

## **Section 10**

### **Summary and Conclusions**

#### **10.1 Overview**

Poplar Island, formerly a 1,000-acre single island in 1847, has nearly disappeared due to increasing natural erosion. Only four small remnants (totaling 5 acres) and Coaches Island (totaling 74 acres) currently exist. A concept to reconstruct Poplar Island using clean dredged material from the Baltimore Harbor and Channels Federal navigation project has been developed through the cooperative efforts of many state and Federal agencies, as well as private organizations.

There is an opportunity to beneficially use clean dredged material derived from maintenance dredging activities to restore habitat in the mid-Chesapeake Bay. In the last 150 years, it has been estimated that 10,500 acres have been lost in the middle eastern portion of Chesapeake Bay alone. These losses have occurred as a result of erosion due to land subsidence, rising sea level, and wave action. The group of islands known as Poplar Island is currently eroding at the rapid rate of more than 13 feet per year. If the present rate of land loss continues unabated, the island will probably disappear by the turn of the century.

If the islands disappear, so, too, will the nesting snowy egrets, common egrets, cattle egrets, terns, cormorants, great blue herons, little blue herons, green herons, black ducks, and the endangered bald eagle that the islands currently support, as well as the aquatic habitat in Poplar Harbor. In addition, the continued erosion of the islands will continue to contribute to the Chesapeake Bay sediment loadings and will have a negative impact on the water clarity in the immediate vicinity of the islands. This will result in a continuation of the persistent turbidity that is currently present.

The USACE is responsible for operating and maintaining the 126 miles of Federal navigation channels that serve the Port of Baltimore. These channels are maintained through periodic dredging, with the material removed being placed in dredged material placement sites. The MPA is generally responsible for obtaining the rights for all lands, easements, rights-of-way, and relocations necessary for the development of placement sites, as well as for providing placement areas for the materials dredged from the navigation channels.

Since 1984, the HMI Containment Facility, constructed by the MPA, has been used for the placement of dredged material from the Port of Baltimore and certain reaches of the Baltimore/Chesapeake Bay Navigation Channels. Since its completion, approximately 62 million cubic yards of dredged material have been placed there. Originally, HMI was designed as a placement area for contaminated dredged material and material for the

Baltimore Harbor 50-foot project and was estimated to have an operational life of 15 years. However, demands for placement areas and funding constraints, especially in the Baltimore Harbor 50-foot channel deepening and widening project, caused it to be filled in less time with additional clean and contaminated material. As a result, the site is expected to reach its capacity, be capped with clean material, and be unavailable for use by the year 1998.

The Port of Baltimore is rapidly reaching a point where available placement area capacity will be insufficient to meet the port's dredging needs. Current projections indicate that without additional dredged material placement sites, existing capacity would prohibit necessary maintenance and modification of the Baltimore Harbor and Channels Federal navigation project.

A disruption in the constant maintenance that is required to keep the Port of Baltimore operational would result in significant adverse effects to both the local and the national economies. The Port handles approximately 40 million tons of cargo annually and 350,000 containers of cargo that move between the Dundalk Marine and Seagirt Terminals, and South Locust Point. Currently the Port generates 87,000 jobs, an estimated 45,000 of which are held by Maryland residents. A total of 18,000 are direct jobs; 6,600 are induced jobs, meaning that they support local purchases made by direct jobs; and 62,500 are jobs indirectly related to activities at the Port. Revenue impact from the Port results in earnings of \$1.3 billion for firms in the maritime sector, contributes nearly \$3 billion in business, and represents one-tenth of Maryland's gross state product.

The Poplar Island restoration project represents a cost-effective and environmentally beneficial solution to the dredged material placement problems facing the MPA. The Poplar Island project supports the objectives of the North American Waterfowl Management Plan relating to increasing habitats for emphasis species of migratory waterfowl such as black ducks, and is in full compliance with all applicable environmental protection statutes and executive orders. In addition, it is supported by all of the various state, Federal, and local natural resource management agencies.

## **10.2 Study Findings**

As part of the Poplar Island Restoration Study, a coastal engineering assessment was made, hydrographic and topographic surveys were performed, and geotechnical and archeological investigations were conducted. Based on the results of these analyses and on input received from the various natural resource agencies and publics, a recommended plan was developed for reconstructing Poplar Island.

The recommended plan would create a 1,110-acre dredged material placement area around the island's 1847 footprint, within a 35,000-foot perimeter. This area would then be filled with clean dredged material and developed into low and high marsh wetlands and upland habitat. The projected site capacity associated with the recommended plan is 38 million cubic yards, which is expected to be placed over a period of 24 years. The site would consist of 50 percent tidal wetlands, of which 80 percent would be low marsh and 20 percent would be

high marsh, and 50 percent uplands up to +20 feet MLLW. A dike would surround the entire area but would not tie directly into Coaches Island. Along the dike alignment adjacent to Coaches Island, a sand dune configuration is currently proposed that would allow for a small tideway to remain open between Coaches Island and the Poplar Island restoration area. This will protect ownership rights of both Coaches Island and the proposed restored island.

The recommended design for the western perimeter dike consists of a sand dike with 3H:1V exterior slopes protected with 1.5 to 2.0 ton armor stone up to elevation 11.5, an overbuilt interior section with 5H:1V slopes, and an unarmored dike section from elevation 11.5 up to 23.0 MLLW constructed with sand at a later date. Those interior dikes providing containment for the upland cells would also consist of a sand dike to approximately elevation 10 or 11 MLLW with an overbuilt interior slope, and would also be raised to elevation 23.0 using sand from an outside borrow source under later contract. The armored eastern dike would have a 3H:1V exterior slope with 250-pound armor, and a crest elevation of 8 feet MLLW. The eastern dike would not have to be raised since it contains the wetland cells. An unarmored reach of the eastern dike which parallels Coaches Island would have 5H:1V slopes and a crest elevation of 8.0.

No significant negative impacts will occur to the region's economic, cultural, recreational, or social resources will result from the implementation of the recommended plan. Cumulative negative effects of the dredged material placement and Poplar Island restoration are minimal. Some local effects associated with loss of present bottoms and open waters can be expected, but such habitats are relatively extensive in the region, and the project will have few significant impacts. Cumulative positive effects and overall benefits to the Chesapeake Bay economic and ecological systems are great and long-lasting. Major economic benefits are associated with the provision of maintained channel access to the Port of Baltimore. Cumulative environmental benefits of the restoration will accrue throughout the central Chesapeake Bay area and the mid-Atlantic region. High quality, island-based wetland and upland habitat will support commercially and recreationally valuable finfish and shellfish; birds and wildlife; and rare, threatened, and endangered species. Water quality will improve as present erosion is eliminated, and the reconstructed island will provide erosion protection for adjacent islands in the group.

The total cost of the project and dredging of the channels is estimated to be \$458.4 million. Under Section 204 of the WRDA of 1992, the incremental costs, defined as the project costs above the base plan, are cost-shared 75 percent Federal, 25 percent non-Federal. The base plan for this project has been determined to be the Deep Trough since it would accomplish the placement of dredged material in the least costly manner that is consistent with sound engineering practice and that meets all Federal environmental standards. The cost of transporting and placing maintenance dredged material in the Deep Trough is \$151.2 million. Consequently, the project cost is estimated to be \$307 million.

### **10.3 Views of the Sponsor**

The MPA fully supports the findings of this feasibility study and the recommended plan. They have been fully involved in every facet of the feasibility study and have been proactive in maintaining the study schedule. Their participation has included the following: (1) spending approximately \$2.5 million to retain the services of a contractor to expedite the conduct of the feasibility study, (2) providing technical and financial information, (3) attending all study team meetings, (4) arranging workshops, (5) coordinating with the various natural resource management agencies, and (6) reviewing preliminary findings.

The MPA is aware of the items required for local cooperation, including (1) provision of LERR, (2) approval of the feasibility report and provision of a letter of intent, (3) requirements for non-Federal funding, and (4) negotiation and execution of the PCA.

The MPA has demonstrated a commitment to both the outcome of the study and project implementation.