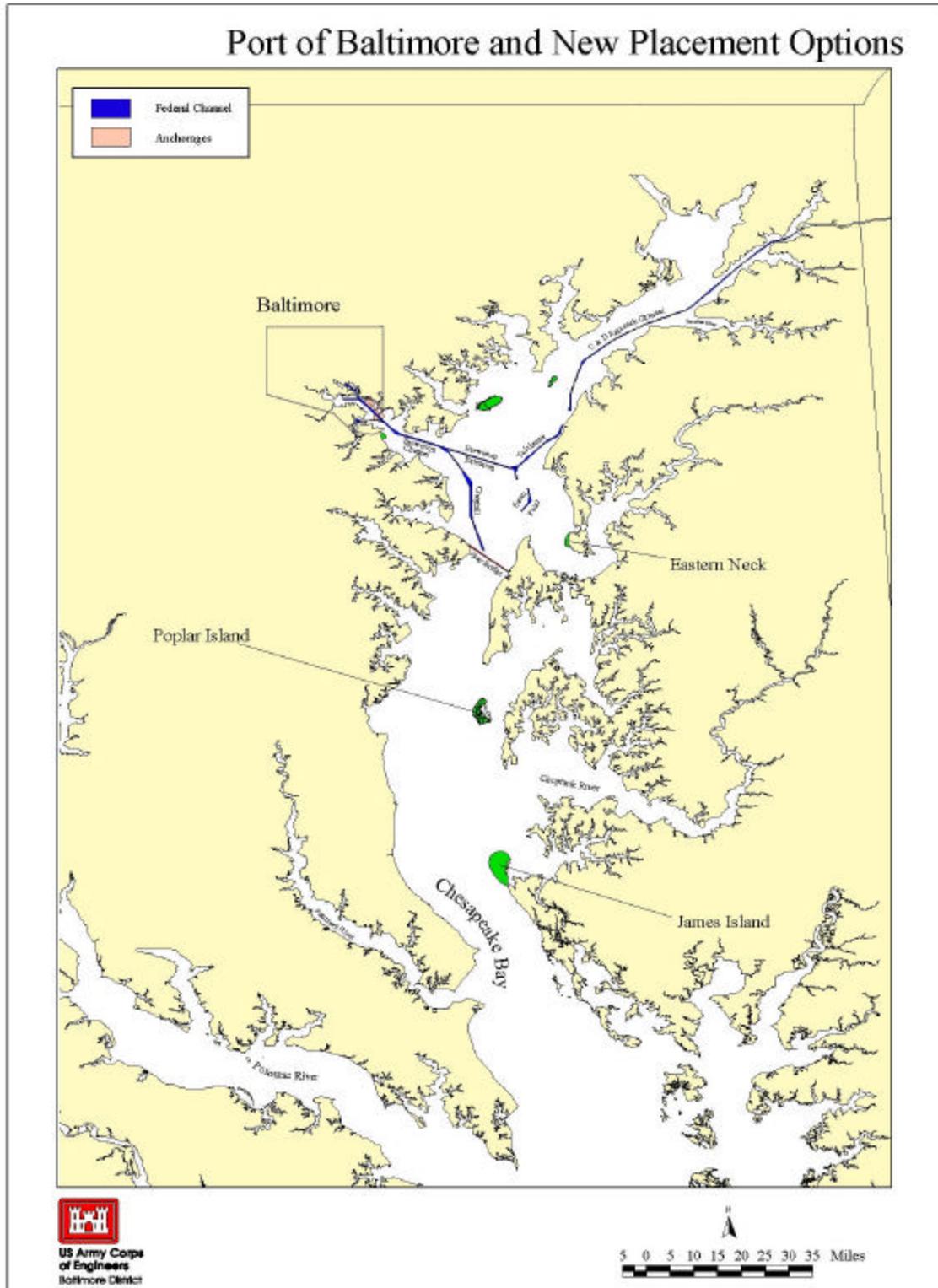
Expand the Footprint

It may be feasible to expand the footprint of Poplar Island by 300 - 400 acres. The cost will likely exceed the Section 902 limit and it may be difficult to maintain the beneficial use project purpose. This change can be investigated through a GRR under the existing authorization and will likely require Congressional authorization for the modified project. Possible additional capacity: 18+ mcy. Cost per cubic yard: \$11 - \$13.

James Island

Dorchester County has requested that James Island be considered as a beneficial use project for island restoration similar to the Poplar Island restoration project. The potential size ranges up to 2,000 acres. The island is remote and, therefore, provides excellent bird habitat. Waterfowl and waterbirds are expected to utilize the island. Restoring the island could potentially reduce physical energy affecting the shallow waters east of the James Island Archipelago and Oyster Cove, thereby improving conditions potentially favorable to colonization and growth of submerged aquatic vegetation. Investigation for this project could be conducted under a specific study resolution, or as a feasibility study as authorized by resolution of the Senate Committee on Environment and Public Works, dated June 5, 1997, for the Eastern Shore, Maryland and Delaware. Implementation could be through the authority of Section 204 of WRDA 1992 and Section 207 of WRDA 1996 (Beneficial Use of Dredged Material) or through a project-specific construction authority. Possible additional capacity: up to 80 mcy. Cost per cubic yard: \$14 - \$17.

Figure 5: Early Start Initiatives



Eastern Neck, Maryland

U.S. Fish and Wildlife has requested that this National Wildlife Refuge be considered for a beneficial use project for island restoration/shoreline protection. The refuge is a 2,285-acre island at the mouth of the Chester River. The refuge bird list contains 243 species recorded on the refuge. Numerous marsh and shore birds migrate through in Spring and Fall. Mallards, black ducks, wood ducks, great blue herons, and green-backed herons nest at the refuge. Bald eagles have fledged young each year since 1986, and blue birds, ospreys, and woodcocks are regularly fledged. Part of the island's western shore has been protected by the Corps of Engineers in the past. Following maintenance of the Chester River project, dredged material was placed behind geotextile tubes and the area was planted with 10,000 spartina plants. Investigation for this project could be conducted under a specific study resolution, or as a feasibility study under the Eastern Shore authority. Implementation could be through Section 204 and Section 207, through a project-specific construction authority, or as a Support-for-Others project. Possible additional capacity: 1-3 mcy. Cost per cubic yard: \$25 - \$30.

RECOMMENDATION

I, therefore, recommend that this Preliminary Assessment be approved and that permission be granted for the Baltimore District to commence a Phase 1 Management Study for a Baltimore Harbor and Channels dredged material management plan. The Phase 1 study will last 12 months and include preparation of a detailed scope of work for the total Management Plan Study effort. The Phase 1 effort will identify the level of NEPA compliance required. The Final Phase of the Management Plan Study will be completed in approximately 36 months following initiation and result in a detailed DMMP for the Baltimore Harbor and Channels.

I also recommend that the District begin concurrent investigation of placement options at Poplar Island, James Island, and Eastern Neck utilizing existing authorities.

Colonel Charles J. Fiala, Jr., P.E.
District Engineer

Attachment A: DMMP Framework

