7. IMPLEMENTATION OF RECOMMENDED PLAN

Implementation of the recommended plan would require a commitment by the State of Maryland to adhere to an accelerated schedule for bringing the site online by early 2009. This section outlines the process for implementing the recommended plan, the parties involved, and the schedule for implementation.

7.1 IMPLEMENTATION PROCESS

The construction of the proposed dredged material containment facility (DMCF) at Masonville includes considerable site preparation activities. The timing and scheduling of the site preparation activities is critical to meet schedule requirements for the construction of the projects. The following is a list of the major schedule items necessary for the implementation of the recommended plan. Some of these items are going to be permitted separately from the proposed Masonville DMCF.

- Site Preparation Activities
  - Pre-dredging (removal of overburden) (August 2007 to October 2007)
  - Phase I of Baltimore City Storm Drain Relocation (June 2007 to January 2008)
  - Phase II, Baltimore City Storm Drain Relocation and MMT Phase 2/KIM Stormwater Outfall Relocation (January 2008 to June 2008)
  - Remediation and Relocation of Derelict Vessels (March 2007 to September 2007)
  - Demolition of Piers 1, 2, and 3 (August 2006 to July 2007)
  - Relocation of Baltimore City Waterline (November 2007 to March 2009)
- Seagirt Dredging Activities (April 2007 to January 2008)
- Masonville Dike and Spillway Construction (July 2007 to March 2009)
- Mitigation and Community Enhancement Projects (May 2007 to April 2009)

Implementation for each of these schedule items requires the following four major phases:

1. Engineering
2. Permitting
3. Procurement, Bid, and Award of Construction Projects
4. Construction

These steps often overlap as different items within the overall project move from phase to phase at different times, but the following is a general description of the process for implementing the recommended plan. To meet the accelerated schedule, site engineering is being performed as the permit application is reviewed. This would allow procurement of the funding for the projects to occur immediately following the joint permit (Section 404 permit, Section 10 permit, tidal wetlands license, non-tidal wetlands permit, water quality certification, Federal consistency determination) application decision, if the decision is favorable.

If the joint permit and certification are awarded, funding procurement would begin and the engineering plans would be put out to bid. The contract would be awarded following a bidding period, and construction would begin. Prior to construction, the project would also require approval from the Critical Area Commission for the Chesapeake and Atlantic Coastal Bays, approval from the Maryland Department of the Environment (MDE) for stormwater management

and erosion and sediment control, a water construction permit, a storm drain modification permit, and an national pollutant discharge elimination system (NPDES) Permit.

7.1.1 Engineering

The engineering phase involves the planning, design, and scheduling for each of the schedule items. The duration of this phase is dependent upon the complexity of the schedule item and planning and design decisions.

7.1.2 Permitting and Coordination

Federal and state governments regulate construction and dredging within tidal waters. Tidal wetlands in the State of Maryland are protected by the following regulations:

- Section 10 of the River and Harbor Act of 1899 – Federal
- Clean Water Act, Section 404 – Federal
- Maryland Tidal Wetlands Act – State
- Section 401 Water Quality Certification – State

The work to be performed would be done under several permits. The majority of the work would be included under the joint permit application. The following list identifies the major line items included under the DMCF project permit application and those with individual permits.

- Schedule Items Under the DMCF Permit Application
  - Pre-dredging
  - Phase II of the Relocation of Baltimore City Storm Drain Relocation and Masonville Marine Terminal (MMT) Phase 2/ Kurt Iron and Metal (KIM) Stormwater Outfall Relocation
  - Relocation of Baltimore City Waterline
  - Construction of the DMCF
  - Relocation of Derelict Vessels
  - Onsite Mitigation and Community Enhancement Projects (in the vicinity of Masonville Cove)
  - Removal of BGE submarine cable
- Schedule Items Under Separate Permits/Agreements
  - Remediation of Derelict Vessels (agreement with the MDE)
  - Off-site Mitigation Projects

The permits that must be obtained and coordination that must occur prior to construction of the proposed Masonville DMCF are listed below. The agency issuing each permit or involved in the coordination is shown in parentheses. The overall project schedule in Appendix N provides a timetable for project construction and facility operation and chapter 8 discusses the permits that would be required. An NPDES permit and a Water Appropriations Permit issued by MDE would be required prior to discharge of water from the constructed dredged material containment facility.

- Section 404 Permit [U.S. Army Corps of Engineers (USACE)]
- Section 10 Permit (USACE)
- Federal Conformity Decision (MDE/U.S. Environmental Protection Agency (USEPA)

- Water Quality Certification (MDE)
- Erosion and Sediment Control (MDE)
- Non-tidal Wetlands Permit (MDE)
- Critical Area Commission Coordination (Critical Areas Commission for the Chesapeake and Atlantic Coastal Bays)
- Federal Consistency Determination (MDE)
- Storm Water Management (MDE)
- General Permit for Construction Activity (MDE)
- Industrial Wastewater/Stormwater General Discharge Permit (MDE)
- Storm Drainage Modifications (City)
- Water/Sanitary Hookup (City)
- Relocation of Baltimore City Waterline Developer's Agreement (City)
- Rare, Threatened, and Endangered Species Consultation (Maryland Department of Natural Resources (DNR), National Oceanic and Atmospheric Administration (NOAA), U.S. Fish and Wildlife Service)
- Coast Guard Application CG-2554

7.1.3 Procurement, Bidding, and Award

This phase includes time for the state to procure the funding necessary to complete each construction task, prepare the contract documents, execute the bidding and review period, and award the contract. This phase is estimated to last approximately five months from the beginning of procurement to the award of the construction job. Generally, this phase immediately follows completion of the engineering phase and issuance of a permit. Some flexibility in the scheduling of this phase exists, as procurement may begin prior to finalizing the engineering plans and/or issuance of the necessary permits.

7.1.4 Construction

Construction of the site is dependent upon obtaining the necessary permits and the award of the bid. A detailed construction schedule is presented in Appendix N. Construction includes any work done at the site, excluding work performed for site investigations. The first schedule items to begin the construction phase would be the site preparation activities, followed by the construction of the proposed DMCF. Construction of the compensatory mitigation projects would be ongoing during the site preparation and proposed DMCF construction activities.

7.2 IMPLEMENTATION SCHEDULE

An overall schedule for the Masonville project is presented in Appendix N. This schedule shows the relationships between the schedule items and their implementation steps. This section evaluates each schedule item and the factors critical for their timely completion.

7.2.1 Site Preparation Activities

7.2.1.1 Pre-dredging

Design of the removal of materials geotechnically unsuitable for construction (pre-dredging) has been completed. The pre-dredging would be included under the permit(s) for the proposed DMCF. A permit decision is anticipated in August 2007. Procurement for pre-dredging was completed from December 2006 through March 2007. The construction phase will begin immediately following issuance of the DMCF permit, which is estimated to be August 2007. Pre-dredging would be completed using a clamshell mechanical dredge and scow, and material would be barged to the Hart-Miller Island (HMI) DMCF.

7.2.1.2 Phase I, Baltimore City Storm Drain Relocation

Coordination with the Baltimore City Department of Public Works for relocation of the storm drains began with meetings in July 2004 and continues to date. The engineering for this item began in early 2005 and was completed in mid 2006. Procurement began in November 2006 and construction should begin in April 2007. This work requires approval from the Critical Areas Commission and a general permit for construction activity from the MDE. No wetlands or open water would be affected by this Phase. This portion of the project should be finished in January 2008.

7.2.1.3 Phase II, Baltimore City Storm Drain Relocation and MMT Phase 2/KIM Stormwater Outfall Relocation

The engineering for this item is currently underway, and should be completed in October 2007. The procurement, bidding, and award phase would immediately follow engineering, and construction could begin following a favorable joint permit application decision. This would also require a storm drain modification permit from Baltimore City. Construction should be completed in June 2008.

7.2.1.4 Remediation and Relocation of Derelict Vessels

MPA performed in-depth investigation and testing of various samples of the total of 25 vessels and structures including the floating drydock, and sediments beneath the drydock and debris piles. Based upon these studies and penetration dives conducted on these vessels, the MPA would remediate the vessels by removing hazardous and regulated waste, by a marine operation. The remediation plan has been developed in consultation with MDE.

All vessels are currently sunk or not salvageable. Barges 1, 2 and 3 are currently located in areas where they would impede construction of the DMCF. Some of these would be abandoned in place and others would be relocated to other locations within the proposed DMCF footprint, after they have been cleaned of hazardous and regulated waste as approved by a certified industrial hygienist or similarly certified individual. The MPA has consulted with the MDE on the applicable, or relevant and appropriate, requirements for cleaning these vessels.

All vessels would then be buried by dredged material during placement operations. It is anticipated that the vessel remediation and management would occur from March 2007 to September 2007 and the relocation would occur as needed.

7.2.1.5 Demolition of Piers 1, 2, and 3

Engineering for the demolition of Piers 2 and 3 and the removal of the Pier 1 deck was completed in early 2006. The procurement for this item was completed in August 2006, and construction began immediately following award of the contract. Demolition should be complete by July 2007.

7.2.1.6 Relocation of Baltimore City Waterline

This schedule item requires careful integration with the construction of the proposed DMCF's structure. Coordination between Baltimore City and the MPA is crucial for this task, and began with meetings between the Department of Public Works and the MPA in July 2004 and is ongoing. The most recent meeting was held in January 2007. This coordination identified issues of importance to the City, namely long-term reliability and maintenance of the new water main structure, design of the cofferdam associated with the underwater construction activity, and minimization of the duration of any service outage. The MPA and their consultants have been meeting regularly with the City, and would continue to do so throughout the project. The final design documents regarding the waterline relocation into the containment structure are available.

The new Baltimore City waterline would be built into the sand berm inboard of the cofferdam and would be accessible for maintenance without disturbing dredged material after the site is operational. Portions of new waterline would be constructed in the water outside of the alignment, on the landside and within the sand portion of the containment structure. The existing waterline would then be connected to the new waterline and flushed, and the disconnected portion of the existing waterline would be abandoned. The existing waterline will be out of service for several months while the connection is being made.

The relocation of the waterline is included on permit applications for the proposed DMCF. This action would also require an industrial wastewater/stormwater general discharge permit for the hydrostatic testing of the waterline. The procurement for this item would begin immediately following the engineering phase. Construction is currently slated to begin in November 2007, but may be shifted pending decisions on integrating the waterline relocation into the construction schedule for the proposed DMCF.

7.2.1.7 Removal of Submarine Cable

An abandoned submarine cable owned by Baltimore Gas & Electric (BGE) would be removed as part of the site preparation activities for this project. Coordination between BGE and the MPA is ongoing.

7.2.2 Proposed Masonville DMCF

The engineering of the proposed Masonville DMCF is currently underway, with completion anticipated in January 2008.

The permitting process for the site is also currently underway. The process centers on the Federal Section 404 Permit for which MPA is preparing this environmental impact statement (EIS). The general schedule for the Federal permit is as follows:

- Publish Notice of Intent (NOI) to prepare an EIS in the Federal Register – 26 May 2005 (completed)
- Conduct Scoping Process (completed)
    - Public meeting – 15 June 2005
    - Public Comments Due 15 July 2005
- Prepare draft environmental impact statement (DEIS) – Completed
- Submit DEIS , Publish Notice of Availability (NOA), and Apply for Federal Permit – Completed May 2006 – Completed
- Submit DEIS Supplement – June 2006 – Completed
- Public and Agency Review of DEIS and Supplement – May 2006 to August 2006 (completed) – Completed
- Finalize and Submit FEIS, Publish NOA – July 2006 to May 2007
- Record of Decision – July 2007
- Permit Decision – August 2007

A more detailed schedule is available in Appendix N. The permit decision for the joint permit application in July 2007 includes the following:

- Section 404 Permit
- Section 10 Permit
- Tidal Wetlands License
- Non-tidal Wetlands Permit
- Water Quality Certification
- Federal Consistency Determination

All permits necessary for the construction of the site are listed in Section 7.1.2. It is anticipated by the MPA that these would be awarded by August 2007.

Procurement would begin immediately following the completion of the engineering phase. The bidding would begin immediately following procurement. The construction of the DMCF includes construction of the four containment structure sections detailed in Section 4.4. These containment structure sections are the cofferdam, armored dike, fringe marsh dike, and onshore dike. Award of the necessary contract(s) for construction of the cofferdam is anticipated in July 2007. Award of the other containment structure contracts is expected to follow in April 2008.

Pre-dredging and other site preparation must occur before construction of the containment structure. Pre-dredging requires the removal of overburden from overtop of the onsite borrow areas and under the containment structure footprint. This dredging would be done mechanically using clamshell dredges and hopper barges to transport the material to the HMI DMCF.

Additionally, material from the Seagirt borrow area would be used to fill in the areas where unsuitable material was moved from the dike footprint. The quantity of material available from the Seagirt dredging project is similar to the quantity of the material needed to backfill the unsuitable that was removed from the dike footprint. It is anticipated that all of the Seagirt material would be placed in the dike section.

To access the suitable borrow material at Seagirt, overburden material must be removed. This would be done mechanically using clamshell dredges and hopper barges to transport the material to the HMI DMCF. Following removal of the overburden, this material will be dredged mechanically using a clamshell dredge. The material would be placed in a split-hull scow and transported to the Masonville project area, where the Masonville predredging activities would have been previously completed. The material would be placed within the footprint of the proposed Masonville dike where overburden was removed by opening the bottom of the split-hull scow.

Construction for the majority of the site preparation schedule items would occur during portions of DMCF construction. The sunken barges (Figure 4-1) located under the western portion of the alignment would be removed under the same contract as the derelict vessels and placed in an appropriate facility. With multiple schedule items occurring simultaneously during the construction of the DMCF, detailed planning and scheduling and strict project oversight would be required. The current construction schedule is displayed in Appendix N.

The containment structure (Figure 4-1) of the main portion of the alignment would be constructed in the following order:

1) Cofferdam
2) Fringe Marsh Dike
3) Armored Sand Dike
4) On-shore Dike

Construction of the cofferdam sections would be the first construction activity for the containment structure, and would have duration of approximately six months. The cofferdam cells would be filled using off-site material from a licensed upland source (Section 4.4.1.1). Approximately 152,000 cy of material would be used to fill the cells. Seagirt borrow material may be used to back fill the cofferdam cells, depending on the characteristics of the material and construction methods selected by the contractor. The berm behind the cofferdams would be hydraulically placed following construction and filling of the cofferdams. After the cofferdams are completed and material is placed behind the cells, the new Baltimore City waterline would be placed within the fill behind the cofferdams. The new section of waterline would then be tied to into the existing waterline. Water service to the surrounding community would not be interrupted. Mobilization of equipment for construction of the sand dike portions of the site would occur once the new waterline has been tied into the existing waterline. Coordination with the City of Baltimore regarding the relocation of the waterline is ongoing and would occur throughout the waterline relocation. Cofferdam construction is described in greater detail in Section 4.5.2.2.

The sand portion of the dike construction would begin at the western end of the site. The fringe marsh dike may be constructed from either on-site or off-site material. It is anticipated that there would be a training dike constructed with sand material and the discharge from the dredge would be guided by the training dikes to a limited area that is enclosed by turbidity curtains (Section 4.5.2.4). This material would be placed hydraulically from within the on-site borrow area unless off-site upland material is used. Having completed the eastern cofferdam and western fringe marsh dike, turbidity impacts from borrow activities and construction of the northern sand dike would be minimized. The armored sand dike would be constructed using on-site construction materials, training dikes and turbidity curtains (Section 4.5.2.3). Construction of the dike would continue, as the dikes are shaped and rock armament is mechanically placed by a crane on the northern section of the dike. The onshore dike would be constructed from on-site construction material, if possible. Some site preparation for the onshore dike may be required and conventional earthwork construction methods would be used (Section 4.5.2.5).

Should clay be used to construct a portion of the containment dike (see sections 4.4.1.2 and 4.4.1.3), this construction would begin once the sand portion has been completed. This would prevent the introduction of any potential turbidity from suspended clay particles to the Patapsco River. The clay would be excavated and placed with a 30-inch hydraulic dredge.

During dike construction, relocation of some of the derelict vessels would be occurring. This would require close coordination of the contractor's onsite.

Ancillary items such as spillways and site facilities would be constructed concurrently with the containment structure. Also, following completion of the containment structure, the newly constructed dike would be vegetated to meet critical area buffer requirements for newly created buffers. The 100 ft critical area buffer would be reestablished following future dike raisings at the site. The total duration of construction is anticipated to be one and one half years, allowing site operations in the 2008-2009 dredging season.

After the amount of dredged material in the facility reaches the height of land of the MMT Phase 2 (Figure 2-1), an onshore berm along the periphery of MMT Phase 2 connecting the fringe marsh dike and the onshore dike would be constructed to the final height of the DMCF to contain the dredged material. MMT Phase 2 is anticipated to have a final height of +36 ft MLLW, the onshore berm would be constructed to a temporary height of +42 ft MLLW and graded to a final height of +36 ft MLLW at the appropriate time following filling operations.

7.2.3 Integrated Compensatory Mitigation Projects

Proposed mitigation projects are discussed in Chapter 6.

Mitigation projects and their scope have been through the JE process. Design work on some of the selected projects is underway. However, details of the projects are anticipated to be decided upon during the permit review process. A schedule for their completion has not yet been developed, but the projects should be reaching their construction phases between late 2007 and 2009. The construction of most of the mitigation projects should be completed by 2009.

7.3 KIM DERELICT VESSEL MANAGEMENT

The 25 derelict vessels currently located in KIM Channel would have the solid and hazardous waste removed and then would be buried under dredged material. All material and debris management resulting from demolition and all removal work would be conducted according to current state and federal regulations in order to ensure that no additional contamination or environmental hazards would occur. No debris would be permitted to fall into adjacent bodies of water and all waste would be transported from the site and disposed of in permitted locations.

The work would include but not limited to:

1) Demolition and removal of the timber dry dock to below deck level.
2) Demolition and removal of a 3,000 gallon fuel tank on top of the Gantry crane frame on the crane barge, including approximately 6 inches of residual fuel. Demolition and removal of the Gantry Crane frame.
3) Demolition and removal of sufficient portions of the Beverly to allow waterside access for the removal and disposal of the creosoted timbers from Barge No. 3, or the relocation of Barge No. 3, if necessary.
4) Demolition and removal of steel drydock decking to access removal of regulated and solid waste materials in the hull interior.
5) Incidental demolition and removal of steel plating, decking, superstructure, hull, tanks, and machinery on all vessels to allow access for the subsequent removal of regulated hazardous and solid wastes.

During the demolition work, adjacent waterways would be protected from debris and other material falling into the water. Cleanup of all debris would be completed by the contractor. As part of the minimization of impacts during the demolition and cleanup activities, a waterside containment boom and turbidity curtain would be employed. These would completely enclose the waterside work area to contain floating debris. In addition, water misting, temporary enclosures, and other suitable methods would be employed, as necessary, to limit the spread of dust and dirt, since environmentally sensitive materials are known to be associated with some of these vessels. All work would be conducted to avoid free fall and to prevent materials from falling into the water. All demolished items and materials would be segregated and stockpiled promptly. On-site storage or sale of removed items would be prohibited.

Demolished materials would be disposed of daily, and no materials would be burned. All demolished materials would be transported off the property and legally disposed of in accordance state and federal regulations. All debris from the decks, within the superstructure, on equipment, and in the hulls would be mechanically and manually removed and segregated into separate stockpiles of suspect unregulated, solid, and hazardous materials. These would then be characterized according to the nature of the specific materials, i.e., tires, floor tiles, metal, wood, cable, hoses, gaskets, blasting grit, etc. All work would be subject to a site specific Health and Safety Plan (HASP). Personal protective equipment would be required for material segregation in accordance with this HASP. To the extent possible, upon removal of waste, the materials would be mechanically segregated into readily identifiable units such as tires, concrete rubble, sonar dome, creosoted timber, scrap metal, etc. These materials would be immediately

stockpiled or field tested for immediate loading and appropriate disposal. Mixed debris stockpiles would then be manually segregated into units such as splintered wood and blasting grit that are intermixed with cable, pipe, scrap metal, gaskets, hoses, insulation, etc.

Sediment and Debris Control

A containment boom and turbidity curtain would be utilized to encompass the immediate area of remediation and construction. The removal and disposal of uncontaminated material, which may be characterized as solid waste, would be in accordance with Code of Maryland Regulations (COMAR) 26.04. Facilities accepting such wastes in the State of Maryland must be licensed and are required to maintain a current permit. Disposal certification, quantities, description, and date of all solid waste loads would be provided on a daily basis. Transporters and disposal facilities would be those approved by the MDE. All regulated waste would be properly manifested and all receiving facilities would be only those approved by state and federal regulatory agencies.

7.4 MINIMIZATION OF IMPACTS

Several techniques to minimize impacts to water quality have been included in the recommended plan for the proposed Masonville DMCF. The construction sequence has been designed to minimize turbidity impacts to the Patapsco River. By constructing the cofferdam cells and the fringe marsh dike prior to building the armored sand dike, any turbidity generated from accessing available on-site sand for construction would be partially contained. This would decrease the cross-sectional area of the Patapsco River affected by the turbidity plume, which would decrease the potential for adverse impacts of construction activities to aquatic life in the River. Should onsite clay be needed to complete dike construction, this material would not be used until after the containment structure has enclosed the site; and any use or access of on-site construction (borrow) materials that occurs after the containment structure has enclosed the site should have no impact on aquatic life in the Patapsco River.

Turbidity curtains would be used in conjunction with training dikes to confine turbidity plumes during the construction of the armored sand dike. The training dikes are mounded initially and then moved out as the main dike is constructed. Discharge would be released behind the training dikes and into a settling area. Turbidity curtains would be utilized as a measure for containment of the turbidity plume. Though studies have shown that turbidity curtains can reduce turbidity concentrations by up to 90 percent (JBF Scientific 1978), turbidity curtains are generally not that efficient. The 90 percent reduction means that the turbidity levels outside the curtains would be up to 90 percent lower than the turbidity levels contained by the turbidity curtains. For Masonville, an assumption of a 50 to 60 percent reduction in turbidity has been made.

By using the Seagirt borrow material (Alternative 2), the turbidity plume and water quality impacts would be minimized by placing approximately 25 percent of the dike construction material by split hull barge instead of hydraulically placing the material. The turbidity plume impacts would also be minimized by using the material from the Seagirt dredging area (generally 12 percent fines) instead of the material from the onsite borrow area (generally 30 percent).

A leachate barrier with a permeability of $5x10^{-6}$ cm per second would be used to line the dikes. Though migration of contaminants through the dike is not anticipated to be an issue, based on experience at the HMI DMCF (URS 2004), this barrier would further minimize movement of any contaminants through the dike to the Patapsco River or Patapsco aquifer.

If dust is created due to construction activities, reasonable precautions will take place to prevent matter from becoming airborne. Some examples of measures that will be taken include dust control and water trucks.

The use of the Seagirt borrow material would minimize emissions. This reduction in emissions is the result of placing material using a split-hulled barge instead of placing material hydraulically (Masonville onsite borrow material would be placed hydraulically.). The use of the material at Segirt also minimizes the need to bring in material from other upland sources that may be farther away and would require transport by barge or truck.

There is also a cumulative reduction in regional emissions of 56.6 tons of NO_x. This reduction in emissions results from the decreased distance necessary to move the Seagirt dredged material that would be dredged as part of the Seagirt Marine Terminal Access Channel deepening and widening project. There are 0.4 mcy of dredged material that would have been shipped to the HMI DMCF which is approximately 14 miles from the dredging area that would now be shipped to the proposed Masonville DMCF, which is approximately 2 miles from the Seagirt dredging area. Emissions of other pollutants other than NO_x that result from the operation of internal combustion engines would also be reduced. These pollutants include CO_2, particulate matter, and CO.

The use of material from the Seagirt dredging area would minimize the impacts to upland borrow sources by minimizing the amount of material that would need to be obtained from such sources. The Seagirt dredging area would be dredged to a depth of -50 ft MLLW (plus 2 feet of over dredging) without the proposed Masonville DMCF project. Between 0.3 and 0.5 mcy of the material to be used during the dike construction at Masonville from the Seagirt dredging area was slated for placement at the HMI DMCF. The innovative reuse of this material minimizes the amount of capacity taken at the HMI DMCF and the amount of material used from an upland source. The additional dredged material from the Seagirt dredging area as a result of the additional 1 to 2 feet of dredging to support the use of borrow material from the area would further minimize the impacts to an offsite, upland borrow source by affecting an area that has already been disturbed by dredging activities rather than affecting a potentially undisturbed upland area.

7.5 CONCEPTUAL TURBIDITY MONITORING PLAN

The objective of the monitoring plan is to determine the extent of the sediment plume resulting from dredging operations at the Masonville site relative to Maryland water quality regulations.

- While there are no mixing zone regulations for turbidity, the allowed mixing zone is typically the same as that for conventional pollutant (i.e. total suspended solids). For conventional pollutants, the allowed mixing zone (focusing on the mean water level and

average tidal velocity) in Maryland estuarine waters is defined as 10-percent of the cross-sectional area of the receiving water body.

- Turbidity in the surface water resulting from any discharge may not exceed 150 Nephelometric Turbidity Units (NTUs) at any time or 50 NTUs as a monthly average.

The interpretation of the 10 percent cross-sectional area would be redefined as the shoreline changes during the life of the project.

Several monitoring stations would be established at the prescribed perimeter, plus at least one Middle Branch "control" monitoring station to assess ambient background values for turbidity (in NTUs). Initially, monitoring at each of these stations would be conducted once daily to characterize the plume under various tidal conditions, and then possibly reduced if the plume can be accurately described. At each monitoring station, the plume within the water column would be characterized using a minimum of five points within the water column. For example with five or six vertical water column measurements, the three highest values would be averaged.

The monitoring would take place at locations corresponding to approximately 10 percent of the cross-sectional area, and data would be collected over the depth of the water column and averaged. Assuming that the dredge point is the centerline of the plume, the monitoring would take place on either side from the dredge point during construction of the western dike. The field monitoring procedures would include locating the downstream distance corresponding to the maximum plume width of concentrations of concern.

Once construction of the dike along the northern perimeter is underway, cutterhead dredging and placement along the dike line would be taking place simultaneously. The monitoring would take place offshore of the sediment discharge location associated with construction, and data would be collected over the depth of the water column and averaged.

7.6 IMPLEMENTATION ISSUES

Currently the site is being designed using sand and potentially clay dredged from onsite, sand dredged from Seagirt, and materials from licensed upland facilities for construction. The extent to which upland borrow material may be utilized would be determined by the actual volumes of suitable borrow at Seagirt and onsite. There is some concern about the ability to use on-site borrow material for the construction of the dikes. The 2001 Dredged Material Management Act (Statute 5-1102) prohibits the unconfined placement of Harbor dredged material. This issue was reviewed by Assistant Attorneys General representing MPA and the Maryland Department of the Environment, and it was determined that neither the language, nor the legislative history of this provision demonstrated that this provision was intended to preclude the use of such borrow to construct the sand dike portions of the facility.

Dredging portions of the construction phases may cause near-field turbidity, which could affect fish spawning and migration patterns. To minimize impacts due to turbidity, contractors would adhere to Time of Year (TOY) restrictions on dredging spanning. These typically occur from February 15th to June 15th of each year. Further, the minimization of impacts during construction would be pursued, as discussed in section 7.4

7.7 SUMMARY OF RESPONSIBILITIES

This section lists the parties responsible for funding the projects described in this EIS and the parties responsible for maintaining the projects following their construction.

7.7.1 Project Funding

The MPA would provide funding for construction and management of the proposed Masonville DMCF throughout its life as a placement site. The MPA would also provide funding for the mitigation projects and certain portions, to be determined at a later date, of the community enhancement projects associated with the DMCF. The MPA would assist the community with finding funding sources for the enhancements. The funding required to complete an operational site, complete the mitigation and support MPA's portion of the community enhancement projects is estimated to be $103 million. The MPA would provide funding to maintain the mitigation and community enhancement projects as described in Chapter 6 and Appendix M.

Typically, a DMCF necessary for supporting a federally maintained navigation project is cost shared between the federal government and the project's local sponsor. However, in this case, the USACE is not able to provide capital funding for construction of the DMCF. The MPA would seek reimbursement of funding under Section 217 of the 1996 Water Resources Development Act. The costs and project line items (DMCF, mitigation, infrastructure, etc.) presented in this FEIS may or may not be cost shareable should a cost share agreement between the MPA and USACE, Baltimore District be pursued.

7.7.2 Project Ownership

The MPA currently owns the land abutting the DMCF project, would own the DMCF during operations as a placement facility, and would own the land created by the project following closure of the DMCF. The MPA currently owns the land surrounding the Masonville Cove, which is the site for the majority of the mitigation and community enhancement projects. The MPA would retain ownership of Masonville Cove, but intends to enter into a conservation easement with an environmental trust concerning the portion of the property that includes the nature center. This area covers 54 acres along the Patapsco River. Other projects outside of Masonville Cove are being considered, but have not yet been selected, and thus ownership has not yet been addressed.