US Army Corps of Engineers
Baltimore District

Baltimore Harbor and Channels (MD and VA) Dredged Material Management Plan and Final Tiered Environmental Impact Statement

Volume II – Appendices

D E C E M B E R 2 0 0 5

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APPENDIX A

DREDGING NEEDS SUPPLEMENTAL INFORMATION

Development of Sediment Projections for the DMMP

Analysis of Historical Data

A key element of the planning process is to determine how the various placement alternatives will be used to meet ongoing generation of dredged materials over the course of the 20-year planning period. This component must simultaneously consider the frequency, rates and locations of dredging operations, and the time required to authorize, develop, and construct various placement options. The optimal plan will have available capacity coming online in time to meet the dredged material generation rate so that required dredging is not delayed by a shortfall in capacity.

An initial step in this DMMP is the development of projections of dredged material generation rates over the planning period. The DMMP must consider the following categories of materials being generated over the life of the plan:

- Federal channel maintenance dredging.
- Non-federal maintenance dredging, because that material "competes" for placement capacity with the federal requirements.
- New work dredging for identified channel expansions or improvements.

As summarized in the CENAB Preliminary Assessment, the following *overall* quantities apply as the starting point for the DMMP:

Table 1

Channels	Annual Maintenance Quantity, (cy)	Total Quantity, 20 year Planning Period, (cy)
Maintenance Dredging		
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)	1,200,000	24,000,000
New Work		
Dundalk & Seagirt 50' Berth		6,200,000
Baltimore Harbor Anchorages & 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 data and other available information were evaluated to illustrate the need to match placement capacity with dredging operations.

<u>Step 1: Evaluation of Sediment Generation over Time</u>

The total quantities shown in Table 1 reflect an average generation rate during the 20-year planning period. However, maintenance dredging in most reaches occurs intermittently, as determined by sediment deposition rates, funding, and possibly other factors. This suggests that peak demand will be higher in some years than the average. In order to match placement options with requirements, the DMMP has evaluated the cyclical nature of dredging operations. The starting point for this evaluation was data on historical dredging operations as provided by CENAB via Excel Spreadheet DRGHIS. This spreadsheet summarizes dredge material quantity on an annual basis for various reaches. The following adjustments have been made:

1. Historical dredging data, provided via Excel spreadsheet DRGHIS, are not completely segregated according to the geographic planning areas required for the DMMP. The first step was therefore to resort the individual categories to match the DMMP planning areas.

2. The data summary as provided does not include non-pay overdepth dredging quantities. In other words, the data include the contracted material required to be removed to achieve desired channel dimensions but not that additional material unavoidably removed during

the dredging process. Although this overdepth material is not part of the paid quantity under the dredging contract (which provides the basis for CENAB's numbers), it nevertheless consumes placement capacity and therefore must be accounted for in the DMMP. Based upon discussion with CENAB, an allowance of 10% for non-pay overdepth material, on a volume basis, has been added to individual dredged material estimates for both federal and non-federal projects in each geographic channel area.

3. For data reported as representing 2 years (e.g., 1989/1990) the data were assigned to the earlier year. Because the intent of this effort is to evaluate the effect of peak years, in general a 1-year uncertainty in this value is not expected to affect the overall conclusion.

After these adjustments, the time pattern of total maintenance dredging quantity for each planning area was examined for the available data period of 1973-2004. Maintenance dredging quantities for each planning area are shown in Figure 1 as well as the overall average and the total quantity by year during that period. Figure 2 adds new work completed during that period, to illustrate the extreme peak that occurs with major new work projects.

Figure 1

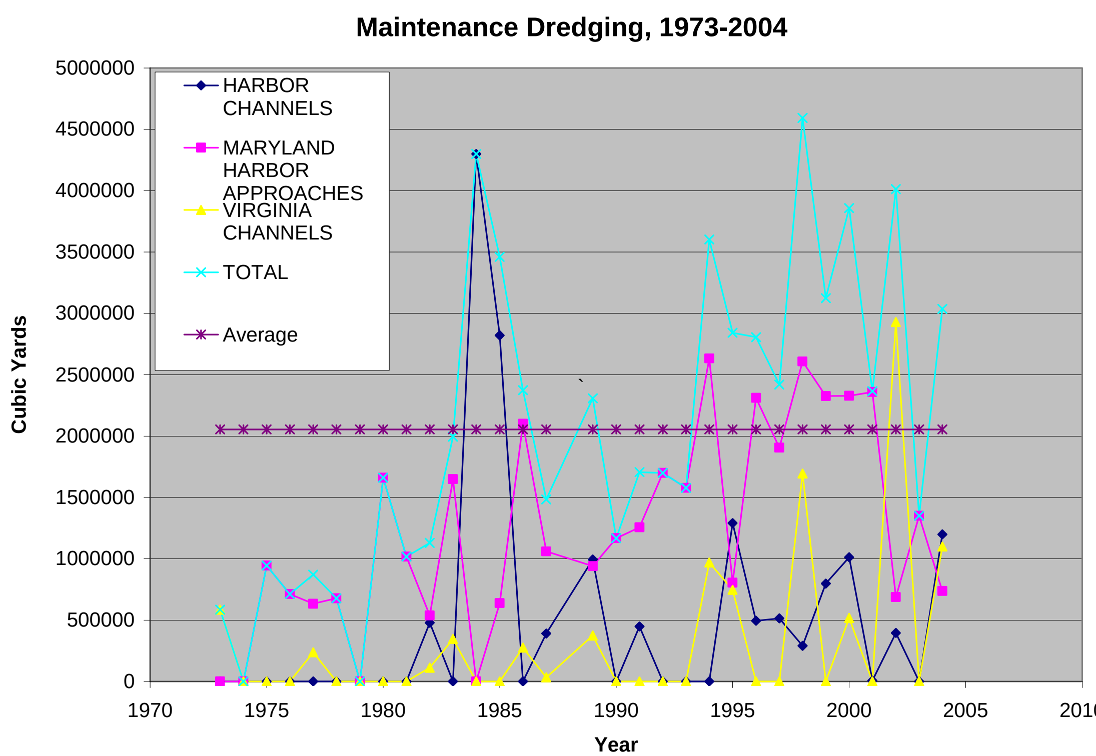
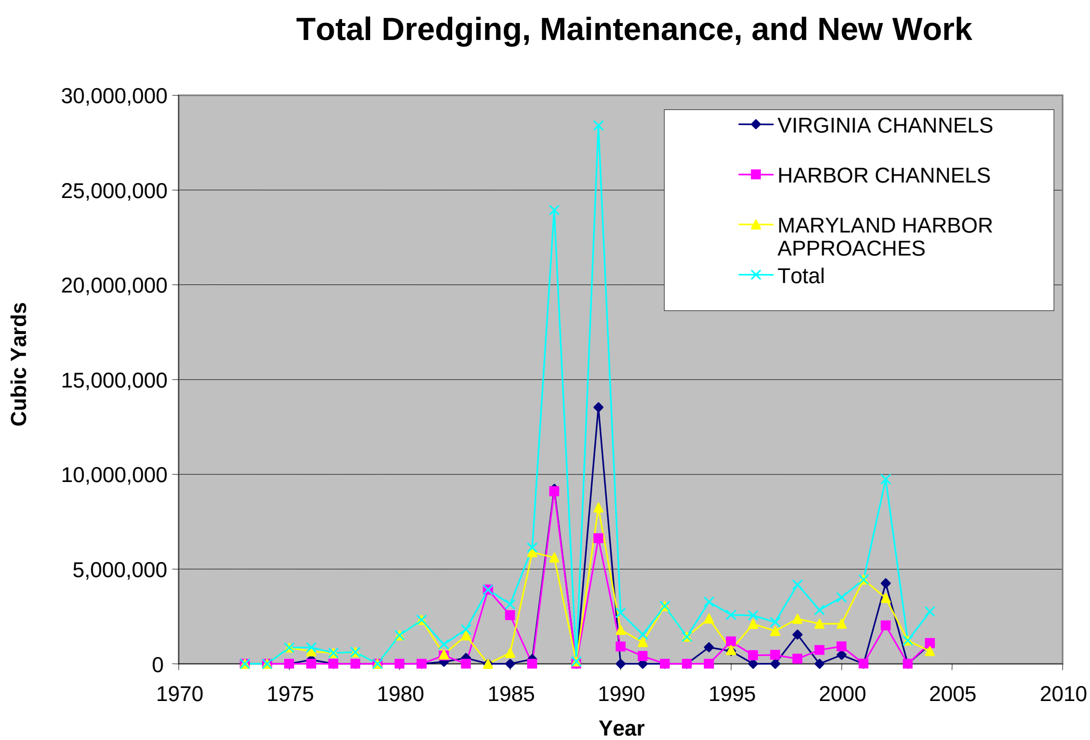


Figure 1 shows that maintenance dredging exhibits some periodicity. While the average can be estimated on an annual basis, the material is not generated at a consistent rate. Fluctuations in actual generation rate should be considered since, during at least some years, the peak placement capacity demand may be much higher than the long-term average. Figure 2 clearly illustrates the need for long-term planning for new work dredging to meet the peak demand during construction

Figure 2



Step 2: Projection of Demand for DMMP

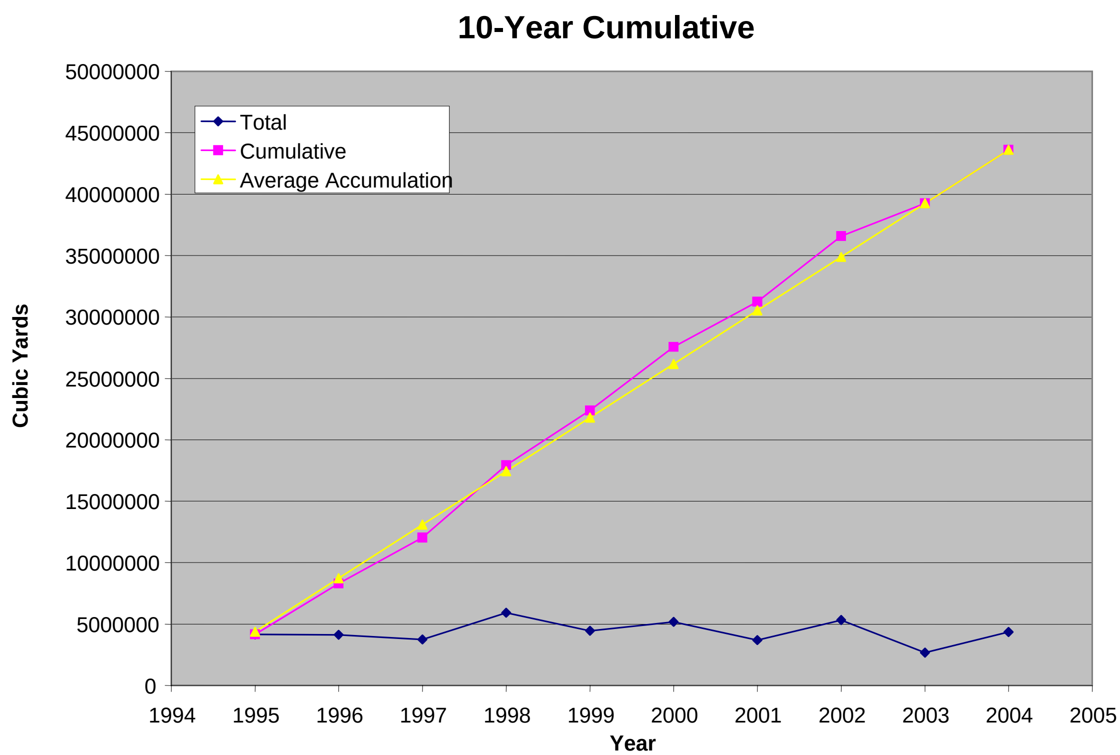
As noted above, the actual placement demand will vary annually. In order to illustrate this demand, the Preliminary Assessment values in Table 1 and the maintenance quantity data for past years, as modified in step one above, were again the starting point, assuming the future maintenance pattern is similar to the historic pattern. The following additional adjustments were made to reflect known changes:

1. New work projects that have been completed since the Preliminary Assessment have been removed from the overall projections.

2. Philadelphia District (C&D Canal Approach Channels-Lower Approach) requirements are included on a constant 1.2 mcy/year basis; data on cyclic trends for that specific channel reach are not available.

Figures 1 and 2 illustrate the need to consider peak production years. In order to illustrate the need to address changes in production rate, Figure 3 shows cumulative maintenance quantity over time reflecting prior dredging as compared to the cumulative quantity at a "constant" generation rate equal to the long-term average over the past 10 years (as noted above, the past 10 years are considered to be more representative of maintenance following major construction prior to that time).

Figure 3 Maintenance Dredging

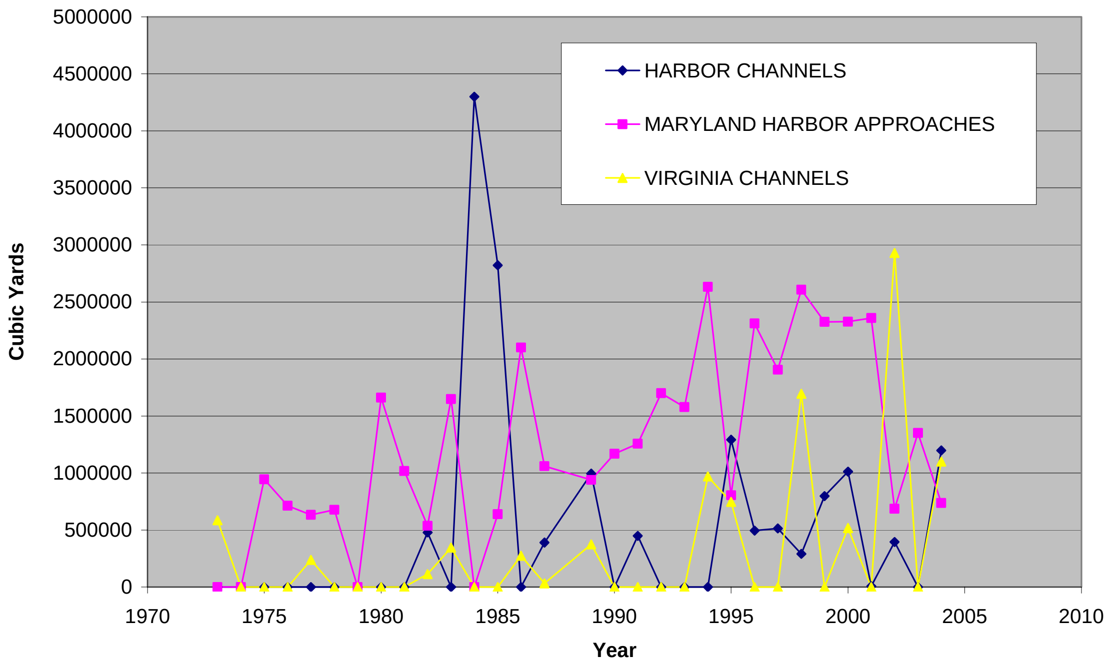


This shows that, depending upon actual schedule, the cumulative demand may exceed the capacity, which would be provided if only the average is considered. Conversely, planning for the average would provide some periods of spare capacity. The objective of the DMMP should be to bring capacity online at a rate that meets the peak demand requirement so that essential maintenance dredging does not have to be postponed for lack of capacity, or, at least so that more expensive options (such as transport to ocean placement from the upper Bay) do not have to be implemented to meet capacity shortfalls.

These concerns may be more significant in individual planning areas. Figure 4 shows historic trends for individual planning areas and illustrates that the peak does not coincide among planning areas.

Figure 4

Historical Dredging by Planning Area



Although to some extent this suggests that peak demand in one planning area could be addressed by short-term excess capacity in another, two factors mitigate against this:

1. The distances between some of the planning areas makes transport out of a planning area to meet short-term shortfall a costly option.

2. For the Harbor material in particular, placement of the dredged material in an unconfined manner outside of the harbor is prohibited under current state law.

Figure 5 shows the comparison of cumulative demand for the Harbor channels, for which, due to the regulatory definition of the nature of the sediment, placement options are inherently more limited and may be more difficult to develop.

Figure 5

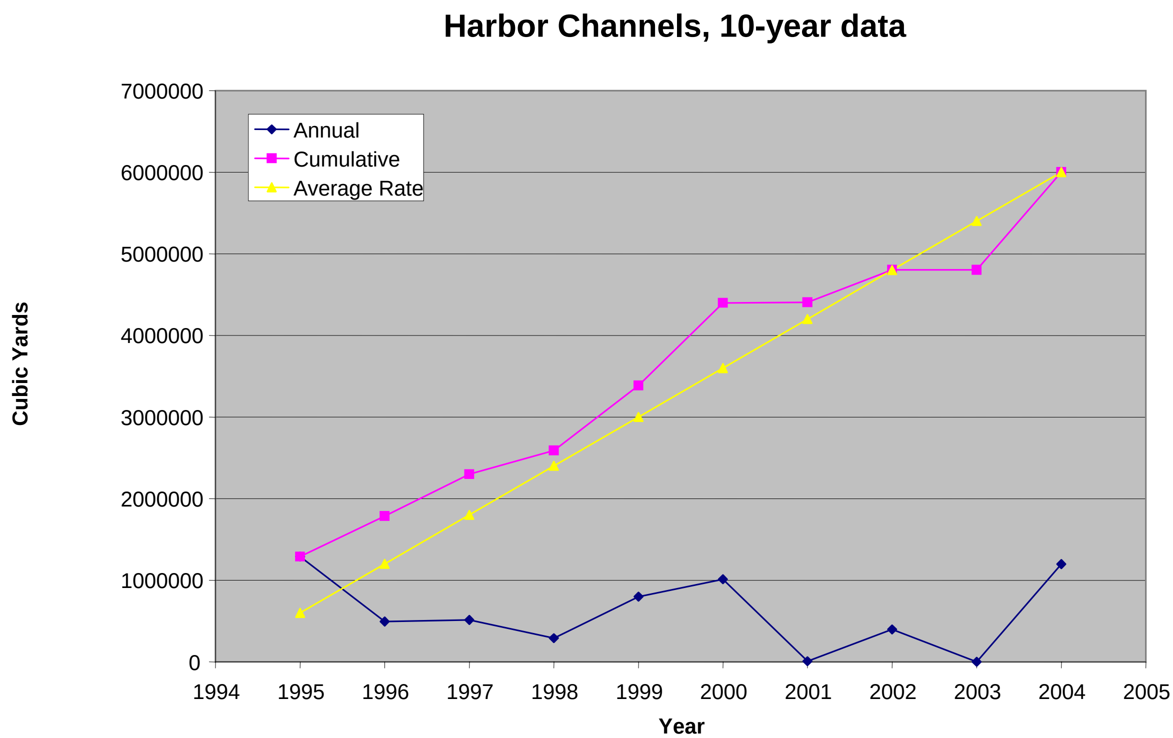
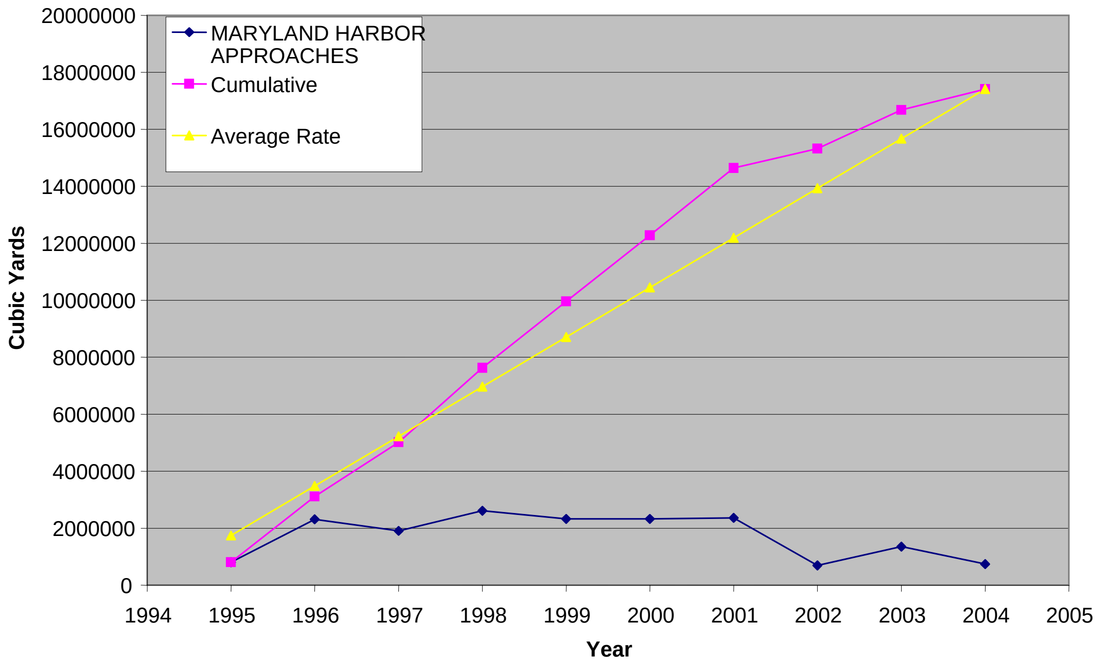


Figure 6 shows the same comparison for the past 10-year period for the Maryland approach channels and illustrates the significant shortfall that could occur by basing the plan on average values. In this case the maximum shortfall (difference between cumulative quantity generated and capacity available at "average" generation rates) would have occurred in year 2001 with a shortfall volume of 2.45 million cubic yards. Therefore, the development of placement alternatives and the Implementation Plan in particular needs to be based upon annual (peak) quantities as well as the long-term cumulative quantities. Projections of need by year have been developed from historical data for maintenance, and known or projected new work projects. It should be recognized that the projected quantities and/or the schedule for maintenance or new work could change over time. Therefore, projections should be periodically reviewed and revised as appropriate.

As discussed, this analysis used data from the PA as a starting point for 20-year total quantities, and CENAB historical data as an indicator of the cyclic or periodic variations in annual quantities and their effect on capacity planning. The quantities in the Final DMMP recommended plan may vary from the PA projections to the extent that some of the "new work" has been completed since 2001, and to the extent that annual maintenance requirements may change.

Figure 6

Maryland Harbor Approaches, 10-year data



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APPENDIX B

BAY ENHANCEMENT WORKING GROUP ENVIRONMENTAL SCORING

APPENDIX B.1

DESCRIPTION OF BEWG SCORING PROCESS AND PARAMETERS

Appendix B. Description of BEWG scoring process and parameters

RESOURCE SCORING INDICES

Fifty-two parameters have been selected to evaluate the environmental suitability of the proposed options. These parameters are divided into 10 categories based upon similar attributes. A brief description of each resource parameter is presented below. A complete list of the parameters is provided in the table entitled Environmental Parameters to be Considered for the Site Ranking (included at the end of the "Resource Scoring Indices" text), along with the factors considered for each parameter. Each parameter is assigned a raw score of +1, -1, or 0 for each option under consideration. The scores are presented in the environmental ranking matrix, and used to calculate the total weighted normalized score for each option. A description of the raw scores is described below.

A +1 will be assigned to a given parameter if the option is expected to protect or enhance *existing* resources of that type in or immediately adjacent to the option footprint. A –1 will be assigned if the resource is present and negative impacts (or further degradation) are expected as a result of option development. This is very carefully defined as long-term negative impacts to existing resources so options will not be scored negatively for potential short-term effects. A 0 will be assigned when no negative impacts are expected to existing resources at or immediately adjacent to an option. It will also be used in cases where there is not enough conclusive evidence to make a definitive evaluation, or evidence is ambiguous. In the later cases, the 0 will be underlined so that decision–makers will be able to discern those options that have less information. If the parameter is not applicable at a particular option because it could not possibly exist in that location, the box will be shaded. Scores that are bold indicate a "caveat." These "caveats" can be assumptions that the scores were based on or disserting opinions from various BEWG voting members. These "caveats" are documented in the Supplemental Information for the Evaluation of the Preliminary Environmental Ranking of Federal Dredged Material Management Plan Options(included at the end of the "Resource Scoring Indices" text).

Raw values are assigned based upon consensus of the BEWG and are subject to change as new data or information become available. The raw evaluations are to be based upon existing data and historical information, as well as the collective experience and knowledge of the BEWG and the technical study team. It is expected that additional information will be required for some options as the process moves forward. The initial scoring and ranking will be accomplished with the information and knowledge at hand with some modifications and updates occurring over the course of the process.

Each parameter will be assigned a weighting factor based upon the consensus of the BEWG. The raw scores will be multiplied by the weighting factor and totaled in order to achieve a total weighted value for each option. The total scores will then be normalized by dividing by the number of applicable (unshaded) parameters for that option. In this way, options are not unduly (positively) weighted for resources that cannot exist at the option. The normalized scores are for relative comparison among the options, and a positive or negative score does not indicate that an option has an overall positive or negative impact. As an approach to emphasizing that the rank of the screened options is relative, a column was added and a correlation factor was added to the normalized score. This yielded all positive scores.

CATEGORY 1: WATER QUALITY

Water quality is an important environmental parameter that can significantly influence the type of biota present at any particular option. A suite of water quality parameters will be described for each option, four of which will be considered for separate evaluation: dissolved oxygen, nutrients, turbidity, and salinity. These factors have demonstrated influences on distributions of aquatic organisms in the Bay. According to known habitat requirements for living Chesapeake Bay resources (Funderburk et al. 1991), naturally occurring TSS concentrations in the upper Bay do not exceed concentrations that would be detrimental to larval, juvenile, or adult life stages of commercially important species. Salinity will be considered separately because of its specific influence upon various life stages of aquatic organisms within the Bay.

Each option will require a Water Quality Certification that will specify the discharge limitations for that option. While the issue of TMDLs will be addressed under the certification, the evaluation of each option will be conducted using the above constituents as related to background conditions.

Parameters:

Dissolved Oxygen (DO)

There are areas in the Bay where DO drops below 5 ppm (sometimes even to 0) during seasonal lows. These areas are less supportive of aquatic life than areas that are well oxygenated over the entire year. If option development is not expected to have any long-term negative impacts on DO, it would receive a score of 0. If option development can impact DO positively, by decreasing depths and raising the bottom of a deep area above the pycnocline; this circumstance would receive a +1. Current changes resulting from option development could also influence water cycling/retention times in an area and negatively affect DO. Excessive nutrient inputs resulting from option development could also negatively effect DO by increasing oxygen consumption from the stimulation/extinction of algal blooms. Either of these conditions would result in a –1.

Nutrients, particularly ammonia nitrogen and phosphorous

Nutrients are natural components of any aquatic ecosystem and are typically balanced by natural processes. Increasing nutrient inputs over natural levels has been demonstrated to over-stimulate plant growth and can lead to problematic fluctuations in water quality, particularly DO. Nutrient releases can result from a variety of option developments activities and those that are expected to potentially cause long-term nutrient enrichment would be scored with a –1. For example, newly excavated areas expose naturally nutrient rich sediments, allowing the nutrients to flux into the surrounding water. Also, discharges during dewatering activities after sediments are placed can be nutrient enriched. If option development is not expected to have any long-term negative impacts on nutrient enrichment, it would receive a score of 0. A score of +1 will be applied to this parameter if dewatering activities will occur at a separate site from the option placement and there is potential to remove nutrients from enriched aquatic ecosystems

Turbidity

Many areas of the Bay experience naturally elevated turbidity due to tidal currents, river discharges, and other physical processes. Although natural turbidity has been shown to be important for the survival of some life stages of aquatic organisms, most organisms that occur in these areas are tolerant of a range of turbidity. Excessive long-term turbidity, however, can be detrimental, particularly to some planktonic and benthic organisms. If option development has the potential to increase turbidity levels beyond the natural ranges for the area on more than a short-term basis, the option would receive a score of –1. If option development is not expected to have any long-term increase in turbidity, it would receive a score of 0. If it has the potential to ameliorate existing high local turbidity, a +1 would be assigned.

Salinity

Salinity has a significant influence on the distribution of aquatic organisms in estuaries. Preference for and tolerance of salinity dictates the types of organisms that can live in various areas, and therefore, dictates the structure of the aquatic community. Alterations in regional salinity ranges could influence the aquatic community structure significantly. Additionally, the saltier waters from the ocean travel up the Bay in a wedge near the bottom through deepest areas of the Bay. This salt wedge enables organisms from saltier areas of the Bay to disperse into fresher water feeding and nursery areas. The potential for significant alterations to near field and regional salinity will be evaluated at each option. A 0 will be assigned if no negative impact is expected and a –1 if the construction of the option would affect hydrodynamics such that a change in salinity or an effect to the salt wedge would likely occur. No +1 condition has been identified for this parameter.

Ground Water

Some of the proposed options may have a potential influence upon groundwater through the migration of constituents through the underlying soils and would be scored with a +1. This is a particular concern at upland options where potable water resources exist and where sulfur compounds in dredged material are oxidized and acidified by exposure to the atmosphere. The potential for groundwater contamination will be evaluated and a value of 0 will be assigned if no negative groundwater impact is anticipated. Conversely a –1 would be assigned if a negative impact is probable.

CATEGORY 2: SHALLOW WATER HABITAT

<u>Parameters:</u>

Shallow Water Habitat (Tier II and Tier III)

Shallow water habitat (SWH) is considered a high value resource in the Bay to support potential SAV re-growth, fish nursery habitat, and avian (particularly waterfowl/wading bird) feeding areas. In this case we are using the SWH descriptor to be protective of Tier II and Tier III SAV habitat (see below) and the depths considered would be 6.6 feet or less. The existing condition of SWH will be evaluated to define the potential for significant impacts related to placement option development. If SWH exists within the option or immediately adjacent and could be negatively impacted by option development, a –1 will be assigned. If no negative impact is expected, a 0 will be assigned. If development of the option will protect or enhance existing SWH, the option would receive a +1 score.

Submerged Aquatic Vegetation (SAV)

Submerged Aquatic Vegetation (SAV) has historically declined over most of the upper Bay. These declines are thought to be due, in part, to high turbidity and nutrient loading. *Myriophyllum spicatum* (Eurasian water milfoil), *Hydrilla verticillata* (hydrilla), and *Potamogeton perfoliatus* (clasping weed pondweed) are currently among the most common species of SAV in the Chesapeake Bay, while others are undergoing slow recovery.

The Chesapeake Bay Program has issued guidance for protecting SAV in the Chesapeake Bay and its tributaries (CBP 1995). The Chesapeake Bay Program's Executive Council established a SAV Policy in 1989 and committed to an implementation plan in 1990, to achieve the goal of "a net gain in SAV distribution, abundance, and species diversity in the Chesapeake Bay and its tidal tributaries"(CEC 1990). This policy is meant to protect SAV "from further losses due to increased degradation of water quality, physical damage to the plants, or disruption to the local sedimentary environment" (CBP 1995). The Chesapeake Bay Program developed a three-tiered framework of SAV restoration goals or targets:

Tier I: restoration or establishment of SAV in areas of historic (1971 - present) distribution

Tier II: restoration or establishment of SAV in potential habitat to a depth of one meter

Tier III: restoration or establishment of SAV in potential habitat to a depth of two meters

Unvegetated potential habitat areas are protected by the Chesapeake Bay Program's three-tiered SAV restoration goals.

Several state and federal agencies have SAV regulations and policies; however, many of these regulations and policies apply specifically to SAV and not necessarily to potential, unvegetated SAV habitat (CBP 1995). In order for the goals of the Chesapeake Bay Program to be attained, the policies and regulations of these agencies must be considered in all shallow water areas providing SAV habitat.

Recommended SAV protection guidance by the Chesapeake Bay Program includes avoiding dredging activities in Tier I, Tier II, and Tier III areas. Additional guidance includes avoiding dredging, filling, or construction activities that create additional turbidity in or near SAV beds during the growing season; establishing buffers around SAV beds to minimize direct and indirect impacts on SAV during activities that significantly increase turbidity; preserving natural shorelines and stabilizing shorelines when needed; and educating the public about the negative effects of recreational and commercial boating on SAV, and ways to avoid or reduce these effects (CBP 1995).

Maps of SAV distribution in recent years will be examined to determine if SAV has been present within the proposed options. Additionally, shallow water habitat is valuable for many ecological reasons, even in the absence of SAV. Both will be considered together in evaluating this parameter.

Only Tier I SAV Habitat is considered here because the SWH parameter is designed to be protective of Tier II and Tier III habitat. If no Tier I SAV habitat occurs within or immediately adjacent to an option and no permanent negative impacts to SAV are expected, the option will receive a score of 0. If option development would protect or enhance Tier I habitat, the option would score a +1. If SAV is known to occur within an option and permanent negative impacts are expected, the option would score a –1.

CATEGORY 3: WETLANDS

<u>Parameters:</u>

Tidal Wetlands

This category is limited to locations where the possibility of affecting naturally occurring tidal wetlands exists. Options containing naturally occurring functional tidal wetlands will be considered less suitable for the construction of a dredged material placement option. In addition, options that may cause erosional impacts to this resource will be also considered less suitable for construction. If option development is expected to negatively impact natural wetlands, it will be assigned a -1. A 0 will be assigned if no negative impacts to existing wetlands are anticipated and a +1 if option development will result in the protection or enhancement of existing natural tidal wetlands.

Non-tidal Wetlands

This category is limited to locations where the possibility of affecting naturally functioning non-tidal wetlands exists. Options containing such wetlands will be considered less suitable for the construction of a dredged material placement option. If option development is expected to negatively impact natural non-wetlands, it will be assigned a -1. A 0 will be assigned if no negative impacts to existing wetlands are anticipated and a +1 if option development will result in the protection or enhancement of existing natural non-tidal wetlands.

CATEGORY 4: AQUATIC BIOLOGY - FINFISH/SHELLFISH ATTRIBUTES

Parameters:

Benthic Community

Benthic communities are an important component of the Chesapeake Bay ecosystem. Benthic organisms provide a trophic link from phytoplankton to higher trophic levels, serve as a food source for commercially important fish and shellfish, and play a role in nutrient cycling. Salinity and substrate are natural characteristics that influence the structure of the benthic community. Sediment composition will be evaluated based on option-specific data. Benthic assemblages are often used as indicators of environmental or anthropogenic stress in aquatic systems. An estuarine Benthic Index of Biotic Integrity (B-IBI) has been developed for Chesapeake Bay benthic communities (Weisberg et al. 1997). The B-IBI is salinity- and substrate-specific and evaluates attributes of the benthic community such as diversity, abundance, biomass, proportions of pollution-sensitive and pollution-tolerant species, and trophic feeding guilds to determine the relative condition (or environmental health) of an option. Options where there is no potential for further long-term benthic degradation within or immediately adjacent to the option from option development will receive a score of 0. Options that will be permanently negatively impact the benthic community would receive a –1. In cases where the benthic habitat could be improved from option development (ex. elevating the bottom above the pycnocline or capping contaminated material) would receive a +1.

Finfish Spawning Habitat

Portions of the upper Bay and the upper portions of the major riverine systems of the Bay are known to be crucial spawning and/or nursery areas for anadromous fish species that occur throughout the Chesapeake Bay. This is particularly the case in shallow water areas, or areas that have significant amounts of underwater structure or other cover, or that lie within critical (low) salinities. Because anadromous finfish spawning areas have received legislative protection, these spawning areas will be considered separately from other fish resource and habitat issues. Anadromous species, such as striped bass, American shad, blueback herring, and alewives migrate up-Bay to freshwater and oligohaline areas to spawn. The same areas are utilized by a variety of species resident to those salinities for spawning (including such important species as white perch). Each option will be scored based upon the presence (-1) or absence (0) of known or potential spawning within the footprint or immediate vicinity of the proposed placement area. If option development has the potential to protect or enhance existing anadromous fish spawning areas, it will receive a +1.

Finfish Rearing Habitat

Immediately downstream of the anadromous finfish spawning areas lay larger areas that are known to be critical to the success of early life stages of anadromous finfish species. These are generally termed rearing habitat and are of equal importance to year class success as the spawning grounds. Suitable rearing habitat (in terms of salinities and other water quality parameters) can occur over large areas within the Bay, but the most important areas for anadromous fish generally lie within shallow water (or the shore zone) in warmer months. (Winter refuge habitat is scored separately). These areas are also know to be utilized by the early life stages of species that spawn in much higher salinities and that are important forage for young anadromous fishes. Each option will be scored based upon the presence (-1) or absence (0) of known or potential anadromous fish (or forage) rearing habitat within the footprint or immediate vicinity of the proposed placement area. If option development has the potential to protect or enhance existing anadromous fish rearing areas, it will receive a +1.

Larval Transport

Discharge from the Susquehanna River and other upper and mid Bay rivers transports the early life stages of species that are spawned in the rivers to feeding and nursery areas further south (down-Bay). In contrast, the salt wedge and tidal currents help to transport young of fish that are spawned in saltier areas to feeding areas up-Bay. Significant alterations to the currents that influence these larval transport mechanisms could have detrimental effects on fish populations. Residence time modeling was conducted to attempt to predict significant alterations in water mass distribution and suspended particulate (e.g., larval fish) transport. The extent to which larval transport could be influenced by alterations in hydrodynamics will be examined at each option, to the extent possible. A 0 will be assigned if no negative impact is expected and a –1 assigned if negative effects are anticipated. No +1 condition has been identified for this parameter.

Essential Fish Habitat (EFH)

The Magnuson-Stevens Act provides protection to habitats designated as essential for the success of marine fish species that are managed by the NMFS as harvestable resources. The species of concern are particular to a region and the habitats essential to the success of their early life stages are defined in the EFH guidance for the region. The Chesapeake Bay generally provides EFH for seven species of regional concern, although only two species typically occur in the middle and upper portions of the Bay (bluefish and summer flounder). If the option lies within the general area designated as EFH but the species of concern are not present (or the option would otherwise not impact EFH) it will be scored with a 0. If an option is known to support the species of concern and there is a potential for negative impact, it will be assigned a –1. EFH areas will be defined from existing information and consultation with the NMFS. If option development has the potential to protect or enhance existing EFH, it will receive a +1.

Potential EFH at the Ocean Placement Option is significantly different than that of the Chesapeake Bay and will be scored based upon assessment made during siting and permitting of the option.

Habitat of Particular Concern (HAPC)

Within areas that provide EFH for fish species protected under the Magnuson-Stevens Act, some areas are considered to be of particular concern. These are generally areas of unique habitat features that have been shown to be critical to the survival of the early life stages of particular fish species. HAPC for most regionally important species occurs within the lower Bay, the Coastal Bays, or over the continental shelf. However, SAV (particularly the SAV bed boundaries) are considered HAPC for summer flounder, particularly south of the Bay Bridge.

The presence of HAPC or proximity to HAPC will be evaluated to define the potential impacts from construction or operation of a dredged material placement option or beneficial use option. HAPC areas will be defined from existing information and consultation with the NMFS. The presence of or negative impacts to HAPC will result in the assignment of a –1. A 0 will be assigned if no HAPC occur in the area, or if no negative impact is anticipated. If option development has the potential to protect or enhance existing HAPC, it will receive a +1.

Potential HAPC at the Ocean Placement Option is significantly different than that of the Chesapeake Bay and will be scored based upon assessment made during siting and permitting of the option.

Commercial Fish and Shellfish

For the majority of options, the fish species to be used for the screening will include those typically harvested within the Bay, including: *Morone americana* (white perch), *Morone saxatilis* (striped bass), herring (*Alosa*) species, *Alosa aestivalis* (blueback herring), *Alosa mediocris* (hickory shad), *Alosa sapidissima* (American shad) and various species in the family *Sciaenidae* (spot, croaker, etc.). Shellfish considered include *Callinectes sapidus* (blue crab), *Crassostrea virginica* (oysters), and *Mya arenaria* (soft clams) and hard clams (*Mercenaria mercenaria*). These species will be selected because of their historical commercial importance, and in some cases, because of population declines that have caused the imposition of state or federal restrictions on the taking of these species. Each of these species uses the Bay during at least one life stage and all of these species are typically used in evaluating the value of the fishery resources of the Chesapeake Bay (MES 1997b). Commercial shellfish and crabbing areas are limited (by regulations) within the Bay. Each option will be evaluated based upon current/existing commercial shellfish harvesting areas, existence of natural or historical oyster beds, presence of oyster sanctuaries, and crabbing areas within or immediately adjacent to the area. Potential negative impacts to existing harvesting areas or sanctuaries will receive a –1. If no negative impact potential exists, a 0 will be assigned. The commercial harvest potential of the Ocean Placement Option will be based upon previous assessments of commercial fish/shellfish distributions made during the permitting of the option. If option development has the potential to protect or enhance existing commercial harvesting areas, it will receive a +1.

Thermal Refuge

Within the Chesapeake Bay and its major tributaries, deeper areas provide overwintering habitat and refuge for young of the year finfish species and blue crabs. These areas can remain a few degrees warmer than the overlying (surficial) waters and provide refuge for young fish. This can be critical to the survival of some species because large percentages of some finfish populations may overwinter in the Bay and rely on these winter refugia. Also, within many areas of the Bay, deeper waters are known to be critical habitat for blue crabs, which burrow into the bottom to lie dormant for the winter. Each option will be evaluated relative to its potential to provide overwintering habitat for finfish or blue crabs. A 0 will be assigned if such areas are not present or affected by the construction of a given option, and a –1 will be assigned if negative impacts to or altering of known thermal refuges are anticipated to occur. If option development has the potential to protect or enhance existing thermal refuge areas, it will receive a +1.

Recreational Fishery

The recreational fishery in the Chesapeake Bay is among one of the most valued resources in the state of Maryland. The Bay supports a tremendous number of fish and diversity of species sought by recreational anglers. Charter boat captains favor some areas of the Bay, while individual recreational anglers favor other areas. In some areas, recreational anglers consume and subsist on their catches and the resource is highly valued locally. Options in these areas that are expected to negatively impact fishing activity will receive a –1 for this parameter. If none or only occasional use is determined, and no negative impacts are expected a 0 will be assigned. If option development has the potential to protect or enhance existing recreational fishing, it will receive a +1. The potential for each area to be utilized by recreational species and the actual use of each area by recreational anglers will be evaluated in the context of the regional fishery.

CATEGORY 5: SPECIAL REGULATORY ATTRIBUTES

Parameters:

Protected Species (RTE)

The distribution of both state (DNR designated SSPRA) and federally protected (i.e., Rare, Threatened, and Endangered [RTE]) species relative to the potential placement options will be determined through review of existing information and/or correspondence with both state and federal resource agencies. If option development has the potential to negatively impact RTE or SSPRA habitats, it will be assigned a –1. For this parameter, the colonial waterbird, waterfowl areas, and special non-tidal wetland habitats under SSPRA are not being considered because they are scored separately elsewhere. If no RTE or applicable SSPRA are determined to be in the vicinity and no negative impact is expected, a 0 will be assigned. If option development has the potential to protect or enhance existing RTE habitat, it will receive a +1. The occurrence of shortnose sturgeon, the proximity to bald eagle nesting areas, and the potential occurrence of least tern, black skimmer, or piping plover nesting options will be evaluated for each option within the Bay. A positive or negative score will result for each species identified at a particular site. For example, if 3 RTE species were identified at an option and negative impacts were anticipated, a score of –3 would result.

The RTE species potentially present near the Ocean Placement option are significantly different than those that utilize the Bay (in most cases). Potential for the Ocean Placement option to support RTE will be based upon previous assessments made during the permitting of the option.

CATEGORY 6: WATERBIRD ATTRIBUTES

Parameters:

Waterfowl Use

The Chesapeake Bay is utilized as breeding and feeding habitat for many species of waterfowl. Shallows are used for feeding and /or rearing of young. Deeper areas are also important for resting and staging (or flocking). The Bay is used by both migratory waterfowl and residents, and serves as a significant staging area for some species along the Atlantic flyway. For this assessment, the definition of waterfowl is limited to the harvestable resources (ducks/geese). The potential impacts upon existing areas of waterfowl utilization will be evaluated, with particular attention to duck and goose habitat. Options with a potential for long-term negative impacts to waterfowl staging or concentration areas will receive a score of –1. A 0 will be assigned to options where no negative waterfowl habitat impacts are expected. If option development has the potential to protect or enhance existing waterfowl habitat, it will receive a +1.

Wading and Shorebird Use

Shore zone and shallow water areas within the Chesapeake Bay are important foraging habitats for shorebird and wading bird feeding areas. Remote forested and natural beaches have been identified as critical nesting habitats for the survival of many wading and shorebird species. Each option will be evaluated for the potential of providing these habitat functions for wading or shorebirds and will receive a –1 if any long-term negative impacts can be expected, and a 0 if negative impacts are not expected or wading and shorebirds habitat is not present. If option development has the potential to protect or enhance existing wading or shorebird habitat, it will receive a +1.

CATEGORY 7: TERRESTRIAL HABITAT ATTRIBUTES

Parameters:

Wildlife Habitat

This category is limited to locations where the possibility of impacting sensitive natural terrestrial (upland) habitat and wildlife or nesting/forage areas exists. It will also include the potential for impacts to sensitive upland plant communities (other than forests and wetlands, which are scored separately). Options that will be developed in upland areas, will potentially abut shorelines, or which may negatively impact existing island remnants that provide habitat may have the potential for negative impacts to this parameter. In addition, options that may cause erosional impacts to terrestrial habitats will be also considered less suitable for construction. Any of these conditions would be assigned a -1. A 0 will be assigned if no negative impact is anticipated. If option development has the potential to protect or enhance existing terrestrial wildlife habitat, it will receive a +1.

Forests

This category includes natural forested areas that are of sufficient extent and density to provide forage and cover for sensitive terrestrial species. In general that means mature or mostly-mature forest stands of sufficient width (1000+ foot diameter) to provide habitat for species that dwell in forest interiors. Options that could potentially negatively impact such forested areas would receive a –1 and a 0 would be assigned if no potential negative impact is expected. If the option has the potential to protect or enhance existing forested areas, it will receive a +1.

Streams

Freshwater streams are an important resource for both wildlife habitat and recreation within the State of Maryland. Construction near streams, or options that could potentially alter the hydraulics of a stream have the potential to alter the physical character of the stream channel which, in turn, impacts the habitat value of the stream. Alterations in stream character can negatively impact the aquatic communities that the stream supports and can have lesser impacts on other terrestrial resources. An option that has the potential to negatively alter the physical character of a stream or stream channel will be scored –1. (Potential impacts to surface water quality are scored elsewhere). If streams existing within or immediately adjacent to an option, but there is no potential for impacts to the streams, the option would score a 0. If the option has the potential to protect or enhance existing natural streams, it will receive a +1.

Lakes & Ponds

Some of the proposed options may have a potential influence upon natural fresh surface water lakes and ponds. This potential will be evaluated and a value of -1 will be assigned if the physical character or hydraulics of the lake or pond would be potentially negatively impacted by option development. (Potential impacts to surface water quality are scored elsewhere). If no negative impact is anticipated, the site would receive a 0. If the option has the potential to protect or enhance existing natural lakes or ponds, it will receive a +1.

Other Avian Habitat

Upland areas provide habitat for a variety of avian species that differs considerably from those that are considered under the waterbird/shorebird and waterfowl categories. Specifically, uplands provide habitat for a wide variety of resident species but are also critical to sensitive groups such neotropical migrants and those that dwell in forest interiors. This category focuses on potential impacts to these habitats with particular attention to areas that would support sensitive species. Options that with a potential to negatively impact these other avian habitats would be scored with a –1. A 0 would be assigned to options that are not expected to negatively impact avian habitats. If the option has the potential to protect or enhance existing natural avian habitats, it will receive a +1.

High Quality Agriculture

Prime and unique farmland has been vanishing at a tremendous rate in some areas. Highly productive farmlands with rich soil composition that have been farmed for generations are recognized as a non-renewable resource by Executive Order. Development of or infringement upon these farmlands would be considered a negative impact and scored with a –1. A 0 would be assigned to options that are not expected to negatively impact prime or unique farmland. If the option has the potential to protect or enhance existing prime or unique farmlands, it will receive a +1.

CATEGORY 8: PHYSICAL ATTRIBUTES

Parameters:

Substrate Characteristics

Substrate characteristics are known to be a significant habitat feature that influences the distribution of benthic and other aquatic organisms within the Bay. The substrate composition of the benthic environment within the proposed placement option provides important information that will be used to characterize the relative condition of the option, the quality of habitat available to higher trophic levels at the option (such as fish), and the suitability of the option for construction. In the same manner, soil characteristics influence the type and productivity of terrestrial areas. Significant alterations in substrate/soil characteristics could negatively impact the habitat and biotic communities within an area particularly if a substrate is limited. This is the case with sand bottom in the Harbor. Conversion of sandy bottoms to finer-grained substrates would be considered a negative impact and assigned a value of -1. A 0 will be assigned if negative changes to substrate/soil composition are not expected from the option. If the option has the potential to enhance existing substrate or soil characteristics by adding or improving limited substrates, it will receive a +1.

Hydrodynamic Effects

Wind-driven currents and tidal currents affect the distribution of biological organisms and nutrients, sedimentation patterns, and rates of erosion. Large structures can alter the flow velocity to the point that significant changes in sedimentation, erosion, and potentially the distribution of biological organisms could occur. Hydrodynamic two-dimensional modeling will be conducted, examining the hydrodynamic effects of dredged material placement for water based options. Option-specific variations of facility size and orientation will be evaluated for hydrodynamic properties. Results of preliminary hydrodynamic modeling will be incorporated into the environmental analysis. More comprehensive hydrodynamic modeling, including use of a three-dimensional model, may be needed to more fully characterize prospective hydrodynamic effects of the selected options as they progress through the study process.

Alterations in hydrodynamics that could increase erosion potential or alter currents over critical areas such as oysters bays would be considered as –1. However, options that would have no effect will be scored as 0. Options that may decrease erosion over sensitive areas or otherwise protest/enhance resources would be assigned a +1 for a positive effect.

For this evaluation, the physical effects of hydrodynamics (erosion/sedimentation and increased currents in shallow or critical areas) are considered separately from the potential effects on larval fish distributions or navigation.

Toxic Contaminants

This category applies to the effects of toxic contaminants on flora and fauna. The effects of toxic contaminants on human health are to be considered under the Public Health category. Sediments/substrates can contain a variety of toxic contaminants introduced from both natural and anthropogenic sources. Sediment toxicants can limit the organisms that are able to utilize the area and can also be mobilized into the food chain (becoming bioavailable to other organisms and food fish). Sediment quality will be evaluated for each of the options based on known sediment quality data.

Harbor options and dredged materials within the Harbor are generally considered "contaminated" and material removed from them would remain in the Harbor or be placed in contained facilities. Generally, these facilities would be assigned a 0 for this parameter because there would be no change/impact relative to the existing conditions. Some Harbor options may include a "capping" component whereby materials of poorer quality will be buried or capped with materials of better quality. A +1 would be assigned if there were a potential for capping toxic contaminated sediments with sediments of better quality. A –1 would be assigned if there were a potential that an option could degrade the sediment quality in the area.

Hazardous, Toxic, Radioactive Substances (HTRS) and Unexploded Ordnance (UXO)

As part of its mission, the military currently tests, and has historically tested, weapons in portions of the Chesapeake Bay around Pooles Island (APG firing range), Sharps Island and at Bloodsworth Island (immediately north of Holland Island) in the central Bay (Navy firing/bombing range). This includes the firing of live rounds and stray shells are known to have landed outside the designated restricted areas. The Controlled Areas of the Bay are believed to contain shells that did not explode during testing. The presence of or potential for unexploded ordinance (UXO) could significantly complicate the construction of a dredged material placement area, and would result in the assignment of a -1. Any option without such potential would receive a 0. Also, any option that is known to have the potential for existing pollutants (HTRS) or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liabilities would be a poor choice for a dredged material placement area if construction would potentially remobilize contaminants into the environment. With respect to UXO, there is no approved remediation policy. There is also no specific federal policy regarding the liability of potential responsible parties. These are institutional issues, which would need to be addressed in addition to the potential environmental and safety implications associated with UXO, and in relationship to technical difficulties associated with cleanup. No +1 condition was identified for this parameter.

Fossil Shell Mining

In portions of the upper Chesapeake Bay, fossil oyster shell beds and buried shell resources are mined for MDNR to provide cultch for oyster replenishment in the middle and lower portions of the Bay. Baylor Grounds are natural oyster rocks, beds, and shoals charted within Virginia's Baylor Survey; Baylor Grounds may be a potential source for shell mining. Fossil shell mining is viewed as an important resource for the continued production of oysters from the Bay and the presence of mining areas or Baylor Grounds within or adjacent to a proposed option footprint would be assigned a –1. The absence of such beds or grounds would result in the assignment of a 0. No +1 condition was identified for this parameter.

CATEGORY 9: OTHER NON-BIOLOGICAL ATTRIBUTES

Parameters:

Floodplains

In addition to providing natural flood control, floodplains are important buffer and wildlife areas. Floodplains are recognized as a non-renewable resource by Executive Order. Further development of or infringement upon natural floodplains could decrease the water storage capacity of an area and increase the potential for localized flooding. This would be considered a negative impact and scored with a –1. A 0 would be assigned to options that are not expected to negatively impact floodplain storage capacity or flood potential. If the option has the potential to protect or enhance existing floodplains (i.e. increase flood storage capacity or decrease flooding), it will receive a +1.

Recreational Value

Parts of the Chesapeake Bay watershed are heavily used as recreational areas. The diverse recreational activities include bird watching, boating, swimming, fishing, hunting, etc. For this evaluation, recreational fishing is already evaluated elsewhere, so it will not be included with this parameter. If an option is known to provide recreational resources or facilities currently and option development will permanently disrupt these activities, option development will be assigned a –1. The absence of such resources or use would result in the assignment of a 0. If the option has the potential to protect or enhance existing recreational resources, it will receive a +1.

Aesthetics

Aesthetics impacts from the construction and operation of a dredged material placement facility can be a negative impact if the option is near a neighborhood, tourist/recreation area, or natural areas where there is a potential for wildlife disturbance. If an option is located within approximately 0.5 mi of a population center, dwellings, or managed natural area and will not include mitigating a site of existing poor aesthetic value, it will be considered to have the potential to have a negative impact on aesthetics, and will be assigned a -1. Although some options lie within the city limits of Baltimore, if they lie within existing industrial areas and will not negatively impact residential or recreational areas, they will be given a score of 0. If the option has the potential to improve aesthetics, it will receive a +1.

Noise

Noise impacts from the construction and operation of a dredged material placement facility can be a negative impact if the option is near a neighborhood, tourist/recreation area, or natural areas where there is a potential for wildlife disturbance. If an option is located within approximately 0.5 mi of a population center, dwellings, or managed natural area and the project will have potential noise impacts associated with construction and operation, it will be considered to have a negative impact and will be assigned a -1. Although some options lie within the city limits of Baltimore, if they lie within existing industrial areas and will not negatively impact dwelling or recreational areas, they will be given a score of 0. If the option has the potential to reduce existing noise levels, it will receive a +1.

Cultural Resources

This parameter is used to describe the potential for archaeological and historic options at each option. The potential presence of shipwrecks and other historical features as well as any archaeological resources known to occur (from existing reports) will be assigned a value of -1. Known resources that have been deemed to have no archaeological value (due to previous disturbance) will not be considered negatively relative to option development, and will be assigned a 0. Determinations that no known resources exist will be assigned a 0 also. If the option has the potential to protect or enhance existing cultural resources, it will receive a +1.

Air Quality

This parameter refers to the current status of the local air quality: In attainment or out of attainment based the federal standards set by EPA. It also includes the health risks associated with entry of particulate material or irritant substances into the airways affecting air quality that can may be associated with dredged material placement projects. If the project area is in attainment and building the project will put it out of attainment or the project could introduce long-term particulate/irritant emissions, the parameter would be assigned a score of –1. If there will be in impact to the current air quality or increase of particulates/irritants (whether the area is in or out of attainment) the score will be 0. If the project area is not in attainment and the project will improve the air quality or particulate/irritant conditions OR if the project area is in attainment and the air quality will be further improved the project will be scored +1.

Infrastructure

This parameter refers to the current status of the local infrastructure. This includes but may not be limited to roads, railroads, gas, sewer or electrical lines, business building and employment opportunities. Existing traffic and traffic patterns are also considered as part of this parameter. If the project has the potential to damage or impede the local infrastructure or negatively impact traffic volume or patterns the score is –1. If the project will have no impact on the local infrastructure the score is 0. If the project has the potential to improve, protect or provide opportunities to expand, enhance or benefit the local infrastructure or traffic the score is +1.

Existing Land Use

The existing land use in the vicinity of proposed dredged material placement sites in the Harbor includes commercial uses, recreational facilities, residential uses, and even some open/green space. Development of a dredged material placement site has the potential to enhance or perhaps even disrupt the current land use. If a project has the potential to enhance or has high potential to cleanup existing shoreline areas (improve eroded bulk heading, remove trash, etc.), the project would receive a score of +1. If a project is consistent with the current land use but provides no benefits or enhancements to an area, it will receive a score of 0. If the project has the potential to negatively alter or impact existing land use or community development/revitalization plans, it will receive a –1.

Socioeconomics: Commercial Income & Assets

The existing commercial ventures in an area or neighborhood help to define the character of the area and contribute significantly to the economic base. Development of a dredged material placement site has the potential to either enhance or disrupt the existing commercial activities within an area. Addition/improvement of recreation facilities, improvements to infrastructure, improvements to maritime use, or availability of more commercial space as a result of a project could bring more commercial income into an area or neighborhood. Such enhancements would be considered positive and receive a score of +1. If a project is consistent with the current commercial usage but provides no benefits or enhancements to an area, it will receive a score of 0. If the project has the potential to negatively alter or impact existing commercial ventures or income, it will receive a –1.

Socioeconomics: Community Assets

The existing community structure and economic character of an area is driven by a variety of factors. Employment potential, quality of education and recreational/commercial opportunities help to dictate property values and the average income of the families within a community. Communities that thrive economically have less turn over in residents and more improvements to individual properties, which maintains and improves the economic base. Development of a dredged material placement site has the potential to either enhance or disrupt the existing community socioeconomics of an area. Addition/improvement of recreation facilities, improvements to infrastructure, or availability of more residential land and small business ventures will tend to improve property values and average residential income within a community. Such enhancements would be considered positive and receive a score of +1. If a project is consistent with the current community usage but provides no benefits or enhancements to an area, it will receive a score of 0. If the project has the potential to negatively impact existing residential socioeconomics (e.g. decrease property values, impact economic character of the area), it will receive a –1.

Environmental Justice

Executive Order 12898 was established to protect low-income and minority populations, because it was recognized that some actions might disproportionately favor higher-income populations or put lower-income populations at higher health and safety risks. Development of a dredged material placement site could positively or negatively impact these types of populations. Addition/improvement of recreation facilities or other community amenities, improvement of property values or decreases of environmental health risks as a result of a project would be considered positive and scored as +1. If the project is consistent with EO 12898 but does not provide any improvements/enhancements, it will receive a score of 0. If the project has the potential to negatively impact or displace a minority or low-income community (e.g. increasing health risks, decreasing property values or income potential), it will receive a –1.

Public Health

Continuing good health of citizens is a paramount concern of most individuals, families and community leaders. Development of a dredged material placement site has the potential to improve public health in many ways. Capping of contaminated materials, reducing the leaching of toxic material which might enter the human food chain are considered under this category. Limiting the entry of particulate material or irritant substances into the airways affecting air quality may be one of the outcomes of a dredged material placement project are considered under air quality. Improvements to public health would be considered positive and would receive a score of +1. If a site development would not appreciably mitigate any public health concerns, it will receive a neutral score of 0. Although state and federal resource agencies would not knowingly support any project that would potentially increase the risk to public health, there are some potential mitigation projects that could pose increased public health risks during site evaluation and cleanup. If this arises as a potential for development of any site, and the potential health risk exceeds the potential benefit, the site should receive a score of –1.

Public Safety

This category refers to those situations affecting recreational, occupational and general public safety issues concerned with dredged material placement options. Some options may include chemical processing of dredged material prior to its final disposition. These options may result in occupational safety concerns. Other options may suggest long-term safety issues such as increases in industrial accidents or significant contributions to traffic accidents (from trucking of dredged material to upland sites). Some options may also have the potential to convert current recreational fishing/boating areas for dredged material placement, which may increase recreational boat traffic in/near shipping channels. If a site has the potential to create any of these potential hazards or otherwise increases public safety concerns, it will receive a score of –1. Improvements to any of these conditions, particularly safer access to public recreation, would be considered positive and would receive a score of +1. No appreciable change to public safety would receive a score of 0.

Navigation

Safe and effective navigation is essential to the vitality of the Port of Baltimore and the commerce of the region. Due to the large volume of barge, ship, and container traffic in the Bay, the potential effects of the proposed options on local navigation will be evaluated. Options that lie partially or wholly within navigation channels could be considered hazards to navigation. Additionally, options adjacent to channels could have an impact on navigation due to increased currents from altered hydrodynamics. A structure that may hinder navigation can also pose a potential environmental threat from potential ship collisions and groundings and will be assigned a -1. If no such potential exists, a 0 will be assigned. If the option has the potential to protect or enhance existing navigation on or immediately adjacent to the site, it will receive a +1.

CATEGORY 10: BENEFICIAL ATTRIBUTES

Parameters:

Beneficial Use – Upland

Many of the proposed options will be converted, in part, to upland habitat to enhance regional habitat resources (particularly for bird nesting habitat). If an option is not designed to create upland habitat, then it will receive a 0 score. If upland habitat will be created, the option will receive a +1. This parameter does not specifically relate to impairment or impact evaluation, but gives a positive score for creation of habitat. No –1 condition was identified for this parameter.

Beneficial Use – Wetland

Many of the proposed options will be converted, in part, to wetland habitat to enhance regional habitat resources. If an option is not designed to create wetland habitat, then it will receive 0 raw score. If wetland habitat will be created, the option will receive a +1. This parameter does not specifically relate to impairment or impact evaluation, but gives a positive score for creation of habitat. No –1 condition was identified for this parameter.

Beneficial Use – Adjacent Habitat Enhancement

Some options may have the potential to restore or enhance adjacent habitat after construction. For example, protection of an eroding shoreline may allow for natural propagation of tidal marsh plants or SAV adjacent to an option. Stabilization of certain beaches could also improve the nesting habitat for terrapins or colonial ground nesting birds (terns/skimmers). Restoration of forested uplands could provide isolated (adjacent) fringe habitat or provide enough density of adjacent forests to support forested interior dwelling species (FIDS). Another upland example would be the potential for stream improvements from the cessation of acid mine drainage. Habitat enhancements adjacent to the proposed option will be considered as positive effects of option development and will be assigned a raw score of +1. If no benefit is to be derived a 0 will be assigned. No –1 condition was identified for this parameter.

Beneficial Use – Faunal Enhancement

Some options may have the potential to restore or enhance populations of wildlife species of concern. For example, protection of some shoreline areas or isolated islands could have a positive effect on sensitive bird species. Wildlife enhancements within or immediately adjacent to the proposed option will be considered as positive effects of option development and will be assigned a raw score of +1. If no benefit is to be derived a 0 will be assigned. No –1 condition was identified for this parameter.

Beneficial Use –Recreational Enhancement

Some options may have the potential to create recreational facilities as part of the project. Impacts and improvements to existing recreational facilities are captured under the recreational category. This parameter is established to acknowledge projects that will create recreational opportunities as an integral part of the project plan. Recreational facilities developed as part of the proposed option will be considered as positive effects of option development and will be assigned a raw score of +1. If no benefit is derived a 0 will be assigned. No –1 condition was identified for this parameter.

Shoreline Protection

Several options have the potential to provide shoreline stabilization that will protect not only wildlife habitat but also dwellings and other man-made properties/structures. These options may provide a benefit that needs to be measured separately from the protection of natural resources. Shoreline stabilization for protection of property would be considered a positive effect of option development under this parameter, and a +1 will be assigned if it is part of the site design. If the option has no designed shoreline protection value, it will receive a 0. No –1 condition was identified for this parameter Shoreline stabilization for the purpose of habitat protection and enhancement is considered separately under other parameters.

APPENDIX B.2

ENVIRONMENTAL PARAMETERS TO BE CONSIDERED FOR THE SITE RANKING

Environmental Parameters To Be Considered For The Site Ranking			
Parameter	**Factors resulting in +1**	**Factors resulting in 0**	**Factors Resulting in -1**
Dissolved oxygen (DO)	• Has potential to improve DO (e.g. raising the bottom above the pycnocline)	• Not enough/inconclusive data OR • No potential for long-term negative impact to DO from project • Not Applicable	• Potential for long-term negative impact to DO from project
Nutrient enrichment	• Dewatering will occur off-site, and the option has potential to remove nutrients from enriched ecosystems.	• Not enough/inconclusive data OR • No potential for long-term nutrient enrichment from project • Not Applicable	• Potential for increased long-term nutrient enrichment from project
Turbidity	• Potential for improvements to existing water clarity from project development (ex. by stopping erosion)	• Not enough/inconclusive data OR • No potential for long-term increase in turbidity from project • Not Applicable	• Potential long-term increase in turbidity from project
Salinity	• No +1 condition identified	• Not enough/inconclusive modeling results • No changes to regional salinity expected • Not Applicable	• Changes to regional salinity expected from project
Groundwater	• Project provides a buffering potential (e.g. to acid mine drainage) or could otherwise improve existing groundwater quality	• Not enough/inconclusive data OR • No potential negative impact on groundwater from project • Not Applicable	• Potential negative impact on groundwater from project

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	Parameter	Factors resulting in +1	Factors resulting in 0	Factors Resulting in -1
	Shallow Water Habitat (<6.6 ft which is Tier II & Tier III SAV habitat)	• Project will protect or enhance existing Shallow Water Habitat (SWH)	• Not enough/inconclusive data OR • No potential to negatively impact existing SWH • Not Applicable	• Potential for negative impact or conversion of existing SWH from project
	SAV	• Protection or enhancement of existing (Tier I) SAV areas would occur due to project development	• Not enough/inconclusive data OR • No potential for negative impacts to SAV from project • Not Applicable	• Potential for negative impact to Tier I SAV or habitat from project
	Tidal Wetlands (Existing)	• Protection or enhancement of existing natural tidal wetlands from project development	• Not enough/inconclusive data • No potential for negative impacts to natural tidal wetlands from project • Not Applicable	• Potential for impact or alterations to natural tidal wetlands from project development
	Non-tidal Wetlands (Existing)	• Protection or enhancement of existing natural non-tidal wetlands from project development	• Not enough/inconclusive data • No potential for negative impacts to natural non-tidal wetlands from project • Not Applicable	• Potential for impact or alterations to natural non-tidal wetlands from project development
	Benthic Community	• Project has potential to improve existing benthic habitat (ex. elevating the bottom above the pycnocline or capping contaminated material)	• Not enough/inconclusive data OR • No potential to further degrade the benthic community within or immediately adjacent to project • Not Applicable	• Long-term impacts to benthos within or immediately adjacent to project are expected.
	Finfish spawning habitat	• Protection or enhancement of existing anadromous fish or winter flounder spawning habitat predicted from project	• Not enough/inconclusive data OR • No potential for negative impacts to anadromous fish or winter flounder spawning habitat predicted from project • Not Applicable	• Potential for negative impacts to anadromous fish or winter flounder spawning habitat from project

Parameter	Factors resulting in +1	Factors resulting in 0	Factors Resulting in -1
Finfish rearing habitat	• Protection or enhancement of existing anadromous fish or forage fish and other important estuarine fish species rearing habitat predicted from project	• Not enough/inconclusive data OR • No potential for negative impacts to young of anadromous species or forage species and other important estuarine fish species predicted from project • Not Applicable	• Potential for impacts to anadromous fish or forage species rearing and other important estuarine fish species predicted from project
Larval Transport	• No +1 condition identified	• Not enough/inconclusive data or modeling • Site does not lie within or will not influence an area critical to Up-Bay Migration of young of marine/high mesohaline species or Down-Bay migration of early life stages of anadromous species • Not Applicable	• Potential disturbance of Up-Bay migration of young of marine/high mesohaline species or Down-Bay migration of early life stages of anadromous species from project
Habitat of Particular Concern (HAPC)	• Project has potential to protect or enhance existing HAPC (as defined by the Magnuson-Stevens Act) for regionally important marine species (specifically summer flounder and red drum) within or adjacent to project footprint	• Not enough/inconclusive data OR • Project does not constitute HAPC and no potential for negative impact to HAPC is expected • Not Applicable	• Project lies within an area that provides HAPC for regionally important marine species (summer flounder and red drum) and potential for impact to HAPC
Essential Fish Habitat (EFH)	• Project has potential to protect or enhance existing EFH (as defined by the Magnuson-Stevens Act) for regionally important marine species (specifically summer flounder and red drum) within or adjacent to project footprint	• Not enough/inconclusive data OR • No potential for impact to EFH for regionally important species or forage species from project • Not Applicable	• Potential for impact to EFH or forage species that could cause population level effects on regionally important species (summer flounder and red drum) and potential for impact to HAPC

Parameter	Factors resulting in +1	Factors resulting in 0	Factors Resulting in -1
Commercially Harvested Species and Habitat (fish and shellfish)	• Project has potential to protect or enhance existing commercial harvesting areas, sanctuaries, or shellfish beds	• Not enough/inconclusive data OR • No negative impacts to commercial harvesting areas are predicted from project • Not Applicable	• Current/existing commercial finfish or shellfish harvesting or sanctuary areas within or immediately adjacent to project and potential negative impacts are expected
Thermal Refuge	• Project would protect or enhance existing finfish or blue crab over wintering habitat	• Not enough/inconclusive data • No impacts to finfish or blue crab over wintering habitat expected from project • Not Applicable	• Potential for impacts to over wintering habitat from project
Recreational Fishery	• Project has potential to protect or enhance existing recreational or subsistence fishing resources	• Not enough/inconclusive data OR • No impacts to recreational fishing expected from project • Not Applicable	• Impacts to angler utilization or subsistence fishing expected from project
Protected species (RTE)	• Project has potential to protect or enhance existing natural RTE habitat or RTE nesting or Sensitive Species Project Review Area (SSPRA). [Excludes: Colonial water bird, waterfowl, and special non-tidal wetlands, which are scored separately].	• Not enough/inconclusive data OR • RTE are transients to site and/or no negative impacts to RTE or SSPRA expected from project • Not Applicable	• Presence of RTE or SSPRA and potential negative impacts from project.
Waterfowl Use	• Project has potential to protect or enhance existing waterfowl (duck/goose) staging or concentration areas	• Not enough/inconclusive data OR • Project will not negatively impact a waterfowl (duck/goose) staging or concentration areas • Not Applicable	• Potential for negative impacts to waterfowl staging and concentration areas

Parameter	Factors resulting in +1	Factors resulting in 0	Factors Resulting in -1
Wading and Shorebird Use	• Project has potential to protect or enhance existing wading bird or shorebird habitat	• Not enough/inconclusive data OR • Site not known as a wading or shorebird utilization area or no potential negative impacts to wading or shorebird use expected from project • Not Applicable	• Potential negative impacts to wading or shorebird use
Wildlife Habitat	• Site development has potential to enhance or protect existing high value terrestrial habitat	• Not enough/inconclusive data OR • No potential for negative impacts to terrestrial habitats expected • Not Applicable	• Potential negative impacts expected to wildlife habitat(s)
Forests	• Site development will result in restoration or enhancement of forested areas	• Not enough/inconclusive data OR • No potential for negative impacts to natural forested areas from project • Not Applicable	• Potential negative impacts to forests expected
Streams	• Project has potential to protect or enhance the physical character of existing natural streams	• Not enough/inconclusive data OR • No potential for negative impacts to the physical character of adjacent streams from project • Not Applicable	• Potential negative impacts to the physical character of streams expected.
Lakes & Ponds	• Project has potential to protect or enhance the physical character of existing lakes/ponds	• Not enough/inconclusive data OR • No potential for negative impacts to the physical character of adjacent lakes/ponds from project • Not Applicable	• Potential negative impacts to the physical character of lakes/ponds expected

	Parameter	Factors resulting in +1	Factors resulting in 0	Factors Resulting in -1
	Other Natural Avian Habitat	• Project has the potential to protect or enhance migratory or other sensitive bird habitat(s)	• Not enough/inconclusive data OR • No potential for negative impacts to migratory or other sensitive bird habitat(s)from project • Not Applicable	• Potential for negative impacts to migratory or other sensitive bird habitat(s)from project
	Prime or Unique Agricultural Land	• Project has the potential to protect or enhance prime or unique farmland	• Not enough/inconclusive data OR • No potential for negative impacts to prime or unique farmland • Not Applicable	• Potential for negative impacts to prime or unique farmland from project
	Substrate /Soil Characteristics	• Project has the potential to protect or enhance unique substrate/soil characteristics of the area (e.g. preserve, enhance or create sandy substrates in the Harbor)	• Not enough/inconclusive data OR • No potential for alterations to substrate/soil composition from project • Not Applicable	• Project has the potential to eliminate or otherwise alter limited substrate/soil resources in the area.
	Hydrodynamic Effects (physical)	• Project has potential to decrease erosion or sedimentation or otherwise protect/enhance resources OR • Project has the potential to improve currents/circulation in the project vicinity	• Not enough/inconclusive modeling results OR • No potential for detrimental increases in erosion/sedimentation erosion or other current-related negative impacts to resources from project • Not Applicable	• Potential for detrimental increases in erosion/sedimentation erosion or other current-related negative impacts to resources from project
	Toxic Contaminants	• Project has the potential to decrease the potential for existing contaminant release (e.g. capping/isolating poorer quality sediments)	• Not enough/inconclusive data OR • No potential for negative impacts from toxic contaminant as a result of project • Not Applicable	• Potential for negative impacts from toxic contaminant as a result of project

Parameter	Factors resulting in +1	Factors resulting in 0	Factors Resulting in -1
CERCLA / UXO Potential	• No +1 Condition	• Not enough/inconclusive data OR • No potential for presence of UXO OR • Site is not currently an NPL or CERCLA site or does not have the potential to require significant HTRW cleanup • Not Applicable	• Potential for presence of UXO OR • Site is currently an NPL or CERCLA site or has the potential to require significant HTRW cleanup
Fossil Shell Mining & Buried Shell Resource Area (including Baylor Grounds in Virginia)	• No +1 Condition	• Not enough/inconclusive data OR • No infringement on historic oyster bars, fossil shell or buried shell resources • Not Applicable	• Infringement on historic oyster bars, fossil shell or buried shell resources
Floodplains	• Project will result in flood protection or other floodplain improvements (~~i.e~~i.e. improvement in water storage capacity).	• Insufficient information OR • No improvements or impacts to flooding or water storage capacity • Not Applicable	• Potential for reduction in water storage capacity or increased flooding in the project area.
Recreational Value (does not include recreational fishing – see separate category above)	• Project has the potential to improve existing recreational activities or facilities (does not include recreational fishing)	• Not enough/inconclusive data OR • No potential for recreational activity impacts from project • Not Applicable	• Potential for negative disturbance to recreational activities or facilities from project
Aesthetics	• Project has the potential improve aesthetics	• Not enough/inconclusive data OR • No potential for visual impacts from project • Not Applicable	• Potential visual impacts from project (generally adjacent to population centers or dwellings)

Parameter	Factors resulting in +1	Factors resulting in 0	Factors Resulting in -1
Noise	• Project has the potential to reduce existing noise levels	• Not enough/inconclusive data OR • No potential for noise impacts from project • Not Applicable	• Potential for noise impacts from project (generally adjacent to population centers or dwellings) OR • No beneficial use associated with project and within or adjacent to managed natural area(s)
Cultural Resources: Historic Structures Native American Sites Shipwrecks	• Project development will result in the protection or enhancement of existing historical or cultural resources	• Not enough/inconclusive data OR • No impacts to historical/cultural resources expected from project • Not Applicable	• Potential for impacts to historical/cultural resources from project
Air Quality	• Project development will reduce # of criteria pollutants OR • Project will move area from non-attainment to attainment OR • Project will reduce particulate or irritant emissions.	• Not enough/inconclusive data OR • No impacts related to air quality expected from project OR • Not applicable	• Project will contribute additional criteria pollutant OR • Project will move an attainment area to non-attainment OR • Project will generate long-term particulate or irritant emissions.
Infrastructure	• Project development will improve or protect public roads, utilities, pipes & other infrastructure (utilities, roads, pipes, cable etc…) and/or improve traffic patterns	• Not enough/inconclusive information on infrastructure impacts. • No impacts related to necessary project infrastructure from project. • Uncertain due to undefined alignment • Not applicable.	• Potential for destruction or interruption or harmful impacts to public infrastructure (utilities, roads, pipes, cable etc…) and/or traffic impacts.

Parameter	Factors resulting in +1	Factors resulting in 0	Factors Resulting in -1
Existing Land Use	• Project has potential to enhance existing land use or existing community development/revitalization plans • Project has high potential to cleanup existing shoreline areas (improve eroded bulkheading, remove trash, etc.)	• Project complies with the existing land use and community plans for the area • Not enough/inconclusive data OR • No impacts related to existing land use expected from project OR • Not applicable	• Project has the potential to negatively alter or impact existing land use or community development/revitalization plans
Socioeconomics—Commercial Income & Assets	• Project has potential to improve or enhance existing or provide opportunities for new commercial ventures in an area (e.g. improve recreation/commercial income potential, improve maritime use)	• Not enough/inconclusive data OR • No commercial economic impacts expected from project OR • Not applicable	• Project has the potential to negatively impact existing commercial ventures (decrease commercial property values, decrease tourist or other income).
Socioeconomics—Residential Assets	• Project has potential to improve or enhance existing or provide opportunities for new residential socioeconomics (e.g. improvement of property values, improve average residential income with community)	• Not enough/inconclusive data OR • No residential socioeconomic impacts expected from project OR • Not applicable	• Project has the potential to negatively impact existing residential socioeconomics (decrease property values, impact economic character of community)
Environmental Justice	• Project has potential to improve or conditions for a predominantly minority or low income community	• Not enough/inconclusive data OR • No environmental justice impacts expected from project OR • Not applicable	• Project has the potential to negatively affect or displace a minority or low-income community

Parameter	Factors resulting in +1	Factors resulting in 0	Factors Resulting in -1
Public Health	• Project has the potential to improve public health due to: isolating contaminated material or reducing the leaching of toxic material, which might enter the human food chain. (i.e. limiting the entry of particulate matter or irritant substances into the airways is included und Air Quality)	• Not enough/inconclusive data OR • No public health impacts expected from project OR • Not applicable	• Project has the potential to negatively affect public health
Public Safety	• Project has the potential to improve public safety (e.g. provide safer access to current recreational opportunities; decrease recreational boating near shipping channels). •	• Not enough/inconclusive data OR • No public safety impacts expected from project OR • Not applicable	• Project has the potential to negatively affect public and occupational safety due to processing of dredged material or due to increase in accident potential (e.g. recreational fishing/boating closer to shipping channels; increased truck traffic for the transportation of dredged material)
Navigation	• Project development will result in improvements to navigation • Project development will result in improvements to local boat traffic.	• Not enough/inconclusive modeling results • No potential for negative increases in currents in navigation channels from project OR • No increased potential for environmental disaster, ship collisions or groundings from project development OR • No increased potential for impedance of local boat traffic. • Not Applicable	• Potential for increased currents in navigation channels OR • Potential for increased potential for environmental disaster, ship collisions or groundings from project development OR • Potential for impedance of local boat traffic.

	Parameter	Factors resulting in +1	Factors resulting in 0	Factors Resulting in -1
	Beneficial Use – Wetlands	• Project will result in restoration or enhancement of tidal or non-tidal wetlands	• Beneficial Use is not part of the design	• No –1 condition identified
	Beneficial Use – Uplands	• Project will result in restoration or enhancement of upland habitats	• Beneficial Use is not part of the design	• No –1 condition identified
	Beneficial Use – Adjacent Habitat Enhancement	• Post placement adjacent habitat enhancement (e.g. SAV, shallow water habitat, fish nursery) has high potential as a result of the project	• Beneficial Use is not part of the design	• No –1 condition identified
	Beneficial Use – Faunal	• Project has high potential to restore/enhance populations of species of concern	• Beneficial Use is not part of the design	• No –1 condition identified
	Beneficial Use – Recreational Enhancement	• Project has high potential to create new recreational facilities (impacts to **existing** recreation captured elsewhere)	• This type of Beneficial Use is not part of the design	• No –1 condition identified
	Shoreline Protection	• Project designed to protect existing shorelines and properties	• Project has no (designed) shoreline protection component	• No –1 condition identified

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APPENDIX B.3

SUPPLEMENTAL INFORMATION FOR THE EVALUATION OF THE PRELIMINARY ENVIRONMENTAL RANKING OF OPTIONS FOR THE FEDERAL DREDGED MATERIAL MANAGEMENT PROGRAM (DMMP)

Bay Enhancement Working Group

Supplemental Information for the Evaluation of the Preliminary Environmental Ranking of Options for the Federal Dredged Material Management Program (DMMP)

March 2004

Purpose: The Bay Enhancement Working Group (BEWG) has performed preliminary scoring for the dredged material placement alternatives to assist with development of the Federal Dredged Material Management Plan (DMMP). The purpose of this document is to provide supplemental information for use during the review of the preliminary environmental ranking performed by the BEWG in March 2004. The caveats, limitations and conditions included in this document represent the basis of the assignment of the preliminary environmental scores. Furthermore, this document also details those agencies that stated an opinion contrary to the consensus of the group and the assigned score.

General

- All environmental scores are subject to change based on new information. Current scoring is based on the best available data and best professional judgment at this time.

- Scoring for most parameters considered the end result of the project in order to evaluate potential impacts. However, several parameters also considered the process of filling and managing a dredged material management site in the scoring. These included: aesthetics, noise, public health, & public safety.

- The U.S. Fish and Wildlife Service (USFWS) does not believe beneficial use, restored habitat and waterfowl parameters are weighted equally to aquatic resources in the overall environmental scoring system.

- The “Turbidity” parameter is philosophically viewed by some agencies differently. The Environmental Protection Agency (EPA) and National Marine Fisheries Service (NMFS) have noted that turbidity and erosion may actually be a natural occurrence that eventually comes under control when the sediment source has completely eroded. NMFS has further noted that erosion may support some submerged aquatic vegetation (SAV) (such as in Eastern Bay) growth by increasing the height of the photic zone. The position of the USFWS is that a decrease in turbidity and erosion provide an overall benefit to the Bay.

- A rate of erosion / sedimentation study should be included in future studies of the island restoration sites to more accurately score these options.

- The environmental scores assigned to the options do not consider the potential negative impacts associated with the operation of a particular site or process.

- The development of in-water placement options are expected to cause some short-term water quality effects; however, the water quality parameters were scored to capture long-term water quality effects.

- All environmental scores are subject to change based on new information.

- In general, options that restore an existing island are preferred over island creation options.

- Baltimore County Department of Environmental Protection and Resource Management (DEPRM) suggested that turbidity for all options with a wetland creation component should be scored at +1 because wetlands decrease turbidity in the area even if the erosion is not a problem at the project site.

- DEPRM & others (Anne Arundel County -AAC) believe that benthic community for all options with a wetland creation component should be scored at +1 because wetlands are beneficial to the benthic communities.

- DEPRM & others (AAC) believe that DO for all options with a wetland creation component should be scored at +1 because wetlands are beneficial to the DO.

- NMFS stated that there is no evidence that summer flounder or bluefish inhabit the Baltimore Harbor even though this area is of the appropriate depth and salinity in order to support these species.

- Except for alternatives with specific caveats in this document, the infrastructure parameter was scored for the options based on several general assumptions. It is assumed that most projects will be constructed and filled from the water so there should not be major traffic or infrastructure issues at most sites. All sites were scored on this basis. If significant landside access becomes necessary for a particular site as designs evolve, scoring for this parameter will have to be revisited.

- The Bay Enhancement Working Group will consider alternative alignments in order to minimize negative environmental impacts.

- The SAV parameter includes both historic beds and those that are currently in existence.

- MDNR stated that the only colonial waterbird nesting site and significant SSPRA site currently within Baltimore Harbor is Fort Carroll. Older colonial nesting sites have dissipated or the birds have moved to Fort Carroll. This results on scores of zero for SSPRA at all locations.

- Baltimore Harbor sites with a potential CERCLA liability received negative scores as a way to screen the potential issues for the MPA and USACE. Although MDE agrees that this is an important for site screening, the agency would also like to acknowledge that

CERCLA sites could have tremendous Brownfields redevelopment potential, which would be viewed positively from MDE's perspective.

- Baltimore City Department of Planning stated that Baltimore Harbor projects should include plans for mosquito control including minimizing the opportunities for standing water on the project sites.

Agricultural Placement-Maryland & Agricultural Placement-Virginia (#1 & #2)

- Dredged material would be used as an amendment to enhance soil quality on land that historically or currently is used for agriculture or horticulture. Dredged material will not be applied to land that is considered prime or unique.
- <u>Toxic Contaminants:</u> (Score= 0) AAC voted for a score of +1 for this option to be consistent with the other innovative uses and placement options with respect to potentially removal of toxics from the environment. Other members voted 0 because certain toxics MAY not be removed for materials that would be used as agricultural amendment.

Artificial Island Creation–Upper Bay (#4)

- <u>Hydrodynamics:</u> (Score=0) Hydrodynamic modeling was inconclusive in determining potential impacts to larval transport.

Beach Nourishment—Virginia (#5)

- <u>Protected Species (RTE):</u> (Score=0) The Incidental Take Statement developed for current dredging and beach nourishment operations in the option area must be strictly followed to minimize impacts to marine mammals.
- <u>Waterfowl Use:</u> (Score=0) USFWS noted that the beach nourishment option in Virginia may be a benefit to waterfowl if the placement of dredged material replaces the need for excavating the sand off of the shoals which are used by waterfowl such as scoters.

Capping—Landfill/ Brownfields (#8)

- <u>Aesthetics:</u> (Score=1) Scoring was based on the assumption that capping would use the dredged material to deepen the sediment layer beyond the standard cap depth and expand it to approximately 6 feet to allow for the planting of more diverse vegetation than grass (typical of most landfills).
- <u>Toxic Contaminants:</u> (Score= 0) AAC voted for a score of +1 for this option to be consistent with the other innovative uses and Baltimore Harbor placement options with respect to potentially removal of toxics from the environment. Other members voted 0 because most members felt that placement of dredged material in a landfill would not have an affect on the landfill
- <u>Recreational Value and Beneficial Use Recreational Enhancement</u>: (Score=1) US Army Corps of Engineers Baltimore District stated that a general understanding of the "base case" needs to be established in order to appropriately score the parameter of recreational value. The "base case" for landfill usage assumes that even though recreational activities would likely not be occurring at an active landfill, many landfills are redeveloped for recreational use after final capping (so there would be existing recreation at the site prior to some dredged material enhancement). Beneficial Use recreational enhancement

assumed that some currently closed landfills that are not being used for recreational activities might be enhanced by placement of dredged materials (i.e. plant shrubs to attract birds). Both of these cases are based upon the premise that landfills are required by law to be capped and therefore can provide recreational opportunities regardless of whether dredged material is used as the cap.

Capping—Elizabeth River & Patapsco River (#9 & #10)

- Toxic Contaminants: (Score= 1) The score is based on the potential for long-term improvements from the removal or burial of toxic contaminants if this project were to occur. The BEWG recognizes that there is a potential for short-term release of toxics while this project is conducted which would result in a different scoring for this parameter.

Confined Aquatic Disposal Area (pit)—Patapsco River (#11)

- Toxic Contaminants: (Score= 1) The score is based on the potential for long-term improvements from the removal or burial of toxic contaminants if this project were to occur. The BEWG recognizes that there is a potential for short-term release of toxics while this project is conducted which would result in a different scoring for this parameter.

Large Island Restoration—Lower Bay (#16)

- Waterfowl: (Score =1) There may be more potential to benefit/ protect waterfowl habitat from this project on the Eastern Shore versus the Western Shore, due to the higher rate of erosion on the Eastern Shore impacting waterfowl habitat.

Large Island Restoration—Mid Bay (#17)

- Protected Species: (Score = 0) There is consensus that the Bald Eagle habitat will be protected as a result of this project (+1). NMFS has stated that the Loggerhead turtle will be impacted and a -1 has been added for a total score of 0.

    - NMFS has also stated that the Kemps Ridley turtle may also be negatively impacted and has requested further research to determine whether the score should be changed to -1.

    - USFWS holds the position that turtles (both Loggerhead and Kemps Ridley) are transients to the area, and therefore neither species should be considered a negative impact for this parameter. USFWS supports a score of +1 for this parameter and has stated that there will be no overall impact on turtles Bay-wide as a result of this project moving forward.

Mine Placement—Cecil county, MD & Western Maryland (#18 & #19)

- Groundwater and Surface water: (Score = 1) Scores have been based on the assumption that there will be no impact to ground or surface water resources because a discharge permit would regulate any potential impacts.

- Finfish Spawning: (Score = 1) For this option only, freshwater fish are also being considered.
- Infrastructure: (Score=-1) The assigned score was based on the USFWS recommendation that the trucking of large volumes of material from the dewatering facility to the placement site will wear and traffic volume impacts to the roadways used to transport the material.

Small Island Restoration—Lower Bay (#27)

- Waterfowl: (Score =1) There may be more potential to benefit/ protect waterfowl habitat from this project on the Eastern Shore versus the Western Shore, due to the higher rate of erosion on the Eastern Shore impacting waterfowl habitat.

Wetlands Restoration—Dorchester County, MD (#29)

- Salinity: (Score =1) The assigned score reflects the potential for positive impacts to the salinity regime of the wetland system assuming that dredged material placement will decrease salt wedge intrusion to the upstream reaches of the waterway.

APPENDIX B.4

DMMP ALTERNATIVES

#	ALTERNATIVE	WATER QUALITY					AQUATIC HABITAT		WETLANDS		AQUATIC BIOLOGY - FINFISH/SHELLFISH									SPECIAL	WATERBIRDS		TERRESTRIAL						PHYSICAL PARAMETERS					
	Weighting Factor - Environmental Only	5	3	3	2	3	4	2	6	4	3	2	2				4		4	2	5	3							3	2	4			
	Weighting Factor	3	3	3	4	5	4	5	5	5	3	4	4	6	5	3	4	4	4	5	4	4	2	3	4	2	2	3	3	4	4	5	3	2
#	ALTERNATIVE	Dissolved Oxygen	Nutrient Enrichment	Turbidity	Salinity	Ground Water	Shallow Water Habitat (Tier II & Tier III)	SAV	Tidal Wetlands	Non-tidal Wetlands	Benthic Community	Finfish Spawning Habitat	Finfish Rearing Habitat	Larval Transport	Habitat of Particular Concern	Essential Fish Habitat	Commercially Harvested Species and Habitat	Thermal Refuge	Recreational Fishery	Protected Species (RTE) (SSPRA)	Waterfowl Use	Wading and Shorebird Use	Wildlife Habitat	Forests	Streams	Lakes & Ponds	Other Natural Avian Habitat	Prime or Unique Agricultural Land	Substrate/Soil Characteristics	Hydro-dynamics effects	Toxic Contaminants	CERCLA/UXO Potential	Fossil Shell Mining	Floodplains
1	Agricultural Placement- Maryland	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**0**	0	0	0
2	Agricultural Placement- Virginia	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**0**	0	0	0
3	Artificial Island Creation- Lower Bay	0	-1	-1	0	0	-1	0	0	0	-1	0	-1	0	-1	-1	-1	0	-1	-3	-1	0	0	0	0	0	0	0	-1	0	0	0	0	0
4	Artificial Island Creation- Upper Bay	0	-1	-1	0	0	0	0	0	0	-1	0	-1	0	0	-1	-1	-1	-1	-1	0	0	0	0	0	0	0	0	-1	0	0	0	0	0
5	Beach Nourishment- Virginia	0	-1	-1	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	**0**	**0**	1	1	0	0	0	0	0	-1	**0**	0	0	-1	0
6	Building Products	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
7	C&D Canal Pierce Creek Upland Sites Expansion	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	-1	0	0	0	0	0	0	0
8	Capping- Landfill/Brownfields	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**0**	0	0	0
9	Capping- Elizabeth River, VA	0	-1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0
10	Capping- Patapsco River, MD	0	-1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0
11	Confined Aquatic Disposal Pit- Patapsco River, MD	0	-1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0
12	Confined Disposal Facility- Lower Bay	0	-1	0	0	0	-1	0	1	0	-1	0	-1	0	-1	-1	-1	0	-1	-3	-1	0	0	0	0	0	0	0	-1	0	0	0	0	0
13	Confined Disposal Shoreline Facility- Patapsco River, MD	0	-1	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	-1	0	0
14	Cox Creek Expansion	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Hart-Miller Island Expansion	0	-1	0	0	0	-1	0	0	0	-1	0	-1	0	0	-1	-1	0	-1	-1	-1	0	0	0	0	0	0	0	-1	0	0	0	0	0
16	Large Island Restoration- Lower Bay	0	-1	1	0	0	-1	-1	1	0	-1	0	-1	0	-1	-1	-1	0	0	-3	**1**	1	1	1	0	0	1	0	-1	1	0	0	0	0
17	Large Island Restoration- Mid Bay	0	-1	1	0	0	-1	0	1	1	-1	0	-1	0	**0**	-1	-1	0	0	**0**	1	1	1	1	0	0	1	0	-1	1	0	0	0	0
18	Mine Placement- Cecil County, MD	0	1	1	0	**1**	0	0	0	0	0	**1**	1	0	0	0	0	0	1	0	0	0	1	1	1	0	1	0	1	0	1	0	0	0
19	Mine Placement- Western Maryland	0	1	1	0	**1**	0	0	0	0	0	**1**	1	0	0	0	0	0	1	0	0	0	1	1	1	0	1	0	1	0	1	0	0	0
20	Norfolk Ocean Open Water Placement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Pooles Island Open Water Site Expansion	-1	-1	-1	0	0	0	0	0	0	-1	0	-1	0	0	0	-1	0	-1	-1	0	0	0	0	0	0	0	0	-1	0	0	0	0	0
22	PIERP Modification	0	-1	0	0	0	-1	0	0	0	-1	0	-1	0	0	-1	-1	0	-1	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0
23	Rappahannock Shoal Open Water Site Expansion	0	-1	-1	0	0	0	0	0	0	-1	0	0	0	0	-1	-1	-1	-1	-3	0	0	0	0	0	0	0	0	-1	0	0	0	0	0
24	Shoreline Restoration- Lower Bay	0	-1	1	0	0	-1	-1	0	0	-1	0	-1	0	-1	-1	-1	0	0	-3	1	1	1	0	0	0	0	0	-1	0	0	0	0	0
25	Shoreline Restoration- Mid Bay	0	-1	1	0	0	-1	-1	0	0	-1	0	-1	0	-1	-1	-1	0	0	-2	1	1	1	0	0	0	0	0	-1	0	0	0	0	0
26	Shoreline Restoration- Upper Bay	0	-1	1	0	0	-1	-1	0	0	-1	0	-1	0	0	0	-1	0	0	-1	1	1	1	0	0	0	0	0	-1	0	0	0	0	0
27	Small Island Restoration- Lower Bay	0	-1	1	0	0	-1	-1	1	0	-1	0	-1	0	-1	-1	-1	0	0	-3	**1**	1	1	1	0	0	1	0	-1	1	0	0	0	0
28	Small Island Restoration- Mid Bay	0	-1	1	0	0	-1	-1	0	0	-1	-1	-1	0	-1	-1	-1	0	-1	1	1	1	1	1	0	0	1	1	-1	0	0	0	0	0
29	Wetland Restoration- Dorchester County, MD	1	1	1	**1**	1	1	0	1	1	1	0	1	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0	1	0	0	0	0	0
B1	Dam Neck Ocean Open Water Placement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B2	Hart-Miller Island (Existing)	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
B3	New Open Water (Deep Trough)	0	-1	-1	0	0	0	0	0	0	0	0	0	0	0	0	-1	-1	-1	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B4	Pooles Island Open Water Site (Existing)	0	-1	-1	0	0	0	0	0	0	0	0	-1	0	0	0	-1	0	-1	-1	0	0	0	0	0	0	0	0	-1	0	0	0	0	0
B5	Rappahanock Shoal Open Water Site (Existing)	0	-1	-1	0	0	0	0	0	0	-1	0	0	0	0	-1	0	0	0	-3	0	0	0	0	0	0	0	0	-1	0	0	0	0	0
B6	Wolf Trap Open Water Placement	0	-1	-1	0	0	0	0	0	0	-1	0	0	0	0	-1	-1	-1	0	-3	0	0	0	0	0	0	0	0	-1	0	0	0	0	0

Legend +1 Potential protection or enhancement
0 No potential impacts expected
0 Not enough / inconclusive data
0 (shaded) Not applicable / not calculated
- 1 Potential negative impacts expected
RTE is the only parameter with a score >1 because each specie impacted is counted
NOTE: **Bold scores** represent those that have been "flagged" to receive particular consideration because of significant interest or impact and is captured on the Supplemental Information shee

#	ALTERNATIVE	Recreational Value	Aesthetics	Noise	Cultural Resources	Air Quality	Infrastructure	Existing Land Use	Commercial Socioeconomics	Community Socioeconomics	Environmental Justice	Public Health	Public Safety	Navigation	Beneficial Use Wetlands	Beneficial Use Uplands	Beneficial Use - Adjacent Habitat Enhancement	Beneficial Use - Faunal	Beneficial Use - Recreational Enhancement	Shoreline Protection	Total Environmental Score	Normalized	Normalized +1.91	Overall Rank
		HUMAN USE ATTRIBUTES													BENEFICIAL ATTRIBUTES									
	Weighting Factor - Environmental Only	4	2		4									5	1	4	1							
	Weighting Factor	2	2	2	3	3	3	3	4	4	4	5	5	3	4	2	2	2	2	2				
1	Agricultural Placement- Maryland	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	13	0.5000	2.409	8
2	Agricultural Placement- Virginia	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	13	0.5000	2.409	8
3	Artificial Island Creation- Lower Bay	0	-1	0	0	0	0	0	0	0	-1	0	0	0	1	1	1	1	0	0	-51	-1.3077	0.601	34
4	Artificial Island Creation- Upper Bay	-1	-1	0	0	0	0	0	0	0	0	0	0	-1	1	1	1	1	0	0	-36	-0.9474	0.962	29
5	Beach Nourishment- Virginia	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1	1	9	0.2093	2.118	13
6	Building Products	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	16	1.4545	3.364	4
7	C&D Canal Pierce Creek Upland Sites Expansion	0	-1	-1	0	0	0	0	0	-1	0	-1	0	0	0	0	0	0	0	0	-22	-0.7097	1.199	25
8	Capping- Landfill/Brownfields	**1**	**1**	0	0	0	0	1	0	0	0	1	0	0	0	1	0	1	**1**	0	24	0.9600	2.869	5
9	Capping- Elizabeth River, VA	0	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	1	0	34	0.8947	2.804	6
10	Capping- Patapsco River, MD	0	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	1	0	34	0.8947	2.804	6
11	Confined Aquatic Disposal Pit- Patapsco River, MD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0.2368	2.146	12
12	Confined Disposal Facility- Lower Bay	1	-1	0	0	0	0	0	0	-1	-1	0	0	0	0	0	0	1	1	0	-51	-1.1860	0.723	32
13	Confined Disposal Shoreline Facility- Patapsco River, MD	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	-8	-0.2286	1.681	20
14	Cox Creek Expansion	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-5	-0.2778	1.631	21
15	Hart-Miller Island Expansion	1	-1	0	0	0	0	0	0	-1	-1	0	0	0	0	0	0	1	1	1	-39	-0.9070	1.002	28
16	Large Island Restoration- Lower Bay	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	-10	-0.2174	1.692	18
17	Large Island Restoration- Mid Bay	1	0	0	0	0	0	0	0	0	0	0	0	**0**	1	1	1	1	0	1	22	0.4783	2.387	10
18	Mine Placement- Cecil County, MD	1	1	0	0	0	**-1**	1	1	0	0	1	0	0	0	1	0	1	1	0	60	1.6667	3.576	2
19	Mine Placement- Western Maryland	1	1	0	0	0	**-1**	1	1	0	0	1	0	0	0	1	0	1	1	0	60	1.6667	3.576	2
20	Norfolk Ocean Open Water Placement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0000	1.909	14
21	Pooles Island Open Water Site Expansion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-32	-1.0000	0.909	30
22	PIERP Modification	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-30	-0.6977	1.211	24
23	Rappahannock Shoal Open Water Site Expansion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-42	-1.9091	0.000	35
24	Shoreline Restoration- Lower Bay	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	1	0	1	-21	-0.5000	1.409	23
25	Shoreline Restoration- Mid Bay	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	1	0	1	-16	-0.3810	1.528	22
26	Shoreline Restoration- Upper Bay	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	1	0	1	-3	-0.0698	1.839	16
27	Small Island Restoration- Lower Bay	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	-10	-0.2128	1.696	17
28	Small Island Restoration- Mid Bay	0	-1	0	-1	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	-11	-0.2200	1.689	19
29	Wetland Restoration- Dorchester County, MD	1	1	0	0	0	0	1	0	0	0	0	0	0	1	0	1	1	1	1	76	1.8095	3.719	1
B1	Dam Neck Ocean Open Water Placement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0000	1.909	14
B2	Hart-Miller Island (Existing)	1	-1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	17	0.3864	2.295	11
B3	New Open Water (Deep Trough)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-23	-0.7419	1.167	26
B4	Pooles Island Open Water Site (Existing)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-26	-0.7879	1.121	27
B5	Rappahanock Shoal Open Water Site (Existing)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-30	-1.0345	0.875	31
B6	Wolf Trap Open Water Placement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-38	-1.2667	0.642	33

Legend +1 Potential protection or enhancement
0 No potential impacts expected
0 Not enough / inconclusive data
0 (shaded) Not applicable / not calculated
- 1 Potential negative impacts expected
RTE is the only parameter with a score >1 because each specie impacted is counted
NOTE: **Bold scores** represent those that have been "flagged" to receive particular consideration because of significant interest or impact and is captured on the Supplemental Information shee

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APPENDIX C

COST ESTIMATE SPREADSHEETS

AGRICULTURAL PLACEMENT—MARYLAND

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Harbor Channels

ALTERNATIVE - INNOVATIVE USES

Agricultural Placement - Maryland

ASSUMPTIONS/BASIS FOR ESTIMATE:

The representative location for this alternative is Dorchester/Wicomico Counties, MD. This alternative includes dredging by clam-shell, transport by barge from the channel to a stationary moored barge close to the shoreline and the placement site, and then direct pumping from the stationary barge below water and overland by pipeline to the placement site. The material will be pumped out in thin approx. 6-8 in. lifts, dewatered in-place and then tilled into the soil. Two lifts will be placed on the site during optimum drying months of May to September. Each lift would be tilled in prior to the next lift placement. In order to achieve thin lifts, additional costs added to construct temporary berms in 1-2 acre areas and to continuously add pipe to reach the next cell. Required soil amendments will be made at the placement site prior to tilling into soil. Temporary E&S and stormwater controls needed until dredged material tilled into soil. These would include temporary berms and stormwater retention basins. For the purpose of this estimate, a 325 acre area will be amended. This will be applied on three approx. 100 acre sites over a period of 3 years. Each lift of approx. 8 inches would equate to 107,500 cy (wet volume) or 76,800 cy (cut volume). Application rates assume a 3 week time period/lift.

Capacity Calculations:

Final Product/Beneficial Use	Volume (cy/acre) of Wet Material if applied in 8 inch lifts	Ratio Pump Wet Vol/ Cut Vol	Cut Volume from Channel (cy/acre)	Cut Vol. per 100 acre	Vol. of Final Product/100 acre
Agricultural	1075	0.71	768	76,799	107,519

Evaluation of Available Capacity:

Final Product/Beneficial Use	Dredged Volume (CY)	Volume after Pumping from Barge (CY)	Wet Volume of Material for two 8 inch lifts per acre	Total Area (Acres)
Agricultural Use	250,000	350000	2150	163
	500,000	700000	2150	326
	1,000,000	1400000	2150	651

Capacity Calculations:

1. Site Capacity - Total Cut Volume Used for Beneficial Use (MCY)	0.5
2. Site Operating Life (years)	3
3. Annual Cut Volume from Channels (MCY)	0.17
4. Average One-Way Hauling Distance (nmiles) to dewatering site	90
5. Average One Way Hauling Distance (nmiles) to placement site	90

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,108,982**
Site Evaluation, Selection & Design		1		LS	$830,982.00	Cost for Evaluation of Suitable sites, Soil testing, E&S and Stormwater controls and site layout design	$ 830,982
Permitting		1	Total Acres - See table above for total cut volume of 500,000 cy - Assume crop land will be fallow for 1 year	LS	$150,000.00	Cost for E&S and land application permits	$ 150,000
Access Agreements		1		LS	$50,000.00	Obtain right of entry/ access agreements	$ 50,000
Farmland Lease/Compensation		325	Total Acres - See table above for total cut volume of 500,000 cy - Assume crop land will be fallow for 1 year	Acre	$240.00	Yield assumed per acre is 30 BU of soybeans at $8.00/BU (USDA NASS 12/2003). Compensation for 1 yr. - $/acre	$ 78,000

B. Site Development Costs							**$**	**849,700**
Construction of Temporary Berms	Standard earthwork	47,700	Temp perimeter berms approx 3 ft. high (2ft free board), 1 ft width, 3:1 slopes - cross sec area 30 sf. Length of berms 8,400 lf/100 acre site. Interior temp berms for ~10 acre cells, 2.5 ft high, cross sec area 21.25 ft. and length 8,400 lf/100 acre si	CY	$11.00	R.S. Means 2004- Excavation, Placement and Compaction	$	524,700
E& S and Stormwater Controls	Due to the size of disturbed area, controls will include sedimentation basins and outlet structures	325	Total Acres - See table above for total cut volume of 500,000 cy - Assume crop land will be fallow for 1 year	Acre	$1,000.00	Cost per acre assuming construction of temp. sedimentation basins, outlet structures and maintenance of perimeter berms	$	325,000
C. Dredging, Transport and Placement Costs							**$**	**13,000,000**
Mobilization/Demobilization	clam shell dredger to scow	3		LS	$1,500,000.00	Based on bids provided by USACE - rounded up average	$	4,500,000
Dredging of Material from Channel	clam shell dredger to scow	500,000	See table above for total cut volume	CY	$4.00	Based on USACE Dredging Spreadsheet	$	2,000,000
Transportation of Dredged Mat'l to Dewater Site	scow transported closest to placement site	500,000	See table above for total cut volume	CY	$9.00	$0.1/cy/mile	$	4,500,000
Transfer/Unloading to Stationary Barge	Transfer hydraulically from scow to moored stationary barge	500,000	See table above for total cut volume	CY	$1.00	$1.00/cy for transfer to stationary barge. Stationary	$	500,000
Hydraulic Transfer to Placement Site	Transfer hydraulically from stationary barge to agricultural placement site by pipeline	500,000	See table above for total cut volume	CY	$2.00	Based on Bids provided by USACE and USACE Dredging Spreadsheet	$	1,000,000
Relocate Barge and Piping	Barge and piping will need to be moved during operation	500,000	See table above for total cut volume	CY	$1.00	Based on Bids provided by USACE and USACE Dredging Spreadsheet	$	500,000
D. Amendment & Tilling Costs							**$**	**1,400,000**
Lime Amendment and Tilling - Mix with 1 ft. Existing Soils	Metals may leach out - acidity controlled through lime treatment	700,000	Conversion from cut volume to hydraulic pumping volume is 1.40	CY	$2.00	Lime = $26/ton as spread (interview W/ Bio-solids Co.) X 16 tons/acre (Saver for dry mid-bay mat'l) = $426/acre or $0.26/acre; tilling costs ($0.62/cy based on $1,000/acre - Staver)	$	1,400,000
E. Habitat Development Costs							**$**	**-**
		0	NA -No new habitat created	LS	$0.00		$	-
F. Placement Site Operations & Maintenance							**$**	**768,750**
Annual Monitoring & Reporting of Facility		5		year	$153,750.00	Assume for each 100 acre site - 5 years of monitoring to include 1 metals and pH test/acre/year @ $400/sample and labor of $11,250/yr/site (monitoring and reporting - 150 hr @ $75/hr) - $51,250/site/yr	$	768,750
Annual Monitoring and Reporting of Habitat		0	NA -No new habitat created	year	0		$	-
SUBTOTAL (A+B+C+D+E+F)							**$**	**17,127,432**
CONTINGENCY (50%)		**50%**					$	8,563,716
TOTAL							**$**	**25,691,148**
TOTAL UNIT COST PER CUBIC YARD							**$**	**51**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach Channels

ALTERNATIVE - INNOVATIVE USES

Agricultural Placement - Maryland

ASSUMPTIONS/BASIS FOR ESTIMATE:

The representative location for this alternative is Dorchester/Wicomico Counties, MD. This alternative includes dredging by clam-shell, transport by barge from the channel to a stationary moored barge close to the shoreline and the placement site, and then direct pumping from the stationary barge below water and overland by pipeline to the placement site. The material will be pumped out in thin approx. 6-8 in. lifts, dewatered in-place and then tilled into the soil. Two lifts will be placed on the site during optimum drying months of May to September. Each lift would be tilled in prior to the next lift placement. In order to achieve thin lifts, additional costs added to construct temporary berms in 1-2 acre areas and to continuously add pipe to reach the next cell.

Required soil amendments will be made at the placement site prior to tilling into soil. Temporary E&S and stormwater controls needed until dredged material tilled into soil. These would include temporary berms and stormwater retention basins. For the purpose of this estimate, a 325 acre area will be amended. This will be applied on three approx. 100 acre sites over a period of 3 years. Each lift of approx. 8 inches would equate to 107,500 cy (wet volume) or 76,800 cy (cut volume). Application rates assume a 3 week time period/lift.

Capacity Calculations:

Final Product/Beneficial Use	Volume (cy/acre) of Wet Material if applied in 8 inch lifts	Ratio Pump Wet Vol/ Cut Vol	Cut Volume from Channel (cy/acre)	Cut Vol. per 100 acre	Vol. of Final Product/100 acre
Agricultural	1075	0.71	768	76,799	107,519

Evaluation of Available Capacity:

Final Product/Beneficial Use	Dredged Volume (CY)	Volume after Pumping from Barge (CY)	Wet Volume of Material for two 8 inch lifts per acre	Total Area (Acres)
Agricultural Use	250,000	350000	2150	163
	500,000	700000	2150	326
	1,000,000	1400000	2150	651

Capacity Calculations:

1. Site Capacity - Total Cut Volume Used for Beneficial Use (MCY)	0.5
2. Site Operating Life (years)	3
3. Annual Cut Volume from Channels (MCY)	0.17
4. Average One-Way Hauling Distance (nmiles) to dewatering site	90
5. Average One Way Hauling Distance (nmiles) to placement site	90

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,108,982**
Site Evaluation, Selection & Design		1		LS	$830,982.00	Cost for Evaluation of Suitable sites, Soil testing, E&S and Stormwater controls and site layout design	$ 830,982
Permitting		1		LS	$150,000.00	Cost for E&S and land application permits	$ 150,000
Access Agreements		1		LS	$50,000.00	Obtain right of entry/ access agreements	$ 50,000
Farmland Lease/Compensation		325	Total Acres - See table above for total cut volume of 500,000 cy - Assume crop land will be fallow for 1 year	Acre	$240.00	Yield assumed per acre is 30 BU of soybeans at $8.00/BU (USDA NASS 12/2003). Compensation for 1 yr. - $/acre	$ 78,000

B. Site Development Costs							**$ 849,700**
Construction of Temporary Berms	Standard earthwork	47,700	Total Acres - See table above for total cut volume of 500,000 cy - Assume crop land will be fallow for 1 year	CY	$11.00	R.S. Means 2004- Excavation, Placement and Compaction	$ 524,700
E& S and Stormwater Controls	Due to the size of disturbed area, controls will include sedimentation basins and outlet structures	325	Total Acres - See table above for total cut volume of 500,000 cy - Assume crop land will be fallow for 1 year	Acre	$1,000.00	Cost per acre assuming construction of temp. sedimentation basins, outlet structures and maintenance of perimeter berms	$ 325,000
C. Dredging, Transport and Placement Costs							**$ 13,000,000**
Mobilization/Demobilization	clam shell dredger to scow	3		LS	$1,500,000.00	Based on bids provided by USACE - rounded up average	$ 4,500,000
Dredging of Material from Channel	clam shell dredger to scow	500,000	See table above for total cut volume	CY	$4.00	Based on USACE Dredging Spreadsheet	$ 2,000,000
Transportation of Dredged Mat'l to Dewater Site	scow transported closest to placement site	500,000	Conversion from cut volume to transport volume is 1.15	CY	$9.00	$0.1/cy/mile	$ 4,500,000
Transfer/Unloading to Stationary Barge	Transfer hydraulically from scow to moored stationary barge	500,000	Conversion from cut volume to hydraulic pumping volume is 1.40	CY	$1.00	$1.00/cy for transfer to stationary barge. Stationary	$ 500,000
Hydraulic Transfer to Placement Site	Transfer hydraulically from stationary barge to agricultural placement site by pipeline	500,000	Conversion from cut volume to hydraulic pumping volume is 1.40	CY	$2.00	Based on Bids provided by USACE and USACE Dredging Spreadsheet	$ 1,000,000
Relocate Barge and Piping	Barge and piping will need to be moved during operation	500,000	Conversion from cut volume to hydraulic pumping volume is 1.40	CY	$1.00	Based on Bids provided by USACE and USACE Dredging Spreadsheet	$ 500,000
D. Amendment & Tilling Costs			Conversion from cut volume to hydraulic pumping volume is 1.40				**$ 1,400,000**
Lime Amendment and Tilling - Mix with 1 ft. Existing Soils	Metals may leach out - acidity controlled through lime treatment	700,000	Conversion from cut volume to hydraulic pumping volume is 1.40	CY	$2.00	Lime = $26/ton as spread (interview W/ Bio-solids Co.) X 16 tons/acre (Saver for dry mid-bay mat'l) = $426/acre or $0.26/acre; tilling costs ($0.62/cy based on $1,000/acre - Staver)	$ 1,400,000
E. Habitat Development Costs							**$ -**
		0	NA -No new habitat created	LS	$0.00		$ -
F. Placement Site Operations & Maintenance							**$ 768,750**
Annual Monitoring & Reporting of Facility		5		year	$153,750.00	Assume for each 100 acre site - 5 years of monitoring to include 1 metals and pH test/acre/year @ $400/sample and labor of $11,250/yr/site (monitoring and reporting - 150 hr @ $75/hr) - $51,250/site/yr	$ 768,750
Annual Monitoring and Reporting of Habitat		0	NA -No new habitat created	year	0		$ -
SUBTOTAL (A+B+C+D+E+F)							**$ 17,127,432**
CONTINGENCY (50%)		**50%**					$ 8,563,716
TOTAL							**$ 25,691,148**
TOTAL UNIT COST PER CUBIC YARD							**$ 51**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (MD)

ALTERNATIVE - INNOVATIVE USES

Agricultural Placement - Maryland

ASSUMPTIONS/BASIS FOR ESTIMATE:

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	500,000	700000	2150	326
	1,000,000	1400000	2150	651

Capacity Calculations:

1. Site Capacity - Total Cut Volume Used for Beneficial Use (MCY)	0.5
2. Site Operating Life (years)	3
3. Annual Cut Volume from Channels (MCY)	0.17
4. Average One-Way Hauling Distance (nmiles) to dewatering site	80
5. Average One Way Hauling Distance (nmiles) to placement site	80

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,078,982**
Site Evaluation, Selection & Design		1		LS	$800,982.00	Cost for Evaluation of Suitable sites, Soil testing, E&S and Stormwater controls and site layout design	$ 800,982
Permitting		1		LS	$150,000.00	Cost for E&S and land application permits	$ 150,000
Access Agreements		1		LS	$50,000.00	Obtain right of entry/ access agreements	$ 50,000
Farmland Lease/Compensation		325	Total Acres - See table above for total cut volume of 500,000 cy - Assume crop land will be fallow for 1 year	Acre	$240.00	Yield assumed per acre is 30 BU of soybeans at $8.00/BU (USDA NASS 12/2003). Compensation for 1 yr. - $/acre	$ 78,000
B. Site Development Costs							**$ 849,700**

Construction of Temporary Berms	Standard earthwork	47,700	Total Acres - See table above for total cut volume of 500,000 cy - Assume crop land will be fallow for 1 year	CY	$11.00	R.S. Means 2004- Excavation, Placement and Compaction	$	524,700
E& S and Stormwater Controls	Due to the size of disturbed area, controls will include sedimentation basins and outlet structures	325	Total Acres - See table above for total cut volume of 500,000 cy - Assume crop land will be fallow for 1 year	Acre	$1,000.00	Cost per acre assuming construction of temp. sedimentation basins, outlet structures and maintenance of perimeter berms	$	325,000
C. Dredging, Transport and Placement Costs							**$**	**12,500,000**
Mobilization/Demobilization	clam shell dredger to scow	3		LS	$1,500,000.00	Based on bids provided by USACE - rounded up average	$	4,500,000
Dredging of Material from Channel	clam shell dredger to scow	500,000	See table above for total cut volume	CY	$4.00	Based on USACE Dredging Spreadsheet	$	2,000,000
Transportation of Dredged Mat'l to Dewater Site	scow transported closest to placement site	500,000	Conversion from cut volume to transport volume is 1.15	CY	$8.00	$0.1/cy/mile	$	4,000,000
Transfer/Unloading to Stationary Barge	Transfer hydraulically from scow to moored stationary barge	500,000	Conversion from cut volume to hydraulic pumping volume is 1.40	CY	$1.00	$1.00/cy for transfer to stationary barge. Stationary	$	500,000
Hydraulic Transfer to Placement Site	Transfer hydraulically from stationary barge to agricultural placement site by pipeline	500,000	Conversion from cut volume to hydraulic pumping volume is 1.40	CY	$2.00	Based on Bids provided by USACE and USACE Dredging Spreadsheet	$	1,000,000
Relocate Barge and Piping	Barge and piping will need to be moved during operation	500,000	Conversion from cut volume to hydraulic pumping volume is 1.40	CY	$1.00	Based on Bids provided by USACE and USACE Dredging Spreadsheet	$	500,000
D. Amendment & Tilling Costs							**$**	**1,400,000**
Lime Amendment and Tilling - Mix with 1 ft. Existing Soils	Metals may leach out - acidity controlled through lime treatment	700,000	Conversion from cut volume to hydraulic pumping volume is 1.40	CY	$2.00	Lime = $26/ton as spread (interview W/ Bio-solids Co.) X 16 tons/acre (Saver for dry mid-bay mat'l) = $426/acre or $0.26/cy; tilling costs ($1.24/cy based on $2,000/acre - Staver)	$	1,400,000
E. Habitat Development Costs							**$**	**-**
		0	NA -No new habitat created	LS	$0.00		$	-
F. Placement Site Operations & Maintenance							**$**	**768,750**
Annual Monitoring & Reporting of Facility		5		year	$153,750.00	Assume for each 100 acre site - 5 years of monitoring to include 1 metals and pH test/acre/year @ $400/sample and labor of $11,250/yr/site (monitoring and reporting - 150 hr @ $75/hr) - $51,250/site/yr	$	768,750
Annual Monitoring and Reporting of Habitat		0	NA -No new habitat created	year	0		$	-
SUBTOTAL (A+B+C+D+E+F)							**$**	**16,597,432**
CONTINGENCY (50%)		**50%**					$	8,298,716
TOTAL							**$**	**24,896,148**
TOTAL UNIT COST PER CUBIC YARD							**$**	**50**

AGRICULTURAL PLACEMENT—VIRGINIA

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (VA)

ALTERNATIVE - INNOVATIVE USES

Agricultural Placement - Virginia

ASSUMPTIONS/BASIS FOR ESTIMATE:

The representative location for this alternative is Isle of Wight County, VA. This alternative includes dredging by clam-shell, transport by barge from the channel to a stationary moored barge close to the shoreline and the placement site, and then direct pumping from the stationary barge below water and overland by pipeline to the placement site. The material will be pumped out in thin approx. 6-8 in. lifts, dewatered in-place and then tilled into the soil. Two lifts will be placed on the site during optimum drying months of May to September. Each lift would be tilled in prior to the next lift placement. In order to achieve thin lifts, additional costs added to construct temporary berms in 1-2 acre areas and to continuously add pipe to reach the next cell. Required soil amendments will be made at the placement site prior to tilling into soil. Temporary E&S and stormwater controls needed until dredged material tilled into soil. These would include temporary berms and stormwater retention basins. For the purpose of this estimate, a 325 acre area will be amended. This will be applied on three approx. 100 acre sites over a period of 3 years. Each lift of approx. 8 inches would equate to 107,500 cy (wet volume) or 76,800 cy (cut volume). Application rates assume a 3 week time peri

Capacity Calculations:

Final Product/Beneficial Use	Volume (cy/acre) of Wet Material if applied in 8 inch lifts	Ratio Pump Wet Vol/ Cut Vol	Cut Volume from Channel (cy/acre)	Cut Vol. per 100 acre	Vol. of Final Product/100 acre
Agricultural	1075	0.71	768	76,799	107,519

Evaluation of Available Capacity:

Final Product/Beneficial Use	Dredged Volume (CY)	Volume after Pumping from Barge (CY)	Wet Volume of Material for two 8 inch lifts per acre	Total Area (Acres)
Agricultural Use	250,000	350000	2150	163
	500,000	700000	2150	326
	1,000,000	1400000	2150	651

1. Site Capacity - Total Cut Volume Used for Beneficial Use (MCY)	0.5
2. Site Operating Life (years)	3
3. Annual Cut Volume from Channels (MCY)	0.17
4. Average One-Way Hauling Distance (nmiles) to dewatering site	38
5. Average One Way Hauling Distance (nmiles) to placement site	38

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 952,982**
Site Evaluation, Selection & Design		1		LS	$674,982.00	Cost for Evaluation of Suitable sites, Soil testing, E&S and Stormwater controls and site layout design	$ 674,982
Permitting		1		LS	$150,000.00	Cost for E&S and land application permits	$ 150,000
Access Agreements		1		LS	$50,000.00	Obtain right of entry/ access agreements	$ 50,000
Farmland Lease/Compensation		325	Total Acres - See table above for total cut volume of 500,000 cy - Assume crop land will be fallow for 1 year	Acre	$240.00	Yield assumed per acre is 30 BU of soybeans at $8.00/BU (USDA NASS 12/2003). Compensation for 1 yr. - $/acre	$ 78,000

B. Site Development Costs							**$ 849,700**
Construction of Temporary Berms	Standard earthwork	47,700	Temp perimeter berms approx 3 ft. high (2ft free board), 1 ft width, 3:1 slopes - cross sec area 30 sf. Length of berms 8,400 lf/100 acre site. Interior temp berms for ~10 acre cells, 2.5 ft high, cross sec area 21.25 ft. and length 8,400 lf/100 acre site	CY	$11.00	R.S. Means 2004- Excavation, Placement and Compaction	$ 524,700
E& S and Stormwater Controls	Due to the size of disturbed area, controls will include sedimentation basins and outlet structures	325	Total Acres - See table above for total cut volume of 500,000 cy - Assume crop land will be fallow for 1 year	Acre	$1,000.00	Cost per acre assuming construction of temp. sedimentation basins, outlet structures and maintenance of perimeter berms	$ 325,000
C. Dredging, Transport and Placement Costs							**$ 10,400,000**
Mobilization/Demobilization	Hopper Dredge	3		LS	$1,500,000.00	Based on bids provided by USACE - rounded up average	$ 4,500,000
Dredging of Material from Channel	Hopper Dredge	500,000	See table above for total cut volume	CY	$3.00	Based on USACE Dredging Spreadsheet	$ 1,500,000
Transportation of Dredged Mat'l to Dewater Site	Hopper Dredge	500,000	See table above for total cut volume	CY	$3.80	$0.1/cy/mile	$ 1,900,000
Transfer/Unloading to Stationary Barge	Transfer hydraulically from Hopper to moored stationary barge	500,000	See table above for total cut volume	CY	$1.00	$1.00/cy for transfer to stationary barge. Stationary	$ 500,000
Hydraulic Transfer to Placement Site	Transfer hydraulically from stationary barge to agricultural placement site by pipeline	500,000	See table above for total cut volume	CY	$3.00	Based on Bids provided by USACE and USACE Dredging Spreadsheet	$ 1,500,000
Relocate Barge and Piping	Barge and piping will need to be moved during operation	500,000	See table above for total cut volume	CY	$1.00	Based on Bids provided by USACE and USACE Dredging Spreadsheet	$ 500,000
D. Amendment & Tilling Costs							**$ 1,400,000**
Lime Amendment and Tilling - Mix with 1 ft. Existing Soils	Metals may leach out - acidity controlled through lime treatment	700,000	Conversion from cut volume to hydraulic pumping volume is 1.40	CY	$2.00	Lime = $26/ton as spread (interview W/ Biosolids Co.) X 16 tons/acre (Staver for dry mid-bay mat'l) = $426/acre or $0.26/acre; tilling costs ($0.62/cy based on $1,000/acre - Staver)	$ 1,400,000
E. Habitat Development Costs							**$ -**
		0	NA -No new habitat created	LS	$0.00		$ -
F. Placement Site Operations & Maintenance							**$ 768,750**
Annual Monitoring & Reporting of Facility		5		year	$153,750.00	Assume for each 100 acre site - 5 years of monitoring to include 1 metals and pH test/acre/year @ $400/sample and labor of $11,250/yr/site (monitoring and reporting - 150 hr @ $75/hr) - $51,250/site/yr	$ 768,750
Annual Monitoring and Reporting of Habitat		0	NA -No new habitat created	year	$0.00		$ -
SUBTOTAL (A+B+C+D+E+F)							**$ 14,371,432**
CONTINGENCY (50%)		**50%**					$ 7,185,716
TOTAL							**$ 21,557,148**
TOTAL UNIT COST PER CUBIC YARD							**$ 43**

ARTIFICIAL ISLAND CREATION—LOWER BAY

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (VA)

ALTERNATIVE - EXISTING SITES

Artificial Island Creation - Lower Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area near Watts Island, VA east of Tangier Island. Water depth at representative site is approx. -6 MLLW. For initial cost estimation purposes, artificial island creation uses the same design parameters as those for large island restoration. The basis for the estimate is the James Island Habitat Development, Alignment 1 parameters (20ft dike height from water line, 979 acres, 20.4 year design life). Information on layout obtained from "James Island Beneficial Use of Dredged Material" by Maryland Environmental Service, 2002. Water depth at James Island is -6 MLLW, therefore dike dimensions and capacity are similiar.

For an approximatey 1,000 site, James Island (GBA) estimate used 32,100 LF for the exterior dike length. James Island is shaped like a dog-leg. 32,100 LF is used for this estimate to account for an irregular shape to accommodate available material, currents, channel locations, habitat creation, etc. Exterior dike fill volume is 3.0 mcy (20 ft. crest width, dike height to + 20 ft MLLW, and 3:1 slope). Assume that sandy soils for dike construction are available in the representative area.
To assure efficient dewatering for habitat creation and management, assume 6 interior cells. Interior dikes for the wetland portion are +2 ft MLLW in height (crest width 10 ft and slope of 2:1). Estimated wetland dike length is 8000 LF. For the upland portion, the interior dikes are +14 ft MLLW in height (last lift overtops dike) with a crest width of 10 ft. and 2:1 slope. Estimated length is also 8000 LF. The dike separating the two areas will have the same dimensions as the exterior dike and an estimate length of 5500 LF. The estimated interior dike volume is 0.88 cy.

The in-place volume of the site is 24.2 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes existing material inside th footprint of the facility. The site capacity (cut volume) is equal to the in-place volume divided by a factor of 0.7.

1. In-place Site Volume (MCY)	24.2	5. Site Surface Area (ACRE)	1,000
2. Site Operating Life (YRS)	20	6. Upland Surface Area (ACRE)	500
3. Site Capacity (Cut Volume) (MCY)	34.6	7. Exterior Dike Perimeter (FT)	32,100
4. Average One-Way Hauling Distance (NMILES)	37	8. Interior Dike Perimeter (FT)	21,500

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 3,250,000**
Study and Design		1	Quantities based on James Island design, as determined in "James Island Habitat Restoration Project: Final Dredging and Site Engineering Recon Study," Gahagan & Bryant, 2003 (GBA, 2003)	LS	$ 3,000,000.00	Conceptual, pre-feasibility and feasibility costs. Cost estimation based on James Island design, as calculated in "James Island Habitat Restoration Project: Final Dredging and Site Engineering Recon Study," Gahagan & Bryant, 2003 (GBA, 2003)	$ 3,000,000
Permitting		1		LS	$ 250,000.00	Permits will be required for dredge placement.	$ 250,000
B. Site Development Costs							**$ 68,295,000**
Mob/Demob & Bonds		1		LS	$ 4,800,000.00	Table E-1 (GBA, 2003)	$ 4,800,000
Road Stone		50,000	Table D-1 (GBA, 2003) - for 32,100 LF of perm. Dikes - 15 ft. wide (~52,000 SY)	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 600,000
Geotextile		582,000	Table D-1 (GBA, 2003) - for 32,100 LF of perm. Dikes; slope length 82 ft.	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 2,328,000
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Unsuitable Foundation Excavation		1,118,000	Table D-1 (GBA, 2003)	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 13,416,000
Stone Work							
Slope Armor Dike Section		217,000	Table D-1 (GBA, 2003)	TON	$ 42.00	Table E-1 (GBA, 2003)	$ 9,114,000
Underlayer Armor Dike Section		99,000	Table D-1 (GBA, 2003)	TON	$ 41.00	Table E-1 (GBA, 2003)	$ 4,059,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Toe Armor Dike Section		96,000	Table D-1 (GBA, 2003)	TON	$ 53.00	Table E-1 (GBA, 2003)	$ 5,088,000
Quarry Run Dike Section		43,000	Table D-1 (GBA, 2003)	TON	$ 40.00	Table E-1 (GBA, 2003)	$ 1,720,000
Spillways		6	Table E-1 (GBA, 2003)	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 1,500,000
Erosion Control - Nursery Planting		1	Table E-1 (GBA, 2003)	LS	$ 200,000.00	Table E-1 (GBA, 2003)	$ 200,000
Dike Material - Available at Site							$ -
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	3,880,000	See assumptions above for interior and exterior dikes	CY	$ 2.50	USACE Dredging Spreadsheet - Higher Cost Due to high Sand content	$ 9,700,000
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	3,880,000	See assumptions above for interior and exterior dikes	CY	$ 4.00	R.S. Means 2004	$ 15,520,000
C. Dredging, Transport and Placement Costs							**$ 334,500,000**
Mobilization/Demobilization		20	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Costs evaluated from Bid Sheets provided by CENAO	$ 30,000,000
Dredging of Mat'l from Channel	Hopper Dredge	35,000,000	Cut volume (site capacity) equal to in-place volume of site divided by a factor of 0.7	CY	$ 3.00	Costs evaluated from Bid Sheets provided by CENAO	$ 105,000,000
Transportation of Dredged Mat'l to Site	Hopper Dredge	35,000,000	Transportation volume equal to cut volume	CY	$ 3.70	$0.10/nmile/cy	$ 129,500,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	35,000,000	Transfer volume equal to cut volume	CY	$ 2.00	Costs evaluated from Bid Sheets provided by CENAO	$ 70,000,000
D. Habitat Development Costs							**$ 18,400,000**
Planning and Design		3	(GBA, 2003)	YR	$ 1,000,000.00	(GBA, 2003)	$ 3,000,000
Grading/Channels/Hydraulic Controls		500	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 3,000,000
Planting and Seeding-Wetlands		500	Wetland Surface Area	ACRE	$ 20,400.00		$ 10,200,000
Planting and Seeding-Uplands		500	Site Surface Area	ACRE	$ 4,400.00	(GBA, 2003)	$ 2,200,000
E. Operating & Maintenance Costs							**$ 84,784,000**
O&M of Facility - Expansion		22	Site Operating Life plus 2 years after placement	YR	$ 1,534,500.00	$90,000 + $45/LF Perimeter (GBA, 2003)	$ 33,759,000
O&M of Created Habitat		20	Site Operating Life	YR	$ 150,000.00	(GBA, 2003)	$ 3,000,000
Monitoring & Reporting of Facility		23	Site Operating Life plus 3 years after placement	YR	$ 675,000.00	(GBA, 2003)	$ 15,525,000
Monitoring and Reporting of Created Habitat		20	Site Operating Life	YR	$ 500,000.00	(GBA, 2003)	$ 10,000,000
Other: Dredged Material Management		20	Site Operating Life	YR	$ 1,125,000.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 22,500,000
SUBTOTAL COST (A+B+C+D+E)							**$ 509,229,000**
CONTINGENCY (25%)							$ 127,307,250
TOTAL COST							**$ 636,536,250**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 18**

ARTIFICIAL ISLAND CREATION—UPPER BAY

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Harbor Channels

ALTERNATIVE - EXISTING SITES

Artificial Island Creation - Upper Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area west of Tolchester Channel (Gales Lump Reef). Water depth at representative site is approx. -12 MLLW. For initial cost estimation purposes, artificial island creation uses the same design parameters as those for large island restoration. The basis for the estimate is the James Island Habitat Development, Alignment 1 parameters (20ft dike height from water line, 979 acres, 20.4 year design life). Information on layout obtained from "James Island Beneficial Use of Dredged Material" by Maryland Environmental Service, 2002. Water depth at James Island is -6 MLLW, therefore dike dimensions and capacity have been modified to account for a deeper water depth.

For an approximately 1,000 site, James Island (GBA) estimate used 32,100 LF for the exterior dike length James Island is shaped like a dog-leg. 32,100 LF is used for this estimate to account for an irregular shape to accommodate available material, currents, channel locations, habitat creation, etc. Exterior dike fill volume is 4.4 mcy (20 ft. crest, +20 ft MLLW dike height, and 3:1 slope). Assume that sandy soils for dike construction are available in the representative area.

To assure efficient dewatering for habitat creation and management, assume 6 interior cells. Interior dikes for the wetland portion are +2 ft MLLW in height (crest width 10 ft and slope of 2:1). Estimated wetland dike length is 8000 LF. For the upland portion, the interior dikes are +16 ft MLLW in height (last lift overtops dike) with a crest width of 15 ft. and 2.5:1 slope. Estimated length is also 8000 LF. The dike separating the two areas will have the same dimensions as the exterior dike and an estimate length of 5500 LF. The estimated interior dike volume is 1.6 mcy.

The in-place volume for this alternative is based on 50% wetlands (filled to depth of water ~ +2 ft MLLW.) and 50% upland (filled to dike height of ~ +20 ft MLLW.). The in-place volume of the site is 33.87 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The site capacity (cut volume) is equal to the in-place volume divided by a factor of 0.7.

1. In-place Site Volume (MCY)	33.9	5. Site Surface Area (ACRE)	1,000
2. Site Operating Life (YRS)	20	6. Upland Surface Area (ACRE)	500
3. Site Capacity (Cut Volume) (MCY)	48.4	7. Exterior Dike Perimeter (FT)	32,100
4. Average One-Way Hauling Distance (NMILES)	13	8. Interior Dike Perimeter (FT)	21,500

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 3,250,000**
Study and Design		1	Quantities based on James Island design, as determined in "James Island Habitat Restoration Project: Final Dredging and Site Engineering Recon Study," Gahagan & Bryant, 2003 (GBA, 2003)	LS	$ 3,000,000.00	Conceptual, pre-feasibility and feasibility costs. Cost estimation based on James Island design, as calculated in "James Island Habitat Restoration Project: Final Dredging and Site Engineering Recon Study," Gahagan & Bryant, 2003 (GBA, 2003)	$ 3,000,000
Permitting		1		LS	$ 250,000.00	Permits will be required for dredge placement.	$ 250,000
B. Site Development Costs							**$ 89,243,450**
Mob/Demob & Bonds		1		LS	$ 4,800,000.00	Table E-1 (GBA, 2003)	$ 4,800,000
Road Stone		50,000	Table D-1 (GBA, 2003) - for 32,100 LF of perm. Dikes - 20 ft. wide (~52,000 SY)	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 600,000
Geotextile		610,000	Table D-1 (GBA, 2003) - for 32,100 LF of perm. Dikes; slope length 141 ft. Dikes - 50 ft. toe overlap & 20 ft. crest overlap	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 2,440,000
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Unsuitable Foundation Excavation		1,341,600	Table D-1 (GBA, 2003) - Increased by a factor of 20% due to larger dike footprint	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 16,099,200
Slope Armor Dike Section		271,250	Table D-1 (GBA, 2003) - Increased by a factor of 25% due to longer slope length (82 ft. for James Island vs 101 ft.)	TON	$ 42.00	Table E-1 (GBA, 2003)	$ 11,392,500
Underlayer Armor Dike Section		123,750	Table D-1 (GBA, 2003) Increased by 25%	TON	$ 41.00	Table E-1 (GBA, 2003)	$ 5,073,750

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Toe Armor Dike Section		96,000	Table D-1 (GBA, 2003) Increased by 25%	TON	$ 53.00	Table E-1 (GBA, 2003)	$ 5,088,000
Quarry Run Dike Section		53,750	Table D-1 (GBA, 2003) Increased by 25%	TON	$ 40.00	Table E-1 (GBA, 2003)	$ 2,150,000
Spillways		6	Table E-1 (GBA, 2003)	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 1,500,000
Erosion Control - Nursery Planting		1	Table E-1 (GBA, 2003)	LS	$ 200,000.00	Table E-1 (GBA, 2003)	$ 200,000
Dike Material - Available at Site							$ -
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	6,100,000	See assumptions above for interior and exterior dikes	CY	$ 2.50	USACE Dredging Spreadsheet - Higher Cost Due to high Sand content	$ 15,250,000
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	6,100,000	See assumptions above for interior and exterior dikes	CY	$ 4.00	R.S. Means 2004	$ 24,400,000
C. Dredging, Transport and Placement Costs							**$ 284,400,000**
Mobilization/Demobilization		20	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Costs for Dredging provided by CENAP	$ 30,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	48,000,000	Cut volume (site capacity) equal to in-place volume of site divided by a factor of 0.7	CY	$ 2.00	USACE Dredging Spreadsheets	$ 96,000,000
Transportation of Dredged Mat'l to Site	Barge	48,000,000	Transportation volume equal to cut volume	CY	$ 1.30	$0.10/nmile/cy	$ 62,400,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	48,000,000	Transfer volume equal to cut volume	CY	$ 2.00	USACE Dredging Spreadsheets and Recent pricing for "Liberty" type hopper with offloading capabilities	$ 96,000,000
D. Habitat Development Costs							**$ 18,400,000**
Planning and Design		3	(GBA, 2003)	YR	$ 1,000,000.00	(GBA, 2003)	$ 3,000,000
Grading/Channels/Hydraulic Controls		500	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 3,000,000
Planting and Seeding-Wetlands		500	Wetland Surface Area	ACRE	$ 20,400.00		$ 10,200,000
Planting and Seeding-Uplands		500	Site Surface Area	ACRE	$ 4,400.00	(GBA, 2003)	$ 2,200,000
E. Operating & Maintenance Costs							**$ 84,784,000**
O&M of Facility - Expansion		22	Site Operating Life plus 2 years after placement	YR	$ 1,534,500.00	$90,000 + $45/LF Perimeter (GBA, 2003)	$ 33,759,000
O&M of Created Habitat		20	Site Operating Life	YR	$ 150,000.00	(GBA, 2003)	$ 3,000,000
Monitoring & Reporting of Facility		23	Site Operating Life plus 3 years after placement	YR	$ 675,000.00	(GBA, 2003)	$ 15,525,000
Monitoring and Reporting of Created Habitat		20	Site Operating Life	YR	$ 500,000.00	(GBA, 2003)	$ 10,000,000
Other: Dredged Material Management		20	Site Operating Life	YR	$ 1,125,000.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 22,500,000
SUBTOTAL COST (A+B+C+D+E)							**$ 480,077,450**
CONTINGENCY (25%)							$ 120,019,363
TOTAL COST							**$ 600,096,813**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 12**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach Channels

ALTERNATIVE - EXISTING SITES

Artificial Island Creation - Upper Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area west of Tolchester Channel (Gales Lump Reef). Water depth at representative site is approx. -12 MLLW. For initial cost estimation purposes, artificial island creation uses the same design parameters as those for large island restoration. The basis for the estimate is the James Island Habitat Development, Alignment 1 parameters (20ft dike height from water line, 979 acres, 20.4 year design life). Information on layout obtained from "James Island Beneficial Use of Dredged Material" by Maryland Environmental Service, 2002. Water depth at James Island is -6 MLLW, therefore dike dimensions and capacity have been modified to account for a deeper water depth.
For an approximately 1,000 site, James Island (GBA) estimate used 32,100 LF for the exterior dike length. James Island is shaped like a dog-leg. 32,100 LF is used for this estimate to account for an irregular shape to accommodate available material, currents, channel locations, habitat creation, etc. Exterior dike fill volume is 4.4 mcy (20 ft. crest, +20 ft MLLW dike height, and 3:1 slope). Assume that sandy soils for dike construction are available in the representative area.

To assure efficient dewatering for habitat creation and management, assume 6 interior cells. Interior dikes for the wetland portion are +2 ft MLLW in height (crest width 10 ft and slope of 2:1). Estimated wetland dike length is 8000 LF. For the upland portion, the interior dikes are +16 ft MLLW in height (last lift overtops dike) with a crest width of 15 ft. and 2.5:1 slope. Estimated length is also 8000 LF. The dike separating the two areas will have the same dimensions as the exterior dike and an estimate length of 5500 LF. The estimated interior dike volume is 1.6 mcy.

The estimated capacity for this alternative is based on a site with 50% wetlands (filled to depth of water ~ +2 ft MLLW.) and 50% upland (filled to dike height of ~ +20 ft MLLW.). The in-place volume of the site is 33.87 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The site capacity (cut volume) is equal to the in-place volume divided by a factor of 0.7

1. In-place Site Volume (MCY)	33.9	5. Site Surface Area (ACRE)	1,000
2. Site Operating Life (YRS)	20	6. Upland Surface Area (ACRE)	500
3. Site Capacity (Cut Volume) (MCY)	48.4	7. Exterior Dike Perimeter (FT)	32,100
4. Average One-Way Hauling Distance (NMILES)	3.5	8. Interior Dike Perimeter (FT)	21,500

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 3,250,000**
Study and Design		1	Quantities based on James Island design, as determined in "James Island Habitat Restoration Project: Final Dredging and Site Engineering Recon Study," Gahagan & Bryant, 2003 (GBA, 2003)	LS	$ 3,000,000.00	Conceptual, pre-feasibility and feasibility costs. Cost estimation based on James Island design, as calculated in "James Island Habitat Restoration Project: Final Dredging and Site Engineering Recon Study," Gahagan & Bryant, 2003 (GBA, 2003)	$ 3,000,000
Permitting		1		LS	$ 250,000.00	Permits will be required for dredge placement.	$ 250,000
B. Site Development Costs							**$ 89,243,450**
Mob/Demob & Bonds		1		LS	$ 4,800,000.00	Table E-1 (GBA, 2003)	$ 4,800,000
Road Stone		50,000	Table D-1 (GBA, 2003) - for 32,100 LF of perm. Dikes - 20 ft. wide (~52,000 SY)	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 600,000
Geotextile		610,000	Table D-1 (GBA, 2003) - for 32,100 LF of perm. Dikes; slope length 141 ft. Dikes - 50 ft. toe overlap & 20 ft. crest overlap	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 2,440,000
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Unsuitable Foundation Excavation		1,341,600	Table D-1 (GBA, 2003) - Increased by a factor of 20% due to larger dike footprint	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 16,099,200
Slope Armor Dike Section		271,250	Table D-1 (GBA, 2003) - Increased by a factor of 25% due to longer slope length (82 ft. for James Island vs 101 ft.)	TON	$ 42.00	Table E-1 (GBA, 2003)	$ 11,392,500
Underlayer Armor Dike Section		123,750	Table D-1 (GBA, 2003) Increased by 25%	TON	$ 41.00	Table E-1 (GBA, 2003)	$ 5,073,750

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Toe Armor Dike Section		96,000	Table D-1 (GBA, 2003) Increased by 25%	TON	$ 53.00	Table E-1 (GBA, 2003)	$ 5,088,000
Quarry Run Dike Section		53,750	Table D-1 (GBA, 2003) Increased by 25%	TON	$ 40.00	Table E-1 (GBA, 2003)	$ 2,150,000
Spillways		6	Table E-1 (GBA, 2003)	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 1,500,000
Erosion Control - Nursery Planting		1	Table E-1 (GBA, 2003)	LS	$ 200,000.00	Table E-1 (GBA, 2003)	$ 200,000
Dike Material - Available at Site							$ -
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	6,100,000	See assumptions above for interior and exterior dikes	CY	$ 2.50	USACE Dredging Spreadsheet - Higher Cost Due to high Sand content	$ 15,250,000
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	6,100,000	See assumptions above for interior and exterior dikes	CY	$ 4.00	R.S. Means 2004	$ 24,400,000
C. Dredging, Transport and Placement Costs							**$ 238,800,000**
Mobilization/Demobilization		20	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Costs for Dredging provided by CENAP	$ 30,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	48,000,000	Cut volume (site capacity) equal to in-place volume of site divided by a factor of 0.7	CY	$ 2.00	USACE Dredging Spreadsheets	$ 96,000,000
Transportation of Dredged Mat'l to Site	Barge	48,000,000	Transportation volume equal to cut volume	CY	$ 0.35	$0.10/nmile/cy	$ 16,800,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	48,000,000	Transfer volume equal to cut volume	CY	$ 2.00	USACE Dredging Spreadsheets and Recent pricing for "Liberty" type hopper with offloading capabilities	$ 96,000,000
D. Habitat Development Costs							**$ 18,400,000**
Planning and Design		3	(GBA, 2003)	YR	$ 1,000,000.00	(GBA, 2003)	$ 3,000,000
Grading/Channels/Hydraulic Controls		500	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 3,000,000
Planting and Seeding-Wetlands		500	Wetland Surface Area	ACRE	$ 20,400.00		$ 10,200,000
Planting and Seeding-Uplands		500	Site Surface Area	ACRE	$ 4,400.00	(GBA, 2003)	$ 2,200,000
E. Operating & Maintenance Costs							**$ 84,784,000**
O&M of Facility - Expansion		22	Site Operating Life plus 2 years after placement	YR	$ 1,534,500.00	$90,000 + $45/LF Perimeter (GBA, 2003)	$ 33,759,000
O&M of Created Habitat		20	Site Operating Life	YR	$ 150,000.00	(GBA, 2003)	$ 3,000,000
Monitoring & Reporting of Facility		23	Site Operating Life plus 3 years after placement	YR	$ 675,000.00	(GBA, 2003)	$ 15,525,000
Monitoring and Reporting of Created Habitat		20	Site Operating Life	YR	$ 500,000.00	(GBA, 2003)	$ 10,000,000
Other: Dredged Material Management		20	Site Operating Life	YR	$ 1,125,000.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 22,500,000
SUBTOTAL COST (A+B+C+D+E)							**$ 434,477,450**
CONTINGENCY (25%)							$ 108,619,363
TOTAL COST							**$ 543,096,813**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 11**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (MD)

ALTERNATIVE - EXISTING SITES

Artificial Island Creation - Upper Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area west of Tolchester Channel (Gales Lump Reef). Water depth at representative site is approx. -12 MLLW. For initial cost estimation purposes, artificial island creation uses the same design parameters as those for large island restoration. The basis for the estimate is the James Island Habitat Development, Alignment 1 parameters (20ft dike height from water line, 979 acres, 20.4 year design life). Information on layout obtained from "James Island Beneficial Use of Dredged Material" by Maryland Environmental Service, 2002. Water depth at James Island is -6 MLLW, therefore dike dimensions and capacity have been modified to account for a deeper water depth.
For an approximately 1,000 site, James Island (GBA) estimate used 32,100 LF for the exterior dike length. James Island is shaped like a dog-leg. 32,100 LF is used for this estimate to account for an irregular shape to accommodate available material, currents, channel locations, habitat creation, etc. Exterior dike fill volume is 4.4 mcy (20 ft. crest, +20 ft MLLW dike height, and 3:1 slope). Assume that sandy soils for dike construction are available in the representative area.

To assure efficient dewatering for habitat creation and management, assume 6 interior cells. Interior dikes for the wetland portion are +2 ft MLLW in height (crest width 10 ft and slope of 2:1). Estimated wetland dike length is 8000 LF. For the upland portion, the interior dikes are +16 ft MLLW in height (last lift overtops dike) with a crest width of 15 ft. and 2.5:1 slope. Estimated length is also 8000 LF. The dike separating the two areas will have the same dimensions as the exterior dike and an estimate length of 5500 LF. The estimated interior dike volume is 1.6 mcy.

The estimated capacity for this alternative is based on a site with 50% wetlands (filled to depth of water ~ +2 ft MLLW.) and 50% upland (filled to dike height of ~ +20 ft MLLW.). The in-place volume of the site is 33.87 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The site capacity (cut volume) is equal to the in-place volume divided by a factor of 0.7

1. In-place Site Volume (MCY)	33.9	5. Site Surface Area (ACRE)	1,000
2. Site Operating Life (YRS)	20	6. Upland Surface Area (ACRE)	500
3. Site Capacity (Cut Volume) (MCY)	48.4	7. Exterior Dike Perimeter (FT)	32,100
4. Average One-Way Hauling Distance (NMILES)	6	8. Interior Dike Perimeter (FT)	21,500

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 3,250,000**
Study and Design		1	Quantities based on James Island design, as determined in "James Island Habitat Restoration Project: Final Dredging and Site Engineering Recon Study," Gahagan & Bryant, 2003 (GBA, 2003)	LS	$ 3,000,000.00	Conceptual, pre-feasibility and feasibility costs. Cost estimation based on James Island design, as calculated in "James Island Habitat Restoration Project: Final Dredging and Site Engineering Recon Study," Gahagan & Bryant, 2003 (GBA, 2003)	$ 3,000,000
Permitting		1		LS	$ 250,000.00	Permits will be required for dredge placement.	$ 250,000
B. Site Development Costs							**$ 89,243,450**
Mob/Demob & Bonds		1		LS	$ 4,800,000.00	Table E-1 (GBA, 2003)	$ 4,800,000
Road Stone		50,000	Table D-1 (GBA, 2003) - for 32,100 LF of perm. Dikes - 20 ft. wide (~52,000 SY)	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 600,000
Geotextile		610,000	Table D-1 (GBA, 2003) - for 32,100 LF of perm. Dikes; slope length 141 ft. Dikes - 50 ft. toe overlap & 20 ft. crest overlap	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 2,440,000
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Unsuitable Foundation Excavation		1,341,600	Table D-1 (GBA, 2003) - Increased by a factor of 20% due to larger dike footprint	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 16,099,200
Slope Armor Dike Section		271,250	Table D-1 (GBA, 2003) - Increased by a factor of 25% due to longer slope length (82 ft. for James Island vs 101 ft.)	TON	$ 42.00	Table E-1 (GBA, 2003)	$ 11,392,500
Underlayer Armor Dike Section		123,750	Table D-1 (GBA, 2003) Increased by 25%	TON	$ 41.00	Table E-1 (GBA, 2003)	$ 5,073,750

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Toe Armor Dike Section		96,000	Table D-1 (GBA, 2003) Increased by 25%	TON	$ 53.00	Table E-1 (GBA, 2003)	$ 5,088,000
Quarry Run Dike Section		53,750	Table D-1 (GBA, 2003) Increased by 25%	TON	$ 40.00	Table E-1 (GBA, 2003)	$ 2,150,000
Spillways		6	Table E-1 (GBA, 2003)	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 1,500,000
Erosion Control - Nursery Planting		1	Table E-1 (GBA, 2003)	LS	$ 200,000.00	Table E-1 (GBA, 2003)	$ 200,000
Dike Material - Available at Site							$ -
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	6,100,000	See assumptions above for interior and exterior dikes	CY	$ 2.50	USACE Dredging Spreadsheet - Higher Cost Due to high Sand content	$ 15,250,000
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	6,100,000	See assumptions above for interior and exterior dikes	CY	$ 4.00	R.S. Means 2004	$ 24,400,000
C. Dredging, Transport and Placement Costs							**$ 250,800,000**
Mobilization/Demobilization		20	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Costs for Dredging provided by CENAP	$ 30,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	48,000,000	Cut volume (site capacity) equal to in-place volume of site divided by a factor of 0.7	CY	$ 2.00	USACE Dredging Spreadsheets	$ 96,000,000
Transportation of Dredged Mat'l to Site	Barge	48,000,000	Transportation volume equal to cut volume	CY	$ 0.60	$0.10/nmile/cy	$ 28,800,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	48,000,000	Transfer volume equal to cut volume	CY	$ 2.00	USACE Dredging Spreadsheets and Recent pricing for "Liberty" type hopper with offloading capabilities	$ 96,000,000
D. Habitat Development Costs							**$ 18,400,000**
Planning and Design		3	(GBA, 2003)	YR	$ 1,000,000.00	(GBA, 2003)	$ 3,000,000
Grading/Channels/Hydraulic Controls		500	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 3,000,000
Planting and Seeding-Wetlands		500	Wetland Surface Area	ACRE	$ 20,400.00		$ 10,200,000
Planting and Seeding-Uplands		500	Site Surface Area	ACRE	$ 4,400.00	(GBA, 2003)	$ 2,200,000
E. Operating & Maintenance Costs							**$ 84,784,000**
O&M of Facility - Expansion		22	Site Operating Life plus 2 years after placement	YR	$ 1,534,500.00	$90,000 + $45/LF Perimeter (GBA, 2003)	$ 33,759,000
O&M of Created Habitat		20	Site Operating Life	YR	$ 150,000.00	(GBA, 2003)	$ 3,000,000
Monitoring & Reporting of Facility		23	Site Operating Life plus 3 years after placement	YR	$ 675,000.00	(GBA, 2003)	$ 15,525,000
Monitoring and Reporting of Created Habitat		20	Site Operating Life	YR	$ 500,000.00	(GBA, 2003)	$ 10,000,000
Other: Dredged Material Management		20	Site Operating Life	YR	$ 1,125,000.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 22,500,000
SUBTOTAL COST (A+B+C+D+E)							**$ 446,477,450**
CONTINGENCY (25%)							$ 111,619,363
TOTAL COST							**$ 558,096,813**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 12**

BEACH NOURISHMENT—VIRGINIA

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (VA)

ALTERNATIVE - EXISTING SITES

Beach Nourishment - Virginia

ASSUMPTIONS/BASIS FOR ESTIMATE:

Additional Capacity Achieved by Expansion

Expansion Assumptions:

This beach nourishment alternative consists of dredging material from the channel using hopper dredging, transport to within approx. 14,000 LF of the shoreline, and hydraulically pumping through a pipeline to the beach. A connection between the beach pumping system and the hopper dredge requires an offshore hookup, such as a moored barge partially jacked up above the wave action as a intermediate discharge plant. Based on available geotechnical data, only material from the middle and outer reaches of the Cape Henry channel is suitable for placement on beaches. Using published 933 reports of material placed at Sandbridge Beach, VA (1.5 mcy), Ocean Park Beach, VA (0.45 mcy), and Rudee Inlet, VA (erosion rate of 0.5 mcy/yr), it is assumed for this alternative could generate an in-place volume of 5 mcy over a 20 yr period. The material is assumed to be placed in 1 MCY increments on an approximately 124 acre site along 27,000 feet of shoreline. Materia will be placed at a 1:20 slope from a beach wall out 200 ft. into the water. It is assumed that two of the sites will be replenished twice and one site once. Each site is approx. 125 acres. The site capacity (cut volume) of this alternative is equal to the in-place volume divided by a factor of 0.9.

1. In-place Site Volume (MCY)	5		5. Site Surface Area (ACRE)	375
2. Site Operating Life (YRS)	1			
3. Site Capacity (Cut Volume) (MCY)*	5.6			
4. Average One-Way Hauling Distance (NMILES)	12			

*Assume material dewatered and compacted to approx. .9 of cut volume

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,933,446**
Study & Design		1		LS	$ 1,633,446.00	Study and design effort includes assessing need, defining limit of project and confirming suitability of dredged material. Assume 3% of Implementation costs	$ 1,633,446
Permitting & Real Estate Easements		1		LS	$ 300,000.00	Based on Costs Reported in 933 Report for Ocean Park Beach - $100K - 3 sites	$ 300,000
B. Expansion Development Costs	None						**$ -**
C. Dredging, Transport and Placement Costs							**$ 54,448,200**
Mobilization/Demobilization		5	Five mobilizations for three sites. Two sites replenished twice.	LS	$ 1,500,000.00	933 Report - Rudee Inlet (1987) and current costing using USACE dredging costing spreadsheet	$ 7,500,000
Dredging of Mat'l from Channel	Hopper Dredge	5,556,000	Site capacity (cut volume) equal to the amount placed on the beach divided by a factor of 0.9	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 11,112,000
Transportation of Dredged Mat'l to Site	Hopper Dredge	5,556,000	Transportation volume equal to cut volume	CY	$ 1.20	$0.10/cy/nmile	$ 6,667,200
Hyrdaulic Pumping to Shoreline	Mooring Barge, 24" submerged pipe, 24" shore pipe and 2 booster pumps	5,556,000	Transfer volume equal to cut volume	CY	$ 2.25	933 Report - Rudee Inlet (1987) and current costing using USACE dredging costing spreadsheet	$ 12,501,000
Spreading out of Mat'l on Beach	2-D6 Tractor	5,556,000	see above	CY	$ 3.00	R.S. Means Site Work & Landscaping 2004	$ 16,668,000
D. Habitat Development Costs	None						**$ -**
E. Operating & Maintenance Costs							**$ 250,000**
Monitoring of Site		5		Years	$ 50,000.00	Monitoring and Survey of Beaches	$ 250,000
SUBTOTAL COST (A+B+C+D+E)							**$ 56,631,646**
CONTINGENCY (20%)							$ 11,326,329
TOTAL COST							**$ 67,957,975**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 12**

BUILDING PRODUCTS

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Harbor Approach Channels

ALTERNATIVE - INNOVATIVE USES

Building Products - Pavement Bricks

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use as a building product, specifically bricks for non-structural application such as pedestrian walkways and decorative landscaping. For the purpose of this cost estimate, the brick manufacturer is an existing facility. It is assumed that the brick facility is within 100 miles of the CDF. For the Harbor Approach Channels the existing CDF is the Cox Creek facility. No Treatment of the dredged material is assumed.
For the purpose of this cost estimate, the total amount of dredge material from the channel (site capacity/cut volume) to be used for this beneficial use is 500,000 cy. It is further assumed that 100,000 cy per year will be removed from the existing CDF to reduce traffic issues. The cost include a 10% share of the operating costs for the existing facility.

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Factor for Further Reduction During Brick Manufacturing	Percentage of Dredged Material Used
Building Products - Bricks	1	0.7	0.5	1

Evaluation of Available Capacity:

Final Product/Beneficial Use	Dredged Volume (CY)	Volume after Initial Dewatering (CY)	Volume After further Dewatering During Brick Production	Area Covered by 4 inch Paver Bricks
	250,000	175,000	125,000	233
Building Products - Bricks	500,000	350,000	250,000	466
	1,000,000	700,000	500,000	931

Discussion of Available Capacity:

1. Site Capacity (cut volume) (MCY)	0.5	
2. Site Operating Life (YRS)	5	
3. Annual Avail. Capacity from Channels (MCY)	0.1	
4. Average One-Way Hauling Distance (MILES)	100	(Truck)
5. Average One-Way Hauling Distance (NMILES)	1	(Barge)

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 150,000**
Study and Design		1		LS	150000	Engineering evaluation of best dredged material characteristics for brick production and pre-manufacturing blending.	$ 150,000
Permitting		1		LS	0		$ -
B. Excavation, Transport & Processing Costs							**$ 25,677,500**
Excavation of Dewatered Material	Excavator	350,000	Volume after dewatering	CY	$2.25	M.S. Means 2004	$ 787,500
Transportation to Brick manufacturing Site for Stoc	Truck	350,000	Volume after dewatering	CY	$20.00	$0.20 per cy/mile	$ 7,000,000
Stockpile Management	Front End Loader	350,000	Volume after dewatering	CY	$1.00	M.S. Means 2004	$ 350,000
E&S Controls/Stormwater Management	Silt Fencing	10	E&S controls around stockpile area of approximately 10 acres	Acres	$4,000.00	M.S. Means 2004	$ 40,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Brick Manufacturing		350,000	Volume after dewatering	CY	$50.00	Brick Manufacturing cost using dredged materials from various sources (references provided in DMMP Report) - production primary has been performed in Europe. Sources of costs indicate brick productions costs from $35-$100/cy. Assume $50/cy. Actual method of production and cost will depend on manufacturer.	$ 17,500,000
C. Dredging, Transport and Placement Costs							**$ 12,050,000**
Mobilization/Demobilization		5	Mob & Demob for operating life of site	YR	$ 2,000,000.00	Based on Bid Sheets and USACE Dredging Cost Spreadsheets	$ 10,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	500,000	Cut volume equal to Site Capacity	CY	$ 2.00	Based on USACE dredging spreadsheet	$ 1,000,000
Transportation of Dredged Mat'l to Site		500,000	Transportation volume equal to cut volume	CY	$ 0.10	$0.10/nmile/cy	$ 50,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	500,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on Bid Sheets and USACE Dredging Cost Spreadsheets	$ 1,000,000
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 1,150,000**
O&M of Dewatering Facility		5	See above - assume 100,000 cy of material will be removed per year.	YR	$200,000.00	Assume a 10% portion of operating cost of approximately $2 million will be shared.	$ 1,000,000
Monitoring & Reporting of Facility		5	Same as above	YR	$30,000.00	Assume a 10% portion of monitoring cost of approximately $300,000 will be shared.	$ 150,000
SUBTOTAL COST (A+B+C+D+E)							**$ 39,027,500**
CONTINGENCY (50%)							$ 19,513,750
TOTAL							**$ 58,541,250**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 117**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach Channels

ALTERNATIVE - INNOVATIVE USES

Building Products - Pavement Bricks

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use as a building product, specifically bricks for non-structural application such as pedestrian walkways and decorative landscaping. For the purpose of this cost estimate, the brick manufacturer is an existing facility. It is assumed that the brick facility is within 100 miles of the CDF. For the C&D Approach Channels the existing CDF is the Pearce Creek facility. No Treatment of the dredged material is assumed.

For the purpose of this cost estimate, the total amount of dredge material from the channel (site capacity/cut volume) to be used for this beneficial use is 500,000 cy. It is further assumed that 100,000 cy per year will be removed from the existing CDF to reduce traffic issues. The cost include a 10% share of the operating costs for the existing facility.

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Factor for Further Reduction During Brick Manufacturing	Percentage of Dredged Material Used
Building Products - Bricks	1	0.7	0.5	1

Evaluation of Available Capacity:

Final Product/Beneficial Use	Dredged Volume (CY)	Volume after Initial Dewatering (CY)	Volume After further Dewatering During Brick Production	Area Covered by 4 inch Paver Bricks
	250,000	175,000	125,000	233
Building Products - Bricks	500,000	350,000	250,000	466
	1,000,000	700,000	500,000	931

Discussion of Available Capacity:

1. Site Capacity (cut volume) (MCY)	0.5	
2. Site Operating Life (YRS)	5	
3. Annual Avail. Capacity from Channels (MCY)	0.1	
4. Average One-Way Hauling Distance (MILES)	100	(Truck)
5. Average One-Way Hauling Distance (NMILES)	18	(Barge)

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 150,000**
Study and Design		1		LS	150000	Engineering evaluation of best dredged material characteristics for brick production and pre-manufacturing blending.	$ 150,000
Permitting		1		LS	0		$ -
B. Excavation, Transport & Processing Costs							**$ 25,677,500**
Excavation of Dewatered Material	Excavator	350,000	Volume after dewatering	CY	$2.25	M.S. Means 2004	$ 787,500
Transportation to Brick manufacturing Site for Stockpiling	Truck	350,000	Volume after dewatering	CY	$20.00	$0.20 per cy/mile	$ 7,000,000
Stockpile Management	Front End Loader	350,000	Volume after dewatering	CY	$1.00	M.S. Means 2004	$ 350,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
E&S Controls/Stormwater Management	Silt Fencing	10	E&S controls around stockpile area of approximately 10 acres	Acres	$4,000.00	M.S. Means 2004	$ 40,000
Brick Manufacturing		350,000	Volume after dewatering	CY	$50.00	Brick Manufacturing cost using dredged materials from various sources (references provided in DMMP Report) - production primary has been performed in Europe. Sources of costs indicate brick productions costs from $35-$100/cy. Assume $50/cy. Actual method of production and cost will depend on manufacturer.	$ 17,500,000
C. Dredging, Transport and Placement Costs							**$ 12,900,000**
Mobilization/Demobilization		5	Mob & Demob for operating life of site	YR	$ 2,000,000.00	Based on Bid Sheets and USACE dredging spreadsheet	$ 10,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	500,000	Cut volume equal to Site Capacity	CY	$ 2.00	Based on USACE dredging spreadsheet	$ 1,000,000
Transportation of Dredged Mat'l to Site		500,000	Transportation volume equal to cut volume	CY	$ 1.80	$0.10/nmile/cy	$ 900,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	500,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on USACE dredging spreadsheet	$ 1,000,000
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 1,150,000**
O&M of Dewatering Facility		5	See above - assume 100,000 cy of material will be removed per year.	YR	$200,000.00	Assume a 10% portion of operating cost of approximately $2 million will be shared.	$ 1,000,000
Monitoring & Reporting of Facility		5	Same as above	YR	$30,000.00	Assume a 10% portion of monitoring cost of approximately $300,000 will be shared.	$ 150,000
SUBTOTAL COST (A+B+C+D+E)							**$ 39,877,500**
CONTINGENCY (50%)							$ 19,938,750
TOTAL							**$ 59,816,250**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 120**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (MD)

ALTERNATIVE - INNOVATIVE USES

Building Products - Pavement Bricks

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use as a building product, specifically bricks for non-structural application such as pedestrian walkways and decorative landscaping. For the purpose of this cost estimate, the brick manufacturer is an existing facility. It is assumed that the brick facility is within 100 miles of the CDF. For the Chesapeake Bay Approach Channels (MD) the existing CDF is the Hart Miller Island facility. No Treatment of the dredged material is assumed. For the purpose of this cost estimate, the total amount of dredge material from the channel (site capacity/cut volume) to be used for this beneficial use is 500,000 cy. It is further assumed that 100,000 cy per year will be removed from the existing CDF to reduce traffic issues. The cost include a 10% share of the operating costs for the existing facility.

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Factor for Further Reduction During Brick Manufacturing	Percentage of Dredged Material Used
Building Products - Bricks	1	0.7	0.5	1

Evaluation of Available Capacity:

Final Product/Beneficial Use	Dredged Volume (CY)	Volume after Initial Dewatering (CY)	Volume After further Dewatering During Brick Production	Area Covered by 4 inch Paver Bricks
	250,000	175,000	125,000	233
Building Products - Bricks	500,000	350,000	250,000	466
	1,000,000	700,000	500,000	931

Discussion of Available Capacity:

1. Site Capacity (cut volume) (MCY)	0.5	
2. Site Operating Life (YRS)	5	
3. Annual Avail. Capacity from Channels (MCY)	0.1	
4. Average One-Way Hauling Distance (MILES)	100	(Truck)
5. Average One-Way Hauling Distance (NMILES)	10	(Barge)

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 150,000**
Study and Design		1		LS	150000	Engineering evaluation of best dredged material characteristics for brick production and pre-manufacturing blending.	$ 150,000
Permitting		1		LS	0		$ -
B. Excavation, Transport & Processing Costs							**$ 25,677,500**
Excavation of Dewatered Material	Excavator	350,000	Volume after dewatering	CY	$2.25	M.S. Means 2004	$ 787,500
Transportation to Brick manufacturing Site for Stockpiling	Truck	350,000	Volume after dewatering	CY	$20.00	$0.20 per cy/mile	$ 7,000,000
Stockpile Management	Front End Loader	350,000	Volume after dewatering	CY	$1.00	M.S. Means 2004	$ 350,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
E&S Controls/Stormwater Management	Silt Fencing	10	E&S controls around stockpile area of approximately 10 acres	Acres	$4,000.00	M.S. Means 2004	$ 40,000
Brick Manufacturing		350,000	Volume after dewatering	CY	$50.00	Brick Manufacturing cost using dredged materials from various sources (references provided in DMMP Report) - production primary has been performed in Europe. Sources of costs indicate brick productions costs from $35-$100/cy. Assume $50/cy. Actual method of production and cost will depend on manufacturer.	$ 17,500,000
C. Dredging, Transport and Placement Costs							**$ 12,500,000**
Mobilization/Demobilization		5	Mob & Demob for operating life of site	YR	$ 2,000,000.00	Based on Bid Sheets and USACE dredging spreadsheet	$ 10,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	500,000	Cut volume equal to Site Capacity	CY	$ 2.00	Based on USACE dredging spreadsheet	$ 1,000,000
Transportation of Dredged Mat'l to Site		500,000	Transportation volume equal to cut volume	CY	$ 1.00	$0.10/nmile/cy	$ 500,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	500,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on USACE dredging spreadsheet	$ 1,000,000
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 1,150,000**
O&M of Dewatering Facility		5	See above - assume 100,000 cy of material will be removed per year.	YR	$200,000.00	Assume a 10% portion of operating cost of approximately $2 million will be shared.	$ 1,000,000
Monitoring & Reporting of Facility		5	Same as above	YR	$30,000.00	Assume a 10% portion of monitoring cost of approximately $300,000 will be shared.	$ 150,000
SUBTOTAL COST (A+B+C+D+E)							**$ 39,477,500**
CONTINGENCY (50%)							$ 19,738,750
TOTAL							**$ 59,216,250**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 118**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (VA)

ALTERNATIVE - INNOVATIVE USES

Building Products - Pavement Bricks

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use as a building product, specifically bricks for non-structural application such as pedestrian walkways and decorative landscaping. For the purpose of this cost estimate, the brick manufacturer is an existing facility. It is assumed that the brick facility is within 100 miles of the CDF. For the Chesapeake Bay Approach Channels (VA) the existing CDF is the Craney Island facility. The Craney Island facility is restricted to dredged materials from the Norfolk Harbor and vicinity per the 1946 federal River & Harbor Act. This federal legislation would need to be amended to accept material from the Chesapeake Bay Approach Channels. A toll fee is also levied on material placed in the facility. No Treatment of the dredged material is assumed.

For the purpose of this cost estimate, the total amount of dredge material from the channel (site capacity/cut volume) to be used for this beneficial use is 500,000 cy. It is further assumed that 100,000 cy per year will be removed from the existing CDF to reduce traffic issues. The cost include a 10% share of the operating costs for the existing facility.

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Factor for Further Reduction During Brick Manufacturing	Percentage of Dredged Material Used
Building Products - Bricks	1	0.7	0.5	1

Evaluation of Available Capacity:

Final Product/Beneficial Use	Dredged Volume (CY)	Volume after Initial Dewatering (CY)	Volume After further Dewatering During Brick Production	Area Covered by 4 inch Paver Bricks
	250,000	175,000	125,000	233
Building Products - Bricks	500,000	350,000	250,000	466
	1,000,000	700,000	500,000	931

Discussion of Available Capacity:

1. Site Capacity (cut volume) (MCY)	0.5	
2. Site Operating Life (YRS)	5	
3. Annual Avail. Capacity from Channels (MCY)	0.1	
4. Average One-Way Hauling Distance (MILES)	100	(Truck)
5. Average One-Way Hauling Distance (NMILES)	28	(Barge)

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 150,000**
Study and Design		1		LS	150000	Engineering evaluation of best dredged material characteristics for brick production and pre-manufacturing blending.	$ 150,000
Permitting		1		LS	0		$ -
B. Excavation, Transport & Processing Costs							**$ 25,677,500**
Excavation of Dewatered Material	Excavator	350,000	Volume after dewatering	CY	$2.25	M.S. Means 2004	$ 787,500
Transportation to Brick manufacturing Site for Stockpiling	Truck	350,000	Volume after dewatering	CY	$20.00	$0.20 per cy/mile	$ 7,000,000
Stockpile Management	Front End Loader	350,000	Volume after dewatering	CY	$1.00	M.S. Means 2004	$ 350,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
E&S Controls/Stormwater Management	Silt Fencing	10	E&S controls around stockpile area of approximately 10 acres	Acres	$4,000.00	M.S. Means 2004	$ 40,000
Brick Manufacturing		350,000	Volume after dewatering	CY	$50.00	Brick Manufacturing cost using dredged materials from various sources (references provided in DMMP Report) - production primary has been performed in Europe. Sources of costs indicate brick productions costs from $35-$100/cy. Assume $50/cy. Actual method of production and cost will depend on manufacturer.	$ 17,500,000
C. Dredging, Transport and Placement Costs							**$ 14,440,000**
Mobilization/Demobilization		5	Mob & Demob for operating life of site	YR	$ 2,000,000.00	Based on Bid Sheets and USACE dredging spreadsheet	$ 10,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	500,000	Cut volume equal to Site Capacity	CY	$ 3.00	Based on USACE dredging spreadsheet	$ 1,500,000
Transportation of Dredged Mat'l to Site		500,000	Transportation volume equal to cut volume	CY	$ 2.80	$0.10/nmile/cy	$ 1,400,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	500,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on USACE dredging spreadsheet	$ 1,000,000
Toll Charge for Craney Island		500,000	Cut volume	CY	$ 1.08	Anticipated toll rate per CENAO	$ 540,000
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 1,150,000**
O&M of Dewatering Facility		5	See above - assume 100,000 cy of material will be removed per year.	YR	$200,000.00	Assume a 10% portion of operating cost of approximately $2 million will be shared.	$ 1,000,000
Monitoring & Reporting of Facility		5	Same as above	YR	$30,000.00	Assume a 10% portion of monitoring cost of approximately $300,000 will be shared.	$ 150,000
SUBTOTAL COST (A+B+C+D+E)							**$ 41,417,500**
CONTINGENCY (50%)							$ 20,708,750
TOTAL							**$ 62,126,250**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 124**

CAPPING—LANDFILL

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Harbor Approach Channels

ALTERNATIVE - INNOVATIVE USES

Capping - Landfill

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use as a daily cover material at a local solid waste facility. For the Harbor Approach Channels the existing CDF is the Cox Creek facility. The distance to the solid waste facility is assumed to be 30 miles.

For the purpose of this cost estimate, the total amount of dredge material from the channel (cut Volume) to be used for this beneficial use is 500,000 cy. It is further assumed that 100,000 cy per year will be removed from the existing CDF to reduce traffic issues. The cost include a 10% share of the operating costs for the existing facility.

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Final Dewatered Volume CY	Percentage of Dredged Material Used	Percentage of Granular Mat'l Used
Landfill Cap - Daily Cover (75%DWM:25% Sand)	1	0.7	0.7	0.75	0.25

Evaluation of Available Capacity:

Final Product/Beneficial Use	Dredged Volume (CY)	Volume after Dewatering (CY)	Volume of Granular Material Used to Produce Cover Material	Total Vol of Daily Cover Mat'l Produced	Area Covered by 6 in of Daily Cover -Acres
	250,000	175,000	58,333	233,333	289
Landfill Cap - Daily Cover - 75% Dredged Mat'l	500,000	350,000	116,667	466,667	579
	1,000,000	700,000	233,333	933,333	1,157

Discussion of Available Capacity:

1. Site Capacity (MCY) / cut volume	0.5	
2. Site Operating Life (YRS)	5	
3. Annual Avail. Capacity from Channels (MCY)	0.1	
4. Average One-Way Hauling Distance (MILES)	30	(Truck)
5. Average One-Way Hauling Distance (NMILES)	2	(Barge)

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 400,000**
Study and Design		1		LS	$150,000.00	Engineering evaluation of best mixture and method of blending.	$ 150,000
Permitting		1		LS	$250,000.00	Set up Agreement with Solid Waste Facility. Amendment to Permits	$ 250,000
B. Excavation, Transport & Processing Costs							**$ 3,762,500**
Excavation of Dewatered Material	Excavator	350,000	Volume after dewatering	CY	$2.25	M.S. Means 2004	$ 787,500
Transportation to Landfill for Stockpiling	Truck	350,000	Volume after dewatering	CY	$4.50	$0.15 per cy/mile	$ 1,575,000
Additional Material Cost to Produce Product/Use	Delivered to site	116,667	25% Sand	CY	$12.00	Based on Shoreline Restoration Project (WESTON, 2004)	$ 1,400,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Stockpile Management/ Blending of Materials	Front End Loader and Tiller	466,667	Total volume of blended material	CY	$3.50	Cost for an Operator, Laborer, and Loader w/ attachment is $5630/acre. Assume Material Spread Out in 18 inch Lifts and then Blended with Tiller Attachment	$ 1,633,333
E&S Controls/Stormwater Management	Silt Fencing	10	E&S controls around stockpile area of approximately 10 acres	Acres	$4,000.00	M.S. Means 2004	$ 40,000
C. Dredging, Transport and Placement Costs							**$ 9,600,000**
Mobilization/Demobilization		5	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Based on Bid Sheets and USACE Dredging Cost Spreadsheets	$ 7,500,000
Dredging of Mat'l from Channel	Clamshell Dredging	500,000	Cut volume	CY	$ 2.00	Based on USACE dredging spreadsheet	$ 1,000,000
Transportation of Dredged Mat'l to Site		500,000	Transportation volume equal to cut volume	CY	$ 0.20	$0.10/nmile/cy	$ 100,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	500,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on Bid Sheets and USACE Dredging Cost Spreadsheets	$ 1,000,000
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 1,150,000**
O&M of CDF		5	See above - assume 100,000 cy of material will be removed per year.	YR	$200,000.00	Assume a 10% portion of operating cost of approximately $2 million will be shared.	$ 1,000,000
Monitoring & Reporting of Facility		5	Same as above	YR	$30,000.00	Assume a 10% portion of monitoring cost of approximately $300,000 will be shared.	$ 150,000
SUBTOTAL COST							**$ 14,912,500**
CONTINGENCY (25%)							$ 3,728,125
TOTAL							**$ 18,640,625**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 37**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach Channels

ALTERNATIVE - INNOVATIVE USES

Capping - Landfill

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use as a daily cover material at a local solid waste facility. For the C&D Approach Channels the existing CDF is the Pearce Creek facility. The distance to the solid waste facility is assumed to be 30 miles.

For the purpose of this cost estimate, the total amount of dredge material from the channel (cut Volume) to be used for this beneficial use is 500,000 cy. It is further assumed that 100,000 cy per year will be removed from the existing CDF to reduce traffic issues. The cost include a 10% share of the operating costs for the existing facility.

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Final Dewatered Volume CY	Percentage of Dredged Material Used	Percentage of Granular Mat'l Used
Landfill Cap - Daily Cover (75%DWM:25% Sand)	1	0.7	0.7	0.75	0.25

Evaluation of Available Capacity:

Final Product/Beneficial Use	Dredged Volume (CY)	Volume after Dewatering (CY)	Volume of Granular Material Used to Produce Cover Material	Total Vol of Daily Cover Mat'l Produced	Area Covered by 6 in of Daily Cover -Acres
	250,000	175,000	58,333	233,333	289
Landfill Cap - Daily Cover - 75% Dredged Mat'l	500,000	350,000	116,667	466,667	579
	1,000,000	700,000	233,333	933,333	1,157

Discussion of Available Capacity:

1. Site Capacity (MCY) / cut volume	0.5	
2. Site Operating Life (YRS)	5	
3. Annual Avail. Capacity from Channels (MCY)	0.1	
4. Average One-Way Hauling Distance (MILES)	30	(Truck)
5. Average One-Way Hauling Distance (NMILES)	14	(Barge)

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 400,000**
Study and Design		1		LS	150000	Engineering evaluation of best mixture and method of blending.	$ 150,000
Permitting		1		LS	250000	Set up Agreement with Solid Waste Facility. Amendment to Permits	$ 250,000
B. Excavation, Transport & Processing Costs							**$ 3,762,500**
Excavation of Dewatered Material	Excavator	350,000	Volume after dewatering	CY	$2.25	M.S. Means 2004	$ 787,500
Transportation to Landfill for Stockpiling	Truck	350,000	Volume after dewatering	CY	$4.50	$0.15 per cy/mile	$ 1,575,000
Additional Material Cost to Produce Product/Use	Delivered to site	116,667	25% Sand	CY	$12.00	Based on Shoreline Restoration Project (WESTON, 2004)	$ 1,400,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Stockpile Management/ Blending of Materials	Front End Loader and Tiller	466,667	Total volume of blended material	CY	$3.50	Cost for an Operator, Laborer, and Loader w/ attachment is $5630/acre. Assume Material Spread Out in 18 inch Lifts and then Blended with Tiller Attachment	$ 1,633,333
E&S Controls/Stormwater Management	Silt Fencing	10	E&S controls around stockpile area of approximately 10 acres	Acres	$4,000.00	M.S. Means 2004	$ 40,000
C. Dredging, Transport and Placement Costs							**$ 10,200,000**
Mobilization/Demobilization		5	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Based on Bid Sheets and USACE Dredging Cost Spreadsheets	$ 7,500,000
Dredging of Mat'l from Channel	Clamshell Dredging	500,000	Cut volume	CY	$ 2.00	Based on USACE dredging spreadsheet	$ 1,000,000
Transportation of Dredged Mat'l to Site		500,000	Transportation volume equal to cut volume	CY	$ 1.40	$0.10/nmile/cy	$ 700,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	500,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on Bid Sheets and USACE Dredging Cost Spreadsheets	$ 1,000,000
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 1,150,000**
O&M of CDF		5	See above - assume 100,000 cy of material will be removed per year.	YR	$200,000.00	Assume a 10% portion of operating cost of approximately $2 million will be shared.	$ 1,000,000
Monitoring & Reporting of Facility		5	Same as above	YR	$30,000.00	Assume a 10% portion of monitoring cost of approximately $300,000 will be shared.	$ 150,000
SUBTOTAL COST							**$ 15,512,500**
CONTINGENCY (25%)							$ 3,878,125
TOTAL							**$ 19,390,625**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 39**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (MD)

ALTERNATIVE - INNOVATIVE USES

Capping - Landfill

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use as a daily cover material at a local solid waste facility. For the Chesapeake Bay Approach (MD Channels the existing CDF is the Cox Creek facility. The distance to the solid waste facility is assumed to be 30 miles.

For the purpose of this cost estimate, the total amount of dredge material from the channel (cut Volume) to be used for this beneficial use is 500,000 cy. It is further assumed that 100,000 cy per year will be removed from the existing CDF to reduce traffic issues. The cost include a 10% share of the operating costs for the existing facility.

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Final Dewatered Volume CY	Percentage of Dredged Material Used	Percentage of Granular Mat'l Used
Landfill Cap - Daily Cover (75%DWM:25% Sand)	1	0.7	0.7	0.75	0.25

Evaluation of Available Capacity:

Final Product/Beneficial Use	Dredged Volume (CY)	Volume after Dewatering (CY)	Volume of Granular Material Used to Produce Cover Material	Total Vol of Daily Cover Mat'l Produced	Area Covered by 6 in of Daily Cover -Acres
	250,000	175,000	58,333	233,333	289
Landfill Cap - Daily Cover - 75% Dredged Mat'l	500,000	350,000	116,667	466,667	579
	1,000,000	700,000	233,333	933,333	1,157

Discussion of Available Capacity:

1. Site Capacity (MCY) / cut volume	0.5	
2. Site Operating Life (YRS)	5	
3. Annual Avail. Capacity from Channels (MCY)	0.1	
4. Average One-Way Hauling Distance (MILES)	30	(Truck)
5. Average One-Way Hauling Distance (NMILES)	11	(Barge)

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 400,000**
Study and Design		1		LS	150000	Engineering evaluation of best mixture and method of blending.	$ 150,000
Permitting		1		LS	250000	Set up Agreement with Solid Waste Facility. Amendment to Permits	$ 250,000
B. Excavation, Transport & Processing Costs							**$ 3,762,500**
Excavation of Dewatered Material	Excavator	350,000	Volume after dewatering	CY	$2.25	M.S. Means 2004	$ 787,500
Transportation to Landfill for Stockpiling	Truck	350,000	Volume after dewatering	CY	$4.50	$0.15 per cy/mile	$ 1,575,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Additional Material Cost to Produce Product/Use	Delivered to site	116,667	25% Sand	CY	$12.00	Based on Shoreline Restoration Project (WESTON, 2004)	$ 1,400,000
Stockpile Management/ Blending of Materials	Front End Loader and Tiller	466,667	Total volume of blended material	CY	$3.50	Cost for an Operator, Laborer, and Loader w/ attachment is $5630/acre. Assume Material Spread Out in 18 inch Lifts and then Blended with Tiller Attachment	$ 1,633,333
E&S Controls/Stormwater Management	Silt Fencing	10	E&S controls around stockpile area of approximately 10 acres	Acres	$4,000.00	M.S. Means 2004	$ 40,000
C. Dredging, Transport and Placement Costs							**$ 10,050,000**
Mobilization/Demobilization		5	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Based on Bid Sheets and USACE Dredging Cost Spreadsheets	$ 7,500,000
Dredging of Mat'l from Channel	Clamshell Dredging	500,000	Cut volume	CY	$ 2.00	Based on USACE dredging spreadsheet	$ 1,000,000
Transportation of Dredged Mat'l to Site		500,000	Transportation volume equal to cut volume	CY	$ 1.10	$0.10/nmile/cy	$ 550,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	500,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on Bid Sheets and USACE Dredging Cost Spreadsheets	$ 1,000,000
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 1,150,000**
O&M of CDF		5	See above - assume 100,000 cy of material will be removed per year.	YR	$200,000.00	Assume a 10% portion of operating cost of approximately $2 million will be shared.	$ 1,000,000
Monitoring & Reporting of Facility		5	Same as above	YR	$30,000.00	Assume a 10% portion of monitoring cost of approximately $300,000 will be shared.	$ 150,000
SUBTOTAL COST							**$ 15,362,500**
CONTINGENCY (25%)							$ 3,840,625
TOTAL							**$ 19,203,125**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 38**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Channels (VA)

ALTERNATIVE - INNOVATIVE USES

Capping - Landfill

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use as a daily cover material at a local solid waste facility. For the Chesapeake Bay Approach (VA) Channels the existing CDF is the Craney Island facility. The Craney Island facility is restricted to dredged materials from the Norfolk Harbor and vicinity per the 1946 federal River & Harbor Act. This federal legislation would need to be amended to accept material from the Chesapeake Bay Approach Channels. A toll fee is also levied on material placed in the facility. The distance to the solid waste facility is assumed to be 30 miles.

For the purpose of this cost estimate, the total amount of dredge material from the channel (cut Volume) to be used for this beneficial use is 500,000 cy. It is further assumed that 100,000 cy per year will be removed from the existing CDF to reduce traffic issues. The cost include a

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Final Dewatered Volume CY	Percentage of Dredged Material Used	Percentage of Granular Mat'l Used
Landfill Cap - Daily Cover (75%DWM:25% Sand)	1	0.7	0.7	0.75	0.25

Evaluation of Available Capacity:

Final Product/Beneficial Use	Dredged Volume (CY)	Volume after Dewatering (CY)	Volume of Granular Material Used to Produce Cover Material	Total Vol of Daily Cover Mat'l Produced	Area Covered by 6 in of Daily Cover -Acres
	250,000	175,000	58,333	233,333	289
Landfill Cap - Daily Cover - 75% Dredged Mat'l	500,000	350,000	116,667	466,667	579
	1,000,000	700,000	233,333	933,333	1,157

Discussion of Available Capacity:

1. Site Capacity (MCY) / cut volume	0.5	
2. Site Operating Life (YRS)	5	
3. Annual Avail. Capacity from Channels (MCY)	0.1	
4. Average One-Way Hauling Distance (MILES)	30	(Truck)
5. Average One-Way Hauling Distance (NMILES)	28	(Barge)

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 400,000**
Study and Design		1		LS	150000	Engineering evaluation of best mixture and method of blending.	$ 150,000
Permitting		1		LS	250000	Set up Agreement with Solid Waste Facility. Amendment to Permits	$ 250,000
B. Excavation, Transport & Processing Costs							**$ 3,762,500**
Excavation of Dewatered Material	Excavator	350,000	Volume after dewatering	CY	$2.25	M.S. Means 2004	$ 787,500
Transportation to Landfill for Stockpiling	Truck	350,000	Volume after dewatering	CY	$4.50	$0.15 per cy/mile	$ 1,575,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Additional Material Cost to Produce Product/Use	Delivered to site	116,667	25% Sand	CY	$12.00	Based on Shoreline Restoration Project (WESTON, 2004)	$ 1,400,000
Stockpile Management/ Blending of Materials	Front End Loader and Tiller	466,667	Total volume of blended material	CY	$3.50	Cost for an Operator, Laborer, and Loader w/ attachment is $5630/acre. Assume Material Spread Out in 18 inch Lifts and then Blended with Tiller Attachment	$ 1,633,333
E&S Controls/Stormwater Management	Silt Fencing	10	E&S controls around stockpile area of approximately 10 acres	Acres	$4,000.00	M.S. Means 2004	$ 40,000
C. Dredging, Transport and Placement Costs							**$ 8,900,000**
Mobilization/Demobilization		5	Mob & Demob for operating life of site	YR	$ 1,000,000.00	Based on Bid Sheets and USACE Dredging Cost Spreadsheets	$ 5,000,000
Dredging of Mat'l from Channel	Hopper Dredge	500,000	Cut volume	CY	$ 3.00	Based on USACE dredging spreadsheet	$ 1,500,000
Transportation of Dredged Mat'l to Site		500,000	Transportation volume equal to cut volume	CY	$ 2.80	$0.10/nmile/cy	$ 1,400,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	500,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on Bid Sheets and USACE Dredging Cost Spreadsheets	$ 1,000,000
Toll Charge for Craney Island		500,000	Cut volume	CY	$ 1.08	Anticipated toll rate per CENAO	$ 540,000
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 1,150,000**
O&M of CDF		5	See above - assume 100,000 cy of material will be removed per year.	YR	$200,000.00	Assume a 10% portion of operating cost of approximately $2 million will be shared.	$ 1,000,000
Monitoring & Reporting of Facility		5	Same as above	YR	$30,000.00	Assume a 10% portion of monitoring cost of approximately $300,000 will be shared.	$ 150,000
SUBTOTAL COST							**$ 14,212,500**
CONTINGENCY (25%)							$ 3,553,125
TOTAL							**$ 17,765,625**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 36**

CAPPING—BROWNFIELDS

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (MD)

ALTERNATIVE - INNOVATIVE USES

Capping - Brownfields

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use as grading fill at a Brownfield site. For the Chesapeake Bay Approach (MD) Channels the existing CDF is the Cox Creek facility. The distance to the Brownfield site is assumed to be 30 miles.

For the purpose of this cost estimate, the total amount of dredge material from the channel (cut Volume) to be used for this beneficial use is 500,000 cy. It is further assumed that 100,000 cy per year will be removed from the existing CDF to reduce traffic issues. The cost include a 10% share of the operating costs for the existing facility.

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Final Dewatered Volume CY	Percentage of Dredged Material Used	Percentage of Granular Mat'l Used
Landfill Final Cover or Brownfield Site Fill	1	0.7	0.7	0.5	0.5

Evaluation of Available Capacity:

Final Product/Beneficial Use	Dredged Volume (CY)	Volume after Dewatering (CY)	Volume of Granular Material Used to Produce Cover Material	Total Vol of Daily Cover Mat'l Produced	Area Covered by 2 ft.of Blended Mat'l -Acres
	250,000	175,000	175,000	350,000	109
Final Cover / Brownfield Site - 50% Dredged Mat'l	500,000	350,000	350,000	700,000	217
	1,000,000	700,000	700,000	1,400,000	434

Discussion of Available Capacity:

1. Site Capacity (MCY) / cut volume	0.5	
2. Site Operating Life (YRS)	5	
3. Annual Avail. Capacity from Channels (MCY)	0.1	
4. Average One-Way Hauling Distance (MILES)	30	(Truck)
5. Average One-Way Hauling Distance (NMILES)	11	(Barge)

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 400,000**
Study and Design		1		LS	150000	Engineering evaluation of best mixture and method of blending.	$ 150,000
Permitting		1		LS	250000	Set up Agreement with Solid Waste Facility. Amendment to Permits	$ 250,000
B. Excavation, Transport & Processing Costs							**$ 15,002,500**
Excavation of Dewatered Material	Excavator	350,000	Volume after dewatering	CY	$2.25	M.S. Means 2004	$ 787,500
Transportation to Landfill for Stockpiling	Truck	350,000	Volume after dewatering	CY	$4.50	$0.15 per cy/mile	$ 1,575,000
Additional Material Cost to Produce Product/Use	Delivered to site	350,000	50% Granular Material - Off-site Source	CY	$12.00	Based on Quotes for Sand in Baltimore Area - Haul Distance 30 miles	$ 4,200,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Stockpile Management/ Blending of Materials	Front End Loader and Pug Mill Operation	700,000	Total volume of blended material	CY	$12.00	Based on Prices from MW Project - Soil Amendment - Mobile Pug Mill Operation (WESTON, 2004)	$ 8,400,000
E&S Controls/Stormwater Management	Silt Fencing	10	E&S controls around stockpile area of approximately 10 acres	Acres	$ 4,000.00	Seeding, Fertilizer and Mulch M.S. Means 2004	$ 40,000
C. Dredging, Transport and Placement Costs							**$ 10,050,000**
Mobilization/Demobilization		5	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Based on Bid Sheets and USACE Dredging Cost Spreadsheets	$ 7,500,000
Dredging of Mat'l from Channel	Clamshell Dredging	500,000	Cut volume	CY	$ 2.00	Based on USACE dredging spreadsheet	$ 1,000,000
Transportation of Dredged Mat'l to Site		500,000	Transportation volume equal to cut volume	CY	$ 1.10	$0.10/nmile/cy	$ 550,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	500,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on Bid Sheets and USACE Dredging Cost Spreadsheets	$ 1,000,000
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 1,150,000**
O&M of CDF		5	See above - assume 100,000 cy of material will be removed per year.	YR	$200,000.00	Assume a 10% portion of operating cost of approximately $2 million will be shared.	$ 1,000,000
Monitoring & Reporting of Facility		5	Same as above	YR	$30,000.00	Assume a 10% portion of monitoring cost of approximately $300,000 will be shared.	$ 150,000
SUBTOTAL COST							**$ 26,602,500**
CONTINGENCY (30%)							$ 7,980,750
TOTAL							**$ 34,583,250**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 69**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach Channels

ALTERNATIVE - INNOVATIVE USES

Capping - Brownfields

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use as grading fill at a Brownfield site. For the C&D Approach Channels the existing CDF is the Pearce Creek facility. The distance to the Brownfield site is assumed to be 30 miles.

For the purpose of this cost estimate, the total amount of dredge material from the channel (cut Volume) to be used for this beneficial use is 500,000 cy. It is further assumed that 100,000 cy per year will be removed from the existing CDF to reduce traffic issues. The cost include a 10% share of the operating costs for the existing facility.

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Final Dewatered Volume CY	Percentage of Dredged Material Used	Percentage of Granular Mat'l Used
Landfill Final Cover or Brownfield Site Fill	1	0.7	0.7	0.5	0.5

Evaluation of Available Capacity:

Final Product/Beneficial Use	Dredged Volume (CY)	Volume after Dewatering (CY)	Volume of Granular Material Used to Produce Cover Material	Total Vol of Daily Cover Mat'l Produced	Area Covered by 2 ft.of Blended Mat'l -Acres
	250,000	175,000	175,000	350,000	109
Final Cover / Brownfield Site - 50% Dredged Mat'l	500,000	350,000	350,000	700,000	217
	1,000,000	700,000	700,000	1,400,000	434

Discussion of Available Capacity:

1. Site Capacity (MCY) / cut volume	0.5	
2. Site Operating Life (YRS)	5	
3. Annual Avail. Capacity from Channels (MCY)	0.1	
4. Average One-Way Hauling Distance (MILES)	30	(Truck)
5. Average One-Way Hauling Distance (NMILES)	14	(Barge)

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 400,000**
Study and Design		1		LS	150000	Engineering evaluation of best mixture and method of blending.	$ 150,000
Permitting		1		LS	250000	Set up Agreement with Solid Waste Facility. Amendment to Permits	$ 250,000
B. Excavation, Transport & Processing Costs							**$ 15,002,500**
Excavation of Dewatered Material	Excavator	350,000	Volume after dewatering	CY	$2.25	M.S. Means 2004	$ 787,500
Transportation to Landfill for Stockpiling	Truck	350,000	Volume after dewatering	CY	$4.50	$0.15 per cy/mile	$ 1,575,000
Additional Material Cost to Produce Product/Use	Delivered to site	350,000	50% Granular Material - Off-site Source	CY	$12.00	Based on Quotes for Sand in Baltimore Area - Haul Distance 30 miles	$ 4,200,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Stockpile Management/ Blending of Materials	Front End Loader and Pug Mill Operation	700,000	Total volume of blended material	CY	$12.00	Based on Prices from MW Project - Soil Amendment - Mobile Pug Mill Operation (WESTON, 2004)	$ 8,400,000
E&S Controls/Stormwater Management	Silt Fencing	10	E&S controls around stockpile area of approximately 10 acres	Acres	$ 4,000.00	Seeding, Fertilizer and Mulch M.S. Means 2004	$ 40,000
C. Dredging, Transport and Placement Costs							**$ 10,200,000**
Mobilization/Demobilization		5	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Based on Bid Sheets and USACE dredging spreadsheet	$ 7,500,000
Dredging of Mat'l from Channel	Clamshell Dredging	500,000	Cut volume	CY	$ 2.00	Based on USACE dredging spreadsheet	$ 1,000,000
Transportation of Dredged Mat'l to Site		500,000	Transportation volume equal to cut volume	CY	$ 1.40	$0.10/nmile/cy	$ 700,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	500,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on USACE dredging spreadsheet	$ 1,000,000
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 1,150,000**
O&M of CDF		5	See above - assume 100,000 cy of material will be removed per year.	YR	$200,000.00	Assume a 10% portion of operating cost of approximately $2 million will be shared.	$ 1,000,000
Monitoring & Reporting of Facility		5	Same as above	YR	$30,000.00	Assume a 10% portion of monitoring cost of approximately $300,000 will be shared.	$ 150,000
SUBTOTAL COST (A+B+C+D+E)							**$ 26,752,500**
CONTINGENCY (30%)							$ 8,025,750
TOTAL							**$ 34,778,250**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 70**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Harbor Channels

ALTERNATIVE - INNOVATIVE USES

Capping - Brownfields

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use as grading fill at a Brownfield site. For the Harbor Approach Channels the existing CDF is the Cox Creek facility. The distance to the Brownfield site is assumed to be 30 miles.

For the purpose of this cost estimate, the total amount of dredge material from the channel (cut Volume) to be used for this beneficial use is 500,000 cy. It is further assumed that 100,000 cy per year will be removed from the existing CDF to reduce traffic issues. The cost include a 10% share of the operating costs for the existing facility

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Final Dewatered Volume CY	Percentage of Dredged Material Used	Percentage of Granular Mat'l Used
Landfill Final Cover or Brownfield Site Fill	1	0.7	0.7	0.5	0.5

Evaluation of Available Capacity:

Final Product/Beneficial Use	Dredged Volume (CY)	Volume after Dewatering (CY)	Volume of Granular Material Used to Produce Cover Material	Total Vol of Daily Cover Mat'l Produced	Area Covered by 2 ft.of Blended Mat'l -Acres
	250,000	175,000	175,000	350,000	109
Final Cover / Brownfield Site - 50% Dredged Mat'l	500,000	350,000	350,000	700,000	217
	1,000,000	700,000	700,000	1,400,000	434

Discussion of Available Capacity:

1. Site Capacity (MCY) / cut volume	0.5	
2. Site Operating Life (YRS)	5	
3. Annual Avail. Capacity from Channels (MCY)	0.1	
4. Average One-Way Hauling Distance (MILES)	30	(Truck)
5. Average One-Way Hauling Distance (NMILES)	2	(Barge)

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 400,000**
Study and Design		1		LS	150000	Engineering evaluation of best mixture and method of blending.	$ 150,000
Permitting		1		LS	250000	Set up Agreement with Solid Waste Facility. Amendment to Permits	$ 250,000
B. Excavation, Transport & Processing Costs							**$ 15,002,500**
Excavation of Dewatered Material	Excavator	350,000	Volume after dewatering	CY	$2.25	M.S. Means 2004	$ 787,500
Transportation to Landfill for Stockpiling	Truck	350,000	Volume after dewatering	CY	$4.50	$0.15 per cy/mile	$ 1,575,000
Additional Material Cost to Produce Product/Use	Delivered to site	350,000	50% Granular Material - Off-site Source	CY	$12.00	Based on Quotes for Sand in Baltimore Area - Haul Distance 30 miles	$ 4,200,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Stockpile Management/ Blending of Materials	Front End Loader and Pug Mill Operation	700,000	Total volume of blended material	CY	$12.00	Based on Prices from MW Project - Soil Amendment - Mobile Pug Mill Operation (WESTON, 2004)	$ 8,400,000
E&S Controls/Stormwater Management	Silt Fencing	10	E&S controls around stockpile area of approximately 10 acres	Acres	$ 4,000.00	Seeding, Fertilizer and Mulch M.S. Means 2004	$ 40,000
C. Dredging, Transport and Placement Costs							**$ 9,600,000**
Mobilization/Demobilization		5	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Based on Bid Sheets and USACE dredging spreadsheet	$ 7,500,000
Dredging of Mat'l from Channel	Clamshell Dredging	500,000	Cut volume	CY	$ 2.00	Based on USACE dredging spreadsheet	$ 1,000,000
Transportation of Dredged Mat'l to Site		500,000	Transportation volume equal to cut volume	CY	$ 0.20	$0.10/nmile/cy	$ 100,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	500,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on USACE dredging spreadsheet	$ 1,000,000
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 1,150,000**
O&M of CDF		5	See above - assume 100,000 cy of material will be removed per year.	YR	$200,000.00	Assume a 10% portion of operating cost of approximately $2 million will be shared.	$ 1,000,000
Monitoring & Reporting of Facility		5	Same as above	YR	$30,000.00	Assume a 10% portion of monitoring cost of approximately $300,000 will be shared.	$ 150,000
SUBTOTAL COST (A+B+C+D+E)							**$ 26,152,500**
CONTINGENCY (30%)							$ 7,845,750
TOTAL							**$ 33,998,250**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 68**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (VA)

ALTERNATIVE - INNOVATIVE USES

Capping - Brownfields

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use as a final cover material at a local solid waste facility or as grading fill at a Brownfield site. For the Chesapeake Bay Approach Channels (VA) the existing CDF is the Craney Island facility. The Craney Island facility is restricted to dredged materials from the Norfolk Harbor and vicinity per the 1946 federal River & Harbor Act. This federal legislation would need to be amended to accept material from the Chesapeake Bay Approach Channels. A toll fee is also levied on material placed in the facility. The distance to the solid waste facility or Brownfield site is assumed to be 30 miles.

For the purpose of this cost estimate, the total amount of dredge material from the channel (cut volume) to b used for this benefiaicl use is 500,000 cy. It is further assumed that 100,000 cy per year will be removed from the existing CDF to reduce traffic. The cost include a 10% share of the operating cost for the existing facility.

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Final Dewatered Volume CY	Percentage of Dredged Material Used	Percentage of Granular Mat'l Used
Landfill Final Cover or Brownfield Site Fill	1	0.7	0.7	0.5	0.5

Evaluation of Available Capacity:

Final Product/Beneficial Use	Dredged Volume (CY)	Volume after Dewatering (CY)	Volume of Granular Material Used to Produce Cover Material	Total Vol of Daily Cover Mat'l Produced	Area Covered by 2 ft.of Blended Mat'l -Acres
	250,000	175,000	175,000	350,000	109
Final Cover / Brownfield Site - 50% Dredged Mat'l	500,000	350,000	350,000	700,000	217
	1,000,000	700,000	700,000	1,400,000	434

Discussion of Available Capacity:

1. Site Capacity (MCY) / cut volume	0.5	
2. Site Operating Life (YRS)	5	
3. Annual Avail. Capacity from Channels (MCY)	0.1	
4. Average One-Way Hauling Distance (MILES)	30	(Truck)
5. Average One-Way Hauling Distance (NMILES)	28	(Barge)

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 400,000**
Study and Design		1		LS	150000	Engineering evaluation of best mixture and method of blending.	$ 150,000
Permitting		1		LS	250000	Set up Agreement with Solid Waste Facility. Amendment to Permits	$ 250,000
B. Excavation, Transport & Processing Costs							**$ 15,002,500**
Excavation of Dewatered Material	Excavator	350,000	Volume after dewatering	CY	$2.25	M.S. Means 2004	$ 787,500
Transportation to Landfill for Stockpiling	Truck	350,000	Volume after dewatering	CY	$4.50	$0.15 per cy/mile	$ 1,575,000
Additional Material Cost to Produce Product/Use	Delivered to site	350,000	50% Granular Material - Off-site Source	CY	$12.00	Based on Quotes for Sand in Baltimore Area - Haul Distance 30 miles	$ 4,200,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Stockpile Management/ Blending of Materials	Front End Loader and Pug Mill Operation	700,000	Total volume of blended material	CY	$12.00	Based on Prices from MW Project - Soil Amendment - Mobile Pug Mill Operation (WESTON, 2004)	$ 8,400,000
E&S Controls/Stormwater Management	Silt Fencing	10	E&S controls around stockpile area of approximately 10 acres	Acres	$ 4,000.00	Seeding, Fertilizer and Mulch M.S. Means 2004	$ 40,000
C. Dredging, Transport and Placement Costs							**$ 9,440,000**
Mobilization/Demobilization		5	Mob & Demob for operating life of site	YR	$ 1,000,000.00	Based on Bid Sheets and USACE dredging spreadsheet	$ 5,000,000
Dredging of Mat'l from Channel	Hopper Dredge	500,000	Cut volume	CY	$ 3.00	Based on USACE dredging spreadsheet	$ 1,500,000
Transportation of Dredged Mat'l to Site		500,000	Transportation volume equal to cut volume	CY	$ 2.80	$0.10/nmile/cy	$ 1,400,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	500,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on USACE dredging spreadsheet	$ 1,000,000
Toll Charge for Craney Island		500,000	Cut volume	CY	$ 1.08	Anticipated toll rate per CENAO	$ 540,000
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 1,150,000**
Monitoring & Reporting of Facility		5	See above - assume 100,000 cy of material will be removed per year.	YR	$200,000.00	Assume a 10% portion of operating cost of approximately $2 million will be shared.	$ 1,000,000
Monitoring & Reporting of Faculty		5	Same as above	YR	$30,000.00	Assume a 10% portion of monitoring cost of approximately $300,000 will be shared.	$ 150,000
SUBTOTAL COST (A+B+C+D+E)							**$ 25,992,500**
CONTINGENCY (30%)							$ 7,797,750
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 33,790,250**
TOTAL UNIT COST PER CUBIC YARD							**$ 68**

CAPPING—ELIZABETH RIVER, VA

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (VA)

ALTERNATIVE - EXISTING SITES

Capping - Elizabeth River, VA

ASSUMPTIONS/BASIS FOR ESTIMATE:

This alternative consists of placing dredged material from the Chesapeake Bay Approach Channels (VA) onto impacted sediments in the Elizabeth River where contamination has been identified. The proposed areas are adjacent and down river of several former wood treating (creosote) facilities along the Elizabeth River. The objective of the sediment capping is to provide a physical barrier between contaminants and potential receptors, thereby lowering the overall risk. The areas that are feasible for this alternative are limited to those areas of the river that are deep enough that the ca system will not alter habitat and significantly impact river currents. Capping sites can not be in the vicinity of the navigation channels and thereby interfere with boat traffic. These design factors limi the potential area that would be feasible for a capping system to an estimated 20 acres along the Elizabeth River. The capping system includes 2 ft. of dredge material covered by approximately one foot of granular material to address potential erosion.

Dredged material will be brought to these potential sites by hopper dredge and then pumped hydraulically to the capping sites that are outside the channel and close to the river shorelines in shallow waters. The granular material is assumed to be transported from the Cape Henry Channel (more sandy material available at this channel) and placed in a similar manner. Therefore all 3 ft. of the ca will be from the maintenance channels and is included in the total site capacity.

1. In-place Site Volume (MCY)	0.097	5. Site Surface Area (ACRE)	20
2. Site Operating Life (YRS)	0		
3. Site Capacity (cut volume) (MCY)*	0.097		
4. Average One-Way Hauling Distance (NMILES)	29		

*Cut volume is assumed equal to cap volume

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 190,978**
Study & Design		1		LS	$ 90,978.00	Study and design effort includes assessing need, defining limit of project and confirming suitability of dredged material. Assume 6% of the total construction costs.	$ 90,978
Permitting		1		LS	$ 100,000.00		$ 100,000
B. Site Development Costs	None						**$ -**
							$ -
C. Dredging, Transport and Placement Costs							**$ 1,516,300**
Mobilization/Demobilization		1	Mob and Demob	LS	$ 750,000.00	Based on Bid Sheets provided by USACE and Dredging spreadsheet	$ 750,000
Dredging of Mat'l from Channel	Hopper Dredge	97,000	Cut volume equal to the amount dredge material placed for cap (in-place volume). Cap area is 200 acres. Two feet of the cap will be dredged material from Chesapeake Bay Approach Channels (VA).	CY	$ 3.00	Based on USACE Dredging Spreadsheet	$ 291,000
Transportation of Dredged Mat'l to Site		97,000	Transportation volume equal to cut volume	CY	$ 2.90	$0.10/cy/nmile	$ 281,300
Transfer to Area to be Capped	Hydraulic Pump from Hopper Dredge	97,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on Bid Sheets provided by USACE and Dredging spreadsheet	$ 194,000
D. Habitat Development Costs	None						**$ -**
E. Operating & Maintenance Costs							**$ 450,000**
Site Monitoring		3		Years	$ 150,000.00	Site Monitoring for Water Quality and Stability of Cover	$ 450,000
SUBTOTAL COST (A+B+C+D+E)							**$ 2,157,278**
CONTINGENCY (25%)							$ 539,320
TOTAL COST							**$ 2,696,598**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 28**

CAPPING—PATAPSCO RIVER, MD

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach Channels

ALTERNATIVE - EXISTING SITES

Capping - Patapsco River, MD

ASSUMPTIONS/BASIS FOR ESTIMATE:

This alternative consists of placing dredged material from the C&D Approach Channels onto potentially impacted sediments in the Patapsco River where limited sediment sampling has indicated potential contamination. The proposed areas are located between Rock Point and Leading Point in the Patapsco River. The objective of the sediment capping is to provide a physical barrier between contaminants and potential receptors, thereby lowering the overall risk. The areas that are feasible for this alternative are limited to those areas of the river that are deep enough that the cap system will not alter habitat and significantly impact river currents. Capping sites can not be in the vicinity of the navigation channels. These design factors limit the potential area that would be feasible for a capping system to an estimated 250 acres. The capping system includes 2 ft. of dredge material covered by approximately two foot of granular material to address potential erosion.

Dredged material will be brought to this potential capping site by barge and then bottom dumped to the capping sites. The granular material is assumed to be transported to the capping area hydraulically from a sand borrow area off of Sparrows Point approximately 2 miles across the river on the opposite side of the channel, and is therefore not included in the site capacity.

1. In-place Site Volume (MCY)	0.81	5. Site Surface Area (ACRE)	250
2. Site Operating Life (YRS)	0		
3. Site Capacity (cut volume) (MCY)*	0.81		
4. Average One-Way Hauling Distance (NMILES)	15.5		

*Cut volume is assumed equal to cap volume

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 506,758**
Study & Design		1		LS	$ 406,758.00	Study and design effort includes assessing need, defining limit of project and confirming suitability of dredged material. Assume 6% of the total construction costs.	$ 406,758
Permitting		1		LS	$ 100,000.00		$ 100,000
B. Site Development Costs	None						**$ -**
							$ -
C. Dredging, Transport and Placement Costs							**$ 6,779,300**
Mobilization/Demobilization		2	Mob and Demob	LS	$ 750,000.00	Based on Bid Sheets provided by USACE and Dredging spreadsheet	$ 1,500,000
Dredging of Mat'l from Channel	Clam Shell	806,000	Cut volume equal to the amount dredge material placed for cap (in-place volume). Cap area is 200 acres. Two feet of the cap will be dredged material from Chesapeake Bay Approach Channels (VA).	CY	$ 2.00	Based on USACE Dredging spreadsheet	$ 1,612,000
Transportation of Dredged Mat'l to Site	Barge	806,000	Transportation volume equal to cut volume	CY	$ 1.55	$0.10/cy/nmile	$ 1,249,300
Transfer and Placement of Sand Cover	Hydraulic Pump and Pipeline	806,000	Two feet of sandy material will be pumped from area near Sparrows Point to Cap Area	CY	$ 3.00	Based on USACE Dredging spreadsheet	$ 2,418,000
D. Habitat Development Costs	None						**$ -**
E. Operating & Maintenance Costs							**$ 450,000**
Site Monitoring		3		Years	$ 150,000.00	Site Monitoring for Water Quality and stability of Cover	$ 450,000
SUBTOTAL COST (A+B+C+D+E)							**$ 7,736,058**
CONTINGENCY (25%)							$ 1,934,015
TOTAL COST							**$ 9,670,073**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 12**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (MD)

ALTERNATIVE - EXISTING SITES

Capping - Patapsco River, MD

ASSUMPTIONS/BASIS FOR ESTIMATE:

This alternative consists of placing dredged material from the Chesapeake Bay Approach Channels (MD) onto potentially impacted sediments in the Patapsco River where limited sediment sampling has indicated potential contamination. The proposed areas are located between Rock Point and Leading Point in the Patapsco River. The objective of the sediment capping is to provide a physical barrier between contaminants and potential receptors, thereby lowering the overall risk. The areas that are feasible for this alternative are limited to those areas of the river that are deep enough that the cap system will not alter habitat and significantly impact river currents. Capping sites can not be in the vicinity of the navigation channels. These design factors limit the potential area that would be feasible for a capping system to an estimated 250 acres. The capping system includes 2 ft. of dredge material covered by approximately two foot of granular material to address potential erosion.

Dredged material will be brought to this potential capping site by barge and then bottom dumped to the capping sites. The granular material is assumed to be transported to the capping area hydraulically from a sand borrow area off of Sparrows Point approximately 2 miles across the river on the opposite side of the channel.

1. In-place Site Volume (MCY)	0.81	5. Site Surface Area (ACRE)	250
2. Site Operating Life (YRS)	0		
3. Site Capacity (cut volume) (MCY)*	0.81		
4. Average One-Way Hauling Distance (NMILES)	8		

*Cut volume is assumed equal to cap volume

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 470,488**
Study & Design		1		LS	$ 370,488.00	Study and design effort includes assessing need, defining limit of project and confirming suitability of dredged material. Assume 6% of the total construction costs.	$ 370,488
Permitting		1		LS	$ 100,000.00		$ 100,000
B. Site Development Costs	None						**$ -**
							$ -
C. Dredging, Transport and Placement Costs							**$ 6,174,800**
Mobilization/Demobilization		2	Mob and Demob	LS	$ 750,000.00	Based on Bid Sheets provided by USACE and Dredging spreadsheet	$ 1,500,000
Dredging of Mat'l from Channel	Clam Shell	806,000	Cut volume equal to the amount dredge material placed for cap (in-place volume). Cap area is 200 acres. Two feet of the cap will be dredged material from Chesapeake Bay Approach Channels (VA).	CY	$ 2.00	Based on USACE Dredging spreadsheet	$ 1,612,000
Transportation of Dredged Mat'l to Site		806,000	Transportation volume equal to cut volume	CY	$ 0.80	$0.10/cy/nmile	$ 644,800
Transfer and Placement of Sand Cover	Hydraulic Pump and Pipeline	806,000	Two feet of sandy material will be pumped from area near Sparrows Point to Cap Area	CY	$ 3.00	Based on USACE Dredging spreadsheet	$ 2,418,000
D. Habitat Development Costs	None						**$ -**
E. Operating & Maintenance Costs							**$ 450,000**
Site Monitoring		3		Years	$ 150,000.00	Site Monitoring for Water Quality and stability of Cover	$ 450,000
SUBTOTAL COST (A+B+C+D+E)							**$ 7,095,288**
CONTINGENCY (25%)							$ 1,773,822
TOTAL COST							**$ 8,869,110**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 11**

CONFINED AQUATIC DISPOSAL AREA—PATAPSCO RIVER, MD

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Harbor Channels

ALTERNATIVE - EXISTING SITES

Confined Aquatic Disposal - Patapsco River, MD

ASSUMPTIONS/BASIS FOR ESTIMATE:

This alternative consists of placing dredged material from the Harbor Channels into an existing pit exacavated out from sand mining operations in the Patapsco River. The representative area is Sollers Point. It is assumed that the mined area is existing at the time of this alternative and has an aerial extent of 100 acres and a depth of 25 ft. Dredged material will be placed into the pit using open water placement methods up to within 4 ft. of the surrounding sediment elevation. The top 4 ft. will be capped using 2 ft of dredge material from the C&D Canal Approach Channels or the Chesapeake Bay Approach Channels (MD) overlain with 2 ft of sand from the sand mine area. The in-place volume of the site will therefore include the volume of dredged material from the Harbor Channels at a total thickness of 21 ft, and 2 ft of dredge material from the other channels. The costs for the 2 ft. of the dredged material from other Channels and the sand cover are included. Assume a 5 year period of operation which will include site monitoring.

1. In-place Site Volume (MCY)*	3.7	5. Site Surface Area (ACRE)	100
2. Site Operating Life (YRS)	5	6. Upland Surface Area (ACRE)	N/A
3. Site Capacity (cut volume) (MCY)	3.7	7. Exterior Dike Perimeter (FT)	N/A
4. Average One-Way Hauling Distance (NMILES)	1	8. Interior Dike Perimeter (FT)	N/A

* Site Capacity includes .322 mcy for 2 ft. cap from other Channels than the Harbor Channels - Dredge Cut Volume is equal to Site Capacit

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,263,596.00**
Study and Design		1		LS	$ 763,596.00	Study and design effort includes feasibility study, site survey and design. Assume 6 % of Implementation Costs.	$ 763,596.00
Permitting		1		LS	$ 500,000.00	Permitting of Open Water Placement - State Restrictions Regarding Open Water Placement Need to be Amended.	$ 500,000.00
B. Site Development Costs							**$ -**
Not applicable							
C. Dredging, Transport and Placement Costs							**$ 12,726,600.00**
Mobilization/Demobilization - Dredged Material Placed into the Former Sand Mine		5	Operating Life	LS	$ 500,000.00	USACE Dredging Bids - USACE Spreadsheet	$ 2,500,000.00
Dredging of Mat'l from Harbor Channel for Placement in the Former Sand Pit	Clamshell	3,377,000	Volume of Material Dredged from Harbor Channel and placed in former sand pit below cap	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 6,754,000.00
Transportation of Dredged Mat'l from Harbor Channel to Site and Bottom Dumped	Barge	3,377,000	See Above	CY	$ 0.10	$0.10/nmile/cy	$ 337,700.00
Mobilization/Demobilization - Dredged Material for 2 ft. Cap		1	Assume cap material dredged and placed in one event	LS	$ 550,000.00	USACE Dredging Bids - USACE Spreadsheet	$ 550,000.00
Dredging of Mat'l for first 2 ft. of Cap	Clamshell	323,000	2 ft. Cap placed over dredged material from Harbor Channel	CY	$ 3.00	Based on USACE Dredging Spreadsheet - Higher Unit Cost for Additional Surveying During Placement	$ 969,000.00
Transportation of Dredged Mat'l from Channels other than Harbor Channels for First 2 ft. of Cap -- Mat'l Transported to Site and Bottom Dumped	Barge	323,000	Assume cap material dredged from Chesapeake Bay Approach Channels (MD) - 8 nmi from site	CY	$ 0.80	$0.10/nmile/cy	$ 258,400.00

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Mobilization/Demobilization - Dredged Material for 2 ft. Sand Cap		1	Assume cap material dredged and placed in one event	LS	$ 550,000.00	USACE Dredging Bids - USACE Spreadsheet	$ 550,000.00
Dredging of Mat'l from Sand Mine Area for Final 2 ft. of Cap	Hydraulic Cutter Head and Pipeline to CAD Site	323,000	2 ft. Sand Cap placed over 2 ft. Dredged Material Cap	CY	$ 2.50	Based on USACE Dredging Spreadsheet - Higher Unit Cost for Additional Surveying During Placement	$ 807,500.00
D. Habitat Development Costs	None - No Habitat Creation						**$ -**
E. Operating & Maintenance Costs							**$ 1,500,000.00**
Monitoring & Reporting of Facility		5	Operating Life	YR	$ 300,000.00	MPA Estimated for CDF Facilities	$ 1,500,000.00
SUBTOTAL COST (A+B+C+D+E)							**$ 15,490,196.00**
CONTINGENCY (30%)							$ 4,647,058.80
TOTAL COST							**$ 20,137,254.80**
TOTAL UNIT COST PER CUBIC YARD							**$ 5**

CRANEY ISLAND - WEST BERM EXTENSION

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (VA)

ALTERNATIVE - EXISTING SITES

Craney Island West Berm Extension

ASSUMPTIONS/BASIS FOR ESTIMATE:

Additional Capacity Achieved by Expansion

Expansion Assumptions:

This alternative consist of expansion of the existing Craney Island facility on the James River. The alternative used for this cost estimate is the "Westward Berm" option. This option consists of constructing a 150 ft. wide berm extension along the western berm providing increased stability to the existing dike through the counterweight of the berm extension. This option will allow for a vertical expansion of the facility by 8 ft. and increasing the additional available capacity by 190.4 MCY. However, the dredge cut volumes will represent the 20-year need for the Chesapeake Bay Approach Channels (VA), equal to 10 mcy. Construction costs for the Craney expansion will be proportionally applied to this cost estimate as a function of the 10 mcy capacity which would consumed by this alternative.The toll charge for material being placed in Craney Island is anticipated to be $1.08/cuyd per CENAO.

1. In-place Site Volume (MCY)	190.4	5. Site Surface Area (ACRE)	2,500
2. Site Operating Life (YRS)	20		
3. Site Capacity (cut volume) (MCY)*	10.0		
4. Average One-Way Hauling Distance (NMILES)	28		

*Cut volume is assumed to be the projected maintenance need for the Chesapeake Bay Approach Channels (VA)

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 412,290**
Study & Design		1		LS	$ 162,289.92	Study and design effort includes assessing need, defining limit of project and confirming suitability of dredged material. Assume 6% of the total construction costs.	$ 162,290
Permitting & Real Estate Easements		1		LS	$ 250,000.00	Permitting of the berm expansion into James River	$ 250,000
B. Expansion Development Costs							**$ 2,704,832**
Construction Costs for Berm		1		LS	$2,704,832	Cost estimate for the construction of the westward berm option provided by USACE Norfolk District. Breakdown of costs can be requested from CENAB for this option currently under study. Unit cost represents 10 mcy (alternative requirement)/190.4 mcy (total facility capacity)	$ 2,704,832
C. Dredging, Transport and Placement Costs							**$ 94,800,000**
Mobilization/Demobilization		20	Mob and Demob over the 20 year dredged maintenance period	LS	$ 300,000.00	Bid Sheets provided by USACE	$ 6,000,000
Dredging of Mat'l from Channel	Hopper Dredge	10,000,000	Cut volume equal to the amount of anticipated maintenance need from the Chesapeake Bay Approach Channels (VA)	CY	$ 3.00	Bid Sheets provided by USACE	$ 30,000,000
Transportation of Dredged Mat'l to Site		10,000,000	Transportation volume equal to cut volume	CY	$ 2.80	$0.10/cy/nmile	$ 28,000,000
Transfer to the CDF	Hydraulic Pump from Hopper Dredge	10,000,000	Transfer volume equal to cut volume	CY	$ 2.00	Bid Sheets provided by USACE and Dredging Costing Spreadsheets	$ 20,000,000
Toll Fee for Craney Island		10,000,000	see above	CY	$ 1.08	USACE Norfolk District	$ 10,800,000
D. Habitat Development Costs	None						**$ -**
E. Operating & Maintenance Costs							**$ 2,626,050**
Annual Operating costs for Craney Island		20	Period of Maintenance Dredging	YR	$ 131,302.52	Portion of yearly $2.5 M estimated O&M cost assocaited with 10 mcy capacity of alternative versus full faqcility capacity of 190.4mcy	$ 2,626,050
SUBTOTAL COST (A+B+C+D+E)							**$ 97,838,340**
CONTINGENCY (25%)							$ 24,459,585
TOTAL COST							**$ 122,297,925**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 11**

CONFINED DISPOSAL FACILITY—PATAPSCO RIVER, MD

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Harbor Channels

ALTERNATIVE - EXISTING SITES

Confined Disposal Facility - Patapsco River

ASSUMPTIONS/BASIS FOR ESTIMATE:

This alternative consists of the construction of a new confined disposal facility (CDF) for dredged material placement with no habitat creation. The site represents an average of the State of Maryland's potential Harbor CDF/Fastlands sites. Water depth at representative site is approx. -12 MLLW. For an approx. 100 acre site, exterior dike perimeter length is approximately 8,400 LF (square shape). Exterior dike fill volume is 0.55 mcy (15 ft. crest, +10 ft MLLW dike height, and 3:1 slope). Assume that sandy soils for dike construction are available in the representative area. It is also assumed that the CDF will have three side that will be exposed to wave and tidal action, or approximately 75% of the perimeter dike length. The remaining 25% will be constructed on the uplands and will require only a vegetated cover for erosion protection.

Interior dike length is 4,200 LF, and consists of two berms dividing the facility into four 25-acre cells. Interior dikes for the wetland portion are +8 ft MLLW in height (crest width 15 ft and slope o 2:1). The interior dike volume is 0.17 mcy.

The in-place volume of the CDF is 2.5 mcy based on a total air space of 3.23 mcy minus the dike volumes of 0.55 mcy for exterior and 0.17 for interior dikes. The site capacity (cut volume) is i place site volume divided by a consolidation factor of 0.7.

1. In-place Site Volume (MCY)	2.5	5. Site Surface Area (ACRE)	100
2. Site Operating Life (YRS)	5	6. Upland Surface Area (ACRE)	100
3. Site Capacity (cut volume) (MCY)	3.6	7. Exterior Dike Perimeter (FT)	8,400
4. Average One-Way Hauling Distance (NMILES)	1	8. Interior Dike Perimeter (FT)	4,200

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,242,874**
Study and Design		1		LS	$ 742,874.33	Costs include Feasibility Study and Site Development Design. Assume 6% of the Total Site Development Costs.	$ 742,874
Permitting		1		LS	$ 500,000.00	Permits will be required for dredge placement.	$ 500,000
B. Site Development Costs							**$ 12,381,239**
Mob/Demob Bonding		1		LS	$ 809,988	7% of total construction costs	$ 809,988
Road Stone for Dike Crest		14,000	8,400 LF of perm. Dike - 15 ft. wide	SY	$ 12.55	12 " Thick 3/4" Crushed Stone R.S. Means 2004	$ 175,700
Geotextile		84,000	Area of Geotextile includes the perimeter dike length for only 75% of the slope that will be armored multiplied by the cross sectional length consisting of the dike slope (70 ft.) ,a 25 ft. toe overlap,15 ft. crest, and 10 ft. crest overlap	SY	$ 2.50	200 lb Woven , R.S. Means 2004	$ 210,000
Stabilization of Foundation		54,880	Assume 40% of dike foot print 147' x 8350F and a depth of 3 ft.	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 658,560
Slope Armor		61,740	Outside slope - Slope length 70 ft. - Assume 2 ft. thickness, 75% of dike perimeter and unit weight of 140 pcf	TONS	$ 42.00	Shoreline Restoration Project for Northeast MD (WESTON, 2004)	$ 2,593,080

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Underlayer Armor Dike Section		28,665	Same dimensions as slope armor but 1 ft. thickness and unit weight of 130 pcf	TONS	$ 41.00	Shoreline Restoration Project for Northeast MD (WESTON, 2004)	$ 1,175,265
Toe Armor Dike Section		29,531	Toe armor extends 25 ft. on 3 sides. Thickness is 2.5 ft. and 150 pcf	TONS	$ 53.00	Shoreline Restoration Project for Northeast MD (WESTON, 2004)	$ 1,565,143
Spillways		2	Assume 2 spillways needed to dewater site	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 500,000
Erosion Control - Upland Dike		3	Slope length of 70 ft. multiplied by 25% of Dike Length	Acres	$ 4,000.00	Seeding and Mulch, M.S. Means 2003	$ 13,503
Dike Material - Assumes Available On-site							
Dredging and Stockpiling Dike Material	Hydraulic Dredging of Granular mat'l from site area	720,000	See above dike dimensions	CY	$ 2.50	Cost for Dredging provide by CENAB - see dredging costing sheet	$ 1,800,000
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	720,000	See assumptions above for dikes	CY	$ 4.00	M.S. Means 2004	$ 2,880,000
C. Dredging, Transport and Placement Costs							**$ 22,137,000**
Mobilization/Demobilization		5	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Bid Sheets provided by USACE and Dredging Spreadsheets	$ 7,500,000
Dredging of Mat'l from Channel	Clamshell Dredging	3,570,000	Site Capacity (cut volume) equal to in-place site volume divided by a factor of 0.7	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 7,140,000
Transportation of Dredged Mat'l to Site	Barge	3,570,000	Transportation volume equal to cut volume	CY	$ 0.10	$0.10/nmile/cy	$ 357,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	3,570,000	Transfer volume equal to cut volume	CY	$ 2.00		$ 7,140,000
D. Habitat Development Costs	None - No Habitat Establishment						**$ -**
E. Operating & Maintenance Costs							**$ 9,913,500**
O&M of Facility - Expansion		7	Site Operating Life plus 2 years after placement	YR	$ 468,000.00	$90,000 + $45/LF Perimeter (GBA, 2003)	$ 3,276,000
Monitoring & Reporting of Facility		8	Site Operating Life plus 3 years after placement	YR	$ 675,000.00	(GBA, 2003)	$ 5,400,000
Other: Dredged Material Management		5	Site Operating Life	YR	$ 247,500.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 1,237,500
SUBTOTAL COST (A+B+C+D+E)							**$ 45,674,613**
CONTINGENCY (25%)							$ 11,418,653
TOTAL COST							**$ 57,093,266**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 16**

COX CREEK EXPANSION

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Harbor Channels

ALTERNATIVE - EXISTING SITES

Cox Creek - Vertical Expansion

ASSUMPTIONS/BASIS FOR ESTIMATE:

This alternative consists of the expansion of an existing confined disposal site (CDF) that is permitted to receive dredged material from the Harbor channels. The representative site is the Cox Creek Facility. The expansion will be a vertical expansion by raising the existing perimeter dikes 10 feet from a proposed 36 ft. to 46 ft. in total height. The currently authorized project is to raise the dike height from 24 ft. to 36 ft. Further raising of the dikes above this proposed 36 ft. will require re-negotiation with the community. The increase in dike height will be achieved by adding to the interior slope and not increasing the overall footprint of the existing CDF.

A 3:1 slope and 20 ft wide crest is assumed. Armoring on this 10 ft. vertical extension is assumed for only one side of the dike, or 25% of the total dike perimeter. The other portions of th dike will be stabilized with vegetation. The existing CDF covers an area of 112 acres. The perimeter dike length is estimated at 8,900 LF.

The in-place volume of the site from the 10 ft. dike extension is based on filling the facility to within 2 ft. of the top of the dike, and on subtracting from this air space the volume of the dike extension (up to the height of the dredged material). The estimated in-place volume of 1.3 mcy is therefore based on a total air space volume of 1.445 mcy, subtracted by the dike volume of 0.1476 mcy. The site capacity (cut volume) for this alternative is based on dividing the site capacity by 0.7 due to consolidation of the dredged material.

The expansion of the dike vertically without changing the outside toe of slope of the existing dike will require construction of the dike on existing dredged materials. In order to provide adequate foundation support for the dike expansion, further consolidation and strength gain of the dredged material will be required. For this cost estimate it is assumed that a high strengt geotextile will first be installed across the footprint of the new dike extension over the dredged materials. The new dike footprint will then be surcharged with a 20 ft. high soil surcharge load that will be used to further consolidate and provide strength gain of the underlying dredged materials. After the dredged material has gained sufficient strength, the outer wedge of the surcharge pile will be removed, and the remaining wedge will be the interior dike slope. The time for sufficient consolidation of the dredged material may be many years. In order to accelerate the consolidation, wick drains may be used with a horizontal drainage layer between the surcharge pile and the dredged materials. The cost of a wick drain system has not been included in these costs, a contingency item of 15% of the Site/Expansion Costs has been added to this cost estimate.

1. In-place Site Volume (MCY)	1.3	5. Site Surface Area (ACRE)	112
2. Site Operating Life (YRS)	4	6. Upland Surface Area (ACRE)	112
3. Site Capacity (cut volume) (MCY)	1.9	7. Exterior Dike Perimeter (FT)	8,900
4. Average One-Way Hauling Distance (NMILES)	1		

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 596,752**
Study and Design		1		LS	$ 346,752.04	Assume 6% of the construction and development costs	$ 346,752
Permitting		1		LS	$ 250,000.00	Permits will be required for dredge placement.	$ 250,000
B. Site Development Costs							**$ 5,779,201**
Mob/Demob & Bonds		1		LS	$ 299,651.80	Assume 7% of the Construction costs	$ 299,652
Road Stone		19,778	8,900 LF of perimeter dike and assume a 20 ft. crest.	SY	$ 12.55	12" Thick 3/4" Crushed Stone Mean 2004	$ 248,211
Geotextile		18,542	Required for only the vertical extension slope, crest and 20 ft. overlap on interior side for 25% of dike perimeter where armoring required.	SY	$ 2.50	200 lb Woven R.S. Means 2004	$ 46,354
Stone Work							
Slope Armor Dike Section		9,843	Stone Armor assumed for only new 10 ft. extension (slope length 31.6ft.) for 25% of dike perimeter. Assume 2 ft. thickness and unit weight of 140 pcf	TON	$ 42.00	Shoreline Project for Northeast MD - (WESTON, 2004)	$ 413,423
Underlayer Armor Dike Section		4,570	Underlayer Stone Armor assumed for only new 10 ft. extension (slope length 31.6ft.) for 25% of dike perimeter. Assume 1 ft. thickness and unit weight of 130 pcf	TON	$ 41.00	Shoreline Project for Northeast MD - (WESTON, 2004)	$ 187,376

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Erosion Control - Nursery Planting		5	Other 75% of exterior slope to be stabilized with vegetation. Slope length 31.6 ft.	Acres	$ 4,000.00	Seeding, Fertilizer, and Mulching - M.S. Means	$ 19,376
Dike Material - Available at Site							$ -
Dike Material - Borrow Soil	Borrow Material Transported and Compacted with Roller	363,000	Assume that existing dredge material filled to within 10 ft. of current dike height . Crest width of 20 ft. and 3:1 slope.	CY	$ 6.00	Borrow material transported to site $5.08/ton (approx. 1 ton = 1 cy) and compaction is $0.84/cy	$ 2,178,000
Stabilization of the Existing Dredged Mat'l - Additional Fill for Surcharge Load	Borrow Material Transported and Compacted with Roller	198,000	See assumptions above for dike material. Assume that surcharge load will be applied as a "block" of soil 20 ft. in thickness over 60 ft. length of dike extension around full interior perimeter. One half of the block will remain as part of the dike.	CY	$ 6.00	See Above	$ 1,188,000
High Strength Geotextile - Stabilize Existing Dredged Material prior to Dike Extension Construction		89,000	Dike extension covers 60 ft. of dredged material around full interior of the dike.	SY	$ 5.00	Cost for High Strength Geotextile $1.74/SY for SI 4x4. Labor costs per Means is approx. $2/SY, but due to site conditions working on soft material should be approx. $3/SY, plus transportation.	$ 445,000
Contingency for Soft Foundation Conditions		1		LS	$ 753,808.78	Assume Contingency of 15% of Construction Costs	$ 753,809
C. Dredging, Transport and Placement Costs							**$ 13,790,000**
Mobilization/Demobilization		4	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Bid Sheets provided by USACE and Dredging Spreadsheets	$ 6,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	1,900,000	Site capacity (cut volume) equal to in-place site volume divided by a factor of 0.70	CY	$ 2.00	USACE Dredging Spreadsheet	$ 3,800,000
Transportation of Dredged Mat'l to Site		1,900,000	Transportation volume equal to cut volume	CY	$ 0.10	$0.10/nmile/cy	$ 190,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	1,900,000	Transfer volume equal to cut volume	CY	$ 2.00	USACE Dredging Spreadsheet	$ 3,800,000
D. Habitat Development Costs	**None - No Habitat Development**						**$ -**
E. Operating & Maintenance Costs							**$ 8,704,800**
O&M of Facility - Expansion		6	Site Operating Life plus 2 years after placement	YR	$ 490,500.00	$90,000 + $45/LF Perimeter (GBA, 2003)	$ 2,943,000
Monitoring & Reporting of Facility		7	Site Operating Life plus 3 years after placement	YR	$ 675,000.00	(GBA, 2003)	$ 4,725,000
Other: Dredged Material Management		4	Site Operating Life	YR	$ 259,200.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 1,036,800
SUBTOTAL COST (A+B+C+D+E)							**$ 28,870,753**
CONTINGENCY (25%)							$ 7,217,688
TOTAL COST							**$ 36,088,441**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 19**

HART-MILLER ISLAND EXPANSION

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Harbor Channels

ALTERNATIVE - EXISTING SITES

Hart Miller Island Expansion

ASSUMPTIONS/BASIS FOR ESTIMATE:

Additional Capacity Achieved by Expansion

Expansion Assumptions:

This alternative includes a 300 acre lateral expansion of existing facility to the south and a vertical expansion of 300 acres of the existing CDF. The dike height in the lateral expansion will be at +18 MLLW. Current water depth is -10'. The area of the vertical expansion is 300 acres and will have a dike height of +28MLLW raised from +18' MLLW. The perimeter dike length estimated at 12,000LF for exterior and 16,000 for interior.

1. In-place Site Volume (MCY)	17.5	5. Site Surface Area (ACRE)	300
2. Site Operating Life (YRS)	10.0	6. Upland Surface Area (ACRE)	300
3. Site Capacity (cut volume) (MCY)	25.0	7. Exterior Dike Perimeter (FT)	12000
4. Average One-Way Hauling Distance (NMILES)	11	8. Interior Dike Perimeter (FT)	16000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 3,000,000.00**
Study and Design		1		LS	$ 3,000,000	Conceptual, pre- feasibility and feasibility costs (GBA, 2003)	$ 3,000,000.00
Permitting				LS		Included above	$ -
Other				LS		Included above	$ -
B. Expansion/Site Development Costs							**$ 74,955,319**
Mob/Demob & Bonds		1		LS	$ 4,903,619.00	Assumes 7% of total construction costs	$ 4,903,619
Lateral Expansion Site Development							
Road Stone		46,600	Table D-1 (GBA, 2003) - for 12,000 LF of perm. Dikes - 15 ft. wide	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 559,200
Geotextile		413,000	Table D-1 (GBA, 2003) - for 12,000 LF of ext. Dikes; slope length 88.7 ft. Dikes - 28' elev. 50' toe overlap & 20 ft. crest overlap	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 1,652,000
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Unsuitable Foundation Excavation		666,667	12000' * 300' dike width at base excavated 5 feet. Consistent with Table D-1 (GBA, 2003) when scaled from James Island quantities.	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 8,000,000
Stone Work		573,333	Total stone as calculated by 88' slope width * 5' thickness * 12000 length. 1.6 ton/cy. Compared with Table D-1 (GBA, 2003) as a check to how it would scale to James Island.	CY			
Slope Armor Dike Section		542,000	50% armor stone @1.89 ton/cy (140 pcf) based on James I.	TON	$ 42.00	Table E-1 (GBA, 2003)	$ 22,764,000
Underlayer Armor Dike Section		229,000	22.5% underlayer stone @1.76 ton/cy (130 pcf) based on James I.	TON	$ 41.00	Table E-1 (GBA, 2003)	$ 9,389,000

Toe Armor Dike Section		206,000	17.5% Toe Armor @2.00 ton/cy (150 pcf) based on James I.	TON	$ 53.00	Table E-1 (GBA, 2003)	$ 10,918,000
Quarry Run Dike Section		108,000	10% quarry run @1.89 ton/cy (140 pcf) based on James I.	TON	$ 40.00	Table E-1 (GBA, 2003)	$ 4,320,000
Spillways		3	Table E-1 (GBA, 2003)	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 750,000
Erosion Control - Nursery Planting		1	Table E-1 (GBA, 2003)	LS	$ 200,000.00	Table E-1 (GBA, 2003)	$ 200,000
Dike Material - Available at Site							$ -
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	1,230,000	12,000 LF of Dike @ 28' elev	CY	$ 2.50		$ 3,075,000
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	1,230,000	12,000 LF of Dike @ 28' elev	CY	$ 4.00		$ 4,920,000
Vertical Expansion of Existing Southern Cell							
Road Stone		40,000	Table D-1 (GBA, 2003) - for 16,000 LF of perm. Dikes - 15 ft. wide	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 480,000
Geotextile		40,000	Only on Roadway	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 160,000
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Foundation Stabilization/Strengthening		0			$ -		$ -
Stone Work			None for south cell - no shore protection needed				
Slope Armor Dike Section		0		TON	$ 42.00	Table E-1 (GBA, 2003)	$ -
Underlayer Armor Dike Section		0		TON	$ 41.00	Table E-1 (GBA, 2003)	$ -
Toe Armor Dike Section		0		TON	$ 53.00	Table E-1 (GBA, 2003)	$ -
Quarry Run Dike Section		0		TON	$ 40.00	Table E-1 (GBA, 2003)	$ -
Spillways		0		EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ -
Erosion Control - Nursery Planting		1		LS	$ 200,000.00	Table E-1 (GBA, 2003)	$ 200,000
Dike Material - Available at Site							$ -
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	333,000	16,000 LF of Dike @ 10' elev	CY	$ 2.50		$ 832,500
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	333,000	16,000 LF of Dike @ 10' elev	CY	$ 4.00		$ 1,332,000
C. Dredging, Transport and Placement Costs							**$ 142,500,000.00**
Mobilization/Demobilization		10	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Costs for Dredging provided by CENAP	$ 15,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	25,000,000	Site Capacity (cut volume) equal to in-place site volume divided by a factor of 0.70	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 50,000,000
Transportation of Dredged Mat'l to Site		25,000,000	Transportation volume equal to cut volume	CY	$ 1.10	$0.10/nmile/cy	$ 27,500,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	25,000,000	Transfer volume equal to cut volume	CY	$ 2.00		$ 50,000,000
D. Habitat Development Costs							**$ -**
Not applicable							
E. Operating & Maintenance Costs							**$ 20,100,000.00**
O&M of Facility - Expansion		12	Site operating life + 2 yrs	YR	$ 1,350,000.00	$90,000 + $45/LF Perimeter (GBA, 2003)	$ 16,200,000.00
O&M of Created Habitat		NA					
Monitoring & Reporting of Facility		13.0	Site operating life + 3 yrs	YR	$ 300,000.00	(GBA, 2003)	$ 3,900,000.00
Monitoring and Reporting of Created Habitat		NA		YR			

SUBTOTAL COST (A+B+C+D+E)							**$ 240,555,319.00**
CONTINGENCY (25%)							$ 60,138,829.75
TOTAL COST							**$ 300,694,148.75**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$12**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach Channels

ALTERNATIVE - EXISTING SITES

Hart Miller Island Expansion

ASSUMPTIONS/BASIS FOR ESTIMATE:

Additional Capacity Achieved by Expansion

Expansion Assumptions:

This alternative includes a 300 acre lateral expansion of existing facility to the south and a vertical expansion of 300 acres of the existing CDF. The dike height in the lateral expansion will be at +18 MLLW. Current water depth is -10'. The area of the vertical expansion is 300 acres and will have a dike height of +28MLLW raised from +18' MLLW. The perimeter dike length estimated at 12,000LF for exterior and 16,000 for interior.

1. In-place Site Volume (MCY)	17.5	5. Site Surface Area (ACRE)	300
2. Site Operating Life (YRS)	10.0	6. Upland Surface Area (ACRE)	300
3. Site Capacity (cut volume) (MCY)	25.0	7. Exterior Dike Perimeter (FT)	12000
4. Average One-Way Hauling Distance (NMILES)	6	8. Interior Dike Perimeter (FT)	16000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 3,000,000.00**
Study and Design		1		LS	$ 3,000,000	Conceptual, pre- feasibility and feasibility costs (GBA, 2003)	$ 3,000,000.00
Permitting				LS			$ -
Other				LS			$ -
B. Expansion/Site Development Costs							**$ 74,955,319**
Mob/Demob & Bonds		1		LS	$ 4,903,619.00	Assumes 7% of total construction costs	$ 4,903,619
Lateral Expansion Site Development							
Road Stone		46,600	Table D-1 (GBA, 2003) - for 12,000 LF of perm. Dikes - 15 ft. wide	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 559,200
Geotextile		413,000	Table D-1 (GBA, 2003) - for 12,000 LF of ext. Dikes; slope length 88.7 ft. Dikes - 28' elev. 50' toe overlap & 20 ft. crest overlap	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 1,652,000
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Unsuitable Foundation Excavation		666,667	12000' * 300' dike width at base excavated 5 feet. Consistent with Table D-1 (GBA, 2003) when scaled from James Island quantities.	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 8,000,000
Stone Work		573,333	Total stone as calculated by 88' slope width * 5' thickness * 12000 length. 1.6 ton/cy. Compared with Table D-1 (GBA, 2003) as a check to how it would scale to James Island.	CY			
Slope Armor Dike Section		542,000	50% armor stone @1.89 ton/cy (140 pcf) based on James I.	TON	$ 42.00	Table E-1 (GBA, 2003)	$ 22,764,000
Underlayer Armor Dike Section		229,000	22.5% underlayer stone @1.76 ton/cy (130 pcf) based on James I.	TON	$ 41.00	Table E-1 (GBA, 2003)	$ 9,389,000

Toe Armor Dike Section		206,000	17.5% Toe Armor @2.00 ton/cy (150 pcf) based on James I.	TON	$	53.00	Table E-1 (GBA, 2003)	$	10,918,000
Quarry Run Dike Section		108,000	10% quarry run @1.89 ton/cy (140 pcf) based on James I.	TON	$	40.00	Table E-1 (GBA, 2003)	$	4,320,000
Spillways		3	Table E-1 (GBA, 2003)	EA	$	250,000.00	Table E-1 (GBA, 2003)	$	750,000
Erosion Control - Nursery Planting		1	Table E-1 (GBA, 2003)	LS	$	200,000.00	Table E-1 (GBA, 2003)	$	200,000
Dike Material - Available at Site								$	-
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	1,230,000	12,000 LF of Dike @ 28' elev	CY	$	2.50		$	3,075,000
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	1,230,000	12,000 LF of Dike @ 28' elev	CY	$	4.00		$	4,920,000
Vertical Expansion of Existing Southern Cell									
Road Stone		40,000	Table D-1 (GBA, 2003) - for 16,000 LF of perm. Dikes - 15 ft. wide	SY	$	12.00	Table E-1 (GBA, 2003)	$	480,000
Geotextile		40,000	Only on Roadway	SY	$	4.00	Table E-1 (GBA, 2003)	$	160,000
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$	250,000.00	Table E-1 (GBA, 2003)	$	250,000
Foundation Stabilization/Strengthening		0			$	-		$	-
Stone Work			None for south cell - no shore protection needed						
Slope Armor Dike Section		0		TON	$	42.00	Table E-1 (GBA, 2003)	$	-
Underlayer Armor Dike Section		0		TON	$	41.00	Table E-1 (GBA, 2003)	$	-
Toe Armor Dike Section		0		TON	$	53.00	Table E-1 (GBA, 2003)	$	-
Quarry Run Dike Section		0		TON	$	40.00	Table E-1 (GBA, 2003)	$	-
Spillways		0		EA	$	250,000.00	Table E-1 (GBA, 2003)	$	-
Erosion Control - Nursery Planting		1		LS	$	200,000.00	Table E-1 (GBA, 2003)	$	200,000
Dike Material - Available at Site								$	-
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	333,000	16,000 LF of Dike @ 10' elev	CY	$	2.50		$	832,500
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	333,000	16,000 LF of Dike @ 10' elev	CY	$	4.00		$	1,332,000
C. Dredging, Transport and Placement Costs								**$**	**130,000,000.00**
Mobilization/Demobilization		10	Mob & Demob for operating life of site	YR	$	1,500,000.00	Costs for Dredging provided by CENAP	$	15,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	25,000,000	Site Capacity (cut volume) equal to in-place site volume divided by a factor of 0.70	CY	$	2.00	Based on USACE Dredging Spreadsheet	$	50,000,000
Transportation of Dredged Mat'l to Site		25,000,000	Transportation volume equal to cut volume	CY	$	0.60	$0.10/nmile/cy	$	15,000,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	25,000,000	Transfer volume equal to cut volume	CY	$	2.00		$	50,000,000
D. Habitat Development Costs								**$**	**-**
Not applicable									
E. Operating & Maintenance Costs								**$**	**20,100,000.00**
O&M of Facility - Expansion		12	Site operating life + 2 yrs	YR	$	1,350,000.00	$90,000 + $45/LF Perimeter (GBA, 2003)	$	16,200,000.00
O&M of Created Habitat		NA							
Monitoring & Reporting of Facility		13.0	Site operating life + 3 yrs	YR	$	300,000.00	(GBA, 2003)	$	3,900,000.00
Monitoring and Reporting of Created Habitat		NA							

SUBTOTAL COST (A+B+C+D+E)							**$ 228,055,319.00**
CONTINGENCY (25%)							$ 57,013,829.75
TOTAL COST							**$285,069,149**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 11**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (MD)

ALTERNATIVE - EXISTING SITES

Hart Miller Island Expansion

ASSUMPTIONS/BASIS FOR ESTIMATE:

Additional Capacity Achieved by Expansion

Expansion Assumptions:

This alternative includes a 300 acre lateral expansion of existing facility to the south and a vertical expansion of 300 acres of the existing CDF. The dike height in the lateral expansion will be at +18 MLLW. Current water depth is -10'. The area of the vertical expansion is 300 acres and will have a dike height of +28MLLW raised from +18' MLLW. The perimeter dike length estimated at 12,000LF for exterior and 16,000 for interior.

1. In-place Site Volume (MCY)	17.5	5. Site Surface Area (ACRE)	300
2. Site Operating Life (YRS)	10.0	6. Upland Surface Area (ACRE)	300
3. Site Capacity (cut volume) (MCY)	25.0	7. Exterior Dike Perimeter (FT)	12000
4. Average One-Way Hauling Distance (NMILES)	11	8. Interior Dike Perimeter (FT)	16000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 3,000,000.00**
Study and Design		1		LS	$ 3,000,000	Conceptual, pre- feasibility and feasibility costs (GBA, 2003)	$ 3,000,000.00
Permitting				LS			$ -
Other				LS			$ -
B. Expansion/Site Development Costs							**$ 74,955,319**
Mob/Demob & Bonds		1		LS	$ 4,903,619.00	Assumes 7% of total construction costs	$ 4,903,619
Lateral Expansion Site Development							
Road Stone		46,600	Table D-1 (GBA, 2003) - for 12,000 LF of perm. Dikes - 15 ft. wide	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 559,200
Geotextile		413,000	Table D-1 (GBA, 2003) - for 12,000 LF of ext. Dikes; slope length 88.7 ft. Dikes - 28' elev. 50' toe overlap & 20 ft. crest overlap	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 1,652,000
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Unsuitable Foundation Excavation		666,667	12000' * 300' dike width at base excavated 5 feet. Consistent with Table D-1 (GBA, 2003) when scaled from James Island quantities.	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 8,000,000
Stone Work		573,333	Total stone as calculated by 88' slope width * 5' thickness * 12000 length. 1.6 ton/cy. Compared with Table D-1 (GBA, 2003) as a check to how it would scale to James Island.	CY			
Slope Armor Dike Section		542,000	50% armor stone @1.89 ton/cy (140 pcf) based on James I.	TON	$ 42.00	Table E-1 (GBA, 2003)	$ 22,764,000
Underlayer Armor Dike Section		229,000	22.5% underlayer stone @1.76 ton/cy (130 pcf) based on James I.	TON	$ 41.00	Table E-1 (GBA, 2003)	$ 9,389,000

Toe Armor Dike Section		206,000	17.5% Toe Armor @2.00 ton/cy (150 pcf) based on James I.	TON	$	53.00	Table E-1 (GBA, 2003)	$	10,918,000
Quarry Run Dike Section		108,000	10% quarry run @1.89 ton/cy (140 pcf) based on James I.	TON	$	40.00	Table E-1 (GBA, 2003)	$	4,320,000
Spillways		3	Table E-1 (GBA, 2003)	EA	$	250,000.00	Table E-1 (GBA, 2003)	$	750,000
Erosion Control - Nursery Planting		1	Table E-1 (GBA, 2003)	LS	$	200,000.00	Table E-1 (GBA, 2003)	$	200,000
Dike Material - Available at Site								$	-
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	1,230,000	12,000 LF of Dike @ 28' elev	CY	$	2.50		$	3,075,000
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	1,230,000	12,000 LF of Dike @ 28' elev	CY	$	4.00		$	4,920,000
Vertical Expansion of Existing Southern Cell									
Road Stone		40,000	Table D-1 (GBA, 2003) - for 16,000 LF of perm. Dikes - 15 ft. wide	SY	$	12.00	Table E-1 (GBA, 2003)	$	480,000
Geotextile		40,000	Only on Roadway	SY	$	4.00	Table E-1 (GBA, 2003)	$	160,000
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$	250,000.00	Table E-1 (GBA, 2003)	$	250,000
Foundation Stabilization/Strengthening		0			$	-		$	-
Stone Work			None for south cell - no shore protection needed						
Slope Armor Dike Section		0		TON	$	42.00	Table E-1 (GBA, 2003)	$	-
Underlayer Armor Dike Section		0		TON	$	41.00	Table E-1 (GBA, 2003)	$	-
Toe Armor Dike Section		0		TON	$	53.00	Table E-1 (GBA, 2003)	$	-
Quarry Run Dike Section		0		TON	$	40.00	Table E-1 (GBA, 2003)	$	-
Spillways		0		EA	$	250,000.00	Table E-1 (GBA, 2003)	$	-
Erosion Control - Nursery Planting		1		LS	$	200,000.00	Table E-1 (GBA, 2003)	$	200,000
Dike Material - Available at Site								$	-
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	333,000	16,000 LF of Dike @ 10' elev	CY	$	2.50		$	832,500
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	333,000	16,000 LF of Dike @ 10' elev	CY	$	4.00		$	1,332,000
C. Dredging, Transport and Placement Costs								**$**	**142,500,000.00**
Mobilization/Demobilization		10	Mob & Demob for operating life of site	YR	$	1,500,000.00	Costs for Dredging provided by CENAP	$	15,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	25,000,000	Site Capacity (cut volume) equal to in-place site volume divided by a factor of 0.70	CY	$	2.00	Based on USACE Dredging Spreadsheet	$	50,000,000
Transportation of Dredged Mat'l to Site		25,000,000	Transportation volume equal to cut volume	CY	$	1.10	$0.10/nmile/cy	$	27,500,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	25,000,000	Transfer volume equal to cut volume	CY	$	2.00		$	50,000,000
D. Habitat Development Costs								**$**	**-**
Not Applicable								$	-
E. Operating & Maintenance Costs								**$**	**20,100,000.00**
O&M of Facility - Expansion		12	Site operating life + 2 yrs	YR	$	1,350,000.00	$90,000 + $45/LF Perimeter (GBA, 2003)	$	16,200,000.00
O&M of Created Habitat		NA							
Monitoring & Reporting of Facility		13.0	Site operating life + 3 yrs	YR	$	300,000.00	(GBA, 2003)	$	3,900,000.00
Monitoring and Reporting of Created Habitat		NA							

SUBTOTAL COST (A+B+C+D+E)							**$ 240,555,319.00**
CONTINGENCY (25%)							$ 60,138,829.75
TOTAL COST							**$300,694,149**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 12**

C&D CANAL UPLAND SITES EXPANSION

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Harbor Channels

ALTERNATIVE - EXISTING SITES

C&D Canal Upland Sites Expansion

ASSUMPTIONS/BASIS FOR ESTIMATE:

This alternative consists of the expansion of an existing confined disposal site (CDF) among the C&D Canal upland sites. The representative site is Pearce Creek. The expansion will be a vertical expansion by raising the existing perimeter dikes 10 feet from 50 to 60 in total height. The increase in dike height will be achieved by adding to the interior slope and not increasing the overall footprint of the existing CDF. A 3:1 slope and 20 ft wide crest is assumed. Armoring on this 10 ft. vertical extension is assumed for only one side of the dike, or 25% of the total dike perimeter. The other portions of the dike will be stabilized with vegetation. The existing CDF covers an area of 260 acres.

The expansion of the dike vertically without changing the outside toe of slope of the existing dike will require construction of the dike on existing dredged materials. In order to provide adequate foundation support for the dike, further consolidation and strength gain of the dredged material will be required. For this cost estimate, it is assumed that a high strength geotextile will first be installed across the footprint of the new dike extension over the dredged materials. The new dike footprint will then be surcharged with a 20 ft. high soil surcharged load that will be used to further consolidate and provide strength gain of the underlying dredged materials. After the dredged material has gained sufficient strength, the outer wedge of the surcharge pile will be removed, and the remaining wedge will be the interior dike slope. The time for sufficient consolidation of the dredged material may be many years. In order to accelerate the consolidation, wick drains may be used with a horizontal drainage layer between the surcharge pile and the dredged materials. The cost of a wick drain system has not been included in these costs, a contingency item of 15% of the Site/Expansion Costs has been added to this cost estimate.

1. In-place Site Volume (MCY)	3.1	5. Site Surface Area (ACRE)	260
2. Site Operating Life (YRS)	6	6. Upland Surface Area (ACRE)	260
3. Site Capacity (cut volume) (MCY)	4.4	7. Exterior Dike Perimeter (FT)	13,500
4. Average One-Way Hauling Distance (NMILES)	35	8. Interior Dike Perimeter (FT)	0

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 775,549**
Study and Design		1		LS	$ 525,549.12	Assume 6% of the construction and development costs	$ 525,549
Permitting		1		LS	$ 250,000.00	Permits will be required for dredge placement.	$ 250,000
B. Site Development Costs							**$ 8,759,152**
Mob/Demob & Bonds		1		LS	$ 454,126.89	Assume 7% of the Construction costs	$ 454,127
Road Stone		30,000	13,500 LF of perimeter dike and assume a 20 ft. crest.	SY	$ 12.55	12" Thick 3/4" Crushed Stone Mean 2004	$ 376,500
Geotextile		28,125	Required for only the vertical extension slope, crest and 20 ft. overlap on interior side for 25% of dike perimeter where armoring required.	SY	$ 2.50	200 lb Woven R.S. Means 2004	$ 70,313
Stone Work							
Slope Armor Dike Section		14,931	Stone Armor assumed for only new 10 ft. extension (slope length 31.6ft.) for 25% of dike perimeter. Assume 2 ft. thickness and unit weight of 140 pcf	TON	$ 42.00	Shoreline Project for Northeast MD - (WESTON, 2004)	$ 627,102
Underlayer Armor Dike Section		6,932	Underlayer Stone Armor assumed for only new 10 ft. extension (slope length 31.6ft.) for 25% of dike perimeter. Assume 1 ft. thickness and unit weight of 130 pcf	TON	$ 41.00	Shoreline Project for Northeast MD - (WESTON, 2004)	$ 284,222
Erosion Control - Nursery Planting		7	Other 75% of exterior slope to be stabilized with vegetation. Slope length 31.6 ft.	Acres	$ 4,000.00	Seeding, Fertilizer, and Mulching - M.S. Means	$ 29,390
Dike Material - Available at Site							$ -

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Dike Material - Borrow Soil	Borrow Material Transported and Compacted with Roller	550,000	Assume that existing dredge material filled to within 10 ft. of current dike height of 50 ft. Crest width of 20 ft. and 3:1 slope.	CY	$ 6.00	Borrow material transported to site $5.08/ton (approx. 1 ton = 1 cy) and compaction is $0.84/cy	$ 3,300,000
Stabilization of the Existing Dredged Mat'l - Additional Fill for Surcharge Load	Borrow Material Transported and Compacted with Roller	300,000	See assumptions above for dike material. Assume that surcharge load will be applied as a "block" of soil 20 ft. in thickness over 60 ft. length of dike extension around full interior perimeter. One half of the block will remain as part of the dike.	CY	$ 6.00	See Above	$ 1,800,000
High Strength Geotextile - Stabilize Existing Dredged Material prior to Dike Extension Construction		135,000	Dike extension covers 60 ft. of dredged material around full interior of the dike.	SY	$ 5.00	Cost for High Strength Geotextile $1.74/SY for SI 4x4. Labor costs per Means is approx. $2/SY, but due to site conditions working on soft material should be approx. $3/SY, plus transportation.	$ 675,000
Contingency for Soft Foundation Conditions		1		LS	$ 1,142,498.09	Assume Contingency of 15% of Construction Costs	$ 1,142,498
C. Dredging, Transport and Placement Costs							**$ 46,400,000**
Mobilization/Demobilization		6	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Bid Sheets provided by USACE and Dredging Spreadsheets	$ 9,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	4,400,000	Site Capacity (cut volume) equal to In-place Site Volume divided by a factor of 0.70	CY	$ 3.00	USACE Dredging Spreadsheet	$ 13,200,000
Transportation of Dredged Mat'l to Site		4,400,000	Transportation volume equal to cut volume	CY	$ 3.50	$0.10/nmile/cy	$ 15,400,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	4,400,000	Transfer volume equal to cut volume	CY	$ 2.00	USACE Dredging Spreadsheet	$ 8,800,000
D. Habitat Development Costs	**None - No Habitat Development**						**$ -**
E. Operating & Maintenance Costs							**$ 14,076,000**
O&M of Facility - Expansion		8	Site Operating Life plus 2 years after placement	YR	$ 697,500.00	$90,000 + $45/LF Perimeter (GBA, 2003)	$ 5,580,000
Monitoring & Reporting of Facility		9	Site Operating Life plus 3 years after placement	YR	$ 675,000.00	(GBA, 2003)	$ 6,075,000
Other: Dredged Material Management		6	Site Operating Life	YR	$ 403,500.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 2,421,000
SUBTOTAL COST (A+B+C+D+E)							**$ 70,010,701**
CONTINGENCY (25%)							$ 17,502,675
TOTAL COST							**$ 87,513,376**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 20**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach Channels

ALTERNATIVE - EXISTING SITES

C&D Canal Upland Sites Expansion

ASSUMPTIONS/BASIS FOR ESTIMATE:

This alternative consists of the expansion of an existing confined disposal site (CDF) among the C&D Canal upland sites. The representative site is Pearce Creek. The expansion will be a vertical expansion by raising the existing perimeter dikes 10 feet from 50 to 60 in total height. The increase in dike height will be achieved by adding to the interior slope and not increasing the overall footprint of the existing CDF. A 3:1 slope and 20 ft wide crest is assumed. Armoring on this 10 ft. vertical extension is assumed for only one side of the dike, or 25% of the total dike perimeter. The other portions of the dike will be stabilized with vegetation. The existing CDF covers an area of 260 acres.

The expansion of the dike vertically without changing the outside toe of slope of the existing dike will require construction of the dike on existing dredged materials. In order to provide adequate foundation support for the dike, further consolidation and strength gain of the dredged material will be required. For this cost estimate, it is assumed that a high strength geotextile will first be installed across the footprint of the new dike extension over the dredged materials. The new dike footprint will then be surcharged with a 20 ft. high soil surcharged load that will be used to further consolidate and provide strength gain of the underlying dredged materials. After the dredged material has gained sufficient strength, the outer wedge of the surcharge pile will be removed, and the remaining wedge will be the interior dike slope. The time for sufficient consolidation of the dredged material may be many years. In order to accelerate the consolidation, wick drains may be used with a horizontal drainage layer between the surcharge pile and the dredged materials. The cost of a wick drain system has not been included in these costs, a contingency item of 15% of the Site/Expansion Costs has been added to this cost estimate.

1. In-place Site Volume (MCY)	3.1		5. Site Surface Area (ACRE)	260
2. Site Operating Life (YRS)	6		6. Upland Surface Area (ACRE)	260
3. Site Capacity (cut volume) (MCY)	4.4		7. Exterior Dike Perimeter (FT)	13,500
4. Average One-Way Hauling Distance (NMILES)	14		8. Interior Dike Perimeter (FT)	0

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 775,549**
Study and Design		1		LS	$ 525,549.12	Assume 6% of the construction and development costs	$ 525,549
Permitting		1		LS	$ 250,000.00	Permits will be required for dredge placement.	$ 250,000
B. Site Development Costs							**$ 8,759,152**
Mob/Demob & Bonds		1		LS	$ 454,126.89	Assume 7% of the Construction costs	$ 454,127
Road Stone		30,000	13,500 LF of perimeter dike and assume a 20 ft. crest.	SY	$ 12.55	12" Thick 3/4" Crushed Stone Mean 2004	$ 376,500
Geotextile		28,125	Required for only the vertical extension slope, crest and 20 ft. overlap on interior side for 25% of dike perimeter where armoring required,	SY	$ 2.50	200 lb Woven R.S. Means 2004	$ 70,313
Stone Work							
Slope Armor Dike Section		14,931	Stone Armor assumed for only new 10 ft. extension (slope length 31.6ft.) for 25% of dike perimeter. Assume 2 ft. thickness and unit weight of 140 pcf	TON	$ 42.00	Shoreline Project for Northeast MD - (WESTON, 2004)	$ 627,102
Underlayer Armor Dike Section		6,932	Underlayer Stone Armor assumed for only new 10 ft. extension (slope length 31.6ft.) for 25% of dike perimeter. Assume 1 ft. thickness and unit weight of 130 pcf	TON	$ 41.00	Shoreline Project for Northeast MD - (WESTON, 2004)	$ 284,222
Erosion Control - Nursery Planting		7	Other 75% of exterior slope to be stabilized with vegetation. Slope length 31.6 ft.	Acres	$ 4,000.00	Seeding, Fertilizer, and Mulching - M.S. Means	$ 29,390

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Dike Material - Available at Site							$ -
Dike Material - Borrow Soil	Borrow Material Transported and Compacted with Roller	550,000	Assume that existing dredge material filled to within 10 ft. of current dike height of 50 ft. Crest width of 20 ft. and 3:1 slope.	CY	$ 6.00	Borrow material transported to site $5.08/ton (approx. 1 ton = 1 cy) and compaction is $0.84/cy	$ 3,300,000
Stabilization of the Existing Dredged Mat'l - Additional Fill for Surcharge Load	Borrow Material Transported and Compacted with Roller	300,000	See assumptions above for dike material. Assume that surcharge load will be applied as a "block" of soil 20 ft. in thickness over 60 ft. length of dike extension around full interior perimeter. One half of the block will remain as part of the dike.	CY	$ 6.00	See Above	$ 1,800,000
High Strength Geotextile - Stabilize Existing Dredged Material prior to Dike Extension Construction		135,000	Dike extension covers 60 ft. of dredged material around full interior of the dike.	SY	$ 5.00	Cost for High Strength Geotextile $1.74/SY for SI 4x4. Labor costs per Means is approx. $2/SY, but due to site conditions working on soft material should be approx. $3/SY, plus transportation.	$ 675,000
Contingency for Soft Foundation Conditions		1		LS	$ 1,142,498.09	Assume Contingency of 15% of Construction Costs	$ 1,142,498
C. Dredging, Transport and Placement Costs							**$ 32,760,000**
Mobilization/Demobilization		6	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Bid Sheets provided by USACE and Dredging Spreadsheets	$ 9,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	4,400,000	Site Capacity (cut volume) equal to In-place Site Volume divided by a factor of 0.70	CY	$ 2.00	USACE Dredging Spread Sheet	$ 8,800,000
Transportation of Dredged Mat'l to Site		4,400,000	Transportation volume equal to cut volume	CY	$ 1.40	$0.10/nmile/cy	$ 6,160,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	4,400,000	Transfer volume equal to cut volume	CY	$ 2.00	USACE Dredging Spreadsheet	$ 8,800,000
D. Habitat Development Costs	**None - No Habitat Development**						**$ -**
E. Operating & Maintenance Costs							**$ 14,076,000**
O&M of Facility - Expansion		8	Site Operating Life plus 2 years after placement	YR	$ 697,500.00	$90,000 + $45/LF Perimeter (GBA, 2003)	$ 5,580,000
Monitoring & Reporting of Facility		9	Site Operating Life plus 3 years after placement	YR	$ 675,000.00	(GBA, 2003)	$ 6,075,000
Other: Dredged Material Management		6	Site Operating Life	YR	$ 403,500.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 2,421,000
SUBTOTAL COST (A+B+C+D+E)							**$ 56,370,701**
CONTINGENCY (25%)							$ 14,092,675
TOTAL COST							**$ 70,463,376**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 16**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (MD)

ALTERNATIVE - EXISTING SITES

C&D Canal Upland Sites Expansion

ASSUMPTIONS/BASIS FOR ESTIMATE:

This alternative consists of the expansion of an existing confined disposal site (CDF) among the C&D Canal upland sites. The representative site is Pearce Creek. The expansion will be a vertical expansion by raising the existing perimeter dikes 10 feet from 50 to 60 in total height. The increase in dike height will be achieved by adding to the interior slope and not increasing the overall footprint of the existing CDF. A 3:1 slope and 20 ft wide crest is assumed. Armoring on this 10 ft. vertical extension is assumed for only one side of the dike, or 25% of the total dike perimeter. The other portions of the dike will be stabilized with vegetation. The existing CDF covers an area of 260 acres.

The expansion of the dike vertically without changing the outside toe of slope of the existing dike will require construction of the dike on existing dredged materials. In order to provide adequate foundation support for the dike, further consolidation and strength gain of the dredged material will be required. For this cost estimate, it is assumed that a high strength geotextile will first be installed across the footprint of the new dike extension over the dredged materials. The new dike footprint will then be surcharged with a 20 ft. high soil surcharged load that will be used to further consolidate and provide strength gain of the underlying dredged materials. After the dredged material has gained sufficient strength, the outer wedge of the surcharge pile will be removed, and the remaining wedge will be the interior dike slope. The time for sufficient consolidation of the dredged material may be many years. In order to accelerate the consolidation, wick drains may be used with a horizontal drainage layer between the surcharge pile and the dredged materials. The cost of a wick drain system has not been included in these costs, a contingency item of 15% of the Site/Expansion Costs has been added to this cost estimate.

1. In-place Site Volume (MCY)	3.1	5. Site Surface Area (ACRE)	260
2. Site Operating Life (YRS)	6	6. Upland Surface Area (ACRE)	260
3. Site Capacity (cut volume) (MCY)	4.4	7. Exterior Dike Perimeter (FT)	13,500
4. Average One-Way Hauling Distance (NMILES)	28	8. Interior Dike Perimeter (FT)	0

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 775,549**
Study and Design		1		LS	$ 525,549.12	Assume 6% of the construction and development costs	$ 525,549
Permitting		1		LS	$ 250,000.00	Permits will be required for dredge placement.	$ 250,000
B. Site Development Costs							**$ 8,759,152**
Mob/Demob & Bonds		1		LS	$ 454,126.89	Assume 7% of the Construction costs	$ 454,127
Road Stone		30,000	13,500 LF of perimeter dike and assume a 20 ft. crest.	SY	$ 12.55	12" Thick 3/4" Crushed Stone Mean 2004	$ 376,500
Geotextile		28,125	Required for only the vertical extension slope, crest and 20 ft. overlap on interior side for 25% of dike perimeter where armoring required,	SY	$ 2.50	200 lb Woven R.S. Means 2004	$ 70,313
Stone Work							
Slope Armor Dike Section		14,931	Stone Armor assumed for only new 10 ft. extension (slope length 31.6ft.) for 25% of dike perimeter. Assume 2 ft. thickness and unit weight of 140 pcf	TON	$ 42.00	Shoreline Project for Northeast MD - (WESTON, 2004)	$ 627,102
Underlayer Armor Dike Section		6,932	Underlayer Stone Armor assumed for only new 10 ft. extension (slope length 31.6ft.) for 25% of dike perimeter. Assume 1 ft. thickness and unit weight of 130 pcf	TON	$ 41.00	Shoreline Project for Northeast MD - (WESTON, 2004)	$ 284,222
Erosion Control - Nursery Planting		7	Other 75% of exterior slope to be stabilized with vegetation. Slope length 31.6 ft.	Acres	$ 4,000.00	Seeding, Fertilizer, and Mulching - M.S. Means	$ 29,390
Dike Material - Available at Site							$ -

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Dike Material - Borrow Soil	Borrow Material Transported and Compacted with Roller	550,000	Assume that existing dredge material filled to within 10 ft. of current dike height of 50 ft. Crest width of 20 ft. and 3:1 slope.	CY	$ 6.00	Borrow material transported to site $5.08/ton (approx. 1 ton = 1 cy) and compaction is $0.84/cy	$ 3,300,000
Stabilization of the Existing Dredged Mat'l - Additional Fill for Surcharge Load	Borrow Material Transported and Compacted with Roller	300,000	See assumptions above for dike material. Assume that surcharge load will be applied as a "block" of soil 20 ft. in thickness over 60 ft. length of dike extension around full interior perimeter. One half of the block will remain as part of the dike.	CY	$ 6.00	See Above	$ 1,800,000
High Strength Geotextile - Stabilize Existing Dredged Material prior to Dike Extension Construction		135,000	Dike extension covers 60 ft. of dredged material around full interior of the dike.	SY	$ 5.00	Cost for High Strength Geotextile $1.74/SY for SI 4x4. Labor costs per Means is approx. $2/SY, but due to site conditions working on soft material should be approx. $3/SY, plus transportation.	$ 675,000
Contingency for Soft Foundation Conditions		1		LS	$ 1,142,498.09	Assume Contingency of 15% of Construction Costs	$ 1,142,498
C. Dredging, Transport and Placement Costs							**$ 43,320,000**
Mobilization/Demobilization		6	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Bid Sheets provided by USACE and Dredging Spreadsheets	$ 9,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	4,400,000	Site Capacity (cut volume) equal to In-place Site Volume divided by a factor of 0.70	CY	$ 3.00	USACE Dredging Spreadsheet	$ 13,200,000
Transportation of Dredged Mat'l to Site		4,400,000	Transportation volume equal to cut volume	CY	$ 2.80	$0.10/nmile/cy	$ 12,320,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	4,400,000	Transfer volume equal to cut volume	CY	$ 2.00	USACE Dredging Spreadsheet	$ 8,800,000
						CDF	
D. Habitat Development Costs	**None - No Habitat Development**						**$ -**
E. Operating & Maintenance Costs							**$ 14,076,000**
O&M of Facility - Expansion		8	Site Operating Life plus 2 years after placement	YR	$ 697,500.00	$90,000 + $45/LF Perimeter (GBA, 2003)	$ 5,580,000
Monitoring & Reporting of Facility		9	Site Operating Life plus 3 years after placement	YR	$ 675,000.00	(GBA, 2003)	$ 6,075,000
Other: Dredged Material Management		6	Site Operating Life	YR	$ 403,500.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 2,421,000
SUBTOTAL COST (A+B+C+D+E)							**$ 66,930,701**
CONTINGENCY (25%)							$ 16,732,675
TOTAL COST							**$ 83,663,376**
TOTAL UNIT COST PER CUBIC YARD (CUT VOLUME)							**$ 19**

TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)

LARGE ISLAND RESTORATION—LOWER BAY

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (VA)

ALTERNATIVE - EXISTING SITES

Large Island Restoration - Lower Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area is New Point Comfort Island, VA. Water depth at representative site is approx. -4 MLLW. Historical survey of the island indicates it consisted of 240 acres. CENAO current proposal for site restoration is 10-20 acres. For this cost estimation purposes, and to maximize capacity, the full 240 acres of former island will be used for this large island restoration alternative. The island configuration is assumed to be an approximate rectangle of sides 2,600 ft x 4,000 ft. The island will be divided into 50% upland and 50% wetland. Exterior dike height is assumed to be +11' MLLW (dike crest width of 15 ft. and 3:1 slope) in the upland area and +6' MLLW in the wetland area (dike crest 15 ft. and 3:1 slope). Material for the dike is assumed available within the proposed project area. The estimated fill needed for the exterior dikes is 330,000 cy.

It is assumed that the island will be divided into 6 cells of approximately 40 acres each. Dividing the site at a diagonal into the upland and wetland areas, the total interior dike length is 11,370 ft. The interior dike for the upland areas will have an elevation of +9' MLLW, crest width of 10 ft, and 2:1 slope. The interior dike for the wetland area will be at an elevation of +1' MLLW, crest width of 10 ft, and a slope of 2:1. The fill volume for the interior dikes is 152,000 cy.

The estimated capacity for this alternative is based on a site with 50% wetlands and 50% upland with 2-ft freeboard. The in-place volume of the site is 3.27 mcy, and does not exclude the 0.48 mcy of material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The site capacity (cut volume) is equal to the in-place volume divided by a factor of 0.7.

1. In-place Site Volume (MCY)	3.2	5. Site Surface Area (ACRE)	240
2. Site Operating Life (YRS)	5	6. Upland Surface Area (ACRE)	120
3. Site Capacity (cut volume) (MCY)*	4.6	7. Exterior Dike Perimeter (FT)	13,200
4. Average One-Way Hauling Distance (NMILES)	10	8. Interior Dike Perimeter (FT)	11,370

* Cut Volume based on Site Capacity divided by 0.7

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,169,931**
Study and Design		1		LS	$ 919,931.32	Assumed 6% of the total construction cost	$ 919,931
Permitting		1		LS	$ 250,000.00	Permits will be required for dredge placement.	$ 250,000
B. Site Development Costs							**$ 15,332,189**
Mob/Demob & Bonds		1		LS	$ 446,569	3% of Construction Costs	$ 446,569
Road Stone		198,000	Exterior Dike Length multiplied by the dike width - see above for lengths	SY	$ 12.55	12' thick of 3/4" crushed stone - RS Means Site Work 2004	$ 2,484,900
Geotextile		116,600	Geotextile will cover crest, slope and extend 15' at toe - total cross sectional length multiplied by exterior dike length	SY	$ 2.50	200 lb woven geotextile - R.S. Means 2004	$ 291,500
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Unsuitable Foundation Excavation		5,280	Assume 6 ft. depth over 20% of the dike footprint	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 63,360
Stone Work							
Slope Armor Dike Section		72,996	Slope armor runs along slope - slope length of upland dike is 47.5' and 31.6' for wetland dike - assume 2 ft. thickness and unit weight of 140 pcf	TON	$ 53.00	Due to Shallow Water, double handling required - Shoreline Protection Project - Dorchester County, MD - 2004 WESTON	$ 3,868,788
Underlayer Armor Dike Section		46,761	Same dimensions as slope armor with added 15 ft. toe extension - 1 ft. thickness and unit weight of 130 pcf.	TON	$ 52.00	Due to Shallow Water, double handling required - Shoreline Protection Project - Dorchester County, MD - 2004 WESTON	$ 2,431,572
Toe Armor Dike Section		18,563	Toe armor extends 15 ft. on three sides. Thickness is 2.5 ft. and unit weight of 150 pcf	TON	$ 88.00	Due to Shallow Water, double handling required - Shoreline Protection Project - Dorchester County, MD - 2004 WESTON	$ 1,633,500

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Spillways		3	Table E-1 (GBA, 2003)	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 750,000
Erosion Control - Nursery Planting		1	Table E-1 (GBA, 2003)	LS	$ 200,000.00	Table E-1 (GBA, 2003)	$ 200,000
Dike Material - Available at Site							$ -
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	448,000	See assumptions above for interior and exterior dikes	CY	$ 2.50	USACE Spreadsheet - Cutter Head - Higher unit cost due to predominant sandy characteristics	$ 1,120,000
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	448,000	See assumptions above for interior and exterior dikes	CY	$ 4.00	M.S. Means 2004	$ 1,792,000
C. Dredging, Transport and Placement Costs							**$ 30,357,143**
Mobilization/Demobilization		5	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Costs for Dredging provided by CENAP	$ 7,500,000
Dredging of Mat'l from Channel	Hopper Dredge	4,571,429	Site Capacity (cut volume) equal to in-place volume of site divided by a factor of 0.70	CY	$ 2.00	Costs for Dredging provided by CENAO	$ 9,142,857
Transportation of Dredged Mat'l to Site		4,571,429	Transportation volume equal to cut volume	CY	$ 1.00	$0.10/nmile/cy	$ 4,571,429
Placement of Mat'l at Site	Hydraulic pumping to diked area	4,571,429	Transfer volume equal to cut volume	CY	$ 2.00	USACE Dredging Spreadsheets and Recent pricing for "Liberty" type hopper with offloading capabilities	$ 9,142,857
D. Habitat Development Costs							**$ 3,822,720**
Planning and Design		1		LS	126,720.00	4% of Wetland Construction Costs	$ 126,720
Grading/Channels/Hydraulic Controls		120	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 720,000
Wetands Planting and Seeding		120	Wetland Surface Area	ACRE	$ 20,400.00		$ 2,448,000
Planting and Seeding-Uplands		120		ACRE	$ 4,400.00		$ 528,000
E. Operating & Maintenance Costs							**$ 8,888,000**
O&M of Facility - Expansion		7	Site Operating Life plus 2 years after placement	YR	$ 684,000.00	$90,000 + $45/LF Perimeter (GBA, 2003)	$ 4,788,000
O&M of Created Habitat		5	Site Operating Life	YR	$ 100,000.00	20% of James Island - 500 acres of wetland (GBA, 2003)	$ 500,000
Monitoring & Reporting of Facility		8	Site Operating Life plus 3 years after placement	YR	$ 168,750.00	25% of James Island - 500 acres of wetland (GBA, 2003)	$ 1,350,000
Monitoring and Reporting of Created Habitat		5	Site Operating Life	YR	$ 300,000.00	Monitoring Cost - MPA	$ 1,500,000
Other: Dredged Material Management		5	Site Operating Life	YR	$ 150,000.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 750,000
SUBTOTAL COST (A+B+C+D+E)							**$ 59,569,983**
CONTINGENCY (25%)							$ 14,892,496
TOTAL COST							**$ 74,462,478**
TOTAL UNIT COST PER CUBIC YARD (SITE VOLUME/CUT VOLUME)							**$ 16**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Harbor Channels

ALTERNATIVE - EXISTING SITES

Large Island Restoration - Mid Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area is Dorchester County. Water depth at representative site is approx. -6 MLLW. For initial cost estimation purposes, large island restoration is similiar to James Island proposal. Therefore, the design presented here is similar to James Island Habitat Development, Alignment 1 parameters (20ft dike hieght from water line, 979 acres, 20.4 year design life). Information on layout obtained from "James Island Beneficial Use of Dredged Material" by Maryland Environmental Service, 2002. Water depth at James Island is -6 MLLW, therefore dike dimensions and capacity are similiar.

James Island (GBA) estimate used 32,100 LF and an in-place volume of 3 mcy. The shape of James is more like a dog-leg. 32,100 LF is used for this estimate to account for an irregular shape to accommodate available material, currents, channel locations, habitat creation, ect. Assume that sandy soils for dike construction are available in the representative area.

To assure efficient dewatering for habitat creation and management, assume 6 interior cells. Interior dikes for the wetland portion are +2 ft MLLW in height (crest width 10 ft and slope of 2:1). Estimated wetland dike length is 8000 LF. For the upland portion, the interior dikes are +14 ft MLLW in height (last lift overtops dike) with a crest width of 15 ft. and 2.5:1 slope. Estimated length is also 8000 LF. The dike separating the two areas will have the same dimensions as the exterior dike (height +20 MLLW, crest width of 20 ft. and 3:1 slope) and an estimate length of 5500 LF. The estimated interior dike volume is 0.88 mcy.

The estimated capacity for this alternative is based on a site with 50% wetlands (filled to depth of water ~ +2 ft MLLW.) and 50% upland (filled to dike height of ~ +20 ft MLLW.). The in-place volume of the site is 24.2 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The site capacity (cut volume) is equal to the in-place volume divided by a factor of 0.7.

1. In-place site volume (MCY)	24.2	5. Site Surface Area (ACRE)	1,000
2. Site Operating Life (YRS)	12	6. Upland Surface Area (ACRE)	500
3. Site Capacity (cut volume) (MCY)*	34.6	7. Exterior Dike Perimeter (FT)	32,100
4. Average One-Way Hauling Distance (NMILES)	60	8. Interior Dike Perimeter (FT)	21,500

* Conversion Factor of 0.7 Used - Site Capacity Divided by 0.7 for Cut Volume

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 3,250,000**
Study and Design		1	Quantities based on James Island design, as determined in "James Island Habitat Restoration Project: Final Dredging and Site Engineering Recon Study," Gahagan & Bryant, 2003 (GBA, 2003)	LS	$ 3,000,000.00	Conceptual, pre-feasibility and feasibility costs. Cost estimation based on James Island design, as calculated in "James Island Habitat Restoration Project: Final Dredging and Site Engineering Recon Study," Gahagan & Bryant, 2003 (GBA, 2003)	$ 3,000,000
Permitting		1		LS	$ 250,000.00	Permits will be required for dredge placement.	$ 250,000
B. Site Development Costs							**$ 68,295,000**
Mob/Demob & Bonds		1		LS	$ 4,800,000.00	Table E-1 (GBA, 2003)	$ 4,800,000
Road Stone		50,000	Table D-1 (GBA, 2003) - for 32,100 LF of perm. Dikes - 15 ft. wide (~52,000 SY)	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 600,000
Geotextile		582,000	Table D-1 (GBA, 2003) - for 32,100 LF of perm. Dikes; slope length 82 ft.	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 2,328,000
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Unsuitable Foundation Excavation		1,118,000	Table D-1 (GBA, 2003)	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 13,416,000
Stone Work							
Slope Armor Dike Section		217,000	Table D-1 (GBA, 2003)	TON	$ 42.00	Table E-1 (GBA, 2003)	$ 9,114,000
Underlayer Armor Dike Section		99,000	Table D-1 (GBA, 2003)	TON	$ 41.00	Table E-1 (GBA, 2003)	$ 4,059,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Toe Armor Dike Section		96,000	Table D-1 (GBA, 2003)	TON	$ 53.00	Table E-1 (GBA, 2003)	$ 5,088,000
Quarry Run Dike Section		43,000	Table D-1 (GBA, 2003)	TON	$ 40.00	Table E-1 (GBA, 2003)	$ 1,720,000
Spillways		6	Table E-1 (GBA, 2003)	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 1,500,000
Erosion Control - Nursery Planting		1	Table E-1 (GBA, 2003)	LS	$ 200,000.00	Table E-1 (GBA, 2003)	$ 200,000
Dike Material - Available at Site							$ -
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	3,880,000	See assumptions above for interior and exterior dikes	CY	$ 2.50	USACE Spreadsheet - Cutter Head - Higher unit cost due to predominant sandy characteristics	$ 9,700,000
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	3,880,000	See assumptions above for interior and exterior dikes	CY	$ 4.00	M.S. Means	$ 15,520,000
C. Dredging, Transport and Placement Costs							**$ 398,285,714**
Mobilization/Demobilization		12	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Costs for Dredging provided by CENAP	$ 18,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	34,571,429	Site Capacity (cut volume) equal to in-place volume of site divided by a factor of 0.70	CY	$ 3.00	USACE Dredging Spreadsheet	$ 103,714,286
Transportation of Dredged Mat'l to Site		34,571,429	Transportation volume equal to cut volume	CY	$ 6.00	$0.10/nmile/cy	$ 207,428,571
Placement of Mat'l at Site	Hydraulic pumping to diked area	34,571,429	Transfer volume equal to cut volume	CY	$ 2.00	USACE Dredging Spreadsheets and Recent pricing for "Liberty" type hopper with offloading capabilities	$ 69,142,857
D. Habitat Development Costs							**$ 18,400,000**
Planning and Design		3	(GBA, 2003)	YR	$ 1,000,000.00	(GBA,2003)	$ 3,000,000
Grading/Channels/Hydraulic Controls		500	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 3,000,000
Planting and Seeding - Uplands		500	Upland Surface Area	ACRE	$ 4,400.00	(GBA, 2003)	$ 2,200,000
Wetlands Establishment - Plantings		500	Wetland Surface Area	ACRE	$ 20,400.00	Vendor Quote, Public Landing Project, MD, WESTON, 2004)	$ 10,200,000
E. Operating & Maintenance Costs							**$ 52,908,000**
O&M of Facility - Expansion		14	Site Operating Life plus 2 years after placement	YR	$ 1,534,500.00	$90,000 + $45/LF Perimeter (GBA, 2003)	$ 21,483,000
O&M of Created Habitat		12	Site Operating Life	YR	$ 150,000.00	(GBA, 2003)	$ 1,800,000
Monitoring & Reporting of Facility		15	Site Operating Life plus 3 years after placement	YR	$ 675,000.00	(GBA, 2003)	$ 10,125,000
Monitoring and Reporting of Created Habitat		12	Site Operating Life	YR	$ 500,000.00	(GBA, 2003)	$ 6,000,000
Other: Dredged Material Management		12	Site Operating Life	YR	$ 1,125,000.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 13,500,000
SUBTOTAL COST (A+B+C+D+E)							**$ 541,138,714**
CONTINGENCY (25%)							$ 135,284,679
TOTAL COST							**$ 676,423,393**
TOTAL UNIT COST PER CUBIC YARD (SITE VOLUME/CUT VOLUME)							**$ 20**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach Channels

ALTERNATIVE - EXISTING SITES

Large Island Restoration - Mid Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area is Dorchester County. Water depth at representative site is approx. -6 MLLW. For initial cost estimation purposes, large island restoration is similiar to James Island proposal. Therefore, the design presented here is similar to James Island Habitat Development, Alignment 1 parameters (20ft dike hieght from water line, 979 acres, 20.4 year design life). Information on layout obtained from "James Island Beneficial Use of Dredged Material" by Maryland Environmental Service, 2002. Water depth at James Island is -6 MLLW, therefore dike dimensions and capacity are similiar.

James Island (GBA) estimate used 32,100 LF and an in-place volume of 3 mcy. The shape of James is more like a dog-leg. 32,100 LF is used for this estimate to account for an irregular shape to accommodate available material, currents, channel locations, habitat creation, ect. Assume that sandy soils for dike construction are available in the representative area.

To assure efficient dewatering for habitat creation and management, assume 6 interior cells. Interior dikes for the wetland portion are +2 ft MLLW in height (crest width 10 ft and slope of 2:1). Estimated wetland dike length is 8000 LF. For the upland portion, the interior dikes are +14 ft MLLW in height (last lift overtops dike) with a crest width of 15 ft. and 2.5:1 slope. Estimated length is also 8000 LF. The dike separating the two areas will have the same dimensions as the exterior dike (height +20 MLLW, crest width of 20 ft. and 3:1 slope) and an estimate length of 5500 LF. The estimated interior dike volume is 0.88 mcy.

The estimated capacity for this alternative is based on a site with 50% wetlands (filled to depth of water ~ +2 ft MLLW.) and 50% upland (filled to dike height of ~ +20 ft MLLW.). The in-place volume of the site is 24.2 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The site capacity (cut volume) is equal to the in-place volume divided by a factor of 0.7.

1. In-place site volume (MCY)	24.2	5. Site Surface Area (ACRE)	1,000
2. Site Operating Life (YRS)	12	6. Upland Surface Area (ACRE)	500
3. Site Capacity (cut volume) (MCY)*	34.6	7. Exterior Dike Perimeter (FT)	32,100
4. Average One-Way Hauling Distance (NMILES)	60	8. Interior Dike Perimeter (FT)	21,500

*Site capacity divided by 0.7 to obtain cut volume

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 3,250,000**
Study and Design		1	Quantities based on James Island design, as determined in "James Island Habitat Restoration Project: Final Dredging and Site Engineering Recon Study," Gahagan & Bryant, 2003 (GBA, 2003)	LS	$ 3,000,000.00	Conceptual, pre-feasibility and feasibility costs. Cost estimation based on James Island design, as calculated in "James Island Habitat Restoration Project: Final Dredging and Site Engineering Recon Study," Gahagan & Bryant, 2003 (GBA, 2003)	$ 3,000,000
Permitting		1		LS	$ 250,000.00	Permits will be required for dredge placement.	$ 250,000
B. Site Development Costs							**$ 68,295,000**
Mob/Demob & Bonds		1		LS	$ 4,800,000.00	Table E-1 (GBA, 2003)	$ 4,800,000
Road Stone		50,000	Table D-1 (GBA, 2003) - for 32,100 LF of perm. Dikes - 15 ft. wide (~52,000 SY)	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 600,000
Geotextile		582,000	Table D-1 (GBA, 2003) - for 32,100 LF of perm. Dikes; slope length 82 ft.	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 2,328,000
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Unsuitable Foundation Excavation		1,118,000	Table D-1 (GBA, 2003)	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 13,416,000
Stone Work							
Slope Armor Dike Section		217,000	Table D-1 (GBA, 2003)	TON	$ 42.00	Table E-1 (GBA, 2003)	$ 9,114,000
Underlayer Armor Dike Section		99,000	Table D-1 (GBA, 2003)	TON	$ 41.00	Table E-1 (GBA, 2003)	$ 4,059,000
Toe Armor Dike Section		96,000	Table D-1 (GBA, 2003)	TON	$ 53.00	Table E-1 (GBA, 2003)	$ 5,088,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Quarry Run Dike Section		43,000	Table D-1 (GBA, 2003)	TON	$ 40.00	Table E-1 (GBA, 2003)	$ 1,720,000
Spillways		6	Table E-1 (GBA, 2003)	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 1,500,000
Erosion Control - Nursery Planting		1	Table E-1 (GBA, 2003)	LS	$ 200,000.00	Table E-1 (GBA, 2003)	$ 200,000
Dike Material - Available at Site							$ -
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	3,880,000	See assumptions above for interior and exterior dikes	CY	$ 2.50	USACE Spreadsheet - Cutter Head - Higher unit cost due to predominant sandy characteristics	$ 9,700,000
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	3,880,000	See assumptions above for interior and exterior dikes	CY	$ 4.00	M.S. Means	$ 15,520,000
C. Dredging, Transport and Placement Costs							**$ 398,285,714**
Mobilization/Demobilization		12	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Costs for Dredging provided by CENAP	$ 18,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	34,571,429	Site Capacity (cut volume) equal to in-place volume of site divided by a factor of 0.70	CY	$ 3.00	USACE Dredging Spreadsheet	$ 103,714,286
Transportation of Dredged Mat'l to Site		34,571,429	Transportation volume equal to cut volume	CY	$ 6.00	$0.10/nmile/cy	$ 207,428,571
Placement of Mat'l at Site	Hydraulic pumping to diked area	34,571,429	Transfer volume equal to cut volume	CY	$ 2.00	USACE Dredging Spreadsheets and Recent pricing for "Liberty" type hopper with offloading capabilities	$ 69,142,857
D. Habitat Development Costs							**$ 18,400,000**
Planning and Design		3	(GBA, 2003)	YR	$ 1,000,000.00	(GBA,2003)	$ 3,000,000
Grading/Channels/Hydraulic Controls		500	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 3,000,000
Planting and Seeding - Uplands		500	Site Surface Area	ACRE	$ 4,400.00	(GBA, 2003)	$ 2,200,000
Wetlands Establishment - Plantings		500	Wetland Surface Area	ACRE	$ 20,400.00	Vendor Quote, Public Landing Project, MD, WESTON, 2004)	$ 10,200,000
E. Operating & Maintenance Costs							**$ 52,908,000**
O&M of Facility - Expansion		14	Site Operating Life plus 2 years after placement	YR	$ 1,534,500.00	$90,000 + $45/LF Perimeter (GBA, 2003)	$ 21,483,000
O&M of Created Habitat		12	Site Operating Life	YR	$ 150,000.00	(GBA, 2003)	$ 1,800,000
Monitoring & Reporting of Facility		15	Site Operating Life plus 3 years after placement	YR	$ 675,000.00	(GBA, 2003)	$ 10,125,000
Monitoring and Reporting of Created Habitat		12	Site Operating Life	YR	$ 500,000.00	(GBA, 2003)	$ 6,000,000
Other: Dredged Material Management		12	Site Operating Life	YR	$ 1,125,000.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 13,500,000
SUBTOTAL COST (A+B+C+D+E)							**$ 541,138,714**
CONTINGENCY (25%)							$ 135,284,679
TOTAL COST							**$ 676,423,393**
TOTAL UNIT COST PER CUBIC YARD (SITE VOLUME/CUT VOLUME)							**$ 20**

LARGE ISLAND RESTORATION—MID BAY

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (MD)

ALTERNATIVE - EXISTING SITES

Large Island Restoration - Mid Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area is Dorchester County. Water depth at representative site is approx. -6 MLLW. For initial cost estimation purposes, large island restoration is similiar to James Island proposal. Therefore, the design presented here is similar to James Island Habitat Development, Alignment 1 parameters (20ft dike hieght from water line, 979 acres, 20.4 year design life). Information on layout obtained from "James Island Beneficial Use of Dredged Material" by Maryland Environmental Service, 2002. Water depth at James Island is -6 MLLW, therefore dike dimensions and capacity are similiar.

The exterior dike has a crest width of 20 ft and is set at an elevation of +20' MLLW. Side slopes are 3H:1V. The in-place volume of the exterior dike is 3.0 mcy. 32,100 LF is used for this estimate to account for an irregular shape to accommodate available material, currents, channel locations, habitat creation, ect. Assume that sandy soils for dike construction are available in the representative area.

To assure efficient dewatering for habitat creation and management, assume 6 interior cells. Interior dikes for the wetland portion are +2 ft MLLW in height (crest width 10 ft and slope of 2:1). Estimated wetland dike length is 8000 LF. For the upland portion, the interior dikes are +14 ft MLLW in height (last lift overtops dike) with a crest width of 15 ft. and 2.5:1 slope. Estimated length is also 8000 LF. The dike separating the two areas will have the same dimensions as the exterior dike (height +20 MLLW, crest width of 20 ft. and 3:1 slope) and an estimate length of 5500 LF. The estimated interior dike volume is 0.88 mcy.

The estimated capacity for this alternative is based on a site with 50% wetlands (filled to depth of water ~ +2 ft MLLW.) and 50% upland (filled to dike height of ~ +20 ft MLLW.). The in-place volume of the site is 24.2 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The site capacity (cut volume) is equal to the in-place volume divided by a factor of 0.7.

1. In-place site volume (MCY)	24.2	5. Site Surface Area (ACRE)	1,000
2. Site Operating Life (YRS)	12	6. Upland Surface Area (ACRE)	500
3. Site Capacity (cut volume) (MCY)*	34.6	7. Exterior Dike Perimeter (FT)	32,100
4. Average One-Way Hauling Distance (NMILES)	50	8. Interior Dike Perimeter (FT)	21,500

*Site capacity divided by 0.7 to obtain cut volume

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 3,250,000**
Study and Design		1	Quantities based on James Island design, as determined in "James Island Habitat Restoration Project: Final Dredging and Site Engineering Recon Study," Gahagan & Bryant, 2003 (GBA, 2003)	LS	$ 3,000,000.00	Conceptual, pre-feasibility and feasibility costs. Cost estimation based on James Island design, as calculated in "James Island Habitat Restoration Project: Final Dredging and Site Engineering Recon Study," Gahagan & Bryant, 2003 (GBA, 2003)	$ 3,000,000
Permitting		1		LS	$ 250,000.00	Permits will be required for dredge placement.	$ 250,000
B. Site Development Costs							**$ 68,295,000**
Mob/Demob & Bonds		1		LS	$ 4,800,000.00	Table E-1 (GBA, 2003)	$ 4,800,000
Road Stone		50,000	Table D-1 (GBA, 2003) - for 32,100 LF of perm. Dikes - 15 ft. wide (~52,000 SY)	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 600,000
Geotextile		582,000	Table D-1 (GBA, 2003) - for 32,100 LF of perm. Dikes; slope length 82 ft.	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 2,328,000
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Unsuitable Foundation Excavation		1,118,000	Table D-1 (GBA, 2003)	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 13,416,000
Stone Work							
Slope Armor Dike Section		217,000	Table D-1 (GBA, 2003)	TON	$ 42.00	Table E-1 (GBA, 2003)	$ 9,114,000
Underlayer Armor Dike Section		99,000	Table D-1 (GBA, 2003)	TON	$ 41.00	Table E-1 (GBA, 2003)	$ 4,059,000
Toe Armor Dike Section		96,000	Table D-1 (GBA, 2003)	TON	$ 53.00	Table E-1 (GBA, 2003)	$ 5,088,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Quarry Run Dike Section		43,000	Table D-1 (GBA, 2003)	TON	$ 40.00	Table E-1 (GBA, 2003)	$ 1,720,000
Spillways		6	Table E-1 (GBA, 2003)	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 1,500,000
Erosion Control - Nursery Planting		1	Table E-1 (GBA, 2003)	LS	$ 200,000.00	Table E-1 (GBA, 2003)	$ 200,000
Dike Material - Available at Site							$ -
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	3,880,000	See assumptions above for interior and exterior dikes	CY	$ 2.50	USACE Spreadsheet - Cutter Head - Higher unit cost due to predominant sandy characteristics	$ 9,700,000
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	3,880,000	See assumptions above for interior and exterior dikes	CY	$ 4.00	M.S. Means	$ 15,520,000
C. Dredging, Transport and Placement Costs							**$ 363,714,286**
Mobilization/Demobilization		12	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Costs for Dredging provided by CENAP	$ 18,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	34,571,429	Site Capacity (cut volume) equal to in-place volume of site divided by a factor of 0.70	CY	$ 3.00	USACE Dredging Spreadsheet	$ 103,714,286
Transportation of Dredged Mat'l to Site		34,571,429	Transportation volume equal to cut volume	CY	$ 5.00	$0.10/nmile/cy	$ 172,857,143
Placement of Mat'l at Site	Hydraulic pumping to diked area	34,571,429	Transfer volume equal to cut volume	CY	$ 2.00	USACE Dredging Spreadsheets and Recent pricing for "Liberty" type hopper with offloading capabilities	$ 69,142,857
D. Habitat Development Costs							**$ 18,400,000**
Planning and Design		3	(GBA, 2003)	YR	$ 1,000,000.00	(GBA,2003)	$ 3,000,000
Grading/Channels/Hydraulic Controls		500	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 3,000,000
Planting and Seeding - Uplands		500	Upland Surface Area	ACRE	$ 4,400.00	(GBA, 2003)	$ 2,200,000
Wetlands Habitat Development - Plantings		500	Wetland Surface Area	ACRE	$ 20,400.00	Vendor Quote (WESTON, 2004)	$ 10,200,000
E. Operating & Maintenance Costs							**$ 52,908,000**
O&M of Facility - Expansion		14	Site Operating Life plus 2 years after placement	YR	$ 1,534,500.00	$90,000 + $45/LF Perimeter (GBA, 2003)	$ 21,483,000
O&M of Created Habitat		12	Site Operating Life	YR	$ 150,000.00	(GBA, 2003)	$ 1,800,000
Monitoring & Reporting of Facility		15	Site Operating Life plus 3 years after placement	YR	$ 675,000.00	(GBA, 2003)	$ 10,125,000
Monitoring and Reporting of Created Habitat		12	Site Operating Life	YR	$ 500,000.00	(GBA, 2003)	$ 6,000,000
Other: Dredged Material Management		12	Site Operating Life	YR	$ 1,125,000.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 13,500,000
SUBTOTAL COST (A+B+C+D+E)							**$ 506,567,286**
CONTINGENCY (25%)							$ 126,641,821
TOTAL COST							**$ 633,209,107**
TOTAL UNIT COST PER CUBIC YARD (SITE VOLUME/CUT VOLUME)							**$ 18**

MINE (QUARRY) PLACEMENT—CECIL COUNTY, MD

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Harbor Approach Channels

ALTERNATIVE - INNOVATIVE USES

Quarry Placement - Cecil County Maryland

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use to reclaim a sand quarry. The representative site is located in Cecil County Maryland and is approximately 130 acres. This site has an estimated in-place volume between 6-9 mcy. For this alternative it is assumed that the dewatered dredged material will be transported to the sand quarry by truck. At the quarry, the dredged material will be unloaded, stockiled, and then placed and compacted. It is assumed that the quarry is below grade around all sides and therefore no containment berms are needed. It is assumed no amendments will needed until the last 5-10 feet of fill material in order to provide a bridge for the underlying dewatered materials. For the last 5 ft. of material, it assumed that the dredged material will be blended with 50% granular material to establish this "bridge layer" to reduce long term subsidence and allow for site re-use

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Final Dewatered Volume CY	Percentage of Dredged Material Used	Percentage of Sand Mat'l for last 5' Fill
Quarry Reclamation - General Fill	1	0.7	0.7	100	0
Quarry Reclamation - Bridge Layer - Top 5 ft.	1	0.7	0.7	50	50

Evaluation of Available Capacity:

The reported available in-place volume for the representative site in Cecil County is between 6-9 mcy. The actual in-place volume will depend on the final grading requirements. In order to evaluate the transportation needs for these projected quantities, the following table of required number of trucks and frequency is presented using the assumption that the material will be transported overland by truck to the quarry.

Total Amount of Material to be Hauled cubic yards	Number of Trucks at 12cy/truck	Number of Trucks per Year - 20 yrs	Number of Trucks per Day - 250 days/yr	Trucks per Hours for 10 hr/days	Minutes Between Trucks
4,000,000	333,333	16,667	67	7	9
5,000,000	416,667	20,833	83	8	7
6,000,000	500,000	25,000	100	10	6
7,000,000	583,333	29,167	117	12	5
8,000,000	666,667	33,333	133	13	5
9,000,000	750,000	37,500	150	15	4

As indicated on the above table, the number of trucks required per day would be greater than 100 at a frequency of approximately every 5 minutes to transport the projected capacity. Due to issues increased truck traffic in the communities near the existing CDFs, it may be more feasible from a community acceptance prospective to transport the material by rail or barge. A rail system is not available at all the existing CDFs to the representative site. This infrastructure would therefore need to be constructed and added to the cost of this alternative. For the purpose of this cost estimate, truck transport will be assumed for an average capacity of 7.5 mcy. Below is a table of the amount of dewatered material required for the general fill and the bridge layer that

Final Product/Beneficial Use	Site Fill (Capacity) Volume - 130 Acres Site	Percentage that is Dredged Mat'l	Volume of Dewatered Dredged Material Used	Volume of Sand Amendment Needed
Quarry Reclamation - Fill	6,451,694	100	6,451,694	0
Quarry Reclamation - Bridge Layer - Top 5 ft.	1,048,306	50	524,153	524,153
Total	7,500,000		6,975,847	524,153

Discussion of Available Capacity:

1. In-place Site Volume (MCY)	7.5		
2. Site Operating Life (YRS)	20		
3. Site Capacity (cut volume) (MCY)	10.7		
4. Average One-Way Hauling Distance (MILES)	40	(Truck)	
5. Average One-Way Hauling Distance (NMILES)	1	(Barge)	Existing CDF for Harbor Channels is Cox Creek Facility

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 13,034,257**
Study and Design		1		LS	12,784,256.96	Engineering feasibility study, evaluation of best transport method, final grading design, geotechnical evaluation of long-term consolidation and structural requirements of fill and E&S controls and stockpile management during implementation. Design costs are approx. 6% of implementation costs.	$ 12,784,257
Permitting		1		LS	250000		$ 250,000
B. Excavation, Transport & Processing Costs							**$ 213,070,949**
Excavation of Dewatered Material	Excavator	6,975,847	See Table above for Volume of Dewatered Mat'l Used Based on Average Capacity of Representative Site	CY	$2.25	M.S. Means 2004	$ 15,695,656
Transportation to Quarry for Stockpiling	Truck	6,975,847	See Above	CY	$8.00	$0.20 per cy/mile	$ 55,806,778
Additional Material Cost to Produce Product/Use	Delivered to site	1,046,377	Assume 15% Fly-Ash Amendment	CY	$10.00	Assume Fly Ash (Non Pozzolanic) transported to site from facility approx. 30 miles from mine	$ 10,463,771
Mechanically Mix Amendment into Dewatered Material	Pug Mill Operation - Load, Mix and Stockpile	8,022,224	Based on Dewatered Material Delivered to the site plus the 15% Fly Mixture	CY	$12.00	Based on Prices from MW Project - Soil Amendment - Mobile Pug Mill Operation (WESTON, 2004)	$ 96,266,692
Additional Material Cost to Produce Product/Use	Delivered to site	524,153	See Table Above - 50% Granular Material for "Bridge Layer" Top 10 ft. - Off-site Source	CY	$8.00	Based on Shoreline Restoration Project (WESTON, 2004) Reduced by $4/cy since site was former sand quarry	$ 4,193,222
Mix Sand into Dewatered Material	Front End Loader w/ Ripper Attachment	524,153	See Above	CY	$4.20	Cost for an Operator, Laborer, and Loader w/ attachment is $5630/acre. Assume 3 lifts of 1.5-2 ft. over 130 acres.	$ 2,201,442
E&S Controls/Stormwater Management	Silt Fencing	10000	E&S controls around stockpile area of approximately 10 acres	LF	$2.00	M.S. Means 2004	$ 20,000
Placement of Mat'l and Compaction at Site	Dozer, Grader and Vibratory Roller	6,975,847	See Table above for Volume of Dewatered Mat'l Used Based on Average Capacity of Representative Site	CY	$4.00	M.S. Means 2004	$ 27,903,389
Establish Vegetative Cover		130	Representative Site Area	Acres	$ 4,000.00	Seeding, Fertilizer and Mulch M.S. Means 2004	$ 520,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
C. Dredging, Transport and Placement Costs							**$ 83,928,571**
Mobilization/Demobilization		20	Mob & Demob for operating life of site	YR	$ 2,000,000.00	Costs for Dredging provided by CENAP	$ 40,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	10,714,286	Site capacity (cut volume) equal to in-place volume of site divided by a factor of 0.7	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 21,428,571
Transportation of Dredged Mat'l to Site		10,714,286	Transportation volume equal to cut volume	CY	$ 0.10	$0.10/nmile/cy	$ 1,071,429
Placement of Mat'l at Site	Hydraulic pumping to diked area	10,714,286	Transfer volume equal to cut volume	CY	$ 2.00	Estimate obtained for "Liberty" Type barge with off-loading capabilities	$ 21,428,571
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 50,000,000**
O&M of Dewatering Facility		20		YR	$2,000,000.00	Cost provided from MPA on existing CDF sites	$ 40,000,000
Monitoring & Reporting of Facility		20		YR	$500,000.00	Cost provided from MPA on existing CDF sites	$ 10,000,000
SUBTOTAL COST (A+B+C+D+E)							**$ 360,033,778**
CONTINGENCY (50%)							$ 180,016,889
TOTAL							**$ 540,050,667**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 50**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach Channels

ALTERNATIVE - INNOVATIVE USES

Quarry Placement - Cecil County Maryland

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use to reclaim a sand quarry. The representative site is located in Cecil County Maryland and is approximately 130 acres. This site has an estimated in-place volume between 6-9 mcy. For this alternative it is assumed that the dewatered dredged material will be transported to the sand quarry by truck. At the quarry, the dredged material will be unloaded, stockiled, and then placed and compacted. It is assumed that the quarry is below grade around all sides and therefore no containment berms are needed. It is assumed no amendments will needed until the last 5-10 feet of fill material in order to provide a bridge for the underlying dewatered materials. For the last 5 ft. of material, it assumed that the dredged material will be blended with 50% granular material to establish this "bridge layer" to reduce long term subsidence and allow for site re-use

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Final Dewatered Volume CY	Percentage of Dredged Material Used	Percentage of Sand Mat'l for last 5' Fill
Quarry Reclamation - General Fill	1	0.7	0.7	100	0
Quarry Reclamation - Bridge Layer - Top 5 ft.	1	0.7	0.7	50	50

Evaluation of Available Capacity:

The reported available in-place volume for the representative site in Cecil County is between 6-9 mcy. The actual in-place volume will depend on the final grading requirements. In order to evaluate the transportation needs for these projected quantities, the following table of required number of trucks and frequency is presented using the assumption that the material will be transported overland by truck to the quarry.

Total Amount of Material to be Hauled cubic yards	Number of Trucks at 12cy/truck	Number of Trucks per Year - 20 yrs	Number of Trucks per Day - 250 days/yr	Trucks per Hours for 10 hr/days	Minutes Between Trucks
4,000,000	333,333	16,667	67	7	9
5,000,000	416,667	20,833	83	8	7
6,000,000	500,000	25,000	100	10	6
7,000,000	583,333	29,167	117	12	5
8,000,000	666,667	33,333	133	13	5
9,000,000	750,000	37,500	150	15	4

As indicated on the above table, the number of trucks required per day would be greater than 100 at a frequency of approximately every 5 minutes to transport the projected capacity. Due to issues increased truck traffic in the communities near the existing CDFs, it may be more feasible from a community acceptance prospective to transport the material by rail or barge. A rail system is not available at all the existing CDFs to the representative site. This infrastructure would therefore need to be constructed and added to the cost of this alternative. For the purpose of this cost estimate, truck transport will be assumed for an average capacity of 7.5 mcy. Below is a table of the amount of dewatered material required for the general fill and the bridge layer that

Final Product/Beneficial Use	Site Fill (Capacity) Volume - 130 Acres Site	Percentage that is Dredged Mat'l	Volume of Dewatered Dredged Material Used	Volume of Sand Amendment Needed
Quarry Reclamation - Fill	6,451,694	100	6,451,694	0
Quarry Reclamation - Bridge Layer - Top 5 ft.	1,048,306	50	524,153	524,153
Total	7,500,000		6,975,847	524,153

Discussion of Available Capacity:

1. In-place Site Volume (MCY)	7.5		
2. Site Operating Life (YRS)	20		
3. Site Capacity (cut volume) (MCY)	10.7		
4. Average One-Way Hauling Distance (MILES)	23	(Truck)	
5. Average One-Way Hauling Distance (NMILES)	14	(Barge)	Existing CDF for C&D Approach Channels is Pearce Creek Facility

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 11,611,184**
Study and Design		1		LS	11,361,184.13	Engineering feasibility study, evaluation of best transport method, final grading design, geotechnical evaluation of long-term consolidation and structural requirements of fill and E&S controls and stockpile management during implementation. Design costs are approx. 6% of implementation costs.	$ 11,361,184
Permitting		1		LS	250000		$ 250,000
B. Excavation, Transport & Processing Costs							**$ 189,353,069**
Excavation of Dewatered Material	Excavator	6,975,847	See Table above for Volume of Dewatered Mat'l Used Based on Average Capacity of Representative Site	CY	$2.25	M.S. Means 2004	$ 15,695,656
Transportation to Quarry for Stockpiling	Truck	6,975,847	See Above	CY	$4.60	$0.20 per cy/mile	$ 32,088,897
Additional Material Cost to Produce Product/Use	Delivered to site	1,046,377	Assume 15% Fly-Ash Amendment	CY	$10.00	Assume Fly Ash (Non Pozzolanic) transported to site from facility approx. 30 miles from mine	$ 10,463,771
Mechanically Mix Amendment into Dewatered Material	Pug Mill Operation - Load, Mix and Stockpile	8,022,224	Based on Dewatered Material Delivered to the site plus the 15% Fly Mixture	CY	$12.00	Based on Prices from MW Project - Soil Amendment - Mobile Pug Mill Operation (WESTON, 2004)	$ 96,266,692
Additional Material Cost to Produce Product/Use	Delivered to site	524,153	See Table Above - 50% Granular Material for "Bridge Layer" Top 10 ft. - Off-site Source	CY	$8.00	Based on Shoreline Restoration Project (WESTON, 2004) Reduced by $4/cy since site was former sand quarry	$ 4,193,222
Mix Sand into Dewatered Material	Front End Loader w/ Ripper Attachment	524,153	See Above	CY	$4.20	Cost for an Operator, Laborer, and Loader w/ attachment is $5630/acre. Assume 3 lifts of 1.5-2 ft. over 130 acres.	$ 2,201,442
E&S Controls/Stormwater Management	Silt Fencing	10000	E&S controls around stockpile area of approximately 10 acres	LF	$2.00	M.S. Means 2004	$ 20,000
Placement of Mat'l and Compaction at Site	Dozer, Grader and Vibratory Roller	6,975,847	See Table above for Volume of Dewatered Mat'l Used Based on Average Capacity of Representative Site	CY	$4.00	M.S. Means 2004	$ 27,903,389
Establish Vegetative Cover		130	Representative Site Area	Acres	$ 4,000.00	Seeding, Fertilizer and Mulch M.S. Means 2004	$ 520,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
C. Dredging, Transport and Placement Costs							**$ 97,857,143**
Mobilization/Demobilization		20	Mob & Demob for operating life of site	YR	$ 2,000,000.00	Costs for Dredging provided by CENAP	$ 40,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	10,714,286	Site capacity (cut volume) equal to in-place volume of site divided by a factor of 0.7	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 21,428,571
Transportation of Dredged Mat'l to Site		10,714,286	Transportation volume equal to cut volume	CY	$ 1.40	$0.10/nmile/cy	$ 15,000,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	10,714,286	Transfer volume equal to cut volume	CY	$ 2.00	Estimate obtained for "Liberty" Type barge with off-loading capabilities	$ 21,428,571
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 50,000,000**
O&M of Dewatering Facility		20		YR	$2,000,000.00	Cost provided from MPA on existing CDF sites	$ 40,000,000
Monitoring & Reporting of Facility		20		YR	$500,000.00	Cost provided from MPA on existing CDF sites	$ 10,000,000
SUBTOTAL COST (A+B+C+D+E)							**$ 348,821,396**
CONTINGENCY (50%)							$ 174,410,698
TOTAL							**$ 523,232,094**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 49**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (MD)

ALTERNATIVE - INNOVATIVE USES

Quarry Placement - Cecil County Maryland

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use to reclaim a sand quarry. The representative site is located in Cecil County Maryland and is approximately 130 acres. This site has an estimated in-place volume between 6-9 mcy. For this alternative it is assumed that the dewatered dredged material will be transported to the sand quarry by truck. At the quarry, the dredged material will be unloaded, stockiled, and then placed and compacted. It is assumed that the quarry is below grade around all sides and therefore no containment berms are needed. It is assumed no amendments will needed until the last 5-10 feet of fill material in order to provide a bridge for the underlying dewatered materials. For the last 5 ft. of material, it assumed that the dredged material will be blended with 50% granular material to establish this "bridge layer" to reduce long term subsidence and allow for site re-use

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Final Dewatered Volume CY	Percentage of Dredged Material Used	Percentage of Sand Mat'l for last 5' Fill
Quarry Reclamation - General Fill	1	0.7	0.7	100	0
Quarry Reclamation - Bridge Layer - Top 5 ft.	1	0.7	0.7	50	50

Evaluation of Available Capacity:

The reported available in-place volume for the representative site in Cecil County is between 6-9 mcy. The actual in-place volume will depend on the final grading requirements. In order to evaluate the transportation needs for these projected quantities, the following table of required number of trucks and frequency is presented using the assumption that the material will be transported overland by truck to the quarry.

Total Amount of Material to be Hauled cubic yards	Number of Trucks at 12cy/truck	Number of Trucks per Year - 20 yrs	Number of Trucks per Day - 250 days/yr	Trucks per Hours for 10 hr/days	Minutes Between Trucks
4,000,000	333,333	16,667	67	7	9
5,000,000	416,667	20,833	83	8	7
6,000,000	500,000	25,000	100	10	6
7,000,000	583,333	29,167	117	12	5
8,000,000	666,667	33,333	133	13	5
9,000,000	750,000	37,500	150	15	4

As indicated on the above table, the number of trucks required per day would be greater than 100 at a frequency of approximately every 5 minutes to transport the projected capacity. Due to issues increased truck traffic in the communities near the existing CDFs, it may be more feasible from a community acceptance prospective to transport the material by rail or barge. A rail system is not available at all the existing CDFs to the representative site. This infrastructure would therefore need to be constructed and added to the cost of this alternative. For the purpose of this cost estimate, truck transport will be assumed for an average capacity of 7.5 mcy. Below is a table of the amount of dewatered material required for the general fill and the bridge layer that

Final Product/Beneficial Use	Site Fill (Capacity) Volume - 130 Acres Site	Percentage that is Dredged Mat'l	Volume of Dewatered Dredged Material Used	Volume of Sand Amendment Needed
Quarry Reclamation - Fill	6,451,694	100	6,451,694	0
Quarry Reclamation - Bridge Layer - Top 5 ft.	1,048,306	50	524,153	524,153
Total	7,500,000		6,975,847	524,153

Discussion of Available Capacity:

1. In-place Site Volume (MCY)	7.5		
2. Site Operating Life (YRS)	20		
3. Site Capacity (cut volume) (MCY)	10.7		
4. Average One-Way Hauling Distance (MILES)	40	(Truck)	
5. Average One-Way Hauling Distance (NMILES)	11	(Barge)	Existing CDF for Chesapeake Bay Approach Channels (MD) is Cox Creek CDF

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 13,034,257**
Study and Design		1		LS	12,784,256.96	Engineering feasibility study, evaluation of best transport method, final grading design, geotechnical evaluation of long-term consolidation and structural requirements of fill and E&S controls and stockpile management during implementation. Design costs are approx. 6% of implementation costs.	$ 12,784,257
Permitting		1		LS	250000		$ 250,000
B. Excavation, Transport & Processing Costs							**$ 213,070,949**
Excavation of Dewatered Material	Excavator	6,975,847	See Table above for Volume of Dewatered Mat'l Used Based on Average Capacity of Representative Site	CY	$2.25	M.S. Means 2004	$ 15,695,656
Transportation to Quarry for Stockpiling	Truck	6,975,847	See Above	CY	$8.00	$0.20 per cy/mile	$ 55,806,778
Additional Material Cost to Produce Product/Use	Delivered to site	1,046,377	Assume 15% Fly-Ash Amendment	CY	$10.00	Assume Fly Ash (Non Pozzolanic) transported to site from facility approx. 30 miles from mine	$ 10,463,771
Mechanically Mix Amendment into Dewatered Material	Pug Mill Operation - Load, Mix and Stockpile	8,022,224	Based on Dewatered Material Delivered to the site plus the 15% Fly Mixture	CY	$12.00	Based on Prices from MW Project - Soil Amendment - Mobile Pug Mill Operation (WESTON, 2004)	$ 96,266,692
Additional Material Cost to Produce Product/Use	Delivered to site	524,153	See Table Above - 50% Granular Material for "Bridge Layer" Top 10 ft. - Off-site Source	CY	$8.00	Based on Shoreline Restoration Project (WESTON, 2004) Reduced by $4/cy since site was former sand quarry	$ 4,193,222
Mix Sand into Dewatered Material	Front End Loader w/ Ripper Attachment	524,153	See Above	CY	$4.20	Cost for an Operator, Laborer, and Loader w/ attachment is $5630/acre. Assume 3 lifts of 1.5-2 ft. over 130 acres.	$ 2,201,442
E&S Controls/Stormwater Management	Silt Fencing	10000	E&S controls around stockpile area of approximately 10 acres	LF	$2.00	M.S. Means 2004	$ 20,000
Placement of Mat'l and Compaction at Site	Dozer, Grader and Vibratory Roller	6,975,847	See Table above for Volume of Dewatered Mat'l Used Based on Average Capacity of Representative Site	CY	$4.00	M.S. Means 2004	$ 27,903,389
Establish Vegetative Cover		130	Representative Site Area	Acres	$ 4,000.00	Seeding, Fertilizer and Mulch M.S. Means 2004	$ 520,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
C. Dredging, Transport and Placement Costs							**$ 94,642,857**
Mobilization/Demobilization		20	Mob & Demob for operating life of site	YR	$ 2,000,000.00	Costs for Dredging provided by CENAP	$ 40,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	10,714,286	Site capacity (cut volume) equal to in-place volume of site divided by a factor of 0.7	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 21,428,571
Transportation of Dredged Mat'l to Site		10,714,286	Transportation volume equal to cut volume	CY	$ 1.10	$0.10/nmile/cy	$ 11,785,714
Placement of Mat'l at Site	Hydraulic pumping to diked area	10,714,286	Transfer volume equal to cut volume	CY	$ 2.00	Estimate obtained for "Liberty" Type barge with off-loading capabilities	$ 21,428,571
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 50,000,000**
O&M of Dewatering Facility		20		YR	$2,000,000.00	Cost provided from MPA on existing CDF sites	$ 40,000,000
Monitoring & Reporting of Facility		20		YR	$500,000.00	Cost provided from MPA on existing CDF sites	$ 10,000,000
SUBTOTAL COST (A+B+C+D+E)							**$ 370,748,063**
CONTINGENCY (50%)							$ 185,374,032
TOTAL							**$ 556,122,095**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 52**

MINE PLACEMENT—WESTERN MARYLAND

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Harbor Approach Channels

ALTERNATIVE - INNOVATIVE USES

Mine Reclamation - Western Maryland

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use to reclaim an abandoned coal strip mine. The representative area is located in western Maryland. For this alternative it is assumed that the dewatered dredged material will be transported to the abandoned mine by truck. At the mine, the dredged material will be unloaded, stockpiled, mechanically mixed with coal fly ash and then placed and compacted.

Based on an evaluation of the existing mines in western Maryland and on the evaluation of site capacity factors, the representative site will be approximately 300 acres and use an estimated 2.0 mcy of cut volume. It is also assumed that the material will be taken from the CDF over a two year period to reduce the truck traffic.

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Final Dewatered Volume CY	Percentage of Dredged Material Used	Percentage of Fly Ash Used
Mine Reclamation - Western Maryland	1	0.7	0.7	0.9	0.1

Evaluation of Available Capacity:

The capacity for the site will depend on an number of factors including site area, depth of material to be placed, final grading requirements, quantity of material that can be efficiently processed, and transportation constraints. In order to evaluate the transportation needs for these projected quantities, the following table of required number of trucks and frequency is presented using the assumption that the material will be transported overland by truck to the mine.

Total Amount of Material to be Hauled cubic yards	Number of Trucks at 12cy/truck	Number of Trucks per Year - 20 yrs	Number of Trucks per Day - 250 days/yr	Trucks per Hour for 10 hr/days	Minutes Between Trucks
500,000	41,667	2,083	8	1	72
1,000,000	83,333	4,167	17	2	36
2,000,000	**166,667**	**8,333**	**33**	**3**	**18**

Below is a table of the amount of dewatered material and corresponding fly ash amendment for placement at the abandoned mine, and the area covered by an estimated 3 foot layer of amended material.

Final Product/Beneficial Use	Dredged Volume (CY)	Volume After Dewatering (CY)	Volume of Fly Ash Used to Amend Dewatered Dredged (CY)	Total Volume of Amended Mat'l (CY)	Area Covered by 3 ft. of Amended Material - Acres
	250,000	175,000	19,444	194,444	40
Mine Reclamation - Western Maryland	500,000	350,000	38,889	388,889	80
	1,000,000	700,000	77,778	777,778	161
	1,500,000	1,050,000	116,667	1,166,667	241
	2,000,000	**1,400,000**	**155,556**	**1,555,556**	**322**

In order to thoroughly mixed the dewatered dredged material with fly ash and other amendments, a mechanical mixing operation is required. Information obtained from a dredged material processing project indicates that a two pug mill plant can produce approximately 1,300 tons/day. Assuming the unit weight of the amended dewatered material is approximately 85 pcf, a 2 pug mill plant could process approximately 30,500 cy/day. The processing rate would therefore not limit the overall alternative capacity. Days of operation of the plant would however increase costs.

Discussion of Available Capacity:

1. In-place Site Volume (MCY) 1.6

2. Site Operating Life (YRS)	2		
3. Site Capacity (cut volume) (MCY)	2.0		
4. Average One-Way Hauling Distance (MILES)	115	(Truck)	
5. Average One-Way Hauling Distance (NMILES)	1	(Barge)	Existing CDF for Harbor Channels is Cox Creek Facility

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 4,154,828**
Study and Design		1		LS	3,904,828.33	evaluation of best transport method, final grading design, geotechnical evaluation of long-term consolidation and structural requirements of fill and E&S controls and stockpile management during implementation. Design costs are estimated to be approx. 6% of implementation costs.	$ 3,904,828
Permitting		1		LS	250000		$ 250,000
B. Excavation, Transport & Processing Costs							**$ 65,080,472**
Excavation of Dewatered Material	Excavator	1,400,000	See Table above for Volume of Dewatered Mat'l for 1.5 MCY Cut Volume	CY	$2.25	M.S. Means 2004	$ 3,150,000
Transportation to Mine for Stockpiling	Truck	1,400,000	See Above	CY	$23.00	$0.20 per cy/mile	$ 32,200,000
Stockpiling and Staging Material	Excavator	1,400,000	See Above	CY	$1.00	M.S. Means 2004	$ 1,400,000
Additional Material Cost to Produce Product/Use	Delivered to site	155,556	See Table Above - 25% Fly Ash Amendment	CY	$10.00	Assume Fly Ash (Non Pozzolanic) transported to site from facility approx. 30 miles from mine	$ 1,555,556
Mechanically Mix Amendment into Dewatered Material	Pug Mill Operation - Load, Mix and Stockpile	1,555,556	See Table above for total volume of amended material	CY	$12.00	Based on Prices from MW Project - Soil Amendment - Mobile Pug Mill Operation (WESTON, 2004)	$ 18,666,667
E&S Controls/Stormwater Management	Silt Fencing	300000	E&S controls around stockpile area and Site	LF	$2.00	M.S. Means 2004	$ 600,000
Placement of Mat'l and Compaction at Site	Dozer, Grader and Vibratory Roller	1,555,556	See Table above for total volume of amended material	CY	$4.00	M.S. Means 2004	$ 6,222,224
Establish Vegetative Cover		322	Representative Site Area	Acres	$ 4,000.00	Seeding, Fertilizer and Mulch M.S. Means 2004	$ 1,286,026
C. Dredging, Transport and Placement Costs							**$ 12,200,000**
Mobilization/Demobilization		2	Mob & Demob for operating life of site	YR	$ 2,000,000.00	Costs for Dredging provided by CENAP	$ 4,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	2,000,000	Cut volume equal to Site Capacity	CY	$ 2.00	USACE Dredging Spreadsheet	$ 4,000,000
Transportation of Dredged Mat'l to Site		2,000,000	Transportation volume equal to cut volume	CY	$ 0.10	$0.10/nmile/cy	$ 200,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	2,000,000	Transfer volume equal to cut volume	CY	$ 2.00	Estimate obtained for "Liberty" Type barge with off-loading capabilities	$ 4,000,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 4,600,000**
O&M of Dewatering Facility		2		YR	$2,000,000.00	Cost provided from MPA on existing CDF sites	$ 4,000,000
Monitoring & Reporting of Facility		2		YR	$300,000.00	Cost provided from MPA on existing CDF sites	$ 600,000
SUBTOTAL COST (A+B+C+D+E)							**$ 86,035,301**
CONTINGENCY (50%)							$ 43,017,650
TOTAL							**$ 129,052,951**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 65**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach Channels

ALTERNATIVE - INNOVATIVE USES

Mine Reclamation - Western Maryland

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use to reclaim an abandoned coal strip mine. The representative area is located in western Maryland. For this alternative it is assumed that the dewatered dredged material will be transported to the abandoned mine by truck. At the mine, the dredged material will be unloaded, stockpiled, mechanically mixed with coal fly ash and then placed and compacted.

Based on an evaluation of the existing mines in western Maryland and on the evaluation of site capacity factors, the representative site will be approximately 300 acres and use an estimated 2.0 mcy of cut volume. It is also assumed that the material will be taken from the CDF over a two year period to reduce the truck traffic.

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Final Dewatered Volume CY	Percentage of Dredged Material Used	Percentage of Fly Ash Used
Mine Reclamation - Western Maryland	1	0.7	0.7	0.9	0.1

Evaluation of Available Capacity:

The capacity for the site will depend on an number of factors including site area, depth of material to be placed, final grading requirements, quantity of material that can be efficiently processed, and transportation constraints. In order to evaluate the transportation needs for these projected quantities, the following table of required number of trucks and frequency is presented using the assumption that the material will be transported overland by truck to the mine.

Total Amount of Material to be Hauled cubic yards	Number of Trucks at 12cy/truck	Number of Trucks per Year - 20 yrs	Number of Trucks per Day - 250 days/yr	Trucks per Hour for 10 hr/days	Minutes Between Trucks
500,000	41,667	2,083	8	1	72
1,000,000	83,333	4,167	17	2	36
2,000,000	**166,667**	**8,333**	**33**	**3**	**18**

Below is a table of the amount of dewatered material and corresponding fly ash amendment for placement at the abandoned mine, and the area covered by an estimated 3 foot layer of amended material.

Final Product/Beneficial Use	Dredged Volume (CY)	Volume After Dewatering (CY)	Volume of Fly Ash Used to Amend Dewatered Dredged (CY)	Total Volume of Amended Mat'l (CY)	Area Covered by 3 ft. of Amended Material - Acres
	250,000	175,000	19,444	194,444	40
Mine Reclamation - Western Maryland	500,000	350,000	38,889	388,889	80
	1,000,000	700,000	77,778	777,778	161
	1,500,000	1,050,000	116,667	1,166,667	241
	2,000,000	**1,400,000**	**155,556**	**1,555,556**	**322**

In order to thoroughly mixed the dewatered dredged material with fly ash and other amendments, a mechanical mixing operation is required. Information obtained from a dredged material processing project indicates that a two pug mill plant can produce approximately 1,300 tons/day. Assuming the unit weight of the amended dewatered material is approximately 85 pcf, a 2 pug mill plant could process approximately 30,500 cy/day. The processing rate would therefore not limit the overall alternative capacity. Days of operation of the plant would however increase costs.

Discussion of Available Capacity:

1. In-place Site Volume (MCY)	1.6
2. Site Operating Life (YRS)	2

3. Site Capacity (cut volume) (MCY)	2.0	
4. Average One-Way Hauling Distance (MILES)	140	(Truck)
5. Average One-Way Hauling Distance (NMILES)	14	(Barge) Existing CDF for C&D Approach Channels is Pearce Creek Facility

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 4,574,828**
Study and Design		1		LS	4,324,828.33	evaluation of best transport method, final grading design, geotechnical evaluation of long-term consolidation and structural requirements of fill and E&S controls and stockpile management during implementation. Design costs are estimated to be approx. 6% of implementation costs.	$ 4,324,828
Permitting		1		LS	250000		$ 250,000
B. Excavation, Transport & Processing Costs							**$ 72,080,472**
Excavation of Dewatered Material	Excavator	1,400,000	See Table above for Volume of Dewatered Mat'l for 1.5 MCY Cut Volume	CY	$2.25	M.S. Means 2004	$ 3,150,000
Transportation to Mine for Stockpiling	Truck	1,400,000	See Above	CY	$28.00	$0.20 per cy/mile	$ 39,200,000
Stockpiling and Staging Material	Excavator	1,400,000	See Above	CY	$1.00	M.S. Means 2004	$ 1,400,000
Additional Material Cost to Produce Product/Use	Delivered to site	155,556	See Table Above - 25% Fly Ash Amendment	CY	$10.00	Assume Fly Ash (Non Pozzolanic) transported to site from facility approx. 30 miles from mine	$ 1,555,556
Mechanically Mix Amendment into Dewatered Material	Pug Mill Operation - Load, Mix and Stockpile	1,555,556	See Table above for total volume of amended material	CY	$12.00	Based on Prices from MW Project - Soil Amendment - Mobile Pug Mill Operation (WESTON, 2004)	$ 18,666,667
E&S Controls/Stormwater Management	Silt Fencing	300000	E&S controls around stockpile area and Site	LF	$2.00	M.S. Means 2004	$ 600,000
Placement of Mat'l and Compaction at Site	Dozer, Grader and Vibratory Roller	1,555,556	See Table above for total volume of amended material	CY	$4.00	M.S. Means 2004	$ 6,222,224
Establish Vegetative Cover		322	Representative Site Area	Acres	$ 4,000.00	Seeding, Fertilizer and Mulch M.S. Means 2004	$ 1,286,026
C. Dredging, Transport and Placement Costs							**$ 14,800,000**
Mobilization/Demobilization		2	Mob & Demob for operating life of site	YR	$ 2,000,000.00	Costs for Dredging provided by CENAP	$ 4,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	2,000,000	Cut volume equal to Site Capacity	CY	$ 2.00	USACE Dredging Spreadsheet	$ 4,000,000
Transportation of Dredged Mat'l to Site		2,000,000	Transportation volume equal to cut volume	CY	$ 1.40	$0.10/nmile/cy	$ 2,800,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	2,000,000	Transfer volume equal to cut volume	CY	$ 2.00	Estimate obtained for "Liberty" Type barge with off-loading capabilities	$ 4,000,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 4,600,000**
O&M of Dewatering Facility		2		YR	$2,000,000.00	Cost provided from MPA on existing CDF sites	$ 4,000,000
Monitoring & Reporting of Facility		2		YR	$300,000.00	Cost provided from MPA on existing CDF sites	$ 600,000
SUBTOTAL COST (A+B+C+D+E)							**$ 96,055,301**
CONTINGENCY (50%)							$ 48,027,650
TOTAL							**$ 144,082,951**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 72**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (MD)

ALTERNATIVE - INNOVATIVE USES

Mine Reclamation - Western Maryland

ASSUMPTIONS/BASIS FOR ESTIMATE:

Description of Site Location and Locations of Dewatering and Processing Facility Where Applicable

This alternative consists of the beneficial use of already dewatered dredged material from an existing confined disposal facility (CDF). The dredged material removed from the CDF will then provide additional capacity for projected maintenance dredging. The beneficial use of the dewatered material for this alternative is its use to reclaim an abandoned coal strip mine. The representative area is located in western Maryland. For this alternative it is assumed that the dewatered dredged material will be transported to the abandoned mine by truck. At the mine, the dredged material will be unloaded, stockpiled, mechanically mixed with coal fly ash and then placed and compacted.

Based on an evaluation of the existing mines in western Maryland and on the evaluation of site capacity factors, the representative site will be approximately 300 acres and use an estimated 2.0 mcy of cut volume. It is also assumed that the material will be taken from the CDF over a two year period to reduce the truck traffic.

Capacity Calculations:

Final Product/Beneficial Use	Dredged Volume (CY)	Factor for Dewatered Mat'l	Final Dewatered Volume CY	Percentage of Dredged Material Used	Percentage of Fly Ash Used
Mine Reclamation - Western Maryland	1	0.7	0.7	0.9	0.1

Evaluation of Available Capacity:

The capacity for the site will depend on an number of factors including site area, depth of material to be placed, final grading requirements, quantity of material that can be efficiently processed, and transportation constraints. In order to evaluate the transportation needs for these projected quantities, the following table of required number of trucks and frequency is presented using the assumption that the material will be transported overland by truck to the mine.

Total Amount of Material to be Hauled cubic yards	Number of Trucks at 12cy/truck	Number of Trucks per Year - 20 yrs	Number of Trucks per Day - 250 days/yr	Trucks per Hour for 10 hr/days	Minutes Between Trucks
500,000	41,667	2,083	8	1	72
1,000,000	83,333	4,167	17	2	36
2,000,000	**166,667**	**8,333**	**33**	**3**	**18**

Below is a table of the amount of dewatered material and corresponding fly ash amendment for placement at the abandoned mine, and the area covered by an estimated 3 foot layer of amended material.

Final Product/Beneficial Use	Dredged Volume (CY)	Volume After Dewatering (CY)	Volume of Fly Ash Used to Amend Dewatered Dredged (CY)	Total Volume of Amended Mat'l (CY)	Area Covered by 3 ft. of Amended Material - Acres
	250,000	175,000	19,444	194,444	40
Mine Reclamation - Western Maryland	500,000	350,000	38,889	388,889	80
	1,000,000	700,000	77,778	777,778	161
	1,500,000	1,050,000	116,667	1,166,667	241
	2,000,000	**1,400,000**	**155,556**	**1,555,556**	**322**

In order to thoroughly mixed the dewatered dredged material with fly ash and other amendments, a mechanical mixing operation is required. Information obtained from a dredged material processing project indicates that a two pug mill plant can produce approximately 1,300 tons/day. Assuming the unit weight of the amended dewatered material is approximately 85 pcf, a 2 pug mill plant could process approximately 30,500 cy/day. The processing rate would therefore not limit the overall alternative capacity. Days of operation of the plant would however increase costs.

Discussion of Available Capacity:

1. In-place Site Volume (MCY)	1.6	
2. Site Operating Life (YRS)	2	
3. Site Capacity (cut volume) (MCY)	2.0	
4. Average One-Way Hauling Distance (MILES)	115	(Truck)
5. Average One-Way Hauling Distance (NMILES)	11	(Barge) Existing CDF for Chesapeake Bay Approach Channels (MD) is Cox Creek CDF

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 4,154,828**
Study and Design		1		LS	3,904,828.33	evaluation of best transport method, final grading design, geotechnical evaluation of long-term consolidation and structural requirements of fill and E&S controls and stockpile management during implementation. Design costs are estimated to be approx. 6% of implementation costs.	$ 3,904,828
Permitting		1		LS	250000		$ 250,000
B. Excavation, Transport & Processing Costs							**$ 65,080,472**
Excavation of Dewatered Material	Excavator	1,400,000	See Table above for Volume of Dewatered Mat'l for 1.5 MCY Cut Volume	CY	$2.25	M.S. Means 2004	$ 3,150,000
Transportation to Mine for Stockpiling	Truck	1,400,000	See Above	CY	$23.00	$0.20 per cy/mile	$ 32,200,000
Stockpiling and Staging Material	Excavator	1,400,000	See Above	CY	$1.00	M.S. Means 2004	$ 1,400,000
Additional Material Cost to Produce Product/Use	Delivered to site	155,556	See Table Above - 25% Fly Ash Amendment	CY	$10.00	Assume Fly Ash (Non Pozzolanic) transported to site from facility approx. 30 miles from mine	$ 1,555,556
Mechanically Mix Amendment into Dewatered Material	Pug Mill Operation - Load, Mix and Stockpile	1,555,556	See Table above for total volume of amended material	CY	$12.00	Based on Prices from MW Project - Soil Amendment - Mobile Pug Mill Operation (WESTON, 2004)	$ 18,666,667
E&S Controls/Stormwater Management	Silt Fencing	300000	E&S controls around stockpile area and Site	LF	$2.00	M.S. Means 2004	$ 600,000
Placement of Mat'l and Compaction at Site	Dozer, Grader and Vibratory Roller	1,555,556	See Table above for total volume of amended material	CY	$4.00	M.S. Means 2004	$ 6,222,224
Establish Vegetative Cover		322	Representative Site Area	Acres	$ 4,000.00	Seeding, Fertilizer and Mulch M.S. Means 2004	$ 1,286,026
C. Dredging, Transport and Placement Costs							**$ 14,200,000**
Mobilization/Demobilization		2	Mob & Demob for operating life of site	YR	$ 2,000,000.00	Costs for Dredging provided by CENAP	$ 4,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	2,000,000	Cut volume equal to Site Capacity	CY	$ 2.00	USACE Dredging Spreadsheet	$ 4,000,000
Transportation of Dredged Mat'l to Site		2,000,000	Transportation volume equal to cut volume	CY	$ 1.10	$0.10/nmile/cy	$ 2,200,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Placement of Mat'l at Site	Hydraulic pumping to diked area	2,000,000	Transfer volume equal to cut volume	CY	$ 2.00	Estimate obtained for "Liberty" Type barge with off-loading capabilities	$ 4,000,000
D. Habitat Development Costs	No Costs No Habitat Development						**$ -**
E. Operating & Maintenance Costs							**$ 4,600,000**
O&M of Dewatering Facility		2		YR	$2,000,000.00	Cost provided from MPA on existing CDF sites	$ 4,000,000
Monitoring & Reporting of Facility		2		YR	$300,000.00	Cost provided from MPA on existing CDF sites	$ 600,000
SUBTOTAL COST (A+B+C+D+E)							**$ 88,035,301**
CONTINGENCY (50%)							$ 44,017,650
TOTAL							**$ 132,052,951**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 66**

NORFOLK OCEAN OPEN WATER PLACEMENT

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach Channels

ALTERNATIVE - EXISTING SITES

Norfolk Ocean Open Water Placement

ASSUMPTIONS/BASIS FOR ESTIMATE:

Site has sufficient capacity (50 mcy) and expansion is not needed. Capacity of site in 2004 is based on data from Table 4-3 of the Port of Baltimore DMMP, 1990. The average maintenance volume from 1990-2004 was subtracted from the 1989 capacity. For the purpose of this alternative, a capacity of 24 mcy is used to represent the 20-year dredging need for the C&D channels.

1. Site Capacity (MCY)	24	5. Site Surface Area (ACRE)	41,500
2. Site Operating Life (YRS)	20	6. Upland Surface Area (ACRE)	0
3. Annual Dredge Volume from Channels (MCY)	24	7. Exterior Dike Perimeter (FT)	0
4. Average One-Way Hauling Distance (NMILES)	163	8. Interior Dike Perimeter (FT)	0

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 2,500,000.00**
Study and Design		1		LS	$ 2,000,000.00	Based on GBA, 2003	$ 2,000,000.00
Permitting		1		LS	$ 500,000.00	Based on GBA, 2003	$ 500,000.00
B. Expansion Development Costs							**$ -**
Not Applicable				LF			$ -
C. Dredging, Transport and Placement Costs							**$ 555,200,000.00**
Mobilization/Demobilization		20		YR	$ 1,000,000.00	Bid Sheet Costs provided by USACE	$ 20,000,000.00
Dredging of Mat'l from Channel	Clamshell	24,000,000	Site Capacity	CY	$ 6.00	Based on USACE Dredging Spreadsheet	$ 144,000,000
Transportation of Dredged Mat'l to Site	Dump scow	24,000,000	Site Capacity	CY	$ 16.30	$0.10/cy/nmile	$ 391,200,000.00
Placement of Mat'l at Site	Dump scow	24,000,000	Site Capacity	CY			$ -
D. Habitat Development Costs							**$ -**
Not applicable				YR			$ -
E. Operating & Maintenance Costs							**$ 11,000,000.00**
Monitoring & Reporting of Facility		22		YR	$ 500,000.00	Based on GBA, 2003	$ 11,000,000.00
SUBTOTAL COST (A+B+C+D+E)							**$ 568,700,000.00**
CONTINGENCY (20%)							$ 113,740,000.00
TOTAL COST							**$ 682,440,000.00**
TOTAL UNIT COST PER CUBIC YARD							**$ 28**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (MD)

ALTERNATIVE - EXISTING SITES

Norfolk Ocean Open Water Placement

ASSUMPTIONS/BASIS FOR ESTIMATE:

Site has sufficient capacity (50 mcy) and expansion is not needed. Capacity of site in 2004 is based on data from Table 4-3 of the Port of Baltimore DMMP, 1990. The average maintenance volume from 1990-2004 was subtracted from the 1989 capacity. For the purpose of this alternative, a capacity of 40 mcy is used to represent the 20-year dredging need for the Chesapeake Bay Approach (MD) channels.

1. Site Capacity (MCY)	40	5. Site Surface Area (ACRE)	41,500
2. Site Operating Life (YRS)	20	6. Upland Surface Area (ACRE)	0
3. Annual Dredge Volume from Channels (MCY)	40	7. Exterior Dike Perimeter (FT)	0
4. Average One-Way Hauling Distance (NMILES)	153	8. Interior Dike Perimeter (FT)	0

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 2,500,000.00**
Study and Design		1		LS	$ 2,000,000.00	Based on GBA, 2003	$ 2,000,000.00
Permitting		1		LS	$ 500,000.00	Based on GBA, 2003	$ 500,000.00
B. Expansion Development Costs							**$ -**
Not Applicable				LF			$ -
C. Dredging, Transport and Placement Costs							**$ 872,000,000.00**
Mobilization/Demobilization		20		YR	$ 1,000,000.00	Bid Sheet Costs provided by USACE	$ 20,000,000.00
Dredging of Mat'l from Channel	Clamshell	40,000,000	Site Capacity	CY	$ 6.00	Based on USACE Dredging Spreadsheet	$ 240,000,000
Transportation of Dredged Mat'l to Site	Dump scow	40,000,000	Site Capacity	CY	$ 15.30	$0.10/cy/nmile	$ 612,000,000.00
Placement of Mat'l at Site	Dump scow	40,000,000	Site Capacity	CY			$ -
D. Habitat Development Costs							**$ -**
Not Applicable				YR			$ -
E. Operating & Maintenance Costs							**$ 11,000,000.00**
Monitoring & Reporting of Facility		22		YR	$ 500,000.00	Based on GBA, 2003	$ 11,000,000.00
SUBTOTAL COST (A+B+C+D+E)							**$ 885,500,000.00**
CONTINGENCY (20%)							$ 177,100,000.00
TOTAL COST							**$ 1,062,600,000.00**
TOTAL UNIT COST PER CUBIC YARD							**$ 27**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (VA)

ALTERNATIVE - EXISTING SITES

Norfolk Ocean Open Water Placement

ASSUMPTIONS/BASIS FOR ESTIMATE:

Site has sufficient capacity (50 mcy) and expansion is not needed. Capacity of site in 2004 is based on data from Table 4-3 of the Port of Baltimore DMMP, 1990. The average maintenance volume from 1990-2004 was subtracted from the 1989 capacity. For the purpose of this alternative, a capacity of 10 mcy is used to represent the 20-year dredging need for the Chesapeake Bay Approach (VA) channels.

1. Site Capacity (MCY)	10	5. Site Surface Area (ACRE)	41,500
2. Site Operating Life (YRS)	20	6. Upland Surface Area (ACRE)	0
3. Annual Dredge Volume from Channels (MCY)	10	7. Exterior Dike Perimeter (FT)	0
4. Average One-Way Hauling Distance (NMILES)	39	8. Interior Dike Perimeter (FT)	0

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 2,500,000.00**
Study and Design		1		LS	$ 2,000,000.00	Based on GBA, 2003	$ 2,000,000.00
Permitting		1		LS	$ 500,000.00	Based on GBA, 2003	$ 500,000.00
B. Expansion Development Costs							**$ -**
Not applicable				LF			$ -
C. Dredging, Transport and Placement Costs							**$ 75,000,000.00**
Mobilization/Demobilization	Hopper Dredge	20		YR	$ 300,000.00	Bid Sheet Costs provided by USACE	$ 6,000,000.00
Dredging of Mat'l from Channel	Hopper Dredge	10,000,000	Site Capacity	CY	$ 3.00	Based on USACE Bid Sheets	$ 30,000,000
Transportation of Dredged Mat'l to Site	Hopper Dredge	10,000,000	Site Capacity	CY	$ 3.90	$0.10/cy/nmile	$ 39,000,000.00
D. Habitat Development Costs							**$ -**
Not applicable				YR			$ -
E. Operating & Maintenance Costs							**$ 11,000,000.00**
Monitoring & Reporting of Facility		22		YR	$ 500,000.00	Based on GBA, 2003	$ 11,000,000.00
SUBTOTAL COST (A+B+C+D+E)							**$ 88,500,000.00**
CONTINGENCY (20%)							$ 17,700,000.00
TOTAL COST							**$ 106,200,000.00**
TOTAL UNIT COST PER CUBIC YARD							**$ 11**

RAPPAHANNOCK SHOAL DEEP ALT. OPEN WATER SITE EXPANSION

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Channels Approach

ALTERNATIVE - EXISTING SITES

Rappahannock Shoal Deep Alternate Open Water Site Expansion

ASSUMPTIONS/BASIS FOR ESTIMATE:

Additional Capacity Achieved by Expansion

Expansion Assumptions:

This spreadsheet details an expanded capacity at the site to the west. The conceptual design allows an 1000-acre expansion

1. Site Capacity (MCY)	5	5. Site Surface Area (ACRE)	1000
2. Site Operating Life (YRS)	10	6. Upland Surface Area (ACRE)	n/a
3. Annual Dredge Volume from Channels (MCY)	5	7. Exterior Dike Perimeter (FT)	n/a
4. Average One-Way Hauling Distance (NMILES)	99	8. Interior Dike Perimeter (FT)	n/a

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 4,620,000.00**
Study and Design		1		LS	$ 4,620,000.00	Assumes 6% of implementation costs	$ 4,620,000.00
Permitting				LS		included above	$ -
Other				LS		included above	$ -
B. Expansion Development Costs	N/A						**$ -**
Not applicable				LF			
C. Dredging, Transport and Placement Costs							**$ 77,000,000.00**
Mobilization/Demobilization		10		LS	$ 750,000.00	Costs provided by CENAB	$ 7,500,000.00
Dredging of Mat'l from Channel	Clamshell	5,000,000	Site Capacity	CY	$ 4.00	Based on bid spreadsheet provided by USACE and dredging spreadsheet	$ 20,000,000.00
Transportation of Dredged Mat'l to Site	Dump Scow	5,000,000	Site Capacity	CY	$ 9.90	$0.10/nmile/cy	$ 49,500,000.00
Placement of Mat'l at Site	Dump Scow	5,000,000	Site Capacity	CY			$ -
D. Habitat Development Costs	N/A						**$ -**
Not applicable							
E. Operating & Maintenance Costs							**$ 2,400,000.00**
Monitoring & Reporting of Facility		12		YR	$ 200,000.00	Based on GBA, 2003	$ 2,400,000.00
SUBTOTAL COST (A+B+C+D+E)							**$ 84,020,000.00**
CONTINGENCY (20%)							$ 16,804,000.00
TOTAL COST							**$ 100,824,000.00**
TOTAL UNIT COST PER CUBIC YARD							**$ 20**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach (MD)

ALTERNATIVE - EXISTING SITES

Rappahannock Shoal Deep Alternate Open Water Site Expansion

ASSUMPTIONS/BASIS FOR ESTIMATE:

Additional Capacity Achieved by Expansion

Expansion Assumptions:

This spreadsheet details an expanded capacity at the site to the west. The conceptual design allows an 1000-acre expansion

1. Site Capacity (MCY)	5	5. Site Surface Area (ACRE)	1000
2. Site Operating Life (YRS)	10	6. Upland Surface Area (ACRE)	n/a
3. Annual Dredge Volume from Channels (MCY)	5	7. Exterior Dike Perimeter (FT)	n/a
4. Average One-Way Hauling Distance (NMILES)	89	8. Interior Dike Perimeter (FT)	n/a

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 4,320,000.00**
Study and Design		1		LS	$ 4,320,000.00	Assumes 6% of implementation costs	$ 4,320,000.00
Permitting				LS		included above	$ -
Other				LS		included above	$ -
B. Expansion Development Costs	N/A						**$ -**
Not applicable				LF			
C. Dredging, Transport and Placement Costs							**$ 72,000,000.00**
Mobilization/Demobilization		10		LS	$ 750,000.00	Costs provided by CENAB	$ 7,500,000.00
Dredging of Mat'l from Channel	Clamshell	5,000,000	Site Capacity	CY	$ 4.00	Based on bid spreadsheet provided by USACE and dredging spreadsheet	$ 20,000,000.00
Transportation of Dredged Mat'l to Site	Dump Scow	5,000,000	Site Capacity	CY	$ 8.90	$0.10/nmile/cy	$ 44,500,000.00
Placement of Mat'l at Site	Dump Scow	5,000,000	Site Capacity	CY			$ -
D. Habitat Development Costs	N/A						**$ -**
Not applicable							
E. Operating & Maintenance Costs							**$ 2,400,000.00**
Monitoring & Reporting of Facility		12		YR	$ 200,000.00	Based on GBA, 2003	$ 2,400,000.00
SUBTOTAL COST (A+B+C+D+E)							**$ 78,720,000.00**
CONTINGENCY (20%)							$ 15,744,000.00
TOTAL COST							**$ 94,464,000.00**
TOTAL UNIT COST PER CUBIC YARD							**$ 19**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach (VA)

ALTERNATIVE - EXISTING SITES

Rappahannock Shoal Deep Alternate Open Water Site Expansion

ASSUMPTIONS/BASIS FOR ESTIMATE:

Additional Capacity Achieved by Expansion

Expansion Assumptions:

This spreadsheet details an expanded capacity at the site to the west. The conceptual design allows an 1000-acre expansion

1. Site Capacity (MCY)	5	5. Site Surface Area (ACRE)	1000
2. Site Operating Life (YRS)	10	6. Upland Surface Area (ACRE)	n/a
3. Annual Dredge Volume from Channels (MCY)	5	7. Exterior Dike Perimeter (FT)	n/a
4. Average One-Way Hauling Distance (NMILES)	25	8. Interior Dike Perimeter (FT)	n/a

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,830,000.00**
Study and Design		1		LS	$ 1,830,000.00	Assumes 6% of implementation costs	$ 1,830,000.00
Permitting				LS		included above	$ -
Other				LS		included above	$ -
B. Expansion Development Costs	N/A						**$ -**
Not applicable				LF			
C. Dredging, Transport and Placement Costs							**$ 30,500,000.00**
Mobilization/Demobilization		10		LS	$ 300,000.00	Costs provided by CENAB	$ 3,000,000.00
Dredging of Mat'l from Channel	Hopper Dredge	5,000,000	Site Capacity	CY	$ 3.00	Based on bid spreadsheet provided by USACE and dredging spreadsheet	$ 15,000,000.00
Transportation of Dredged Mat'l to Site		5,000,000	Site Capacity	CY	$ 2.50	$0.10/nmile/cy	$ 12,500,000.00
Placement of Mat'l at Site		5,000,000	Site Capacity	CY			$ -
D. Habitat Development Costs	N/A						**$ -**
Not applicable							
E. Operating & Maintenance Costs							**$ 2,400,000.00**
Monitoring & Reporting of Facility		12		YR	$ 200,000.00	Based on GBA, 2003	$ 2,400,000.00
SUBTOTAL COST (A+B+C+D+E)							**$ 34,730,000.00**
CONTINGENCY (20%)							$ 6,946,000.00
TOTAL COST							**$ 41,676,000.00**
TOTAL UNIT COST PER CUBIC YARD							**$ 8**

POOLES ISLAND OPEN WATER SITE EXPANSION

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach Channels

ALTERNATIVE - EXISTING SITES

Pooles Island Open Water Site Expansion

ASSUMPTIONS/BASIS FOR ESTIMATE:

Additional Capacity Achieved by Expansion

Expansion Assumptions:

Expansion area assumed to be 350 acres connecting G-West to Site 92. Allowable fill depth to -11' MLLW.

1. In-place Site Volume (MCY)	5	5. Site Surface Area (ACRE)	350
2. Site Operating Life (YRS)	5	6. Upland Surface Area (ACRE)	N/A
3. Site Capacity (cut volume) (MCY)	5	7. Exterior Dike Perimeter (FT)	N/A
4. Average One-Way Hauling Distance (NMILES)	4	8. Interior Dike Perimeter (FT)	N/A

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 870,000.00**
Study and Design		1		LS	$ 870,000.00	Assume 6% of implementation costs	$ 870,000.00
Permitting				LS		included above	$ -
Other: Initial Construction Costs	N/A			LS		included above	$ -
B. Expansion Development Costs							**$ -**
Not applicable							
C. Dredging, Transport and Placement Costs							**$ 14,500,000.00**
Mobilization/Demobilization		5	Operating Life	LS	$ 500,000.00	annual mob/demob	$ 2,500,000.00
Dredging of Mat'l from Channel	Hopper Dredge	5,000,000	Site Capacity	CY	$ 2.00	(GBA, 2002)	$ 10,000,000.00
Transportation of Dredged Mat'l to Site		5,000,000	Site Capacity	CY	$ 0.40	$0.10/nmile/cy	$ 2,000,000.00
D. Habitat Development Costs							**$ -**
Planning and Design		3		YR			$ -
Grading/Channels/Hydraulic Controls				ACRE			$ -
Planting and Seeding				ACRE			$ -
E. Operating & Maintenance Costs							**$ 4,125,000.00**
Monitoring & Reporting of Facility		5	Operating Life	YR	$ 825,000.00	(GBA, 2002)	$ 4,125,000.00
SUBTOTAL COST (A+B+C+D+E)							**$ 19,495,000.00**
CONTINGENCY (20%)							$ 3,899,000.00
TOTAL COST							**$ 23,394,000.00**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 5**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (MD)

ALTERNATIVE - EXISTING SITES

Pooles Island Open Water Site Expansion

ASSUMPTIONS/BASIS FOR ESTIMATE:

Additional Capacity Achieved by Expansion

Expansion Assumptions:

Expansion area assumed to be 350 acres connecting G-West to Site 92. Allowable fill depth to -11' MLLW. .

1. In-place Site Volume (MCY)	5	5. Site Surface Area (ACRE)	350
2. Site Operating Life (YRS)	5	6. Upland Surface Area (ACRE)	N/A
3. Site Capacity (cut volume) (MCY)	5	7. Exterior Dike Perimeter (FT)	N/A
4. Average One-Way Hauling Distance (NMILES)	14	8. Interior Dike Perimeter (FT)	N/A

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,170,000.00**
Study and Design		1		LS	$ 1,170,000.00	Assume 6% of implementation costs	$ 1,170,000.00
Permitting				LS		included above	$ -
Other: Initial Construction Costs	N/A			LS		included above	$ -
B. Expansion Development Costs							**$ -**
Not applicable							
C. Dredging, Transport and Placement Costs							**$ 19,500,000.00**
Mobilization/Demobilization		5	Operating Life	LS	$ 500,000.00	annual mob/demob	$ 2,500,000.00
Dredging of Mat'l from Channel	Hopper Dredge	5,000,000	Site Capacity	CY	$ 2.00	(GBA, 2002)	$ 10,000,000.00
Transportation of Dredged Mat'l to Site		5,000,000	Site Capacity	CY	$ 1.40	$0.10/nmile/cy	$ 7,000,000.00
D. Habitat Development Costs							**$ -**
Planning and Design		3		YR			$ -
Grading/Channels/Hydraulic Controls				ACRE			$ -
Planting and Seeding				ACRE			$ -
E. Operating & Maintenance Costs							**$ 4,125,000.00**
Monitoring & Reporting of Facility		5	Operating Life	YR	$ 825,000.00	(GBA, 2002)	$ 4,125,000.00
SUBTOTAL COST (A+B+C+D+E)							**$ 24,795,000.00**
CONTINGENCY (20%)							$ 4,959,000.00
TOTAL COST							**$ 29,754,000.00**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 6**

POPLAR ISLAND EXPANSION

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (MD)

ALTERNATIVE - EXISTING SITES

Poplar Island Expansion

ASSUMPTIONS/BASIS FOR ESTIMATE:

Additional Capacity Achieved by Expansion (vertical and lateral)

Expansion Assumptions:

Vertical Expansion: Half of the existing 1140 acre site is expanded to Elev +25' from +20'. Dredged material will be placed to +25'. Lateral Expansion: 600 Acre expansion of existing facility will include 1/2 wetland (el 20', dredge material will be placed to +0' MLLW) and 1/2 upland (el 20', dredged material will be placed to +15'). Existing water depth of -6 MLLW. Unit prices based on James Island.

The total in-place volume of the site is 17.0 mcy, and does not exclude material required for dike construction. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The site capacity (cut volume) is equal to the in-place volume divided by a factor of 0.7.

1. In-place Site Volume (MCY)	17
2. Site Operating Life (YRS)	12
3. Site Capacity (cut volume) (MCY)	24
4. Average One-Way Hauling Distance (NMILES)	21

5. New site upland Surface Area (ACRE)	300
6. New site wetland Surface Area (ACRE)	300
7. Expansion upland Surface Area(ACRE)	570
8. New site upland Dike Perimeter (FT)	20,400
9. New site wetland Dike Perimeter (FT)	11,700
10 Expansion upland Dike perimeter (FT)	20,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 3,000,000.00**
Study and Design		1		LS	$ 3,000,000.00	Conceptual, pre-feasibility and feasibility costs (GBA, 2003)	$ 3,000,000.00
Permitting				LS		Included Above	$ -
Other				LS		Included Above	$ -
B. Expansion/Site Development Costs							**$ 90,840,017**
Mob/Demob & Bonds		1		LS	$ 5,942,804.85	Assumes 7% of total construction costs	$ 5,942,804.85
Lateral Expansion Wetland area Site Development							
Road Stone		26,000	Along 20 ft crest of dike	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 312,000
Geotextile		165,360	for 11,400 LF of ext. Dikes; 127.2' total width: slope length 82.2 ft with 20' crest, 5' crest overlap and 20' toe	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 661,440
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Unsuitable Foundation Excavation		381,333	11,400' * 176' dike width at base excavated to 5 feet	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 4,576,000
Stone Work		221,433	Total stone as calculated by 102.2' (82.2 ' slope width and 20 ' toe width) * 5' thickness * 11,400 length	CY			

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Slope Armor Dike Section		209,255	50% armor stone @1.89 ton/cy (140 pcf) based on James I.	TON	$ 42.00	Table E-1 (GBA, 2003)	$ 8,788,689
Underlayer Armor Dike Section		94,165	22.5% underlayer stone @1.89 ton/cy (140 pcf) based on James I.	TON	$ 41.00	Table E-1 (GBA, 2003)	$ 3,860,746
Toe Armor Dike Section		79,439	17.5% Toe Armor @2.05 ton/cy (150 pcf) based on James I.	TON	$ 53.00	Table E-1 (GBA, 2003)	$ 4,210,278
Quarry Run Dike Section		41,851	10% quarry run @1.89 ton/cy (140 pcf) based on James I.	TON	$ 40.00	Table E-1 (GBA, 2003)	$ 1,674,036
Spillways		3	Table E-1 (GBA, 2003)	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 750,000
Erosion Control - Nursery Planting		1	Table E-1 (GBA, 2003)	LS	$ 200,000.00	Table E-1 (GBA, 2003)	$ 200,000
Dike Material - Available at Site							$ -
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	1,104,133	11,400 LF of dikes to +20 ft MLLW (2548 sf)	CY	$ 2.50		$ 2,760,333
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	1,104,133	11,400 LF of dikes to +0 ft MLLW (2548 sf)	CY	$ 4.00		$ 4,416,533
Lateral Exp. (new) Upland area Site Development							
Road Stone		45,333	Along 20 ft crest of dike	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 544,000
Geotextile		288,320	for 20,400 LF of ext. Dikes; 127.2' total width: slope length 82.2 ft with 20' crest, 5' crest overlap and 20' toe	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 1,153,280
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Foundation Stabilization/Strenghtening		664,889	20,400' * 176' dike width at base excavated to 5 feet	CY	$ -		$ -
Stone Work		386,089	Total stone as calculated by 102.2' (82.2 ' slope width and 20 ' toe width) * 5'	CY			
Slope Armor Dike Section		364,854	50% armor stone @1.89 ton/cy (140 pcf) based on James I.	TON	$ 42.00	Table E-1 (GBA, 2003)	$ 15,323,868
Underlayer Armor Dike Section		164,184	22.5% underlayer stone @1.89 ton/cy (140 pcf) based on James I.	TON	$ 41.00	Table E-1 (GBA, 2003)	$ 6,731,556
Toe Armor Dike Section		138,509	17.5% Toe Armor @2.05 ton/cy (150 pcf) based on James I.	TON	$ 53.00	Table E-1 (GBA, 2003)	$ 7,340,998
Quarry Run Dike Section		72,971	10% quarry run @1.89 ton/cy (140 pcf) based on James I.	TON	$ 40.00	Table E-1 (GBA, 2003)	$ 2,918,832
Spillways		0	Table E-1 (GBA, 2003)	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ -
Erosion Control - Nursery Planting		1	Table E-1 (GBA, 2003)	LS	$ 200,000.00	Table E-1 (GBA, 2003)	$ 200,000
Dike Material - Available at Site							$ -
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	1,925,156	20,400 LF of dikes to +20 ft MLLW (2,548 sf)	CY	$ 2.50		$ 4,812,889
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	1,925,156	20,400 LF of dikes to +20 ft MLLW (2,548 sf)	CY	$ 4.00		$ 7,700,622
Vertical Expansion of Existing Cell							
Road Stone		33,333	Table D-1 (GBA, 2003) - for 20,000 LF of perm. Dikes - 15 ft. wide (~40,000 SY)	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 400,000
Geotextile		33,333	only roadways	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 133,333
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Foundation Stabilization/Strenghtening		0			$ -		$ -

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Stone Work			None for needed for vertical expansion of existing - no shore protection needed				
Slope Armor Dike Section		0		TON	$ 42.00	Table E-1 (GBA, 2003)	$ -
Underlayer Armor Dike Section		0		TON	$ 41.00	Table E-1 (GBA, 2003)	$ -
Toe Armor Dike Section		0		TON	$ 53.00	Table E-1 (GBA, 2003)	$ -
Quarry Run Dike Section		0		TON	$ 40.00	Table E-1 (GBA, 2003)	$ -
Spillways		0		EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ -
Erosion Control - Nursery Planting		1		LS	$ 200,000.00	Table E-1 (GBA, 2003)	$ 200,000
Dike Material - Available at Site							$ -
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	688,889	20,000 LF of dikes @ 25' height	CY	$ 2.50		$ 1,722,223
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	688,889	20,000 LF of dikes @ 25' height	CY	$ 4.00		$ 2,755,556
C. Dredging, Transport and Placement Costs							**$ 194,400,000.00**
Mobilization/Demobilization		12	Mob & Demob for operating life of site	YR	$ 1,500,000.00	average of USACE Norfolk District records	$ 18,000,000.00
Dredging of Mat'l from Channel	Clamshell Dredge	24,000,000	Site capacity (cut volume) based on in-place volume divided by 0.7	CY	$ 3.00	Based on USACE Dredging Sreadsheet	$ 72,000,000.00
Transportation of Dredged Mat'l to Site		24,000,000	Cut volume	CY	$ 2.10	$0.10/nmile/cy	$ 50,400,000.00
Placement of Mat'l at Site	Hydraulic Unloader	24,000,000	Cut volume	CY	$ 2.25		$ 54,000,000.00
D. Habitat Development Costs							**$ 14,748,000.00**
Planning and Design		3		YR	$ 1,000,000.00	(GBA, 2003)	$ 3,000,000.00
Grading/Channels/Hydraulic Controls		300		ACRE	$ 6,000.00	$8/cy x 3 cy/LF x 250 LF/acre	$ 1,800,000.00
Planting and Seeding-Wetlands		300		ACRE	$ 20,400.00		$ 6,120,000.00
Planting and Seeding-Uplands		870		ACRE	$ 4,400.00	$4,400 per acre	$ 3,828,000.00
E. Operating & Maintenance Costs							**$ 37,347,000.00**
O&M of Facility - Expansion		14.0	Site maintenance for operating life plus 2 years following placement	YR	$ 1,008,000.00	$90,000 + $45/Perimeter LF (GBA, 2003)	$ 14,112,000.00
O&M of Created Habitat		12.0	Site Operating Life	YR	$ 150,000.00	(GBA, 2003)	$ 1,800,000.00
Monitoring & Reporting of Facility		15.0	Site of Operating life plus 3 years following site placement	YR	$ 675,000.00	(GBA, 2003)	$ 10,125,000.00
Monitoring and Reporting of Created Habitat		12.0	Site Operating Life	YR	$ 500,000.00	(GBA, 2003)	$ 6,000,000.00
Other		12.0	Placement, dewatering and crust management costs for operating life	YR	$ 442,500.00	$150,000 + $975/acre	$ 5,310,000.00
SUBTOTAL COST (A+B+C+D+E)							**$ 340,335,016.94**
CONTINGENCY (25%)							$ 85,083,754.23
TOTAL COST							**$ 425,418,771.17**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 18**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach Channels

ALTERNATIVE - EXISTING SITES

Poplar Island Expansion

ASSUMPTIONS/BASIS FOR ESTIMATE:

Additional Capacity Achieved by Expansion (vertical and lateral)

Expansion Assumptions:

Vertical Expansion: Half of the existing 1140 acre site is expanded to Elev +25' from +20'. Dredged material will be placed to +25'. Lateral Expansion: 600 Acre expansion of existing facility will include 1/2 wetland (el 20', dredge material will be placed to +0' MLLW) and 1/2 upland (el 20', dredged material will be placed to +15'). Existing water depth of -6 MLLW. Unit prices based on James Island.

The total in-place volume of the site is 17.0 mcy, and does not exclude material required for dike construction. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The site capacity (cut volume) is equal to the in-place volume divided by a factor of 0.7.

1. In-place Site Volume (MCY)	17	5. New site upland Surface Area (ACRE)	300
2. Site Operating Life (YRS)	12	6. New site wetland Surface Area (ACRE)	300
3. Site Capacity (cut volume) (MCY)	24	7. Expansion upland Surface Area(ACRE)	570
4. Average One-Way Hauling Distance (NMILES)	30	8. New site upland Dike Perimeter (FT)	20,400
		9. New site wetland Dike Perimeter (FT)	11,700
		10 Expansion upland Dike perimeter (FT)	20,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 3,000,000.00**
Study and Design		1		LS	$ 3,000,000.00	Conceptual, pre-feasibility and feasibility costs (GBA, 2003)	$ 3,000,000.00
Permitting				LS		Included above	$ -
Other				LS		Included above	$ -
B. Expansion/Site Development Costs							**$ 90,840,017**
Mob/Demob & Bonds		1		LS	$ 5,942,804.85	Assumes 7% of total construction costs	$ 5,942,804.85
Lateral Expansion Wetland area Site Development							
Road Stone		26,000	11,400 LF of perm. Dikes - 20 ft. wide	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 312,000
Geotextile		165,360	for 11,400 LF of ext. Dikes; 127.2' total width: slope length 82.2 ft with 20' crest, 5' crest overlap and 20' toe	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 661,440
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Unsuitable Foundation Excavation		381,333	11,400' * 176' dike width at base excavated to 5 feet	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 4,576,000
Stone Work		221,433	Total stone as calculated by 102.2' (82.2 ' slope width and 20 ' toe width) * 5' thickness * 11,400 length	CY			
Slope Armor Dike Section		209,255	50% armor stone @1.89 ton/cy (140 pcf) based on James I.	TON	$ 42.00	Table E-1 (GBA, 2003)	$ 8,788,689

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Underlayer Armor Dike Section		94,165	22.5% underlayer stone @1.89 ton/cy (140 pcf) based on James I.	TON	$ 41.00	Table E-1 (GBA, 2003)	$ 3,860,746
Toe Armor Dike Section		79,439	17.5% Toe Armor @2.05 ton/cy (150 pcf) based on James I.	TON	$ 53.00	Table E-1 (GBA, 2003)	$ 4,210,278
Quarry Run Dike Section		41,851	10% quarry run @1.89 ton/cy (140 pcf) based on James I.	TON	$ 40.00	Table E-1 (GBA, 2003)	$ 1,674,036
Spillways		3	Table E-1 (GBA, 2003)	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 750,000
Erosion Control - Nursery Planting		1	Table E-1 (GBA, 2003)	LS	$ 200,000.00	Table E-1 (GBA, 2003)	$ 200,000
Dike Material - Available at Site							$ -
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	1,104,133	11,400 LF of dikes to +20 ft MLLW (2548 sf)	CY	$ 2.50		$ 2,760,333
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	1,104,133	11,400 LF of dikes to +0 ft MLLW (2548 sf)	CY	$ 4.00		$ 4,416,533
Lateral Exp. (new) Upland area Site Development A31							
Road Stone		45,333	for 20,400 LF of perm. Dikes - 20 ft. wide	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 544,000
Geotextile		288,320	for 20,400 LF of ext. Dikes; 127.2' total width: slope length 82.2 ft with 20' crest, 5' crest overlap and 20' toe	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 1,153,280
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Foundation Stabilization/Strenghtening		664,889	20,400' * 176' dike width at base excavated to 5 feet		$ -		$ -
Stone Work		386,089	Total stone as calculated by 102.2' (82.2 ' slope width and 20 ' toe width) * 5'				
Slope Armor Dike Section		364,854		TON	$ 42.00	Table E-1 (GBA, 2003)	$ 15,323,868
Underlayer Armor Dike Section		164,184		TON	$ 41.00	Table E-1 (GBA, 2003)	$ 6,731,556
Toe Armor Dike Section		138,509		TON	$ 53.00	Table E-1 (GBA, 2003)	$ 7,340,998
Quarry Run Dike Section		72,971		TON	$ 40.00	Table E-1 (GBA, 2003)	$ 2,918,832
Spillways		0		EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ -
Erosion Control - Nursery Planting		1		LS	$ 200,000.00	Table E-1 (GBA, 2003)	$ 200,000
Dike Material - Available at Site							$ -
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	1,925,156	20,400 LF of dikes to +20 ft MLLW (2,548 sf)	CY	$ 2.50		$ 4,812,889
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	1,925,156	20,400 LF of dikes to +20 ft MLLW (2,548 sf)	CY	$ 4.00		$ 7,700,622
Vertical Expansion of Existing Cell							
Road Stone		33,333	Table D-1 (GBA, 2003) - for 20,000 LF of perm. Dikes - 15 ft. wide (~40,000 SY)	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 400,000
Geotextile		33,333	only roadways	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 133,333
Personnel Pier		1	Table E-1 (GBA, 2003)	LS	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Foundation Stabilization/Strenghtening		0			$ -		$ -
Stone Work			None for needed for vertical expansion of existing - no shore protection needed				
Slope Armor Dike Section		0		TON	$ 42.00	Table E-1 (GBA, 2003)	$ -
Underlayer Armor Dike Section		0		TON	$ 41.00	Table E-1 (GBA, 2003)	$ -
Toe Armor Dike Section		0		TON	$ 53.00	Table E-1 (GBA, 2003)	$ -
Quarry Run Dike Section		0		TON	$ 40.00	Table E-1 (GBA, 2003)	$ -

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Spillways		0		EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ -
Erosion Control - Nursery Planting		1		LS	$ 200,000.00	Table E-1 (GBA, 2003)	$ 200,000
Dike Material - Available at Site							$ -
Dike Material - Dredging of Sandy Material from Site Area	Hydraulic dredging of sandy material with cutter head, pumped to stockpile area	688,889	20,000 LF of dikes @ 25' height	CY	$ 2.50		$ 1,722,223
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	688,889	20,000 LF of dikes @ 25' height	CY	$ 4.00		$ 2,755,556
C. Dredging, Transport and Placement Costs							**$ 216,000,000.00**
Mobilization/Demobilization		12	Mob & Demob for operating life of site	YR	$ 1,500,000.00	average of USACE Norfolk District records	$ 18,000,000.00
Dredging of Mat'l from Channel	Clamshell Dredge	24,000,000	Site capacity (cut volume) based on in-place volume divided by 0.7	CY	$ 3.00	Based on USACE Dredging Sreadsheet	$ 72,000,000.00
Transportation of Dredged Mat'l to Site		24,000,000	Cut volume	CY	$ 3.00	$0.10/nmile/cy	$ 72,000,000.00
Placement of Mat'l at Site	Hydraulic Unloader	24,000,000	Cut volume	CY	$ 2.25		$ 54,000,000.00
D. Habitat Development Costs							**$ 14,748,000.00**
Planning and Design		3		YR	$ 1,000,000.00	(GBA, 2003)	$ 3,000,000.00
Grading/Channels/Hydraulic Controls		300		ACRE	$ 6,000.00	$8/cy x 3 cy/LF x 250 LF/acre	$ 1,800,000.00
Planting and Seeding-Wetlands		300		ACRE	$ 20,400.00		$ 6,120,000.00
Planting and Seeding-Uplands		870		ACRE	$ 4,400.00	$4,400 per acre	$ 3,828,000.00
E. Operating & Maintenance Costs							**$ 37,347,000.00**
O&M of Facility - Expansion		14.0	Site maintenance for operating life plus 2 years following placement	YR	$ 1,008,000.00	$90,000 + $45/Perimeter LF (GBA, 2003)	$ 14,112,000.00
O&M of Created Habitat		12.0	Site Operating Life	YR	$ 150,000.00	(GBA, 2003)	$ 1,800,000.00
Monitoring & Reporting of Facility		15.0	Site of Operating life plus 3 years following site placement	YR	$ 675,000.00	(GBA, 2003)	$ 10,125,000.00
Monitoring and Reporting of Created Habitat		12.0	Site Operating Life	YR	$ 500,000.00	(GBA, 2003)	$ 6,000,000.00
Other		12.0	Placement, dewatering and crust management costs for operating life	YR	$ 442,500.00	$150,000 + $975/acre	$ 5,310,000.00
SUBTOTAL COST (A+B+C+D+E)							**$ 361,935,016.94**
CONTINGENCY (25%)							$ 90,483,754.23
TOTAL COST							**$ 452,418,771.17**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 19**

SHORELINE RESTORATION—LOWER BAY

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (VA)

ALTERNATIVE - EXISTING SITES

Shoreline Restoration - Lower Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area for this alternative is the Eastern Shore of Virginia (Old Town Neck). Alternative includes restoring an eroded peninsula using dredged material. Components include installing a harden dike on three sides (two dikes extending perpendicular from the shoreline and one longer dike parallel to the shoreline thereby restoring the eroded peninsula). Approximate dimensions of the rectangular peninsula is 1500' x 3200', or approximately 110 acres. Water depth is assumed at 4 ft. The hardened dike has a 10 ft. crest and 10 ft height with 3:1 slopes. Dike fill volume is approximately 103,500 cy. Four feet of dredged material will be placed behind the dike to create low marsh and high marsh habitat.

Assuming the placement of 4 ft within the 110 acre site, the in-place volume of the site is 0.71 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The site capacity (cut volume) is equal to the in-place volume divided by a factor of 0.9.

Culverts and backwater spillways used to allow tidal inundation. It is assumed dredged material will be placed over 2-yr period. Project will take 4 yrs to allow settlement of the dredge material prior to final grading and establish

1. In-place Site Volume (MCY)	0.71	5. Site Surface Area (ACRE)	110
2. Site Operating Life (YRS)	4	6. Upland Surface Area (ACRE)	0
3. Site Capacity (cut volume) (MCY)*	0.79	7. Exterior Dike Perimeter (FT)	6,200
4. Average One-Way Hauling Distance (NMILES)	7	8. Interior Dike Perimeter (FT)	N/A

* Factor of .90 used considering only 2 lifts and site open to tidal fluctuations within 2 years

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,019,422**
Study and Design		1		LS	$ 769,421.93	Includes recon study, feasibility study and design. These costs should be approx. 6% of total construction costs.	$ 769,422
Permitting		1		LS	$ 250,000.00	Permit required for dredged material placement	$ 250,000
B. Site Development Costs							**$ 6,115,399**
Mob/Demob Bonding		1		LS	$ 400,073	Assumes 7% of total construction costs	$ 400,073
Road Stone for Dike Crest		10,333	6200 LF of perm. Dike - 15 ft. wide	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 124,000
Geotextile		59,658	6,200 LF perm. Dike, dike slope 31.6 ft. - 25 ft. toe overlap and 15 ft. crest overlap	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 238,631
Stabilization of Foundation		10,333	Assume 20% of dike foot print 75' x 6200LF and a depth of 3 ft.	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 124,000
Slope Armor		27,429	Outside slope - Slope length 31.6 ft. - Assume 2 ft. thickness, full dike length of 6,200 LF and unit weight of 140 pcf	TONS	$ 53.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 1,453,726
Underlayer Armor Dike Section		12,735	Same dimensions as slope armor but 1 ft. thickness and unit weight of 130 pcf	TONS	$ 52.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 662,210
Toe Armor Dike Section		24,844	Toe armor extends 25 ft. on 2 sides and 10 ft on one side. Thickness is 2.5 ft. and 150 pcf	TONS	$ 88.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 2,186,250
Spillways		1	Assume 1 spillway needed to dewater site prior to allowing tidal inundation for wetland	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Erosion Control - Inside Slope of Perimeter Dike		1		Acres	$ 4,400.00	M.S. Means 2004	$ 3,759

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Dike Material - Assumes Available On-site							
Dredging and Stockpiling Dike Material	Hydraulic Dredging of Granular mat'l from site area	103,500	See above dike dimensions	CY	$ 2.50	Cost for Dredging provide by CENAB - see dredging costing sheet	$ 258,750
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	103,500	See assumptions above for dikes	CY	$ 4.00	M.S. Means 2004	$ 414,000
C. Dredging, Transport and Placement Costs							**$ 6,708,300**
Mobilization/Demobilization		2	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Based on Bid Sheets provided by USACE and Dredging Spreadsheet	$ 3,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	789,000	Cut volume equal to Site Capacity divided by a factor of 0.9 since material will be placed in only 2 lifts (total 4 ft. thick) and inundated within 2 yrs to establish wetlands.	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 1,578,000
Transportation of Dredged Mat'l to Site		789,000	Transportation volume equal to cut volume	CY	$ 0.70	$0.10/nmile/cy	$ 552,300
Placement of Mat'l at Site	Hydraulic pumping to diked area	789,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 1,578,000
D. Habitat Development Costs							**$ 2,943,600**
Planning and Design		1	(GBA, 2003)	LS	$ 39,600.00	Assume 6% of total Implementation Costs	$ 39,600
Planting and Seeding		110	Wetland Surface Area	ACRE	$ 20,400.00		$ 2,244,000
Grading/Channels/Hydraulic Controls		110	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 660,000
E. Operating & Maintenance Costs							**$ 4,548,000**
O&M of Facility - Expansion		6	Site Operating Life plus 2 years after placement	YR	$ 329,000.00	$50,000 + $45/LF Perimeter (GBA, 2003)	$ 1,974,000
O&M of Created Habitat		4	Site Operating Life	YR	$ 50,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 200,000
Monitoring & Reporting of Facility		7	Site Operating Life plus 3 years after placement	YR	$ 135,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 945,000
Monitoring and Reporting of Created Habitat		4	Site Operating Life	YR	$ 100,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 400,000
Other: Dredged Material Management		4	Site Operating Life	YR	$ 257,250.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 1,029,000
SUBTOTAL COST							**$ 21,334,721**
CONTINGENCY (35%)							$ 7,467,152
TOTAL COST							**$ 28,801,873**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 41**

SHORELINE RESTORATION—MID BAY

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Harbor Channels

ALTERNATIVE - EXISTING SITES

Shoreline Restoration - Mid Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area for this alternative is Northwest Dorchester County, MD. Alternative includes restoring an eroded peninsula using dredged material. Components include installing a harden dike on three sides (two dikes extending perpendicular from the shoreline and one longer dike parallel to the shoreline thereby restoring the eroded peninsula). Approximate dimensions of the rectangular peninsula is 1500' x 5100', or approximately 175 acres. Water depth is assumed at 4 ft. The hardened dike has a 10 ft. crest and 10 ft height with 3:1 slopes. Dike fill volume is approximately 135,000 cy. Four feet of dredged material will be placed behind the dike to create low marsh and high marsh habitat.

Assuming the placement of 4 ft within the 175 acre site, the in-place volume of the site is 1.13 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The site capacity (cut volume) is equal to the in-place volume divided by a factor of 0.9.

1. In-place Site Volume (MCY)	1.13	5. Site Surface Area (ACRE)	175
2. Site Operating Life (YRS)	4	6. Upland Surface Area (ACRE)	0
3. Site Capacity (cut volume) (MCY)*	1.26	7. Exterior Dike Perimeter (FT)	8,100
4. Average One-Way Hauling Distance (NMILES)	50	8. Interior Dike Perimeter (FT)	N/A

* Factor of .90 used considering only 2 lifts and site open to tidal fluctuations within 2 years

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,614,962**
Study and Design		1		LS	$ 1,364,961.65	Includes recon study, feasibility study and design. These costs should be approx. 6% of total construction costs.	$ 1,364,962
Permitting		1		LS	$ 250,000.00	Permit required for dredged material placement	$ 250,000
B. Site Development Costs							**$ 7,189,361**
Mob/Demob Bonding		1		LS	$ 470,332	Assumes 7% of total construction costs	$ 470,332
Road Stone for Dike Crest		13,500	8100 LF of perm. Dike - 15 ft. wide (~13,500 SY)	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 162,000
Geotextile		78,000	8,100 LF perm. Dike, dike slope 31.6 ft. - 25 ft. toe overlap and 15 ft. crest overlap	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 312,000
Stabilization of Foundation		13,500	Assume 20% of dike foot print 75' x 8100LF and a depth of 3 ft.	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 162,000
Slope Armor		35,834	Outside slope - Slope length 31.6 ft. - Assume 2 ft. thickness, full dike length of 8,100 LF and unit weight of 140 pcf	TONS	$ 53.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 1,899,223
Underlayer Armor Dike Section		16,637	Same dimensions as slope armor but 1 ft. thickness and unit weight of 130 pcf	TONS	$ 52.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 865,145
Toe Armor Dike Section		24,844	Toe armor extends 25 ft. on 2 sides and 10 ft on one side. Thickness is 2.5 ft. and 150 pcf	TONS	$ 88.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 2,186,250
Spillways		1	Assume 1 spillway needed to dewater site prior to allowing tidal inundation for wetland	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Erosion Control - Inside Slope of Perimeter Dike		1		Acres	$ 4,400.00	M.S. Means 2004	$ 4,911
Dike Material - Assumes Available On-site							

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Dredging and Stockpiling Dike Material	Hydraulic Dredging of Granular mat'l from site area	135,000	See above dike dimensions	CY	$ 2.50	Cost for Dredging provide by CENAB - see dredging costing sheet	$ 337,500
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	135,000	See assumptions above for dikes	CY	$ 4.00	M.S. Means 2004	$ 540,000
C. Dredging, Transport and Placement Costs							**$ 15,560,000**
Mobilization/Demobilization		2	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Based on Bid Sheets provided by USACE and Dredging Spreadsheet	$ 3,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	1,256,000	Cut volume equal to Site Capacity divided by a factor of 0.9 since material will be placed in only 2 lifts (total 4 ft. thick) and inundated within 2 yrs to establish wetlands.	CY	$ 3.00	Based on USACE Dredging Spreadsheet	$ 3,768,000
Transportation of Dredged Mat'l to Site		1,256,000	Transportation volume equal to cut volume	CY	$ 5.00	$0.10/nmile/cy	$ 6,280,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	1,256,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 2,512,000
D. Habitat Development Costs							**$ 4,683,000**
Planning and Design		1	(GBA, 2003)	LS	$ 63,000.00	Assume 6% of total Implementation Costs	$ 63,000
Planting and Seeding		175		ACRE	$ 20,400.00		$ 3,570,000
Grading/Channels/Hydraulic Controls		175	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 1,050,000
E. Operating & Maintenance Costs							**$ 5,314,500**
O&M of Facility - Expansion		6	Site Operating Life plus 2 years after placement	YR	$ 414,500.00	$50,000 + $45/LF Perimeter (GBA, 2003)	$ 2,487,000
O&M of Created Habitat		4	Site Operating Life	YR	$ 50,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 200,000
Monitoring & Reporting of Facility		7	Site Operating Life plus 3 years after placement	YR	$ 135,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 945,000
Monitoring and Reporting of Created Habitat		4	Site Operating Life	YR	$ 100,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 400,000
Other: Dredged Material Management		4	Site Operating Life	YR	$ 320,625.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 1,282,500
SUBTOTAL COST (A+B+C+D+E)							**$ 34,361,822**
CONTINGENCY (35%)							$ 12,026,638
TOTAL COST							**$ 46,388,460**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 41**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach

ALTERNATIVE - EXISTING SITES

Shoreline Restoration - Mid Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area for this alternative is Northwest Dorchester County, MD. Alternative includes restoring an eroded peninsula using dredged material. Components include installing a harden dike on three sides (two dikes extending perpendicular from the shoreline and one longer dike parallel to the shoreline thereby restoring the eroded peninsula). Approximate dimensions of the rectangular peninsula is 1500' x 5100', or approximately 175 acres. Water depth is assumed at 4 ft. The hardened dike has a 10 ft. crest and 10 ft height with 3:1 slopes. Dike fill volume is approximately 135,000 cy. Four feet of dredged material will be placed behind the dike to create low marsh and high marsh habitat.

Assuming the placement of 4 ft within the 175 acre site, the in-place volume of the site is 1.13 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes

1. In-place Site Volume (MCY)	1.13	5. Site Surface Area (ACRE)	175
2. Site Operating Life (YRS)	4	6. Upland Surface Area (ACRE)	0
3. Site Capacity (cut volume) (MCY)*	1.26	7. Exterior Dike Perimeter (FT)	8,100
4. Average One-Way Hauling Distance (NMILES)	50	8. Interior Dike Perimeter (FT)	N/A

* Factor of .90 used considering only 2 lifts and site open to tidal fluctuations within 2 years

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,614,962**
Study and Design		1		LS	$ 1,364,961.65	Includes recon study, feasibility study and design. These costs should be approx. 6% of total construction costs.	$ 1,364,962
Permitting		1		LS	$ 250,000.00	Permit required for dredged material placement	$ 250,000
B. Site Development Costs							**$ 7,189,361**
Mob/Demob Bonding		1		LS	$ 470,332	Assumes 7% of total construction costs	$ 470,332
Road Stone for Dike Crest		13,500	8100 LF of perm. Dike - 15 ft. wide (~13,500 SY)	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 162,000
Geotextile		78,000	8,100 LF perm. Dike, dike slope 31.6 ft. - 25 ft. toe overlap and 15 ft. crest overlap	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 312,000
Stabilization of Foundation		13,500	Assume 20% of dike foot print 75' x 8100LF and a depth of 3 ft.	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 162,000
Slope Armor		35,834	Outside slope - Slope length 31.6 ft. - Assume 2 ft. thickness, full dike length of 8,100 LF and unit weight of 140 pcf	TONS	$ 53.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 1,899,223
Underlayer Armor Dike Section		16,637	Same dimensions as slope armor but 1 ft. thickness and unit weight of 130 pcf	TONS	$ 52.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 865,145
Toe Armor Dike Section		24,844	Toe armor extends 25 ft. on 2 sides and 10 ft on one side. Thickness is 2.5 ft. and 150 pcf	TONS	$ 88.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 2,186,250
Spillways		1	Assume 1 spillway needed to dewater site prior to allowing tidal inundation for wetland	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Erosion Control - Inside Slope of Perimeter Dike		1		Acres	$ 4,400.00	M.S. Means 2004	$ 4,911
Dike Material - Assumes Available On-site							

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Dredging and Stockpiling Dike Material	Hydraulic Dredging of Granular mat'l from site area	135,000	See above dike dimensions	CY	$ 2.50	Cost for Dredging provide by CENAB - see dredging costing sheet	$ 337,500
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	135,000	See assumptions above for dikes	CY	$ 4.00	M.S. Means 2004	$ 540,000
C. Dredging, Transport and Placement Costs							**$ 15,560,000**
Mobilization/Demobilization		2	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Based on Bid Sheets provided by USACE and Dredging Spreadsheet	$ 3,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	1,256,000	Cut volume equal to Site Capacity divided by a factor of 0.9 since material will be placed in only 2 lifts (total 4 ft. thick) and inundated within 2 yrs to establish wetlands.	CY	$ 3.00	Based on USACE Dredging Spreadsheet	$ 3,768,000
Transportation of Dredged Mat'l to Site		1,256,000	Transportation volume equal to cut volume	CY	$ 5.00	$0.10/nmile/cy	$ 6,280,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	1,256,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 2,512,000
D. Habitat Development Costs							**$ 4,683,000**
Planning and Design		1	(GBA, 2003)	LS	$ 63,000.00	Assume 6% of total Implementation Costs	$ 63,000
Planting and Seeding		175		ACRE	$ 20,400.00		$ 3,570,000
Grading/Channels/Hydraulic Controls		175	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 1,050,000
E. Operating & Maintenance Costs							**$ 5,314,500**
O&M of Facility - Expansion		6	Site Operating Life plus 2 years after placement	YR	$ 414,500.00	$50,000 + $45/LF Perimeter (GBA, 2003)	$ 2,487,000
O&M of Created Habitat		4	Site Operating Life	YR	$ 50,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 200,000
Monitoring & Reporting of Facility		7	Site Operating Life plus 3 years after placement	YR	$ 135,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 945,000
Monitoring and Reporting of Created Habitat		4	Site Operating Life	YR	$ 100,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 400,000
Other: Dredged Material Management		4	Site Operating Life	YR	$ 320,625.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 1,282,500
SUBTOTAL COST (A+B+C+D+E)							**$ 34,361,822**
CONTINGENCY (35%)							$ 12,026,638
TOTAL COST							**$ 46,388,460**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 41**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach (MD)

ALTERNATIVE - EXISTING SITES

Shoreline Restoration - Mid Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area for this alternative is Northwest Dorchester County, MD. Alternative includes restoring an eroded peninsula using dredged material. Components include installing a harden dike on three sides (two dikes extending perpendicular from the shoreline and one longer dike parallel to the shoreline thereby restoring the eroded peninsula). Approximate dimensions of the rectangular peninsula is 1500' x 5100', or approximately 175 acres. Water depth is assumed at 4 ft. The hardened dike has a 10 ft. crest and 10 ft height with 3:1 slopes. Dike fill volume is approximately 135,000 cy. Four feet of dredged material will be placed behind the dike to create low marsh and high marsh habitat. I

Assuming the placement of 4 ft within the 175 acre site, the in-place volume of the site is 1.13 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes

1. In-place Site Volume (MCY)	1.13	5. Site Surface Area (ACRE)	175
2. Site Operating Life (YRS)	4	6. Upland Surface Area (ACRE)	0
3. Site Capacity (cut volume) (MCY)*	1.26	7. Exterior Dike Perimeter (FT)	8,100
4. Average One-Way Hauling Distance (NMILES)	40	8. Interior Dike Perimeter (FT)	N/A

* Factor of .90 used considering only 2 lifts and site open to tidal fluctuations within 2 years

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,539,602**
Study and Design		1		LS	$ 1,289,601.65	Includes recon study, feasibility study and design. These costs should be approx. 6% of total construction costs.	$ 1,289,602
Permitting		1		LS	$ 250,000.00	Permit required for dredged material placement	$ 250,000
B. Site Development Costs							**$ 7,189,361**
Mob/Demob Bonding		1		LS	$ 470,332	Assumes 7% of total construction costs	$ 470,332
Road Stone for Dike Crest		13,500	8100 LF of perm. Dike - 15 ft. wide (~13,500 SY)	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 162,000
Geotextile		78,000	8,100 LF perm. Dike, dike slope 31.6 ft. - 25 ft. toe overlap and 15 ft. crest overlap	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 312,000
Stabilization of Foundation		13,500	Assume 20% of dike foot print 75' x 8100LF and a depth of 3 ft.	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 162,000
Slope Armor		35,834	Outside slope - Slope length 31.6 ft. - Assume 2 ft. thickness, full dike length of 8,100 LF and unit weight of 140 pcf	TONS	$ 53.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 1,899,223
Underlayer Armor Dike Section		16,637	Same dimensions as slope armor but 1 ft. thickness and unit weight of 130 pcf	TONS	$ 52.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 865,145
Toe Armor Dike Section		24,844	Toe armor extends 25 ft. on 2 sides and 10 ft on one side. Thickness is 2.5 ft. and 150 pcf	TONS	$ 88.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 2,186,250
Spillways		1	Assume 1 spillway needed to dewater site prior to allowing tidal inundation for wetland	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Erosion Control - Inside Slope of Perimeter Dike		1		Acres	$ 4,400.00	M.S. Means 2004	$ 4,911
Dike Material - Assumes Available On-site							

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Dredging and Stockpiling Dike Material	Hydraulic Dredging of Granular mat'l from site area	135,000	See above dike dimensions	CY	$ 2.50	Cost for Dredging provide by CENAB - see dredging costing sheet	$ 337,500
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	135,000	See assumptions above for dikes	CY	$ 4.00	M.S. Means 2004	$ 540,000
C. Dredging, Transport and Placement Costs							**$ 14,304,000**
Mobilization/Demobilization		2	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Based on Bid Sheets provided by USACE and Dredging Spreadsheet	$ 3,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	1,256,000	Cut volume equal to Site Capacity divided by a factor of 0.9 since material will be placed in only 2 lifts (total 4 ft. thick) and inundated within 2 yrs to establish wetlands.	CY	$ 3.00	Based on USACE Dredging Spreadsheet	$ 3,768,000
Transportation of Dredged Mat'l to Site		1,256,000	Transportation volume equal to cut volume	CY	$ 4.00	$0.10/nmile/cy	$ 5,024,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	1,256,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 2,512,000
D. Habitat Development Costs							**$ 4,683,000**
Planning and Design		1	(GBA, 2003)	LS	$ 63,000.00	Assume 6% of total Implementation Costs	$ 63,000
Planting and Seeding		175		ACRE	$ 20,400.00		$ 3,570,000
Grading/Channels/Hydraulic Controls		175	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 1,050,000
E. Operating & Maintenance Costs							**$ 5,314,500**
O&M of Facility - Expansion		6	Site Operating Life plus 2 years after placement	YR	$ 414,500.00	$50,000 + $45/LF Perimeter (GBA, 2003)	$ 2,487,000
O&M of Created Habitat		4	Site Operating Life	YR	$ 50,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 200,000
Monitoring & Reporting of Facility		7	Site Operating Life plus 3 years after placement	YR	$ 135,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 945,000
Monitoring and Reporting of Created Habitat		4	Site Operating Life	YR	$ 100,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 400,000
Other: Dredged Material Management		4	Site Operating Life	YR	$ 320,625.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 1,282,500
SUBTOTAL COST (A+B+C+D+E)							**$ 33,030,462**
CONTINGENCY (35%)							$ 11,560,662
TOTAL COST							**$ 44,591,124**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 39**

SHORELINE RESTORATION—UPPER BAY

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Harbor Channels

ALTERNATIVE - EXISTING SITES

Shoreline Restoration - Upper Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area for this alternative is West of Rock Hall, Maryland. Alternative includes restoring an eroded peninsula using dredged material. Components include installing a harden dike on three sides (two dikes extending perpendicular from the shoreline and one longer dike parallel to the shoreline thereby restoring the eroded peninsula). Approximate dimensions of the rectangular peninsula is 1500' x 3200', or approximately 110 acres. Water depth is assumed at 4 ft. The hardened dike has a 10 ft. crest and 10 ft height with 3:1 slopes. Dike fill volume is approximately 103,500 cy. Four feet of dredged material will be placed behind the dike to create low marsh and high marsh habitat.

Assuming the placement of 4 ft within the 110 acre site, the in-place volume of the site is 0.71 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The site capacity (cut volume) is equal to the in-place volume divided by a factor of 0.9.

1. In-place Site Volume (MCY)	0.71	5. Site Surface Area (ACRE)	110
2. Site Operating Life (YRS)	4	6. Upland Surface Area (ACRE)	0
3. Site Capacity (cut volume) (MCY)*	0.79	7. Exterior Dike Perimeter (FT)	6,200
4. Average One-Way Hauling Distance (NMILES)	13	8. Interior Dike Perimeter (FT)	N/A

* Factor of .90 used considering only 2 lifts and site open to tidal fluctuations within 2 years

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,047,826**
Study and Design		1		LS	$ 797,825.93	Includes recon study, feasibility study and design. These costs should be approx. 6% of total construction costs.	$ 797,826
Permitting		1		LS	$ 250,000.00	Permit required for dredged material placement	$ 250,000
B. Site Development Costs							**$ 6,115,399**
Mob/Demob Bonding		1		LS	$ 400,073	Assumes 7% of total construction costs	$ 400,073
Road Stone for Dike Crest		10,333	6200 LF of perm. Dike - 15 ft. wide	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 124,000
Geotextile		59,658	6,200 LF perm. Dike, dike slope 31.6 ft. - 25 ft. toe overlap and 15 ft. crest overlap	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 238,631
Stabilization of Foundation		10,333	Assume 20% of dike foot print 75' x 6200LF and a depth of 3 ft.	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 124,000
Slope Armor		27,429	Outside slope - Slope length 31.6 ft. - Assume 2 ft. thickness, full dike length of 6,200 LF and unit weight of 140 pcf	TONS	$ 53.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 1,453,726
Underlayer Armor Dike Section		12,735	Same dimensions as slope armor but 1 ft. thickness and unit weight of 130 pcf	TONS	$ 52.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 662,210
Toe Armor Dike Section		24,844	Toe armor extends 25 ft. on 2 sides and 10 ft on one side. Thickness is 2.5 ft. and 150 pcf	TONS	$ 88.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 2,186,250
Spillways		1	Assume 1 spillway needed to dewater site prior to allowing tidal inundation for wetland	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Erosion Control - Inside Slope of Perimeter Dike		1		Acres	$ 4,400.00	M.S. Means 2004	$ 3,759
Dike Material - Assumes Available On-site							

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Dredging and Stockpiling Dike Material	Hydraulic Dredging of Granular mat'l from site area	103,500	See above dike dimensions	CY	$ 2.50	Cost for Dredging provide by CENAB - see dredging costing sheet	$ 258,750
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	103,500	See assumptions above for dikes	CY	$ 4.00	M.S. Means 2004	$ 414,000
C. Dredging, Transport and Placement Costs							**$ 7,181,700**
Mobilization/Demobilization		2	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Based on Bid Sheets provided by USACE and Dredging Spreadsheet	$ 3,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	789,000	Cut volume equal to Site Capacity divided by a factor of 0.9 since material will be placed in only 2 lifts (total 4 ft. thick) and inundated within 2 yrs to establish wetlands.	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 1,578,000
Transportation of Dredged Mat'l to Site	Barge	789,000	Transportation volume equal to cut volume	CY	$ 1.30	$0.10/nmile/cy	$ 1,025,700
Placement of Mat'l at Site	Hydraulic pumping to diked area	789,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 1,578,000
D. Habitat Development Costs							**$ 2,943,600**
Planning and Design		1	(GBA, 2003)	LS	$ 39,600.00	Assume 6% of total Implementation Costs	$ 39,600
Planting and Seeding		110		ACRE	$ 20,400.00		$ 2,244,000
Grading/Channels/Hydraulic Controls		110	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 660,000
E. Operating & Maintenance Costs							**$ 4,548,000**
O&M of Facility - Expansion		6	Site Operating Life plus 2 years after placement	YR	$ 329,000.00	$50,000 + $45/LF Perimeter (GBA, 2003)	$ 1,974,000
O&M of Created Habitat		4	Site Operating Life	YR	$ 50,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 200,000
Monitoring & Reporting of Facility		7	Site Operating Life plus 3 years after placement	YR	$ 135,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 945,000
Monitoring and Reporting of Created Habitat		4	Site Operating Life	YR	$ 100,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 400,000
Other: Dredged Material Management		4	Site Operating Life	YR	$ 257,250.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 1,029,000
SUBTOTAL COST (A+B+C+D+E)							**$ 21,836,525**
CONTINGENCY (35%)							$ 7,642,784
TOTAL COST							**$ 29,479,308**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 42**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach Channels

ALTERNATIVE - EXISTING SITES

Shoreline Restoration - Upper Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area for this alternative is West of Rock Hall, Maryland. Alternative includes restoring an eroded peninsula using dredged material. Components include installing a harden dike on three sides (two dikes extending perpendicular from the shoreline and one longer dike parallel to the shoreline thereby restoring the eroded peninsula). Approximate dimensions of the rectangular peninsula is 1500' x 3200', or approximately 110 acres. Water depth is assumed at 4 ft. The hardened dike has a 10 ft. crest and 10 ft height with 3:1 slopes. Dike fill volume is approximately 103,500 cy. Four feet of dredged material will be placed behind the dike to create low marsh and high marsh habitat.

Assuming the placement of 4 ft within the 110 acre site, the in-place volume of the site is 0.71 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The site capacity (cut volume) is equal to the in-place volume divided by a factor of 0.9.

1. In-place Site Volume (MCY)	0.71	5. Site Surface Area (ACRE)	110
2. Site Operating Life (YRS)	4	6. Upland Surface Area (ACRE)	0
3. Site Capacity (cut volume) (MCY)*	0.79	7. Exterior Dike Perimeter (FT)	6,200
4. Average One-Way Hauling Distance (NMILES)	6	8. Interior Dike Perimeter (FT)	N/A

* Factor of .90 used considering only 2 lifts and site open to tidal fluctuations within 2 years

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,014,688**
Study and Design		1		LS	$ 764,687.93	Includes recon study, feasibility study and design. These costs should be approx. 6% of total construction costs.	$ 764,688
Permitting		1		LS	$ 250,000.00	Permit required for dredged material placement	$ 250,000
B. Site Development Costs							**$ 6,115,399**
Mob/Demob Bonding		1		LS	$ 400,073	Assumes 7% of total construction costs	$ 400,073
Road Stone for Dike Crest		10,333	6200 LF of perm. Dike - 15 ft. wide	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 124,000
Geotextile		59,658	6,200 LF perm. Dike, dike slope 31.6 ft. - 25 ft. toe overlap and 15 ft. crest overlap	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 238,631
Stabilization of Foundation		10,333	Assume 20% of dike foot print 75' x 6200LF and a depth of 3 ft.	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 124,000
Slope Armor		27,429	Outside slope - Slope length 31.6 ft. - Assume 2 ft. thickness, full dike length of 6,200 LF and unit weight of 140 pcf	TONS	$ 53.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 1,453,726
Underlayer Armor Dike Section		12,735	Same dimensions as slope armor but 1 ft. thickness and unit weight of 130 pcf	TONS	$ 52.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 662,210
Toe Armor Dike Section		24,844	Toe armor extends 25 ft. on 2 sides and 10 ft on one side. Thickness is 2.5 ft. and 150 pcf	TONS	$ 88.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 2,186,250
Spillways		1	Assume 1 spillway needed to dewater site prior to allowing tidal inundation for wetland	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Erosion Control - Inside Slope of Perimeter Dike		1		Acres	$ 4,400.00	M.S. Means 2004	$ 3,759
Dike Material - Assumes Available On-site							

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Dredging and Stockpiling Dike Material	Hydraulic Dredging of Granular mat'l from site area	103,500	See above dike dimensions	CY	$ 2.50	Cost for Dredging provide by CENAB - see dredging costing sheet	$ 258,750
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	103,500	See assumptions above for dikes	CY	$ 4.00	M.S. Means 2004	$ 414,000
C. Dredging, Transport and Placement Costs							**$ 6,629,400**
Mobilization/Demobilization		2	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Based on Bid Sheets provided by USACE and Dredging Spreadsheet	$ 3,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	789,000	Cut volume equal to Site Capacity divided by a factor of 0.9 since material will be placed in only 2 lifts (total 4 ft. thick) and inundated within 2 yrs to establish wetlands.	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 1,578,000
Transportation of Dredged Mat'l to Site		789,000	Transportation volume equal to cut volume	CY	$ 0.60	$0.10/nmile/cy	$ 473,400
Placement of Mat'l at Site	Hydraulic pumping to diked area	789,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 1,578,000
D. Habitat Development Costs							**$ 2,943,600**
Planning and Design		1	(GBA, 2003)	LS	$ 39,600.00	Assume 6% of total Implementation Costs	$ 39,600
Grading/Channels/Hydraulic Controls		110	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 660,000
Planting and Seeding		110	Site Surface Area	ACRE	$ 20,400.00	(GBA, 2003)	$ 2,244,000
E. Operating & Maintenance Costs							**$ 4,548,000**
O&M of Facility - Expansion		6	Site Operating Life plus 2 years after placement	YR	$ 329,000.00	$50,000 + $45/LF Perimeter (GBA, 2003)	$ 1,974,000
O&M of Created Habitat		4	Site Operating Life	YR	$ 50,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 200,000
Monitoring & Reporting of Facility		7	Site Operating Life plus 3 years after placement	YR	$ 135,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 945,000
Monitoring and Reporting of Created Habitat		4	Site Operating Life	YR	$ 100,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 400,000
Other: Dredged Material Management		4	Site Operating Life	YR	$ 257,250.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 1,029,000
SUBTOTAL COST (A+B+C+D+E)							**$ 21,251,087**
CONTINGENCY (35%)							$ 7,437,880
TOTAL COST							**$ 28,688,967**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 40**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (MD)

ALTERNATIVE - EXISTING SITES

Shoreline Restoration - Upper Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area for this alternative is West of Rock Hall, Maryland. Alternative includes restoring an eroded peninsula using dredged material. Components include installing a harden dike on three sides (two dikes extending perpendicular from the shoreline and one longer dike parallel to the shoreline thereby restoring the eroded peninsula). Approximate dimensions of the rectangular peninsula is 1500' x 3200', or approximately 110 acres. Water depth is assumed at 4 ft. The hardened dike has a 10 ft. crest and 10 ft height with 3:1 slopes. Dike fill volume is approximately 103,500 cy. Four feet of dredged material will be placed behind the dike to create low marsh and high marsh habitat.

Assuming the placement of 4 ft within the 110 acre site, the in-place volume of the site is 0.71 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The site capacity (cut volume) is equal to the in-place volume divided by a factor of 0.9.

1. In-place Site Volume (MCY)	0.71	5. Site Surface Area (ACRE)	110
2. Site Operating Life (YRS)	4	6. Upland Surface Area (ACRE)	0
3. Site Capacity (cut volume) (MCY)*	0.79	7. Exterior Dike Perimeter (FT)	6,200
4. Average One-Way Hauling Distance (NMILES)	6	8. Interior Dike Perimeter (FT)	N/A

*For Conversion of Cut Volume to Site Capacity, 0.90 used for consolidation factor considering only 2 lifts and site open to tidal fluctuations within 2 years

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,014,688**
Study and Design		1		LS	$ 764,687.93	Includes recon study, feasibility study and design. These costs should be approx. 6% of total construction costs.	$ 764,688
Permitting		1		LS	$ 250,000.00	Permit required for dredged material placement	$ 250,000
B. Site Development Costs							**$ 6,115,399**
Mob/Demob Bonding		1		LS	$ 400,073	Assumes 7% of total construction costs	$ 400,073
Road Stone for Dike Crest		10,333	6200 LF of perm. Dike - 15 ft. wide	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 124,000
Geotextile		59,658	6,200 LF perm. Dike, dike slope 31.6 ft. - 25 ft. toe overlap and 15 ft. crest overlap	SY	$ 4.00	Table E-1 (GBA, 2003)	$ 238,631
Stabilization of Foundation		10,333	Assume 20% of dike foot print 75' x 6200LF and a depth of 3 ft.	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 124,000
Slope Armor		27,429	Outside slope - Slope length 31.6 ft. - Assume 2 ft. thickness, full dike length of 6,200 LF and unit weight of 140 pcf	TONS	$ 53.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 1,453,726
Underlayer Armor Dike Section		12,735	Same dimensions as slope armor but 1 ft. thickness and unit weight of 130 pcf	TONS	$ 52.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 662,210
Toe Armor Dike Section		24,844	Toe armor extends 25 ft. on 2 sides and 10 ft on one side. Thickness is 2.5 ft. and 150 pcf	TONS	$ 88.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 2,186,250
Spillways		1	Assume 1 spillway needed to dewater site prior to allowing tidal inundation for wetland	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Erosion Control - Inside Slope of Perimeter Dike		1		Acres	$ 4,400.00	M.S. Means 2004	$ 3,759
Dike Material - Assumes Available On-site							

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Dredging and Stockpiling Dike Material	Hydraulic Dredging of Granular mat'l from site area	103,500	See above dike dimensions	CY	$ 2.50	Cost for Dredging provide by CENAB - see dredging costing sheet	$ 258,750
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	103,500	See assumptions above for dikes	CY	$ 4.00	M.S. Means 2004	$ 414,000
C. Dredging, Transport and Placement Costs							**$ 6,629,400**
Mobilization/Demobilization		2	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Based on Bid Sheets provided by USACE and Dredging Spreadsheet	$ 3,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	789,000	Cut volume equal to Site Capacity divided by a factor of 0.9 since material will be placed in only 2 lifts (total 4 ft. thick) and inundated within 2 yrs to establish wetlands.	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 1,578,000
Transportation of Dredged Mat'l to Site		789,000	Transportation volume equal to cut volume	CY	$ 0.60	$0.10/nmile/cy	$ 473,400
Placement of Mat'l at Site	Hydraulic pumping to diked area	789,000	Transfer volume equal to cut volume	CY	$ 2.00	Based on USACE Dredging Spreadsheet	$ 1,578,000
D. Habitat Development Costs							**$ 2,943,600**
Planning and Design		1	(GBA, 2003)	LS	$ 39,600.00	Assume 6% of total Implementation Costs	$ 39,600
Planting and Seeding		110	Wetland Surface Area	ACRE	$ 20,400.00		$ 2,244,000
Grading/Channels/Hydraulic Controls		110	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 660,000
E. Operating & Maintenance Costs							**$ 4,548,000**
O&M of Facility - Expansion		6	Site Operating Life plus 2 years after placement	YR	$ 329,000.00	$50,000 + $45/LF Perimeter (GBA, 2003)	$ 1,974,000
O&M of Created Habitat		4	Site Operating Life	YR	$ 50,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 200,000
Monitoring & Reporting of Facility		7	Site Operating Life plus 3 years after placement	YR	$ 135,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 945,000
Monitoring and Reporting of Created Habitat		4	Site Operating Life	YR	$ 100,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 400,000
Other: Dredged Material Management		4	Site Operating Life	YR	$ 257,250.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 1,029,000
SUBTOTAL COST (A+B+C+D+E)							**$ 21,251,087**
CONTINGENCY (35%)							$ 7,437,880
TOTAL COST							**$ 28,688,967**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 40**

SMALL ISLAND RESTORATION—LOWER BAY

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (VA)

ALTERNATIVE - EXISTING SITES

Small Island Restoration - Lower Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Additional Capacity Achieved by Expansion

Expansion Assumptions:

The representative site for this alternative is located near the mouth of Mobjack Bay, VA. Water depth at the representative site is approximately -6 ft. MLLW. For this cost estimation, the small island restoration is 100 acres. The perimeter dike length is approximately 8,400 LF. The exterior dike height is at +10 ft. MLLW (total 16 ft.). The dike dimensions include a crest width of 20 ft. and 3:1 slopes. The exterior dike volume for these dimensions is approximately 0.32 mcy. It is assumed that the dike material is available from within the site area.

Interior dike length for the 100 acres island assumes four cells with the wetland separated by the uplands by a diagonal berm of the same cross sectional dimensions as the perimeter dike, with the exception that the berm slope is 2:1. Another interior berm that divides the upland area into 2 cells has a height of +10 MLLW, crest width of 15 ft., and a 2:1 slope. The dike in the wetland portion is +0 ft. MLLW, with a 10 ft wide crest and a 2:1 slope. The total dike volume is 0.432 mcy.

Assuming 50% wetlands filled to a height of +0 ft. MLLW (water depth), and 50% is uplands filled to a height of +6 ft MLLW (top of dike minus 2 ft. freeboard), the in-place volume of the site is 1.612 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The site capacity (cut volume) is equal to the in-place volume divided by a factor of 0.7.

1. In-place Site Volume (MCY)	1.6	5. Site Surface Area (ACRE)	100
2. Site Operating Life (YRS)	6	6. Upland Surface Area (ACRE)	50
3. Site Capacity (cut volume) (MCY)	2.3	7. Exterior Dike Perimeter (FT)	8,350
4. Average One-Way Hauling Distance (NMILES)	7	8. Interior Dike Perimeter (FT)	5,050

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,205,436**
Study and Design		1		LS	$ 955,436.09	Item includes conceptual, feasibility study and design costs. Assume costs should be approx. 6% of total site development costs.	$ 955,436
Permitting		1		LS	$ 250,000.00	Permits will be required for dredge placement.	$ 250,000
B. Site Development Costs							**$ 15,923,935**
Mob/Demob and Bonding		1		LS	$ 792,664	6-7% of total construction costs	$ 792,664
Road Stone for Dike Crest		18,556	8,350 LF of perm. Dike - 20 ft. wide (~18,600 SY)	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 222,667
Geotextile		102,056	Geotextile Length is multiplied by 8,350 LF Perimeter Dike Length. Geotextile length includes dike slope length of 50.6 ft., 25 ft. toe overlap and 15 ft. crest overlap.	SY	$ 2.50	200 lb Woven , R.S. Means 2004	$ 255,139
Stabilization of Foundation		21,524	Assume 20% of dike foot print 116' x 8350F and a depth of 3 ft.	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 258,293
Stone Work for Hardened Perimeter Dike							
Slope Armor		59,151	Outside slope - Slope length 50.6 ft. - Assume 2 ft. thickness, full dike length of 8,350 LF and unit weight of 140 pcf	TONS	$ 53.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 3,135,024
Underlayer Armor Dike Section		27,463	Same dimensions as slope armor but 1 ft. thickness and unit weight of 130 pcf	TONS	$ 52.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 1,428,084
Toe Armor Dike Section		33,246	Toe armor extends 25 ft. on 3 sides and 10 ft on one side. Thickness is 2.5 ft. and 150 pcf	TONS	$ 88.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 2,925,615

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Spillways		1	Assume 1 spillway needed to dewater site prior to allowing tidal inundation for wetland	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000
Erosion Control		10	Temp Vegetative Covers for Exposed Dike - Interior Slope	Acre	$ 4,000.00	Seeding and Mulching, M.S. Means 2004	$ 40,000
Dike Material - Assumes Available On-site							
Dredging and Stockpiling Dike Material	Hydraulic Dredging of Granular mat'l from site area	432,146	See above dike dimensions	CY	$ 2.50	USACE Dredging Spreadsheet - Higher Cost Due to high Sand content	$ 1,080,365
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	432,146	See assumptions above for interior and exterior dikes	CY	$ 4.00	R.S. Means 2004	$ 1,728,584
Dredging of Access Channel to Island	Hydraulic Dredging of Granular mat'l from site area	1,523,000	Channel Dimensions - 6600 ft. X 500 ft. to a depth of -25 MLLW - Quantity for Berms above is subtracted out of the total	CY	$ 2.50	USACE Dredging Spreadsheet - Higher Cost for high Sand Content	$ 3,807,500
C. Dredging, Transport and Placement Costs							**$ 19,810,000**
Mobilization/Demobilization		6	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Contractor Bid Pricing provided by CENAO	$ 9,000,000
Dredging of Mat'l from Channel	Hopper Dredging	2,300,000	Site Capacity (cut volume) is equal to in-place volume of site divided by a factor of 0.7	CY	$ 2.00	Contractor Bid Pricing provided by CENAO	$ 4,600,000
Transportation of Dredged Mat'l to Site	Hopper Dredging	2,300,000	Transportation volume equal to cut volume	CY	$ 0.70	$0.10/nmile/cy	$ 1,610,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	2,300,000	Transfer volume equal to cut volume	CY	$ 2.00	USACE Dredging Cost Estimating Spreadsheets	$ 4,600,000
D. Habitat Development Costs							**$ 1,571,200**
Planning and Design		1	(GBA, 2003)	LS	$ 31,200.00	Design - Approx. 6% of Implementation Costs	$ 31,200
Grading/Channels/Hydraulic Controls		50	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 300,000
Planting and Seeding		50	Upland Site Surface Area	ACRE	$ 4,400.00	(GBA, 2003)	$ 220,000
Planting and Seeding - Wetlands		50	Wetland Surface Area	ACRE	$ 20,400.00	Vendor Quote, Public Landing Project, MD, WESTON, 2004)	$ 1,020,000
E. Operating & Maintenance Costs							**$ 7,006,000**
O&M of Facility - Expansion		8	Site Operating Life plus 2 years after placement	YR	$ 425,750.00	$50,000 + $45/LF Perimeter (GBA, 2003)	$ 3,406,000
O&M of Created Habitat		6	Site Operating Life	YR	$ 50,000.00	Approx. 20% of Cost for Large Island (GBA, 2003)	$ 300,000
Monitoring & Reporting of Facility		9	Site Operating Life plus 3 years after placement	YR	$ 135,000.00	Approx. 20% of Cost for Large Island (GBA, 2003)	$ 1,215,000
Monitoring and Reporting of Created Habitat		6	Site Operating Life	YR	$ 100,000.00	Approx. 20% of Cost for Large Island (GBA, 2003)	$ 600,000
Other: Dredged Material Management		6	Site Operating Life	YR	$ 247,500.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 1,485,000
SUBTOTAL COST (A+B+C+D+E)							**$ 45,516,571**
CONTINGENCY (30%)							$ 13,654,971
TOTAL COST							**$ 59,171,542**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 26**

SMALL ISLAND RESTORATION—MID BAY

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Harbor Channels

ALTERNATIVE - EXISTING SITES

Small Island Restoration - Mid Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area is Parsons Island. Water depth at representative site is approximately -6 ft. MLLW. For this cost estimation, the small island restoration is 100 acres. The perimeter dike length is approximately 8,400 LF. The exterior dike height is at +10 ft. MLLW (total 16 ft.). The dike dimensions include a crest width of 20 ft. and 3:1 slopes. The exterior dike volume for these dimensions is approximately 0.32 mcy. It is assumed that the dike material is available from within the site area.

Interior dike length for the 100 acres island assumes four cells with the wetland separated by the uplands by a diagonal berm of the same cross sectional dimensions as the perimeter dike, with the exception that the berm slope is 2:1. Another interior berm that divides the upland area into 2 cells has a height of +8 MLLW, crest width of 15 ft., and a 2:1 slope. The dike in the wetland portion is +0 ft. MLLW, with a 10 ft wide crest and a 2:1 slope. The total dike volume is 0.432 mcy.

Assuming 50% wetlands filled to a height of +0 ft. MLLW (water depth), and 50% is uplands filled to a height of +6 ft MLLW (top of dike minus 2 ft. freeboard), the in-place volume of the site is 1.612 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The site capacity (cut volume) is equal to the in-place volume divided by a factor of 0.7.

1. Site Capacity (MCY)	1.6	5. Site Surface Area (ACRE)	100
1. In-place Site Volume (MCY)	6	6. Upland Surface Area (ACRE)	50
3. Dredge (Cut) Volume from Channels (MCY)	2.3	7. Exterior Dike Perimeter (FT)	8,350
3. Site Capacity (cut volume) (MCY)	23	8. Interior Dike Perimeter (FT)	5,050

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,067,975**
Study and Design		1		LS	$ 817,975.17	Study and Design Cost are assumed at approx. 6% of Site Development costs.	$ 817,975
Permitting		1		LS	$ 250,000.00	Permits will be required for dredge placement.	$ 250,000
B. Site Development Costs							**$ 13,632,919**
Mob/Demob & Bonding		1		LS	$ 792,598	6-7 % of Total Construction Costs	$ 792,598
Road Stone for Dike Crest		18,556	8,350 LF of perm. Dike - 20 ft. wide (~18,600 SY)	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 222,667
Geotextile		102,056	Area is based on the length of the perim. Dike of 8,350 LF and the cross sectional length that include the dike slope 50.6 ft., the 25 ft. toe overlap and 15 ft. crest overlap.	SY	$ 2.50	200 lb Woven , R.S. Means 2004	$ 255,139
Stabilization of Foundation		21,524	Assume 20% of dike foot print 116' x 8350F and a depth of 3 ft.	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 258,293
Slope Armor		59,151	Outside slope - Slope length 50.6 ft. - Assume 2 ft. thickness, full dike length of 8,350 LF and unit weight of 140 pcf	TONS	$ 53.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 3,135,024
Underlayer Armor Dike Section		27,463	Same dimensions as slope armor but 1 ft. thickness and unit weight of 130 pcf	TONS	$ 52.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 1,428,084
Toe Armor Dike Section		33,246	Toe armor extends 25 ft. on 3 sides and 10 ft on one side. Thickness is 2.5 ft. and 150 pcf	TONS	$ 88.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 2,925,615
Spillways		1	Assume 1 spillway needed to dewater site prior to allowing tidal inundation for wetland	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Erosion Control		10	Temp Vegetation for Exposed Dike Slopes - Interior	Acre	$ 4,000.00	R.S. Means 2004	$ 40,000
Dike Material - Assumes Available On-site							
Dredging and Stockpiling Dike Material	Hydraulic Dredging of Granular mat'l from site area	432,000	See above dike dimensions	CY	$ 2.50	USACE Dredging Spreadsheet - Higher Cost for high Sand Content	$ 1,080,000
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	432,000	See assumptions above for interior and exterior dikes	CY	$ 4.00	R.S. Means 2004	$ 1,728,000
Dredging of Access Channel to Island	Hydraulic Dredging of Granular mat'l from site area	607,000	Channel Dimensions - 3300 ft. X 500 ft. to a depth of -25 MLLW - Quantity for Berms above is subtracted out of the total	CY	$ 2.50	USACE Dredging Spreadsheet - Higher Cost for high Sand Content	$ 1,517,500
C. Dredging, Transport and Placement Costs							**$ 25,790,000**
Mobilization/Demobilization		6	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Bid Sheets provided by USACE and Dredging Spreadsheets	$ 9,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	2,300,000	Site Capacity (cut volume) is equal to in-place volume of site divided by a factor of 0.7	CY	$ 3.00	USACE Dredging Spreadsheet	$ 6,900,000
Transportation of Dredged Mat'l to Site	Barge	2,300,000	Transportation volume equal to cut volume	CY	$ 2.30	$0.10/nmile/cy	$ 5,290,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	2,300,000	Transfer volume equal to cut volume	CY	$ 2.00	USACE Dredging Spreadsheet	$ 4,600,000
D. Habitat Development Costs							**$ 1,571,200**
Planning and Design		1		LS	$ 31,200.00	Design - Approx. 6% of Implementation Costs	$ 31,200
Grading/Channels/Hydraulic Controls		50	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 300,000
Planting and Seeding - Uplands		50	Uplands Surface Area	ACRE	$ 4,400.00	(GBA, 2003)	$ 220,000
Planting and Seeding - Wetlands		50	Wetland Surface Area	ACRE	$ 20,400.00	Vendor Quote, Public Landing Project, MD, WESTON, 2004)	$ 1,020,000
E. Operating & Maintenance Costs							**$ 7,006,000**
O&M of Facility - Expansion		8	Site Operating Life plus 2 years after placement	YR	$ 425,750.00	$50,000 + $45/LF Perimeter (GBA, 2003)	$ 3,406,000
O&M of Created Habitat		6	Site Operating Life	YR	$ 50,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 300,000
Monitoring & Reporting of Facility		9	Site Operating Life plus 3 years after placement	YR	$ 135,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 1,215,000
Monitoring and Reporting of Created Habitat		6	Site Operating Life	YR	$ 100,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 600,000
Other: Dredged Material Management		6	Site Operating Life	YR	$ 247,500.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 1,485,000
SUBTOTAL COST (A+B+C+D+E)							**$ 49,068,095**
CONTINGENCY (30%)							$ 14,720,428
TOTAL COST							**$ 63,788,523**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 28**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach Channels

ALTERNATIVE - EXISTING SITES

Small Island Restoration - Mid Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area is Parsons Island. Water depth at representative site is approximately -6 ft. MLLW. For this cost estimation, the small island restoration is 100 acres. The perimeter dike length is approximately 8,400 LF. The exterior dike height is at +10 ft. MLLW (total 16 ft.). The dike dimensions include a crest width of 20 ft. and 3:1 slopes. The exterior dike volume for these dimensions is approximately 0.336 mcy. It is assumed that the dike material is available from within the site area.

Interior dike length for the 100 acres island assumes four cells with the wetland separated by the uplands by a diagonal berm of the same cross sectional dimensions as the perimeter dike, with the exception that the berm slope is 2:1. Another interior berm that divides the upland area into 2 cells has a height of +8 MLLW, crest width of 15 ft., and a 2:1 slope. The dike in the wetland portion is +2 ft. MLLW, with a 10 ft wide crest and a 2:1 slope. The total dike volume is 0.432 mcy.

Assuming 50% wetlands filled to a height of +0 ft. MLLW (water depth), and 50% is uplands filled to a height of +8 ft MLLW (top of dike minus 2 ft. freeboard), the in-place volume of the site is 1.612 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The

1. Site Capacity (MCY)	1.6	5. Site Surface Area (ACRE)	100
1. In-place Site Volume (MCY)	6	6. Upland Surface Area (ACRE)	50
3. Dredge (Cut) Volume from Channels (MCY)	2.3	7. Exterior Dike Perimeter (FT)	8,350
3. Site Capacity (cut volume) (MCY)	19	8. Interior Dike Perimeter (FT)	5,050

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,067,975**
Study and Design		1		LS	$ 817,975.17	Study and Design Cost are assumed at approx. 6% of Site Development costs.	$ 817,975
Permitting		1		LS	$ 250,000.00	Permits will be required for dredge placement.	$ 250,000
B. Site Development Costs							**$ 13,632,919**
Mob/Demob & Bonding		1		LS	$ 792,598	6-7 % of Total Construction Costs	$ 792,598
Road Stone for Dike Crest		18,556	8,350 LF of perm. Dike - 20 ft. wide (~18,600 SY)	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 222,667
Geotextile		102,056	Area is based on the length of the perim. Dike of 8,350 LF and the cross sectional length that include the dike slope 50.6 ft., the 25 ft. toe overlap and 15 ft. crest overlap.	SY	$ 2.50	200 lb Woven , R.S. Means 2004	$ 255,139
Stabilization of Foundation		21,524	Assume 20% of dike foot print 116' x 8350F and a depth of 3 ft.	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 258,293
Slope Armor		59,151	Outside slope - Slope length 50.6 ft. - Assume 2 ft. thickness, full dike length of 8,350 LF and unit weight of 140 pcf	TONS	$ 53.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 3,135,024
Underlayer Armor Dike Section		27,463	Same dimensions as slope armor but 1 ft. thickness and unit weight of 130 pcf	TONS	$ 52.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 1,428,084
Toe Armor Dike Section		33,246	Toe armor extends 25 ft. on 3 sides and 10 ft on one side. Thickness is 2.5 ft. and 150 pcf	TONS	$ 88.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 2,925,615
Spillways		1	Assume 1 spillway needed to dewater site prior to allowing tidal inundation for wetland	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Erosion Control		10	Temp Vegetation for Exposed Dike Slopes - Interior	Acre	$ 4,000.00	R.S. Means 2004	$ 40,000
Dike Material - Assumes Available On-site							
Dredging and Stockpiling Dike Material	Hydraulic Dredging of Granular mat'l from site area	432,000	See above dike dimensions	CY	$ 2.50	USACE Dredging Spreadsheet - Higher Cost for high Sand Content	$ 1,080,000
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	432,000	See assumptions above for interior and exterior dikes	CY	$ 4.00	R.S. Means 2004	$ 1,728,000
Dredging of Access Channel to Island	Hydraulic Dredging of Granular mat'l from site area	607,000	Channel Dimensions - 3300 ft. X 500 ft. to a depth of -25 MLLW - Quantity for Berms above is subtracted out of the total	CY	$ 2.50	USACE Dredging Spreadsheet - Higher Cost for high Sand Content	$ 1,517,500
C. Dredging, Transport and Placement Costs							**$ 22,570,000**
Mobilization/Demobilization		6	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Bid Sheets provided by USACE and Dredging Spreadsheets	$ 9,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	2,300,000	Site Capacity (cut volume) is equal to in-place volume of site divided by a factor of 0.7	CY	$ 2.00	USACE Dredging Spreadsheet	$ 4,600,000
Transportation of Dredged Mat'l to Site	Barge	2,300,000	Transportation volume equal to cut volume	CY	$ 1.90	$0.10/nmile/cy	$ 4,370,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	2,300,000	Transfer volume equal to cut volume	CY	$ 2.00	USACE Dredging Spreadsheet	$ 4,600,000
D. Habitat Development Costs							**$ 1,571,200**
Planning and Design		1		LS	$ 31,200.00	Design - Approx. 6% of Implementation Costs	$ 31,200
Grading/Channels/Hydraulic Controls		50	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 300,000
Planting and Seeding - Uplands		50	Uplands Surface Area	ACRE	$ 4,400.00	(GBA, 2003)	$ 220,000
Planting and Seeding - Wetlands		50	Wetland Surface Area	ACRE	$ 20,400.00	Vendor Quote, Public Landing Project, MD, WESTON, 2004)	$ 1,020,000
E. Operating & Maintenance Costs							**$ 7,006,000**
O&M of Facility - Expansion		8	Site Operating Life plus 2 years after placement	YR	$ 425,750.00	$50,000 + $45/LF Perimeter (GBA, 2003)	$ 3,406,000
O&M of Created Habitat		6	Site Operating Life	YR	$ 50,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 300,000
Monitoring & Reporting of Facility		9	Site Operating Life plus 3 years after placement	YR	$ 135,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 1,215,000
Monitoring and Reporting of Created Habitat		6	Site Operating Life	YR	$ 100,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 600,000
Other: Dredged Material Management		6	Site Operating Life	YR	$ 247,500.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 1,485,000
SUBTOTAL COST (A+B+C+D+E)							**$ 45,848,095**
CONTINGENCY (30%)							$ 13,754,428
TOTAL COST							**$ 59,602,523**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 26**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (MD)

ALTERNATIVE - EXISTING SITES

Small Island Restoration - Mid Bay

ASSUMPTIONS/BASIS FOR ESTIMATE:

Representative area is Parsons Island. Water depth at representative site is approximately -6 ft. MLLW. For this cost estimation, the small island restoration is 100 acres. The perimeter dike length is approximately 8,400 LF. The exterior dike height is at +10 ft. MLLW (total 16 ft.). The dike dimensions include a crest width of 20 ft. and 3:1 slopes. The exterior dike volume for these dimensions is approximately 0.336 mcy. It is assumed that the dike material is available from within the site area.

Interior dike length for the 100 acres island assumes four cells with the wetland separated by the uplands by a diagonal berm of the same cross sectional dimensions as the perimeter dike, with the exception that the berm slope is 2:1. Another interior berm that divides the upland area into 2 cells has a height of +8 MLLW, crest width of 15 ft., and a 2:1 slope. The dike in the wetland portion is +2 ft. MLLW, with a 10 ft wide crest and a 2:1 slope. The total dike volume is 0.432 mcy.

Assuming 50% wetlands filled to a height of +0 ft. MLLW (water depth), and 50% is uplands filled to a height of +8 ft MLLW (top of dike minus 2 ft. freeboard), the in-place volume of the site is 1.612 mcy, and does not exclude material required for dike constructuion. It is assumed that interior/exterior dike construction utilizes existing material inside the footprint of the facility. The

1. Site Capacity (MCY)	1.6	5. Site Surface Area (ACRE)	100
1. In-place Site Volume (MCY)	6	6. Upland Surface Area (ACRE)	50
3. Dredge (Cut) Volume from Channels (MCY)	2.3	7. Exterior Dike Perimeter (FT)	8,350
3. Site Capacity (cut volume) (MCY)	13	8. Interior Dike Perimeter (FT)	5,050

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 1,067,975**
Study and Design		1		LS	$ 817,975.17	Study and Design Cost are assumed at approx. 6% of Site Development costs.	$ 817,975
Permitting		1		LS	$ 250,000.00	Permits will be required for dredge placement.	$ 250,000
B. Site Development Costs							**$ 13,632,919**
Mob/Demob & Bonding		1		LS	$ 792,598	6-7 % of Total Construction Costs	$ 792,598
Road Stone for Dike Crest		18,556	8,350 LF of perm. Dike - 20 ft. wide (~18,600 SY)	SY	$ 12.00	Table E-1 (GBA, 2003)	$ 222,667
Geotextile		102,056	Area is based on the length of the perim. Dike of 8,350 LF and the cross sectional length that include the dike slope 50.6 ft., the 25 ft. toe overlap and 15 ft. crest overlap.	SY	$ 2.50	200 lb Woven , R.S. Means 2004	$ 255,139
Stabilization of Foundation		21,524	Assume 20% of dike foot print 116' x 8350F and a depth of 3 ft.	CY	$ 12.00	Table E-1 (GBA, 2003)	$ 258,293
Slope Armor		59,151	Outside slope - Slope length 50.6 ft. - Assume 2 ft. thickness, full dike length of 8,350 LF and unit weight of 140 pcf	TONS	$ 53.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 3,135,024
Underlayer Armor Dike Section		27,463	Same dimensions as slope armor but 1 ft. thickness and unit weight of 130 pcf	TONS	$ 52.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 1,428,084
Toe Armor Dike Section		33,246	Toe armor extends 25 ft. on 3 sides and 10 ft on one side. Thickness is 2.5 ft. and 150 pcf	TONS	$ 88.00	Shoreline Project Public Landing Dorchester County (WESTON, 2004)	$ 2,925,615
Spillways		1	Assume 1 spillway needed to dewater site prior to allowing tidal inundation for wetland	EA	$ 250,000.00	Table E-1 (GBA, 2003)	$ 250,000

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
Erosion Control		10	Temp Vegetation for Exposed Dike Slopes - Interior	Acre	$ 4,000.00	R.S. Means 2004	$ 40,000
Dike Material - Assumes Available On-site							
Dredging and Stockpiling Dike Material	Hydraulic Dredging of Granular mat'l from site area	432,000	See above dike dimensions	CY	$ 2.50	USACE Dredging Spreadsheet - Higher Cost for high Sand Content	$ 1,080,000
Placement of Dike Material	Spread out sandy stockpiled soils with Dozer and Compact	432,000	See assumptions above for interior and exterior dikes	CY	$ 4.00	R.S. Means 2004	$ 1,728,000
Dredging of Access Channel to Island	Hydraulic Dredging of Granular mat'l from site area	607,000	Channel Dimensions - 3300 ft. X 500 ft. to a depth of -25 MLLW - Quantity for Berms above is subtracted out of the total	CY	$ 2.50	USACE Dredging Spreadsheet - Higher Cost for high Sand Content	$ 1,517,500
C. Dredging, Transport and Placement Costs							**$ 21,190,000**
Mobilization/Demobilization		6	Mob & Demob for operating life of site	YR	$ 1,500,000.00	Bid Sheets provided by USACE and Dredging Spreadsheets	$ 9,000,000
Dredging of Mat'l from Channel	Clamshell Dredging	2,300,000	Site Capacity (cut volume) is equal to in-place volume of site divided by a factor of 0.7	CY	$ 2.00	USACE Dredging Spreadsheet	$ 4,600,000
Transportation of Dredged Mat'l to Site	Barge	2,300,000	Transportation volume equal to cut volume	CY	$ 1.30	$0.10/nmile/cy	$ 2,990,000
Placement of Mat'l at Site	Hydraulic pumping to diked area	2,300,000	Transfer volume equal to cut volume	CY	$ 2.00	USACE Dredging Spreadsheet	$ 4,600,000
D. Habitat Development Costs							**$ 1,571,200**
Planning and Design		1		LS	$ 31,200.00	Design - Approx. 6% of Implementation Costs	$ 31,200
Grading/Channels/Hydraulic Controls		50	Wetland Surface Area	ACRE	$ 6,000.00	$8/cy x 3cy/LF x 250 LF/acre (GBA, 2003)	$ 300,000
Planting and Seeding - Uplands		50	Uplands Surface Area	ACRE	$ 4,400.00	(GBA, 2003)	$ 220,000
Planting and Seeding - Wetlands		50	Wetland Surface Area	ACRE	$ 20,400.00	Vendor Quote, Public Landing Project, MD, WESTON, 2004)	$ 1,020,000
E. Operating & Maintenance Costs							**$ 7,006,000**
O&M of Facility - Expansion		8	Site Operating Life plus 2 years after placement	YR	$ 425,750.00	$50,000 + $45/LF Perimeter (GBA, 2003)	$ 3,406,000
O&M of Created Habitat		6	Site Operating Life	YR	$ 50,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 300,000
Monitoring & Reporting of Facility		9	Site Operating Life plus 3 years after placement	YR	$ 135,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 1,215,000
Monitoring and Reporting of Created Habitat		6	Site Operating Life	YR	$ 100,000.00	Approx. 20% of Cost for Large (1000 acre) Island (GBA, 2003)	$ 600,000
Other: Dredged Material Management		6	Site Operating Life	YR	$ 247,500.00	Placement, dewatering, and crust management costs for operating life ($150,000 + $975/acre), (GBA, 2003)	$ 1,485,000
SUBTOTAL COST (A+B+C+D+E)							**$ 44,468,095**
CONTINGENCY (30%)							$ 13,340,428
TOTAL COST							**$ 57,808,523**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 25**

WETLANDS RESTORATION—DORCHESTER COUNTY, MD

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Harbor Channels

ALTERNATIVE - EXISTING SITES

Wetlands Restoration - Dorchester County MD

ASSUMPTIONS/BASIS FOR ESTIMATE:

This alternative consists of placement of approximately 2 ft. of dredged material within a shallow near shore area to restore and protect wetlands from sea level rise and subsidence. This is an innovative alternative that has not been widely used especially over a large area. The concept is to decrease the water column height to a water depth that promotes wetland creation and restoration. These areas are usually surrounded by wetlands that are at-risk of being lost due to the erosion effects of currents and wave energy within these open water depressions. The representative area is the Blackwater Wildlife Refuge located about 55 miles south of Baltimore (adjacent to the Little Choptank River). Over 7,000 acres have been identified of former wetlands that have become open water depression and could be reclaimed using dredged material. For this alternative 1000 acres is assumed feasible for this application.

Dredged material would first be removed from the channels and then transported to this representative area by barge. Since the dredged placement is limited to 2 ft lifts over a large area, placement of the dredged material would need to be performed in a more controlled and lower discharge rate manner. It is therefore assumed that the material would be transferred to a stationary barge, allowing the transport barge to return to the dredging operation. Material would then be pumped from the moored barged via pipeline to the area where the 2 ft. lift is being applied. A smaller (8-12 inch) pipeline would be used to control the discharge rate and the lift thickness. The pipeline would be mounted and rigged to a system that could be moved at an established rate to control the lift thickness. For costing purposed the pipeline length is assumed to be 6000 feet.

Erosion and dredged material migration control at the placement site would be provided using "GeoTubes" that would create temporary diking to contain the dredged material. These Geotube consist of geotextile sewn together and filled with dredged material to form a temporary dike. The dike would be approximately 6 ft. in height to contain the dredged material and allow for settlement and consolidation. The tube would be removed after approximately 2 years after the dredged material has been placed.

1. In-place Site Volume (MCY)	3.2	5. Site Surface Area (ACRE)	1,000
2. Site Operating Life (YRS)	12		
3. Site Capacity (cut volume) (MCY)*	3.2		
4. Average One-Way Hauling Distance (NMILES)	65		

*Assume cut volume is equal to in-place volume

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 4,442,308**
Study & Design		1		LS	$ 4,192,308.00	Study and design effort includes defining limit of project, required depth, and confirming suitability of dredged material. Assume 6% of Item C.	$ 4,192,308
Permitting & Real Estate Easements		1		LS	$ 250,000.00	Permitting for dredged placement and easements for near shore work	$ 250,000
B. Expansion Development Costs	None						**$ -**
C. Dredging, Transport and Placement Costs							**$ 69,871,800**
Mobilization/Demobilization		6	Assume six mobilizations	LS	$ 2,000,000.00	USACE dredging costing spreadsheet	$ 12,000,000
Dredging of Mat'l from Channel	Clam Shell	3,226,000	Cut volume	CY	$ 4.00	Based on USACE Dredging Spreadsheet	$ 12,904,000
Transportation of Dredged Mat'l to Site	Barge	3,226,000	Transportation volume equal to cut volume	CY	$ 6.50	$0.10/cy/nmile	$ 20,969,000
Transfer to Mooring Barge and then Pumping to Restoration Area	Mooring Barge, 12" submerged pipe, 1 booster pump	3,226,000	Transfer volume equal to cut volume	CY	$ 5.00	Current costing using USACE dredging costing spreadsheet	$ 16,130,000
Additional Placement Costs for Moving Discharge Line to Various Cells	Multiple Distribution Lines will be Required from Main Pipleine to Reach all Areas	3,226,000	Transfer volume equal to cut volume	CY	$ 2.00	Current costing using USACE dredging costing spreadsheet	$ 6,452,000
Erosion and Sediment Control	Use of Temporary Geo-Tubes for containment	30,800	Temporary Geotubes used to contain dredged material until it has settled and consolidated. Geotubes to be constructed to contain a 25-acre area. Geotubes are approx. 4-6 ft. in diameter.	LY	$ 34.00	Pricing for GeoTubes from Vendor Quote, Flint, Ind.	$ 1,047,200
Removal of E&S Controls	Removal of Geotubes	30,800	See Item Above	LY	$ 12.00	Vendor Pricing	$ 369,600
D. Habitat Development Costs	None						**$ -**
E. Operating & Maintenance Costs							**$ 8,100,000**
Monitoring of Site		12	Period of Operation	YRS	$ 675,000.00	Monitoring Costs for Large (1000 acre) Island - GBA, 2003	$ 8,100,000
SUBTOTAL COST (A+B+C+D+E)							**$ 82,414,108**
CONTINGENCY (50%)							$ 41,207,054
TOTAL COST							**$ 123,621,162**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 38**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

C&D Approach Channels

ALTERNATIVE - EXISTING SITES

Wetlands Restoration - Dorchester County MD

ASSUMPTIONS/BASIS FOR ESTIMATE:

This alternative consists of placement of approximately 2 ft. of dredged material within a shallow near shore area to restore and protect wetlands from sea level rise and subsidence. This is an innovative alternative that has not been widely used especially over a large area. The concept is to decrease the water column height to a water depth that promotes wetland creation and restoration. These areas are usually surrounded by wetlands that are at-risk of being lost due to the erosion effects of currents and wave energy within these open water depressions. The representative area is the Blackwater Wildlife Refuge located about 55 miles south of Baltimore (adjacent to the Little Choptank River). Over 7,000 acres have been identified of former wetlands that have become open water depression and could be reclaimed using dredged material. For this alternative 1000 acres is assumed feasible for this application.

Dredged material would first be removed from the channels and then transported to this representative area by barge. Since the dredged placement is limited to 2 ft lifts over a large area, placement of the dredged material would need to be performed in a more controlled and lower discharge rate manner. It is therefore assumed that the material would be transferred to a stationary barge, allowing the transport barge to return to the dredging operation. Material would then be pumped from the moored barged via pipeline to the area where the 2 ft. lift is being applied. A smaller (8-12 inch) pipeline would be used to control the discharge rate and the lift thickness. The pipeline would be mounted and rigged to a system that could be moved at an established rate to control the lift thickness. For costing purposed the pipeline length is assumed to be 6000 feet.

Erosion and dredged material migration control at the placement site would be provided using "GeoTubes" that would create temporary diking to contain the dredged material. These Geotubes consist of geotextile sewn together and filled with dredged material to form a temporary dike. The dike would be approximately 6 ft. in height to contain the dredged material and allow for settlement and consolidation. The tube would be removed after approximately 2 years after the dredged material has been placed.

1. In-place Site Volume (MCY)	3.2	5. Site Surface Area (ACRE)	1,000
2. Site Operating Life (YRS)	12		
3. Site Capacity (cut volume) (MCY)*	3.2		
4. Average One-Way Hauling Distance (NMILES)	65		

*Assume cut volume is equal to in-place volume

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 4,442,308**
Study & Design		1		LS	$ 4,192,308.00	Study and design effort includes defining limit of project, required depth, and confirming suitability of dredged material. Assume 6% of Item C.	$ 4,192,308
Permitting & Real Estate Easements		1		LS	$ 250,000.00	Permitting for dredged placement and easements for near shore work	$ 250,000
B. Expansion Development Costs	None						**$ -**
C. Dredging, Transport and Placement Costs							**$ 69,871,800**
Mobilization/Demobilization		6	Assume six mobilizations	LS	$ 2,000,000.00	USACE dredging costing spreadsheet	$ 12,000,000
Dredging of Mat'l from Channel	Clam Shell	3,226,000	Cut volume	CY	$ 4.00	Based on USACE Dredging Spreadsheet	$ 12,904,000
Transportation of Dredged Mat'l to Site	Barge	3,226,000	Transportation volume equal to cut volume	CY	$ 6.50	$0.10/cy/nmile	$ 20,969,000
Transfer to Mooring Barge and then Pumping to Restoration Area	Mooring Barge, 12" submerged pipe, 1 booster pump	3,226,000	Transfer volume equal to cut volume	CY	$ 5.00	Current costing using USACE dredging costing spreadsheet	$ 16,130,000
Additional Placement Costs for Moving Discharge Line to Various Cells	Multiple Distribution Lines will be Required from Main Pipleine to Reach all Areas	3,226,000	Transfer volume equal to cut volume	CY	$ 2.00	Current costing using USACE dredging costing spreadsheet	$ 6,452,000
Erosion and Sediment Control	Use of Temporary Geo-Tubes for containment	30,800	Temporary Geotubes used to contain dredged material until it has settled and consolidated. Geotubes to be constructed to contain a 25-acre area. Geotubes are approx. 4-6 ft. in diameter.	LY	$ 34.00	Pricing for GeoTubes from Vendor Quote, Flint, Ind.	$ 1,047,200
Removal of E&S Controls	Removal of Geotubes	30,800	See Item Above	LY	$ 12.00	Vendor Pricing	$ 369,600
D. Habitat Development Costs	None						**$ -**
E. Operating & Maintenance Costs							**$ 8,100,000**
Monitoring of Site		12	Period of Operation	YRS	$ 675,000.00	Monitoring Costs for Large (1000 acre) Island - GBA, 2003	$ 8,100,000
SUBTOTAL COST (A+B+C+D+E)							**$ 82,414,108**
CONTINGENCY (50%)							$ 41,207,054
TOTAL COST							**$ 123,621,162**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 38**

SCREENING LEVEL COST ESTIMATE

CHANNEL APPROACH

Chesapeake Bay Approach Channels (MD)

ALTERNATIVE - EXISTING SITES

Wetlands Restoration - Dorchester County MD

ASSUMPTIONS/BASIS FOR ESTIMATE:

This alternative consists of placement of approximately 2 ft. of dredged material within a shallow near shore area to restore and protect wetlands from sea level rise and subsidence. This is an innovative alternative that has not been widely used especially over a large area. The concept is to decrease the water column height to a water depth that promotes wetland creation and restoration. These areas are usually surrounded by wetlands that are at-risk of being lost due to the erosion effects of currents and wave energy within these open water depressions. The representative area is the Blackwater Wildlife Refuge located about 55 miles south of Baltimore (adjacent to the Little Choptank River). Over 7,000 acres have been identified of former wetlands that have become open water depression and could be reclaimed using dredged material. For this alternative 1000 acres is assumed feasible for this application.

Dredged material would first be removed from the channels and then transported to this representative area by barge. Since the dredged placement is limited to 2 ft lifts over a large area, placement of the dredged material would need to be performed in a more controlled and lower discharge rate manner. It is therefore assumed that the material would be transferred to a stationary barge, allowing the transport barge to return to the dredging operation. Material would then be pumped from the moored barged via pipeline to the area where the 2 ft. lift is being applied. A smaller (8-12 inch) pipeline would be used to control the discharge rate and the lift thickness. The pipeline would be mounted and rigged to a system that could be moved at an established rate to control the lift thickness. For costing purposed the pipeline length is assumed to be 6000 feet.

Erosion and dredged material migration control at the placement site would be provided using "GeoTubes" that would create temporary diking to contain the dredged material. These Geotube consist of geotextile sewn together and filled with dredged material to form a temporary dike. The dike would be approximately 6 ft. in height to contain the dredged material and allow for settlement and consolidation. The tube would be removed after approximately 2 years after the dredged material has been placed.

1. In-place Site Volume (MCY)	3.2	5. Site Surface Area (ACRE)	1,000
2. Site Operating Life (YRS)	12		
3. Site Capacity (cut volume) (MCY)*	3.2		
4. Average One-Way Hauling Distance (NMILES)	56		

*Assume cut volume is equal to in-place volume

COMPONENT/ITEM	METHOD/EQUIP USED	QUANTITY	BASIS FOR QUANTITY	UNIT	UNIT COST	BASIS FOR UNIT COST	TOTAL COST
A. Initial Study/Permitting/Design Costs							**$ 4,074,544**
Study & Design		1		LS	$ 3,824,544.00	Study and design effort includes defining limit of project, required depth, and confirming suitability of dredged material. Assume 6% of Item C.	$ 3,824,544
Permitting & Real Estate Easements		1		LS	$ 250,000.00	Permitting for dredged placement and easements for near shore work	$ 250,000
B. Expansion Development Costs	None						**$ -**
C. Dredging, Transport and Placement Costs							**$ 63,742,400**
Mobilization/Demobilization		6	Assume six mobilizations	LS	$ 2,000,000.00	USACE dredging costing spreadsheet	$ 12,000,000
Dredging of Mat'l from Channel	Clam Shell	3,226,000	Cut volume	CY	$ 3.00	Based on USACE Dredging Spreadsheet	$ 9,678,000
Transportation of Dredged Mat'l to Site	Barge	3,226,000	Transportation volume equal to cut volume	CY	$ 5.60	$0.10/cy/nmile	$ 18,065,600
Transfer to Mooring Barge and then Pumping to Restoration Area	Mooring Barge, 12" submerged pipe, 8 booster pumps	3,226,000	Transfer volume equal to cut volume	CY	$ 5.00	Current costing using USACE dredging costing spreadsheet	$ 16,130,000
Additional Placement Costs for Moving Discharge Line to Various Cells	Multiple Distribution Lines will be Required from Main Pipleine to Reach all Areas	3,226,000	Transfer volume equal to cut volume	CY	$ 2.00	Current costing using USACE dredging costing spreadsheet	$ 6,452,000
Erosion and Sediment Control	Use of Temporary Geo-Tubes for containment	30,800	Temporary Geotubes used to contain dredged material until it has settled and consolidated. Geotubes to be constructed to contain a 25-acre area. Geotubes are approx. 4-6 ft. in diameter.	LY	$ 34.00	Pricing for GeoTubes from Vendor Quote, Flint, Ind.	$ 1,047,200
Removal of E&S Controls	Removal of Geotubes	30,800	See Item Above	LY	$ 12.00	Vendor Pricing	$ 369,600
D. Habitat Development Costs	None						**$ -**
Wetlands Establishment - Plantings		1,000	Wetland Surface Area	ACRE	$ 20,400.00	Vendor Quote, Public Landing Project, MD, WESTON, 2004)	$ -
E. Operating & Maintenance Costs							**$ 8,100,000**
Monitoring of Site		12	Period of Operation	YRS	$ 675,000.00	Monitoring Costs for Large (1000 acre) Island - GBA, 2003	$ 8,100,000
SUBTOTAL COST (A+B+C+D+E)							**$ 75,916,944**
CONTINGENCY (50%)							$ 37,958,472
TOTAL COST							**$ 113,875,416**
TOTAL UNIT COST PER CUBIC YARD (SITE CAPACITY/CUT VOLUME)							**$ 35**

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APPENDIX D

SUMMARY OF ESSENTIAL FISH HABITAT AND GENERAL HABITAT PARAMETERS FOR FEDERALLY MANAGED SPECIES

<u>Locations of Essential Fish Habitat (EFH) Discussions throughout the Text of the EIS</u>

SECTION

2. AFFECTED ENVIRONMENT

2.6.6 Essential Fish Habitat

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TABLE 2-11
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4. ENVIRONMENTAL CONSEQUENCES

4.6.1.1	C&D Canal Lower Approach Channels
4.6.1.2	Harbor Channels
4.6.1.3	Chesapeake Bay Approach Channels (MD)
4.6.1.4	Chesapeake Bay Approach Channels (VA)
4.6.2.1.5.1	Essential Fish Habitat
4.6.2.2.6	Essential Fish Habitat
4.6.2.3	Wetland Restoration – Dorchester County
4.7.2.3.5.1	Essential Fish Habitat
4.17.2.2	Aquatic Resources

TABLE 4-1

Summary of Essential Fish Habitat (EFH) and General Habitat Parameters for Federally Managed Species

Species	Life Stage	Geographic Area	Temp (°C)	Salinity (%)	Depth (m)	Seasonal Occurrence	Habitat Description	Comments
Red hake	Eggs	GOME, GB, Continental Shelf off southern NE, and middle Atlantic south to Cape Hatteras	<10	<25		May to November, peaks in June and July	Surface waters of inner Continental Shelf	
	Larvae	GOME, GB, Continental Shelf off southern NE, and middle Atlantic south to Cape Hatteras and the following estuaries: Sheepscott R., Mass Bay to Cape Cod Bay; Buzzards Bay, Narragansett Bay & Hudson R./Raritan Bay	<19	>0.5	<200	May to December, peaks in Sept. and October	Surface waters	(newly settled larvae need shelter, including live sea scallops, also use floating or mid-water objects for shelter)
	Juveniles	GOME, GB, Continental Shelf off southern NE, and middle Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Saco Bay; Great Bay, Mass Bay to Cape Cod Bay; Buzzards Bay to Conn. R: Hudson R./Raritan Bay, & Chesapeake Bay	<16	31-33	<100		Bottom habitats with substrate of shell fragments, including areas with an abundance of live scallops	
	Adults	GOME, GB, continental shelf off southern NE, and middle Atlantic south to Cape Hatteras and following estuaries: Passamaquoddy Bay to Saco Bay; Great Bay, Mass Bay to Cape Cod Bay; Buzzards Bay to Conn. R: Hudson R./Raritan, Delaware Bay, & Chesapeake Bay	<12	33-34	10-130		Bottom habitats in depressions with a substrate of sand and mud	(major prey; fish and crustaceans)
	Spawning Adults	GOME, southern edge of GB, Continental Shelf off southern NE, and middle Atlantic south to Cape Hatteras and the following estuaries: Sheepscott R., Mass Bay, Cape Cod Bay, Buzzards Bay, & Narragansett Bay	<10	>25	<100	May to November, peaks in June and July	Bottom habitats in depressions with a substrate of sand and mud	
White hake	Eggs	GOME, GB, southern NE and the following estuaries: Great Bay to Cape Cod Bay				August to September	Surface waters	
	Larvae	GOME, southern edge of GB, southern NE to middle Atlantic and the following estuaries: Mass Bay to Cape Cod Bay				May - mid-Atlantic area August and September - GOME, GB area	Pelagic waters	
	Juveniles	GOME, southern edge of GB, southern NE to middle Atlantic and the following estuaries: Passamaquoddy Bay to Great Bay; Mass Bay to Cape Cod Bay	<19		5-225	May-September - pelagic	Pelagic stage - pelagic waters; Dermersal stage - Bottom habitat with seagrass beds or substrate of mud or fine-grained sand	
	Adults	GOME, southern edge of GB, southern NE to middle Atlantic and the following estuaries: Passamaquoddy Bay to Great Bay; Mass Bay to Cape Cod Bay	<14		5-325		Bottom habitats with substrate of mud or fine-grained sand	(major prey; small fish, shrimp and other crustaceans)
	Spawning Adults	GOME, southern edge of GB, southern NE to middle Atlantic	<14		5-325	April to May - southern part of range; August - September - northern part of range	Bottom habitats with substrate of mud or fine-grained sand in deep water	
Window-pane flounder	Eggs	GOME, GB, southern NE, middle Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Great Bay; Mass Bay to Delaware Inland Bays	<20		<70	February to November, peaks May and October in middle Atlantic July - August on GB	Surface waters	

Species	Life Stage	Geographic Area	Temp (°C)	Salinity (%)	Depth (m)	Seasonal Occurrence	Habitat Description	Comments
	Larvae	GOME, GB, southern NE, middle Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Great Bay; Mass Bay to Delaware Inland Bays	<20		<70	February to November, peaks May and October in middle Atlantic July - August on GB	Pelagic waters	
	Juveniles	GOME, GB, southern NE, middle Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Great Bay; Mass Bay to Chesapeake Bay	<25	5.5 - 36	1-100		Bottom habitats with substrate of mud or fine-grained sand	
	Adults	GOME, GB, southern NE, middle Atlantic south to Virginia-NC border and the following estuaries: Passamaquoddy Bay to Great Bay; Mass Bay to Chesapeake Bay	<26.8	5.5-36	1-75		Bottom habitats with substrate of mud or fine-grained sand	(major prey; polychaetes, small crustaceans, mysids, small fish)
	Spawning Adults	GOME, GB, southern NE, middle Atlantic south to Virginia-NC border and the following estuaries: Passamaquoddy Bay to Great Bay; Mass Bay to Delaware Inland Bay	<21	5.5-36	1-75	February - December, peak in May in middle Atlantic	Bottom habitats with substrate of mud or fine grained sand	
Witch flounder	Eggs	GOME, GB, Continental Shelf off southern NE, middle Atlantic south to Cape Hatteras	<13	High	Deep	March to October	Surface waters	
	Larvae	GOME, GB, Continental Shelf off southern NE, middle Atlantic south to Cape Hatteras	<13	High	Deep	March to November, peaks in May - July	Surface waters to 250m	
	Juveniles	GOME, outer Continental Shelf from GB south to Cape Hatteras	<13	34-36	50-450 to 1500m		Bottom habitats with fine-grained substrate	(the upper slope is nursery area; major prey: crustaceans, polychaetes, mollusks)
	Adults	GOME, outer Continental Shelf from GB south to Chesapeake Bay	<13	32-36	25-300		Bottom habitats with fine-grained substrate	(major prey: polychaetes, echinoderms, crustaceans, mollusks, squid)
	Spawning Adults	GOME, outer Continental Shelf from GB south to Chesapeake Bay	<15	32-36	25-360	March to November, peaks in May - July	Bottom habitats with fine-grained substrate	
Black sea bass	Eggs	Continental Shelf and estuaries from southern NE to North Carolina, also includes Buzzards Bay			0-200	May to October	Water column of coastal Mid-Atlantic Bight and Buzzards Bay	
	Larvae	Pelagic waters over Continental Shelf from GOME to Cape Hatteras, NC, also includes Buzzards Bay	(11-26)	(30-35)	(<100)	(May - Nov, peak Jun - Jul)	Habitats for transforming (to juveniles) larvae are near coastal areas and into marine parts of estuaries between Virginia and NY. When larvae become demersal, found on structured inshore habitat such as sponge beds.	
	Juveniles	Demersal waters over Continental Shelf from GOME to Cape Hatteras, NC, also includes estuaries from Buzzards Bay to Long Island Sound; Gardiners Bay, Barnegat Bay to Chesapeake Bay; Tangier/Pocomoke Sound and James River	>6	>18	(1-38)	Found in coastal areas (April - December peak June-November) between VA and MA, but winter offshore from NJ and south; Estuaries in summer and spring	Rough bottom, shellfish and eelgrass beds, man-made structures in sandy-shelly areas, offshore clam beds and shell patches may be used during wintering	(YOY use salt marsh edges and channels; high habitat fidelity)

Species	Life Stage	Geographic Area	Temp (°C)	Salinity (%)	Depth (m)	Seasonal Occurrence	Habitat Description	Comments
	Adults	Demersal waters over Continental Shelf from GOME to Cape Hatteras, NC, also includes estuaries: Buzzards Bay, Narragansett Bay, Gardiners Bay, Great South Bay, Barnegat Bay to Chesapeake Bay; Tangier/Pocomoke Sound and James River	>6	(>20)	(20-50)	Wintering adults (Nov. to April) offshore, south of NY to NC, Inshore, estuaries from May to October	Structured habitats (natural and man-made) sand and shell substrates preferred	(spawn in coastal bays but not estuaries; benthic and near bottom inverts, small fish, squid)
Bluefish	Eggs	North of Cape Hatteras, found over Continental Shelf from Montauk Point, NY, south to Cape Hatteras, south of Cape Hatteras, found over Continental Shelf through Key West, Florida	>18	>31ppt	Mid-shelf depths	April to August	Pelagic waters	*No EFH designation inshore
	Larvae	North of Cape Hatteras, found over Continental Shelf from Montauk Point, NY, south to Cape Hatteras, South of Cape Hatteras, found over Continental Shelf through Key West, Florida, the slope sea and Gulf Stream between latitudes 29N and 40N; includes the following estuaries: Narragansett Bay	>18	>30ppt	>15	April to September	Pelagic waters	No EFH designation inshore for larvae
	Juveniles	North of Cape Hatteras, found over Continental Shelf from Nantucket Island, MA, south to Cape Hatteras, South of Cape Hatteras, found over Continental Shelf through Key West, Florida, the slope sea and Gulf Stream between latitudes 29N and 40N also includes estuaries between Penobscot Bay to Great Bay; Mass Bay to James R; Albemarie Sound to St. Johns River, FL	(19-24)	(23 - 36) freshwater zone in Albermarie Sound		North Atlantic estuaries from June to October. Mid-Atlantic estuaries from May to October. South Atlantic estuaries from March to December.	Pelagic waters	(use estuaries as nursery areas; can intrude into areas with salinities as low as 3 ppt)
	Adults	North of Cape Hatteras, found over Continental Shelf from Cape Cod Bay, MA, south to Cape Hatteras, found over Continental Shelf through Key West, Florida, also includes estuaries between Penobscot Bay to Great Bay; Mass Bay to James R; Albemarie Sound to Pamlico/Pungo R., Bougue Sound, Cape Fear R., St. Helena Sound, Broad R., St. Johns R., and Indian R.	(14-16)	>25ppt		North Atlantic estuaries from June to October. Mid-Atlantic estuaries from April to October. South Atlantic estuaries from May to January	Pelagic waters	Highly migratory (major prey: fish)
Butterfish	Eggs	Over Continental Shelf from GOME, through Cape Hatteras, NC, also in estuaries from Mass Bay to Long Island Sound; Gardiners Bay, Great South Bay, and Chesapeake Bay	11-17	(25-33)	0-1829	(spring and summer)	Pelagic waters	
	Larvae	Over Continental Shelf from GOME, through Cape Hatteras, NC, also in estuaries from Boston Harbor, Waquoit Bay to Long Island Sound; Gardiners Bay to Hudson R./Raritan Bay; Delaware Bay and Chesapeake Bay	9-19	(6.4 - 37)	10-1829	(summer and fall)	Pelagic waters	

Species	Life Stage	Geographic Area	Temp (°C)	Salinity (%)	Depth (m)	Seasonal Occurrence	Habitat Description	Comments
	Juveniles	Over Continental Shelf from GOME through Cape Hatteras, NC, also in estuaries from Mass Bay, Cape Cod Bay to Delaware Inland Bays; Chesapeake Bay, York R. and James R.	3-28	(4-26)	10-365 (most <120)	(winter - shelf summer to fall - estuaries)	Pelagic waters (schools form over sandy, sandy-silt and muddy substrates)	(pelagic schooling - smaller individuals associated with floating objects including jellyfish)
	Adults	Over Continental Shelf from GOME through Cape Hatteras, NC, also in estuaries from Mass Bay, Cape Cod Bay to Hudson R./Raritan Bay; Delaware Bay and Inland Bays; York R. and James R.	3-28	(4-26)	10-365 (most <120)	(winter - shelf summer to fall - estuaries)	Pelagic waters (schools form over sandy, sandy-silt and muddy substrates)	(common in inshore areas and surf zone; prey; planktonic, thaliacians, squid, copepods)
Ocean quahog	Juveniles	Eastern edge of GB and GOME throughout the Atlantic EEZ	<18	(>25)	8-245		Throughout substrate to a depth of 3 ft within federal waters, occurs progressively farther offshore between Cape Cod and Cape Hatteras	(medium to fine grained sands, sandy mud, silty sand)
	Adults	Eastern edge of GB and GOME throughout the Atlantic EEZ	<18	(>25)	8-245	(spawn May - Dec with several peaks)	Throughout substrate to a depth of 3 ft within federal waters, occurs progressively farther offshore between Cape Cod and Cape Hatteras	(medium to fine grained sands, sandy mud, silty sand; earliest age of maturity 7 yrs, avg 13 yrs; suspension feeders on phytoplankton)
Scup	Eggs	Southern NE to coastal Virginia includes the following estuaries: Waquoit Bay to Long Island Sound; Gardiners Bay, Hudson R./Raritan Bay	13-23	>15	(<30)	May - August	Pelagic waters in estuaries	
	Larvae	Southern NE to coastal Virginia includes the following estuaries: Waquoit Bay to Long Island Sound; Gardiners Bay, Hudson R./Raritan Bay	13-23	>15	(<20)	May-September	Pelagic waters in estuaries	
	Juveniles	The Continental Shelf from GOME to Cape Hatteras, NC, includes the following estuaries; Mass Bay, Cape Cod Bay to Long Island Sound; Gardiners Bay to Delaware Inland Bays; & Chesapeake Bay	>7	>15	(0-38)	Spring and summer in estuaries and bays	Dermersal waters north of Cape Hatteras and Inshore on various sands, mud, mussel, and eelgrass bed type substrates	
	Adults	The Continental Shelf from GOME to Cape Hatteras, NC, includes the following estuaries; Cape Cod Bay to Long Island Sound; Gardiners Bay to Hudson R./Raritan Bay; Delaware Bay & Inland Bays; & Chesapeake Bay	>7	>15	(2-185)	Wintering adults (November to April) are usually offshore, south of NY to NC	Dermersal waters north of Cape Hatteras and Inshore estuaries (various substrate types	(spawn <30m during inshore migration - May - Aug; prey: small benthic inverts)
Summer flounder	Eggs	Over Continental Shelf from GOME to Cape Hatteras, NC; South of Cape Hatteras to Florida			30-70 fall; 110 winter; 9-30 spring	October to May	Pelagic waters, heaviest concentrations with 9 miles of shore off NJ and NY	
	Larvae	Over Continental Shelf fro GOME to Cape Hatteras, NC; South of Cape Hatteras to Florida; also includes estuaries from Waquoit Bay to Narragansett Bay; Hudson River/Raritan Bay; Barnegat Bay, Chesapeake Bay, Rappahannock R., York R., James R., Albemarie Sound, Pamlico Sound, Neuse R. to India R.	(9-12)	(23-33) Fresh in Hudson R. Raritan Bay area	10-70	Mid-Atlantic Bight from Sept. to Feb.; Southern part from Nov. to May at depths 9-30m	Pelagic waters, larvae most abundant 19-83 km from shore; Southern areas 12-52 miles from shore	(high use of tidal creeks and creek mouths)

Species	Life Stage	Geographic Area	Temp (°C)	Salinity (%)	Depth (m)	Seasonal Occurrence	Habitat Description	Comments
	Juveniles	Over Continental Shelf from GOME to Cape Hatteras, NC; South of Cape Hatteras to Florida; also includes estuaries from Waquoit Bay to James R.; Albemarie Sound to Indian R.	>11	10-30 Fresh in Narrag. Bay, Albem/ Pamilico Sound, & St. Johns R.	(0.5-5) in estuary		Demersal waters, muddy substrate but prefer mostly sand; found in the lower estuaries in flats, channels, salt marsh creeks, and eelgrass beds	HAPC - All native species of macroalgae, seagrasses and freshwater and tidal macrophytes in any size bed as well as loose aggregations, within adult and juvenile EFH. (Major prey: mysid shrimp)
	Adults	Over Continental Shelf from GOME to Cape Hatteras, NC; South of Cape Hatteras to Florida; also includes estuaries from Buzzards Bay, Narragansett Bay, Conn. R. to James R.; Albemarie Sound to Broad R; St. Johns R. & Indian R.		Fresh in Albemarie Sound, Pamlico Sound, and St. Johns R.	(0-25)	Inhabit shallow coastal and estuarine waters during warmer months and move offshore on outer Continental Shelf at depths of 150m in colder months	Demersal waters and estuaries	HAPC - all native species of macroalgae, seagrasses and freshwater and tidal macrophytes in any size bed as well as loose aggregations, within adult and juvenile EFH. (Major prey: fish, shrimp, squid, polychaetes)
Surf clams	Juveniles	Eastern edge of GB and GOME throughout the Atlantic EEZ	(2-30)		0-60, low density beyond 38		Throughout substrate to a depth of 3 ft within federal waters (Burrow in med. to coarse sand and gravel substrates. Also found in silty to fine sand, not in mud)	
	Adults	Eastern edge of GB and GOME throughout the Atlantic EEZ	(2-30)		0-60, low density beyond 38	(spawn-summer to fall at 19 - 30ºC)	Throughout substrate to a depth of 3 feet within federal waters	
	Juveniles	U.S. Canadian Boundary to VA/NC boundary (shelf break, submarine canyon walls and flanks; GB to Cape Hatteras)	8-18	(33-36)	76-365	(All year; may leave GB in winter)	Rough bottom, small burrows, and sheltered areas. (Substrate - rocky, stiff clay, human debris)	Tilefish are shelter-seeking and habitat limited). HAPC is substrate between the 76 and 365 m isobath, from U.S./Canadian Boundary to the Virginia/North Carolina boundary within statistical areas 616 and 537 (intersection of isobaths east of Cape May, NJ, and south of Provincetown, MA)
	Adults	US Canadian Boundary to VA/NC boundary (shelf break, submarine canyon walls and flanks; GB to Cape Hatteras)	8-18	(33-36)	76-365	(All year; may leave GB in winter)	Rough bottom, small burrows, and sheltered areas. (Substrate - rocky exposed ledges, stiff clay)	HAPC is substrate between the 250- and 1,200-ft isobath, from U.S./Canadian Boundary to the Virginia/North Carolina boundary within statistical areas 616 and 537 (intersection of isobaths east of Cape May, NJ and south of Provincetown, MA) (prey: crustaceans, fish, decapods, benthic epifauna)

Species	Life Stage	Geographic Area	Temp (°C)	Salinity (%)	Depth (m)	Seasonal Occurrence	Habitat Description	Comments
Red drum	Larvae	Along the Atlantic coast from Virginia through the Florida Keys	2-33	Low salinity	<50		Estuarine wetlands especially important. Flooded salt marshes, brackish marsh, tidal creeks, mangrove fringe, seagrasses	Red drum are euryhaline
	Juveniles	Along the Atlantic coast from Virginia through the Florida Keys	2-33	20-40	<50	Found throughout Chesapeake Bay from Sept. - Nov.	Utilize shallow backwaters of estuaries as nursery areas and remain until they move to deeper water portions of the estuary associated with river mouths, oyster bars and front beaches	Red drum are eurythermal and larger juveniles and adults more susceptible to effects of winter cold waves than small fish
	Adults	Along the Atlantic coast from Virginia through the Florida Keys	2-33	20-40	<50	Found in Chesapeake in spring and fall and also along eastern shore of VA	Concentrate around inlets, shoals, capes along the Atlantic coast - Shallow bay bottoms or oyster reef substrate preferred. Also nearshore artificial reefs.	HAPCs for red drum include all coastal inlets, all state-designated nursery habitats of particular importance to red drum (NC - all Primary and Secondary Nursery Areas), SAV extremely important, barrier islands in NC, SC, GA, FL and passes between barrier islands into estuaries
Spanish mackerel		South Atlantic and Mid-Atlantic Bights	>20	>30			Sandy shoals of capes and offshore bars, high profile rock bottoms and barrier island ocean side waters from surf zone to shelf break but from the Gulf Stream shoreward;	All coastal inlets
Cobia		South Atlantic and Mid-Atlantic Bights	>20	>25			Sandy shoals of capes and offshore bars, high profile rock bottoms and barrier island ocean side waters from surf zone to shelf break but from the Gulf Stream shoreward; high salinity bays, estuaries, seagrass habitat	All coastal inlets
King mackerel		South Atlantic and Mid-Atlantic Bights	>20	>30			Sandy shoals of capes and offshore bars, high profile rock bottoms and barrier island ocean side waters from surf zone to shelf break but from the Gulf Stream shoreward;	All coastal inlets
Golden crab		Chesapeake Bay to the south through the Florida Straight (and into Gulf of Mexico)			290-570	(Gulf Stream EFH because it helps to disperse golden crab larvae)	Flat foraminifera ooze, distinct mounds of dead coral, ripple habitat, dunes, black pebble habitat, low outcrop, and soft bioturbated habitat	

Species	Life Stage	Geographic Area	Temp (°C)	Salinity (%)	Depth (m)	Seasonal Occurrence	Habitat Description	Comments
Sandbar Shark	Juveniles	Abundant in the Lower Bay	15-30	>22	20 to 65	Early spring to fall	Bottom-dwelling, shallow coastal water species seldom seen at the water's surface. Found in turbid waters, prefers smooth substrate	HAPC - shallow waters in lower Chesapeake Bay
	Adults	Found in tropical to temperate waters worldwide. In the western Atlantic they range from MA to Brazil and visit Chesapeake Bay seasonally.	15-30	>22	20 to 65	Early spring to fall	Bottom-dwelling, shallow coastal water species seldom seen at the water's surface. Found in turbid waters, prefers smooth substrate	HAPC - shallow waters in lower Chesapeake Bay

This table was compiled by NMFS Northeast Regional Office, Habitat Conservation Division. All information presented is part of the Regional Fishery Management Council's EFH designations except for that contained within ( ) which is provided as important additional ecological information. Definitions: GOME - Gulf of Maine; GB - George's Bank; HAPC - Habitat Area of Particular Concern; YOY - Young-of-Year. Please note: This table does not contain EFH info on Highly Migratory Species (sharks, tunas, billfish).

*Table has been edited to include species found in the Chesapeake Bay only. Highly Migratory Sandbar Sharks have also been added.

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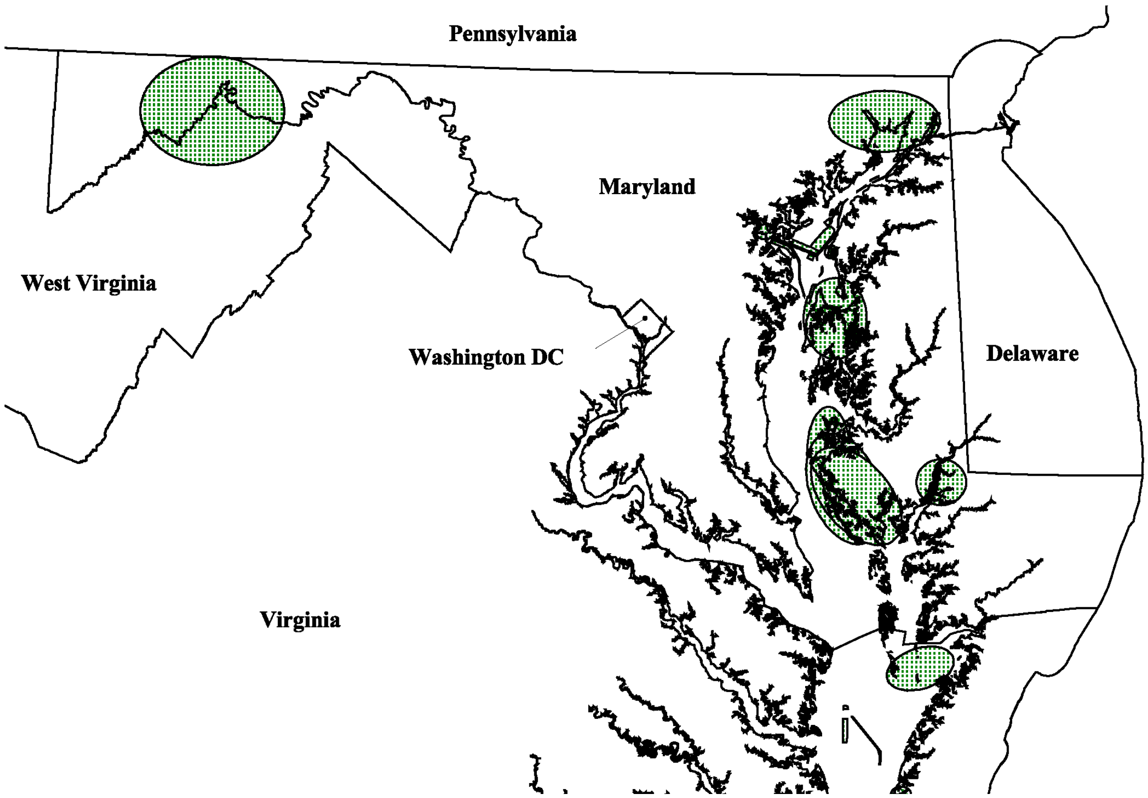
APPENDIX E

CULTURAL RESOURCES STUDY

Go to 2nd Section of Appendix E

Cultural Resources Survey for the Dredged Material Management Plan (DMMP) and Environmental Impact Statement (EIS) Baltimore Harbors and Channels U.S. Army Corps of Engineers, Baltimore District



Prepared For:
U.S. Army Corps of Engineers
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Planning Division
10 South Howard Street
Baltimore, Maryland 21201

Under Subcontract to:
Weston Solutions, Inc.
1400 Weston Way, Building 5-1
West Chester, Pennsylvania 19380

Contract No. DACA31-00-D-0023
Addendum No. 1

Prepared By:
Panamerican Consultants, Inc.
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Draft Report♦July 2004

DRAFT REPORT

Cultural Resources Survey For The Dredged Material Management Plan (DMMP) And Environmental Impact Statement (EIS) Baltimore Harbors and Channels U.S. Army Corps of Engineers, Baltimore District

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Michael C. Krivor
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July 2004

ABSTRACT

From April 3 through May 10, 2004 Panamerican Consultants, Inc. (Panamerican), of Memphis Tennessee conducted a reconnaissance-level cultural resources survey for the U.S. Army Corps of Engineers, Baltimore District's Dredge Material Management Plan (DMMP). Under subcontract to Weston Solutions, Inc. (Weston) of West Chester, Pennsylvania, the purpose of the survey is to identify known cultural resources within proposed and existing dredge material placement sites. Cultural resources include archaeological sites, buildings, structures, objects, or districts. Based on the prehistory, history, topography, and predictive modeling of each DMMP site, a determination of the potential for additional cultural resources is also presented within the report.

The results of each proposed or existing DMMP Area of Potential Effect (APE), including the potential for additional cultural resources, have been summarized below (Table A). Those alternatives that have the potential for additional cultural resources will need to be addressed prior to any site-specific project activities with the appropriate State Historic Preservation Officer (SHPO). After consultation with the SHPO and a determination of effect (upon the property) is decided, a consultation discussing avoidance, minimizing, or mitigating adverse effects on the property follows. Once a suitable agreement is reached between all participating parties, a Memorandum of Agreement (a legal document which states the compliance to Section 106 requirements has been met and agreed upon) is drafted in a written document. The proposed project may then proceed.

Table A. Known and potential cultural resources within each of the proposed and existing DMMP areas.

Proposed and existing DMMP Sites	Known Cultural Resources within APE?	Potential for additional Cultural Resources within APE?
Agricultural Placement - Maryland	Yes	Yes
Agricultural Placement - Virginia	Yes	Yes
Artificial Island Creation - Lower Bay, Virginia	Yes	Yes
Artificial Island Creation - Upper Bay, Maryland	No	Yes
Beach Nourishment - Virginia	Yes	Yes
C&D Canal Sites Expansion, Maryland	Yes	Yes
Capping - Elizabeth River, Virginia	Yes	Yes
Capping - Patapsco River, Maryland	No	No
Confined Aquatic Disposal Area - Patapsco River, Maryland	No	No
Confined Disposal Facility - Lower Bay, Virginia	Yes	Yes
Confined Disposal Facility - Patapsco River, Maryland	No	Yes
Cox Creek Expansion, Maryland	Yes	Yes
Hart-Miller Island Expansion, Maryland	Yes	Yes
Large Island Restoration - Lower Bay, Virginia	Yes	Yes
Large Island Restoration - Mid Bay, Virginia	Yes	Yes
Quarry Placement - Cecil County, Maryland	Yes	No
Mine Placement - Western Maryland	No	No

Table A, continued

Proposed and existing DMMP Sites	Known Cultural Resources within APE?	Potential for additional Cultural Resources within APE?
Norfolk Ocean Open Water Placement	No	Yes
Pooles Island Open Water Site Expansion, Maryland	Yes	Yes
Poplar Island Expansion, Maryland	Yes	Yes
Rappahannock Shoal Deep Alternate Open Water Site Expansion, Virginia	No	Yes
Shoreline Restoration - Mid Bay, Maryland	Yes	Yes
Shoreline Restoration - Upper Bay, Maryland	Yes	Yes
Shoreline Restoration - Lower Bay, Virginia	Yes	Yes
Small Island Restoration - Mid Bay, Maryland	Yes	Yes
Wetlands Restoration - Dorchester County, Maryland	Yes	Yes
Dam Neck Ocean Open Water Placement (existing)	No	No
Hart-Miller Island, Maryland (existing)	No	No
New Open Water Placement - Mid Bay (Deep Trough), Maryland (existing)	No	Yes
Pooles Island Open Water Site, Maryland (existing)	No	No
Rappahannock Shoal Deep Alternate Open Water Site, Maryland (existing)	No	No
Wolf Trap Alternate Open Water Placement, Maryland (existing)	No	No

It is advised that any of the potential and/or existing APE sites that contain known cultural resources be subject to a minimum of Phase I testing to determine the presence or absence of potentially significant cultural resources which may be impacted by proposed site-specific project activities. Following the collection and analysis of data acquired during any additional Phase I testing, recommendations can then be made regarding any potentially significant cultural resources. Recommendations include avoidance, additional testing of potentially significant sites in the form of Phase II testing (if avoidance is not an option), and Phase III data recovery if the site is determined to be eligible for the NRHP (and additional investigations are warranted).

It must be stated that this reconnaissance-level cultural resources survey has served to identify known cultural resources within the proposed and existing dredged material placement areas within and near the Chesapeake Bay. As defined in the Guidelines for Archaeological Investigations in Virginia "a reconnaissance level survey is not appropriate for projects submitted for review pursuant to Section 106 unless otherwise agreed upon by the DHR and the project sponsor" (Virginia Department of Historic Resources 2001:79). This basic standard applies to the State of Maryland as well. Therefore, this document serves as a general outline for known and potential cultural resources as specified by the U.S. Army Corps of Engineers, Baltimore District DMMP. Site-specific testing and assessment of project effects will need to be addressed on a site-by-site basis and adhere to both the State of Maryland and Commonwealth of Virginia's Standards and Guidelines for Cultural Resource Survey (Shaffer and Cole 1994; Virginia Department of Historic Resources 2001).

ACKNOWLEDGEMENTS

The successful completion of this project is due in large part to the professionalism and dedication of numerous individuals in various capacities. The author would first like to thank. Kurt Frederick with Weston Solutions, Inc. of West Chester, Pennsylvania for allowing Panamerican to conduct this research.

We would like to acknowledge the U.S. Army Corps of Engineers, Baltimore District for their assistance during this project. Specifically we would like to thank Scott Watson and Ken Baumgard, archaeologists, for assistance relevant to this investigation. With the U.S. Army Corps of Engineers, Norfolk District, we would like to thank Helene Haluska and Gene Battey for their support.

With the Maryland Historical Trust (MHT), the author would like to thank Susan Langley and Steve Bilicki for their assistance during the archival research phase of this project. We must also extend our thanks to the entire MHT library staff, especially Mary Louise de Sarran, for all the support and assistance.

The author would like to acknowledge the staff at the Virginia Department of Historic Resources (VDHR) for being extremely helpful during the archival research.

In-house Panamerican personnel who must be thanked for their assistance with this report include Kate Gilow, office manager, Stephanie Gray, GIS specialist, and Rick Russell, report editor.

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1. INTRODUCTON

From April 3 through May 10, 2004, Panamerican Consultants, Inc. (Panamerican), of Memphis Tennessee, conducted a reconnaissance-level cultural resources survey for the U.S. Army Corps of Engineers, Baltimore District's Dredged Material Management Plan (DMMP). Under subcontract to Weston Solutions, Inc. (Weston) of West Chester, Pennsylvania, the purpose of the survey was to identify known cultural resources within proposed and existing dredged material placement sites (Figure 1). Cultural resources include archaeological sites, buildings, structures, objects, or districts. Based on the prehistory, history, and topography of each DMMP site, a determination of the potential for additional cultural resources within each site was also to be formulated.

As an agency of the Federal Government, the U.S. Army Corps of Engineers (Corps) has been entrusted with the protection and preservation of all cultural resources that may be adversely affected by their project activities. Therefore, they are responsible for determining if any properties within the current project area are eligible for listing on the National Register of Historic Places (NRHP) prior to the implementation their project activities. The Federal statutes regarding these responsibilities include Section 106 of the National Historic Preservation Act of 1966, as amended; the National Environmental Policy Act of 1969; the Archaeological Resources Protection Act of 1987; the Advisory Council on Historic Preservation Procedures for the Protection of Historic and Cultural Properties (36 CFR Part 800); and the Abandoned Shipwreck Act of 1987. In fulfilling these responsibilities the Corps initiated a reconnaissance-level cultural resources survey in order to identify the absence or presence of historically significant properties potentially eligible for NRHP listing.

The Corps is responsible for the maintenance of the Federal navigation channels within the district boundaries. Engineering Regulation 1105-2-100 (April 22, 2000) mandates that the Corps develop a DMMP if there is insufficient capacity to accommodate dredged material for the next 20 years. The goal of the DMMP is to dispose of dredged material in the most environmentally sound manner and to maximize the use of the material as a beneficial resource.

Relative to the Baltimore District's DMMP, a number of general methods of dredged material management/placement are under consideration including expansion of existing facilities to the feasibility of new options. These new options include Agricultural Placement, Artificial Island Creation, Beach Nourishment, Capping, Confined Aquatic Disposal (CAD), Confined Disposal Facility (CDF), Large Island Restoration, Mine Placement, Open Water Placement, Shoreline Restoration, Small Island Restoration, Wetlands Restoration and Innovative Use alternatives. Each of these existing and proposed alternatives were examined relative to all known cultural resources, as well as the potential to yield additional significant cultural resources. The results of each proposed and/or existing DMMP Area of Potential Effect (APE), including the potential for additional cultural resources, have been summarized in Table 1.

Table 1. Known and potential cultural resources within each of the proposed and existing DMMP areas.

Proposed and existing DMMP Sites	Known Cultural Resources within APE?	Potential for additional Cultural Resources within APE?
Agricultural Placement - Maryland	Yes	Yes
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Rappahannock Shoal Deep Alternate Open Water Site, Maryland (existing)	No	No
Wolf Trap Alternate Open Water Placement, Maryland (existing)	No	No

Prior to any site-specific project activities within the alternatives that have the potential for additional cultural resources, these alternative areas should be subject to a Phase I investigation to determine the presence or absence of potentially significant cultural resources which may be impacted by proposed project activities. Following the collection and analysis of data acquired during any additional Phase I survey, recommendations can then be made regarding any potentially significant cultural resources. Recommendations include avoidance, or additional testing of potentially significant sites in the form of Phase II testing to determine NRHP eligibility (if avoidance is not an option). After consultation with the SHPO and a determination of effect (upon the property) is decided, a consultation discussing avoidance, minimizing, or mitigating adverse effects on the property follows. Once a suitable agreement is reached between all participating parties, a Memorandum of Agreement (a legal document which states the compliance to Section 106 requirements has been met and agreed upon) is drafted in a written document. The proposed project may then proceed.

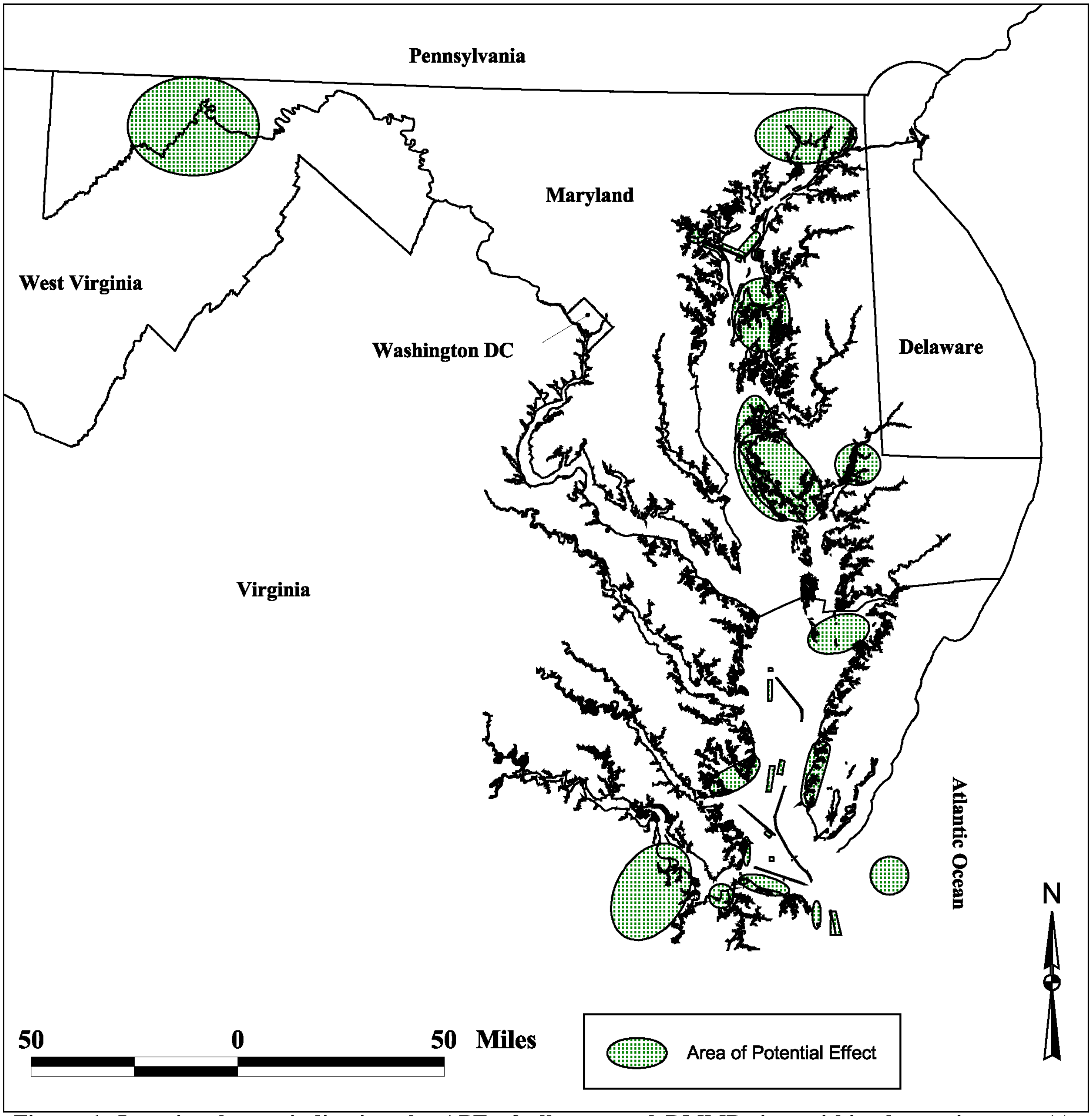

Figure 1. Locational map indicating the APE of all proposed DMMP sites within the project area(s), Maryland and Virginia. (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

2. METHODS

BACKGROUND LITERATURE AND RECORDS SEARCH

A reconnaissance-level cultural resources survey was conducted by Panamerican to identify all known prehistoric, historic (including archaeological sites, buildings, structures, objects, or districts), and NRHP sites relative to the Baltimore District DMMP. Specifically, the goals of the survey are: (1) to identify all previously recorded archaeological and historical properties in and near the proposed study areas; (2) to accumulate data to provide a cultural/historical context for the study areas, and (3) to synthesize the information in an effort to determine the potential for cultural resources for each of the non site-specific categories of dredge material placement options. This reconnaissance-level survey is designed to provide a general overview of the known types of cultural resources within each of the specified areas and to aid in determining the potential for additional cultural resources.

The development of a prehistoric/historical context of the Chesapeake Bay is essential in determining the potential resource base for each of the project areas, identifying known or suspected site locations, as well as providing a basis or context when applying NRHP eligibility criteria. To determine potential access and availability of data regarding the prehistory and history of the project areas, Panamerican analyzed pertinent regional manuscript and archival collections throughout the states of Maryland and Virginia. Material reviewed included archaeological site files, archaeological reports, and other sources of relevant material. Repositories in other locations as well as oral interviews with locals knowledgeable of the prehistory/history within the Chesapeake Bay region were also undertaken.

The primary source for historical and archival records regarding cultural resource sites within Maryland is the Maryland Historical Trust (MHT), located in Annapolis, Maryland. The MHT, established in 1961, assists in:

> identifying, studying, evaluating, preserving, protecting, and interpreting the state's significant prehistoric and historic districts, sites, structures, cultural landscapes, heritage areas, cultural objects, and artifacts, and less tangible human and community traditions (www.marylandhistoricaltrust.net/aboutmht.html).

The Trust operates within the Division of Historical and Cultural Program, an agency of the Maryland Department of Housing and Community Development. The archives and library, operated by the Division of Historical and Cultural Programs, remains the principal repository for architectural, archaeological, and cultural resources material within the State of Maryland. The inventory includes information on more than 8,000 archaeological sites and 80,000 historic and architectural resources.

All known cultural resources within the State of Maryland are plotted on a series of 7.5-min. quadrangle maps. These maps have all known archaeological sites, NRHP/Architectural sites, and all previous survey areas plotted for easy reference. These maps (with all known sites) are also available for review in a GIS format.

In Virginia the primary repository for cultural resources material is the Virginia Department of Historic Resources (VDHR) located in Richmond, Virginia:

> The Department of Historic Resources is the Commonwealth's central repository for survey information on Virginia's historic buildings, structures, sites, objects, and historic districts. The VDHR inventory includes survey information gathered statewide by the agency since 1967. Inventory files also include copies of WPA (Works Progress Administration) survey forms of the 1930s and copies of HABS (Historic American Buildings Survey) forms of the 1950s and 1960s. Inventory files also contain information supplied by private property owners, local governments, and volunteers (Virginia Department of Historic Resources 2001:11).

The VDHR retains files for all cultural resource sites within the Commonwealth of Virginia. Most sites are plotted on quadrangle maps (7.5 minute series, 1:24,000 scale) identifying the name and location of the site. Specific information regarding each site is kept in individual site file folders typically sorted by county. The VDHR maintains a list of all properties within the state listed on the NRHP as well as those potentially eligible for the NRHP.

The VDHR maintains the largest collection of unpublished, site-specific survey reports in Virginia. Review of these reports, written for specific federal or state undertakings within the state, were a useful source of information relative to the DMMP. The majority of the reports contain a prehistoric/historic overview or context and bibliography of sources cited (Virginia Department of Historic Resources 2001:11).

The U.S. Army Corps of Engineers, Baltimore District, located in Baltimore, Maryland, was visited relative to previous cultural resource investigations conducted within the district. The Corps maintains a small library of cultural resources reports, many of which relate to the current investigation. All pertinent, geo-referenced 7.5-min. quadrangle maps for the State of Maryland were also provided by the Baltimore District.

The U.S. Army Corps of Engineers, Norfolk District, was also contacted relative to any pertinent material regarding cultural resources and the DMMP. The Norfolk District provided the necessary geo-referenced, 7.5-min. quadrangle maps for the DMMP areas within the Commonwealth of Virginia.

Weston Solutions, Inc., the primary contractor for the DMMP, has collected an extensive amount of archival research material relative to the project. This material is available at the Weston Solutions, Inc. headquarters in West Chester, Pennsylvania. Weston also maintains a TeamLINK website outlining the DMMP and also contains site specific material. Both the library and TeamLINK site were reviewed for all pertinent cultural resource information.

A variety of secondary sources were also consulted during the archival research phase of the survey. Specific to shipwreck sites within the Chesapeake Bay region, Donald Schomette's book, *Shipwrecks of the Chesapeake Maritime Disasters on Chesapeake Bay and Its Tributaries, 1608-1978,* proved valuable as did Richard and Julie Pouliot's book, *Shipwrecks on the Virginia coast and the Men of the United States Life-Saving Service*.

The internet is a valuable source of information for information pertaining to cultural resources and the DMMP. Many documents and studies are available online as are most state archaeological survey requirements and permit applications.

The current online edition of the National Oceanic and Atmospheric Administration (NOAA) Advanced Wreck and Obstruction Information System (AWOIS) list was consulted relative to known wreck sites or obstructions within or near each of the proposed project areas. The AWOIS database contains information on over 10,000 wreck sites and obstructions/hangs in the coastal waters of the United States. Information within the database includes latitude and longitude of most features along with any known historic and/or descriptive details. The website, accessed at http://historicals.ncd.noaa.gov/awois/awoisdbsearch.asp allows researchers to simply type in either a known NOAA chart number or Latitude/Longitude coordinates to receive a list of all reported hangs, obstructions, and wrecks within a given area. To adequately cover most of the inundated project area(s), an enlarged box was formed around each APE. Results of these online searches were then printed, reviewed, and are presented as Appendix A. It must be stated that position accuracy of AWOIS wrecks and/or obstructions is highly variable and usually poor.

Another valuable website applicable to the current investigation is the National Register Information System (NRIS) which is supported by the National Park Service (NPS). This computerized database includes all properties listed on or determined eligible for the NRHP. The website (http://WWW.NR.NPS.GOV/nrloc1.htm) allows the researcher to search for a property by state, county, name, significant person, etc. The NRHP has identified and documented "in partnership with state, federal, and tribal preservation programs more than 76,000 districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture" (http://www.nr.nps.gov/nrloc.htm).

Another website that includes NRHP properties, as well as historic district information, can be found at http://www.nationalregisterofhistoricplaces.com. All properties and districts are listed by state (i.e. Maryland, Virginia) and county (i.e. Anne Arudel, Norfolk).

3. CULTURAL HISTORY

PREHISTORIC SETTING

Paleo-Indian Period (11,000 to 8000 B.C.)

The earliest human occupation of the Middle Atlantic region has been identified as the Paleo-Indian period (circa 11,000 to 8000 B.C.). Ancestors of the modern Native Americans, Paleo-Indians entered the North American Continent across the Bering Sea at a time when coastal shelves were exposed by receded sea levels (National Park Service 2003:82). Migrating eastward these hunters and gatherers reached the Chesapeake Bay region approximately 11,500 years ago.

The Chesapeake Bay did not exist during the Ice Age but was instead part of a flat coastal plain. As the glaciers retreated to the north, the shifting river channels (namely the Susquehanna, Potomac, Rappahannock, and James Rivers) created swamps, lagoons and grasslands. By 9,900 years ago, the current outline of the Chesapeake Bay began to develop as sea levels continued to rise. Changes in the environment impacted plant and animal species that likely affected the subsistence patterns of the inhabitants (National Park Service 2003:82-83).

Considered the earliest human occupation of the region the Paleo-Indian period has been divided into three overlapping phases. These phases are defined by variations in stone projectile points. The Early Paleo-Indian phase (11,500 to 10,400 B.C.) can be distinguished by Clovis points. The Middle Paleo-Indian phase (10,800 to 10,200 B.C.) is defined by both Clovis points and fluted/unfluted, lance-like points. The Late Paleo-Indian phase (10,400 to 9900 B.C.) includes Dalton points (small fluted and unfluted) and side-notched projectiles with curved, concave bases (National Park Service 2003:83).

Research indicates that settlement patterns during the Paleo-Indian phase included base camps, quarry sites and processing stations. The preferred component during the period included high-quality cryptocrystalline materials and tool kits including biface cutting tools, bolas, and wooden spear throwing devices (Thompson 2000:27, Mintz et al. 1994). Distributions of Paleo-Indian remains throughout forested and grassland environments (in the eastern United States) indicates these inhabitants exploited a variety of resources for subsistence (versus engaging solely in the hunting of now-extinct herd animals). Materials excavated from the Middle Shenandoah Valley in Virginia (Gardner 1974) included quarried jasper, river cobbles, and the manufacture of tools and habitation activities (Wilke and Thompson 1979:39).

Archaic Period (8000 to 1000 B.C.)

The Chesapeake Bay region became warmer and drier beginning about 10,000 years ago. With these climate changes came alterations to the estuaries of the region and the current Bay outline was formed between 5,000 and 3,000 years ago (National Park Service 2003:83). During the Archaic period the local inhabitants began to utilize the new bay and its resources more than the previous period. New types of tools, site locations, and subsistence patterns emerged as a result.

"This period of cultural adjustment from big-game hunting to mixed-resource use is known as the Archaic period in North American archaeology" (National Park Service 2003:83).

The Archaic period has been divided into three defined periods; the Early Archaic period (7500 to 6000 B.C.), the Middle Archaic period (6000 to 4000 B.C.), and the Late Archaic period (4000 to 1000 B.C.). Documented remains from these three periods are somewhat limited suggesting that populations were small and dispersed. Archaic groups likely followed a mobile settlement pattern consisting primarily of hunting and gathering seasonal plant and animal resources (Wilke and Thompson 1979:40). The hunter-gatherer subsistence was successful for centuries and by the Late Archaic period larger and more stable population expanded their subsistence base (National Park Service 2003:83).

Characteristics of Archaic projectile points remain similar throughout the majority of the period. However, later in the period local stylistic changes are evident. Early Archaic projectile points have been found on the surface of many sites along the Potomac River. By the 1970s only one Early Archaic site had been identified along Maryland's eastern shore of the Chesapeake. Located in Somerset County, the Chance site has been referred to as the most productive Early Archaic site in Maryland (Wilke and Thompson 1979:41; Cresthull 1971).

Woodland Period (1,000 B.C. to A.D. 1600)

The Woodland period is also divided into three phases; the Early Woodland period (1000 to 400 B.C.), the Middle Woodland period (400 B.C. to A.D. 900) and the Late Woodland period (A.D. 900 to A.D. 1600). 1000 B.C. marks the first appearance of pottery into the archaeological record and the Chesapeake Bay had developed into its current form (Thompson 2000:28). From the north grit-tempered and cord-marked pottery were introduced into the region, whereas copper beads (from the northwest) and tubular slate smoking pipes (from the mid-west) made there way to eastern coastal areas (National Park Service 2003:83).

During the Early Woodland period settlement continued along the coastal zones and peoples utilized the wealth of shellfish and forest products available in the area. Tools included the use of ground stone axes, adze, large flake, and microlithic tools (Thompson 2000:29). Many of these Early Woodland sites (along the eastern shore of the Chesapeake Bay) are now likely inundated due to erosion of the shoreline.

The Middle Woodland period (400 B.C. to A.D. 900) is distinguished by a number of sub-periods. This period has been described as "a time of increasing social, cultural and political complexity that was influenced by the Ohio-based Hopewell cultures; and the late Middle Woodland, ca. A.D. 200/300-900, apparently a time of decreased sociopolitical and material complexity…"(Thompson 2000:29; Mintz et al. 1994). Crops such as beans, corn, and squash became a staple food item throughout the Chesapeake Piedmont and coastal plain region around 600 to A.D. 900 (National Park Service 2003:84). Chronology for the Middle Woodland period includes the Popes Creek Phase (400 B.C. to A.D. 200), Mockley Phase (A.D. 175 to A.D. 700) and the Selby Bay Phase (A.D. 200 to A.D. 800). The two pottery types for this period include Popes Creek Net Impressed and Popes Creek Cord Marked. The Popes Creek projectile type is called the Rossville (Thompson 2000:29).

The Late Woodland period (A.D. 900 to A.D. 1600) is characterized by the introduction of maize into the Mid-Atlantic Region. Within the archaeological record are the first signs of horticulture. The chronology of the Late Woodland period includes the Little Round Bay Phase (A.D. 900 to A.D. 1300) and the Sullivan Cove Phase (A.D. 1300 to A.D. 1600). Other major developments during the Late Woodland Phase include political competition and formal warfare (resulting in fortified villages), indicating social maturation and economic diversification. Town layout in the coastal plains was more “irregular” versus the more planned layout of Piedmont towns. Piedmont towns, laid out in circles around an open plaza, resembled the towns of the Mississippian cultures of the south and Midwest. Local inhabitants also began harvesting more food items from the Bay including anadromous fish (shad and herring), shellfish, and migratory waterfowl (National Park Service 2003:84).

COLONIAL PERIOD

European Colonization (A.D. 1500-1775)

The first European to discover the opening to Chesapeake Bay was very likely Verrazzano. Verrazzano was from Florence and was sailing for Francois I, the King of France. He left European waters on a voyage to find a route to China in January 1524. His vessel, *La Dauphine*, named after the French heir to the throne, was 100 tons and manned by a crew of 50. After a tempest-tossed crossing he fetched up close to Cape Fear, North Carolina in early March. After a brief reconnaissance south, he turned north to avoid the Spanish presence to the south. Passing the outer banks of the Carolinas, Verrazzano sailed on until he observed more varied topography in the approximate region of New Jersey. It is likely he passed the entrance to the Chesapeake en route. He continued on his voyage and returned to France in July. Being a competent seaman and navigator, Verrazzano was able to conclude that he did not find a way to China, but a New World (Morison 1971:314). It would not be until decades later that the French would place a settlement in this part of the New World.

The Spanish held jealous claim to their North American possessions, but focused on exploiting the easy wealth of Mexico and South America. Some exploratory voyages were reported into Chesapeake Bay by the Spanish as early as 1525, which they named “Bahia de Santa Maria” (Koski-Karell 1979b:18). The North American coast did not appear to offer easy profits like the rest of the burgeoning empire, thus the area was not exploited by the Spanish. Other voyages in the north may have influenced the Spanish crown not to invest in a passage to the east by looking north and west. However, there were others who hoped to profit from the region. During 1562, the French sent two vessels to explore along the Carolina coast. Jean Ribaut took possession of the area in the name of the King of France Charles IX. His original settlement of Port Royal did not survive long, as there was internal dissention, and the post was soon abandoned. The French were not discouraged, and two years later a second attempt, under Rene de Laudonniere, established a settlement at Fort Caroline on the St. Johns River in Florida (Coker 1987:3).

Chesapeake Bay's first settlement by Europeans was during a voyage of the Spaniard Pedro Menéndez de Aviles. In 1570, Menéndez de Aviles attempted to establish a Spanish base far north of St. Augustine. He sent eight Jesuits to the bay to convert the natives. However, short on supplies, the priests failed to establish any permanent settlement and were murdered a year later.

Menéndez de Aviles moved north, returning later on a punitive expedition and executing eight of the suspected culprits (Morison 1972:683). The Spanish, although they held claim to the New World, would not attempt to establish any colonies north of the Carolinas.

During the late sixteenth century the English began to set colonies in the Americas. One of their motivations was to find a northwest passage to the Far East and circumvent the Spanish colonies. Sir Humphrey Gilbert obtained a patent to pursue those goals but was lost on a voyage; the patent passed to his half-brother Sir Walter Raleigh (Bauer 1988:21). Raleigh was the inspiration to colonize the New World for the English. The first English colony was set on the outer banks of North Carolina in 1585 at Roanoke Island and lasted a year. The colonists abandoned their New World habitation at the site of the first relief mission, and by the end of June were being transported back to England by Sir Francis Drake. The second relief mission, arriving only weeks later, found Roanoke completely deserted and a small detachment of men was left to hold the fort. This small garrison was overcome by a band of natives, leaving no one to meet the next set of colonists. A second colonization effort, supported by Raleigh, was to settle in the Chesapeake Bay in 1587, but landed instead at Roanoke. Due to fears of Spanish invasion of England, there was not a relief expedition until 1590. By then the colony was again deserted (Lacey 1973:126, 154).

Another decade and a half would pass before the English would attempt a permanent settlement on the North American continent. A change in European political conditions, with the defeat of the Spanish Armada and the rise of King James I, contributed to a more expansive maritime policy. In order to promote maritime activity, an act passed in 1604 "... to encourage the Seamen of England to take Fish, Whereby they may increase to furnish the Navy of England" (Hunter 1935:84). Other acts under King James I set the foundation for an expanded marine policy to increase English shipping to the detriment of prior monopolistic practices. Although Queen Elizabeth sponsored colonization efforts to the New World it was not until the reign of James I that a more systematic and sustained effort at trade between America and England emerged.

In 1606, James granted the first Virginia Company Charter, setting in motion England's control of colonial trade. A fleet of three English vessels under the command of Christopher Newport, in the employ of the Virginia Company, passed Cape Henry and entered the Chesapeake Bay in 1607. Settling fifty miles inland at Jamestown on the James River, the colonists met a similar fate of other early English settlements: disease and death.

The next year more colonists arrived with more supplies; yet again disease and death took their toll. During the spring of 1610 the colonists were ready to abandon their New World home, but more relief was sent from England and the settlers stayed. The Virginia colony would remain dependent on English supplies from across the sea for years (Labaree et al. 1999:42). This would mark the beginning of England's permanent settlement in the Chesapeake Bay region, which then grew into an important trade colony for agricultural goods.

The English colonists continued to expand throughout the Chesapeake Bay area. The next settlements were focused in the south, close to the mouth of the bay as well as along the various rivers and tributaries. Settlement in the northern portion of the bay took another two and a half decades with the settlement of Saint Mary's City in Maryland. Travel between these settlements was mainly conducted by water, as there were no roads by which to make easy passage. Beginning around 1611, as the colonies grew and settlements dispersed, vessel construction within the region expanded for local use (Koski-Karell 1979b:19).

Early boat and ship building within the Chesapeake Bay area was influenced by European ship builders. Baker states that "the Colonists in each of these regions would naturally have employed vessels sailed or carried over from their home countries or would have constructed types with which they were familiar" (1962:9). Over time, as the colonists became familiar with new surroundings and sailing conditions, the vessels were adapted more to local conditions.

Tobacco was introduced into the colony around 1612 and became a profitable agricultural mainstay of the region. This crop was a mixed blessing for the region. Since it was profitable, planters focused their resources on expanding its production to the exclusion of other produce and industries. Colonists became dependent on outside shippers and merchants rather than following paths that would have led to self sufficiency. British shipping to and from the Chesapeake Bay became the major lifeline between the colony and her patron. In 1621, the Virginian colonists acquired the right to be the sole producers of English tobacco by a proclamation of King James, which prohibited both domestic production as well as importation from foreign sources. During 1622, the Privy Council reiterated to the Virginians that trade of all tobacco and other goods from the colony had to be shipped via England and not directly to foreign ports. A year later, a domestic Virginian law was passed, in order to facilitate customs collection, which stated that cargoes must first be landed in "James City" (Jamestown) prior to sale (Hunter 1935:96).

In order to encourage an indigenous Virginian shipbuilding industry, or at least start a shipbuilding tradition, numerous shipbuilder and carpenters were sent to the colony in 1622. Twenty-five carpenters were sent with orders to build vessels necessary for trade and transport within the colony. They began by making small vessels for river and bay travel. While it was noted that the region had a good supply of timber for boat building, more profitable trades, such as tobacco, diverted attention from ship construction (Hall 1884:128).

James I, successor to Charles I, did little to improve shipping with respect to the colonies. By 1633, the Privy Council had to take action due to the increasing trade between the Dutch and the colonists of Virginia. The increasing volume of trade between England and Virginia was concomitant with an increase in legislation regulating trade. At this time England's northern colonies were beginning to become more self-sufficient and industrious, producing numerous types of vessels (Hunter 1935:109). Some of the vessels from the northern colonies began to find their way to the Virginia Colony, and the new American-made vessels began to be used in the waters of Chesapeake Bay.

The English Civil War saw the severed head of Charles I and inaugurated the Cromwellian era. Colonial trade and policy managed to muddle through these internally unstable times. The Dutch were once again acting as agents in transporting English colonial goods. In order to discourage the Dutch and encourage English shipping and ship building, Parliament passed more legislation to encourage trade. In 1650 a law was passed forbidding foreign nations to trade with the colonies. The Navigation Act of 1651 aided in precipitating a war with the Dutch as it excluded foreign shipping from English and colonial commerce. When a squadron of English ships reached Virginia in 1652, Dutch ships were found engaged in active trade with the colonials in defiance of the Acts (Hunter 1935:124,132). Trade with the Dutch continued, actively engaged in trade in the Chesapeake Bay. To the north, the Dutch in New Amsterdam appeared to be the rising star of American colonial ports. However, with the restoration of Charles II in England and a more aggressive colonial policy, the English took the Dutch colony in 1664 and removed them as a North American competitor (Labaree et al. 1999:46).

Having forcefully removed one colonial competitor, the English still tried again to encourage growth in her maritime colonial power. Numerous other incentives were passed in the seventeenth century in order to encourage colonial shipbuilding. Trade encouraged shipping and shipping encouraged trade.

By the dawn of the eighteenth century, England had eliminated the Dutch colonial threat from North America and began to focus on the threat posed by the French to the north and the Spanish to the south. Chesapeake Bay, however, was somewhat insulated from this activity. The region grew and prospered. The Treaty of Paris (1763) all but removed the other two powers from North America (east of the Appalachians).

Once the contest for American colonial supremacy was settled, locally-built vessels increased to meet demand as a result of improved local economic conditions.. British rule extended from Florida to Newfoundland, and trade in the Chesapeake flourished. With a long occupation and knowledge of local conditions, the vessels used in the bay began to be built for the environment in which they worked. "The naval architecture of the vessels being built in the bay area during the eighteenth century underwent a process of evolution and innovation" (Koski-Karell 1979b:20).

One of the earliest types of craft extensively used in the region was the sloop due to its construction characteristics and versatility in the waters of the bay. As trade expanded beyond the bounds of the bay so too did the development of craft to carry on that trade. One of the finest examples of Chesapeake Bay ship construction is known as the Baltimore Clipper. These craft were long, light, had low freeboard, and were fast. Initially called Virginia Built for their characteristics, these vessels became a favorite of American privateers. Developed around the time of the American Revolution, the vessels were not constructed for bulk commerce, but rather as fast, seagoing vessels (Chapelle 1988:16).

After the Revolution, the Baltimore Clipper found use in the Caribbean against the French and Spanish, as they and England were in a seemingly constant state of hostility. American relations with France were continually strained, leading to the Quasi-War. During this time, belligerence between the new United States and her ex-colonial overlord Great Britain saw the type employed as privateers: "During the war, the port of Baltimore served as the base for over a hundred American privateer vessels..." (Koski-Karell 1979b:22). Many models were taken to great extreme for the speed needed to escape larger Royal Naval vessels and to close on slower merchantmen (Chapelle 1988:37).

Following the War of 1812 the vessel type had developed into such a form that there were few commercially viable products the vessel could transport profitably. One of the few commodities that was profitable were slaves. Speed was of the essence for slavers as the British and later the United States began anti-slave cruises to put an end to the trade. Larger ships could not be used for the trade after active enforcement of anti-slave patrols. The final days of the Baltimore Clipper produced a fast, rakish vessel with very little use except for slave transport, a trade that was to be abolished by international cooperation in the nineteenth century. With the suppression of the slave trade, the Baltimore Clipper could not be an attractive economic investment and their type began to disappear from the waters of the world (Chapelle 1988:111).

Just prior to the American Revolution, Virginia and Maryland supplied Great Britain with the largest proportion of North American colonial products, especially tobacco. A large portion of the American population lived in this region, and most within a short distance of the Chesapeake or one of its numerous tributaries. Due to the population's close proximity to water, centralized settlements were not needed and there were only a few port towns. Without a concentration of capital, British merchants and shippers in general controlled the trade with the Chesapeake and areas south. The commerce of Chesapeake Bay was funneled through Cape Henry, and carried in British-controlled vessels. Numerous colonial and British legislative acts began to restrict trade and commerce between Britain and the United States of America. Finally, Parliament ordered the seizure of all American vessels, and the Continental Congress authorized all American ports open to ships of any nation (Labaree et al. 1999:133).

When the American Revolutionary War started, the British had the strongest navy the world had ever seen. These naval resources were used to choke American commerce and trade, in effect putting extensive pressure on maritime activities. The Chesapeake Bay region, with its dependence on British shipping and merchants, was the choke point between Cape Charles and Cape Henry, and would be adversely affected by hostilities. In 1776 the British burned Virginia's premier port at Norfolk (Engle and Lott 1975:51). With ingenuity and determination, the Continental Congress and various colonial governments established naval forces and privateers to harry British shipping: "Virginia and Maryland, concerned primarily with defending the shores of Chesapeake Bay, launched a variety of small sailing and row vessels (Labaree et al. 1999:141)."

The fledgling United States had a minuscule navy compared to the British. In order to help even the odds a bit, numerous privateers engaged in the conflict. From the ports of the Chesapeake flooded forth a wave of vessels intent not on destroying the British navy but its commerce. Approximately 2,000 vessels were granted letters of marque and reprisal during the Revolution. These vessels would take a toll on British shipping and even capture supplies intended for the British Army. It is estimated that approximately 3,100 British merchantmen were taken, much to the chagrin of Britain (Labaree et al. 1999:140).

The might of the British Royal Navy could not be stopped by the colonials alone. A British force sailed into the Chesapeake Bay and attacked northern portions of the bay, including Philadelphia. Until the entrance of the French and Spanish into the war, the British had a virtual monopoly on projection of maritime power. However, with European aid, the war came to a dramatic conclusion. During 1781, the British Army was forced to Yorktown by Continental and French forces, hoping to be aided by supplies arriving from New York. The French, under Comte de Grasse, had their fleet off the Virginia Capes; when the British Navy arrived they fought an inconclusive battle and the British withdrew. The French moved into the Chesapeake, took up position and bottled in the British ground forces at Yorktown. By 1782 the British sued for peace and the Treaty of Paris was ratified by Congress in 1783.

Independence and Expansion (A.D. 1776-1825)

The post-Revolutionary era saw an expansion of American trade. The world was open to the adventurous American mariner. The European nations engaged in war with or against the Unites States reverted to the old philosophies of mercantilism and cut off or restricted trade. Partially prohibited from European trade, the new nation looked to the Orient for opportunity. Although this trade was valuable, it never accounted for a large percentage. Chesapeake Bay tobacco was still a commodity welcomed in Northern Europe. By 1790 American trade had grown larger than it was before or during the war. Soon, food stuffs overtook the traditional Chesapeake Bay crop of tobacco as the chief export. Approximately one-third of all trade was carried out with Great Britain.

As the young and proud United States was forced into another war with Great Britain, the country again had to utilize the services of privateers in the conflict. The ports and rivers of the Chesapeake were to be closed by the superior British fleet. Numerous British vessels entered the Bay and caused a vast amount of destruction. All commercial traffic on the Chesapeake ceased; the small American flotillas of gunboats could do nothing (Knox 1936:109).

During the War of 1812, American maritime activity was under great pressure from the British. Ports were blockaded and trade suffered. The mouth of the Chesapeake was again used as a strangle point and the British saw the value of establishing a barricade in the form of the 74-gun HMS *Plantaganet* off Cape Henry. Robert Fulton, known as the father of the steamboat, was also very active in various forms of naval warfare, one being "torpedoes", (now known as mines). Elijah Mix, a Chesapeake Bay mariner, obtained some of Fulton's torpedoes and conducted one of the first military underwater attacks in American history. Mix's method of attack was to tow the mine and attempt to attach it to its target. During the first attempt they were sighted; the second attempt saw the mine cast away to drift toward the *Plantaganet* where it exploded prematurely. Although unsuccessful, the attack did cause some consternation among the British blockading captains (Hutcheon 1981:121).

The port of Norfolk, the Navy yard at Gosport, the town of Portsmouth, and the frigate *U.S.S. Constellation*, along with a number of gunboats and numerous merchant vessels, were trapped in Norfolk by the British blockade of the Elizabeth River. British Admiral Warren, acting under orders from the British Admiralty to expand the blockade of the Chesapeake and destroy the trapped American naval force, decided to destroy the Portsmouth/Norfolk complex (consisting of Fort Nelson on the Portsmouth side) and Fort Norfolk (on Lambert’s Point in Norfolk), the Gosport Navy Yard, and the *U.S.S. Constellation*. This necessitated the destruction of the American line of defense at Craney Island, which consisted of an unfinished fort armed with three heavy guns and manned by between 350 and 500 U.S. Army regulars (Hallahan 1986:43). Defenses also included four ships sunk as an obstruction in the channel between Craney Island

and Lambert's Point. Anticipating the British attack on Craney Island, the Americans reinforced the island's defenses with guns, ammunition, stores, sailors and marines from the *Constellation*. The final garrison totaled 767 men. The British, who had grossly overestimated the Craney Island force as being close to 5,000 men, attacked via land and sea with a force of anywhere from 1,400 to 4,000 men, eight rowed gun barges, and several ships-of-the-line. Utilizing the improvised gun battery to great effect by firing round, grape, and cannister shot, the American force repelled the numerically superior British force. The British ships-of-the-line were ineffective given that the shallow water around Craney Island prevented them from getting within range of their cannon. The British quickly broke off the attack and retreated, but not before the American gunners sank between two and five of the British gunboats (exact accounts of the battle vary considerably).

In the vicinity of James Island, the Battle of the Ice Mound occurred on February 7th, 1815, off Tobacco Stick, Maryland, and was the last engagement of the war in Maryland. A longboat from the HMS *Dauntless*, with a crew of 20, raided the area around the mouth of the Little Choptank River. While on its return to the Patuxent River, the vessel became caught in the ice off James Island. The next morning, after a two-hour battle in which one British seaman was killed, the small party surrendered. The vessel, including its cannon, were taken to James Island and sold at auction (Eshelman 2000:1)

After the War of 1812, the growth of the Chesapeake Bay region accelerated. Shipping from all the bay ports increased and the growth of Baltimore at the north end of the bay increased traffic. As early as 1813 a steamboat, the *Chesapeake*, was working the northern part of the bay on a route between Baltimore, and Elkton, Maryland. Steamboats first entered the Chesapeake from the sea via Cape Henry in 1815. Late in May, Robert Fulton's *Washington* became the first steamboat entering the bay, arriving at Norfolk. Less than a month later, in mid-June, another steamboat, the *Eagle*, entered the waters of the Chesapeake, again stopping at Norfolk (Braynard 1963:20). Numerous steam-powered vessels were later constructed and entered service on the bay.

Industry and Urbanism (A.D. 1826-1950)

Steamboat service rapidly expanded in the Chesapeake after the 1820s: "Steamboats were ideally suited for exploiting the Chesapeake and they rapidly replaced sailing vessels on the passenger and fast freight routes" (Greenhill ed. 1993:53). The entire bay region was brought into contact by a day's travel or less. Also, the agricultural produce of the region could be quickly and efficiently exported to other urban centers. The tidewater region also prospered by having quick and convenient access to the industrial products of the urban centers (Morison et al. 1991:13).

Steamboats in the Chesapeake took on some local characteristics with the technology available for the day. Boats on the bay were side-wheeled steamers powered by low-pressure boilers. The earliest method of transferring steam power to the paddle wheel was via the crosshead engine. Although simple in theory and construction, this method was prone to breakage. The vertical beam or "walking beam" engine supplanted the earlier model. This engine differed from the earlier model in the method of transferring the power to the paddle wheel. A distinctive mode of propulsion, the piston transferred its power via a diamond shaped beam set in an A-frame

(Morison et al. 1991:20). This type of engine was used well into the twentieth century by vessels on the bay.
Although Virginia had large stands of timber and a large expanse water front land, shipbuilding was never a large industry. Most vessels built in Virginia were small. By the mid-nineteenth century, Norfolk grew as Virginia's premier shipbuilding center, although small. Between 1853 and 1854, only ten vessels were constructed in the region. A yellow fever outbreak and the deaths that followed in its wake cut the growth of the port (Hall 1884:129).

A slow change was taking place in shipbuilding in the United States: the shift from wood to iron and later steel hull construction. Technical advances were taking place in Delaware River steamboating in the 1840s in the form of iron-hull construction. The shippers on the Chesapeake were aware of these developments, and by 1847 the iron-hulled *Mount Vernon* was employed in the bay (Greenhill ed. 1993:54). As wood was still comparatively cheap and American iron was going into railroads, it would be a long time before metal steamboats became the standard on the bay. The Civil War would put a temporary halt to commercial experimentation.

During the middle of the nineteenth century, the Chesapeake region was breached by the conflict of the Civil War. The American Civil War constricted shipping through the Virginia Capes, with both sail and steam suffering the effects of the national conflagration. The naval yard at Norfolk was quickly appropriated by the Confederacy in 1861. The Union abandoned and attempted to burn the facility, but a large number of supplies, cannon, and powder were transferred to the South. The Confederacy had to burn and abandon the yard a year later, facing Union pressure (Howarth 1991:182).

Chesapeake Bay was to undergo change after the Civil War: the shipbuilding center of Baltimore took a general decline. "The war of 1861, with the changes which took place in that period in favor of steam vessels and strikes and high wages, put a virtual end to ship-building in Baltimore, few merchant vessels, other than side-wheel steamboats and propeller tugs, having been built since that time" (Hall 1884:127). Further south in the bay the region's agricultural prosperity grew. Norfolk acted as the regional commercial center. Agricultural products from the region would flood into the port to be shipped by steamer to New York or Baltimore. The local craft were bug-eyes and canoes built and owned by the small farmers of the region. These craft had sloop and schooner rigs, with schooner being preferable. A small vessel was considered to be approximately 26 feet, while larger vessels approached 45 feet, with 35 feet being average (Hall 1884:130). These vessels carried the local trade, while larger vessels distributed the merchandise to urban centers on the east coast.

One major change in shipping in the Chesapeake was the introduction of a new method of propulsion, the propeller. Steamboat design was to be affected by this new form of locomotion. The *New Jersey* was the first commercial vessel to use a propeller in the bay in 1867. Paddle wheel vessels began their ultimate decline from then, but continued in use through the twentieth century. (Morison et al. 1991:22).

During a survey of American shipbuilding taken in 1882 to 1883, Hall (1884) recorded numerous aspects of the industry. For the census year the number of vessels constructed in Virginia was a rather low 26 with a tonnage of 514, also small. Hall’s discussion of Norfolk states: "This is one of the most conveniently situated on the coast for the building and repairing of vessels, and in much employed by the department for that purpose…The location of the yard and the harbor access is praised but the yard is criticized for not having the plant for iron-shipbuilding" (Hall 1884:240).

By the end of the nineteenth century other technological developments began to affect steamboat design. Steam boilers and engines became more efficient with the application of some principles of thermodynamics. Better and more reliable construction methods for boilers allowed them to attain higher pressures. Steam engines were then designed to take advantage of these higher pressures. The compound, triple-expansion and quadruple-expansion engines were developed, which were highly efficient in turning steam into mechanical power. Steam entered a high-pressure cylinder, but instead of being exhausted into the atmosphere, it was directed to other, progressively lower pressure cylinders to drive more pistons for more power. After the lowest pressure cylinder was filled the steam was exhausted (Greenhill ed. 1993:106).

Another change that aided the growth of the area was the military. Previously, most military action in the region caused devastation. However, Norfolk and Portsmouth became a major naval center at the end of the nineteenth century. Through the two World Wars the region grew based upon this military connection. Today, the mouth of the Chesapeake Bay opens to one of the largest naval facilities in the world and is home to the U.S. Atlantic Fleet (Watts 2000:14).

By the beginning of the twentieth century, the technological achievements of the United States with respect to shipping on the Chesapeake reached their zenith. The region developed and grew from the earliest Spanish explorations in the wooden sailing vessels of the sixteenth century. English and Dutch trading vessels exported the agricultural produce of the region. Wars saw British and French vessels transit the region. With peace came prosperity and numerous vessel types were developed for the local conditions of the bay. Technological developments of the nineteenth century radically changed the nature of shipping on the Chesapeake. Steam power, propulsion methods and new construction materials offered shippers an opportunity for regular and more efficient transportation. During the twentieth century, wars made a positive impact due to the placement of important naval facilities in the region. The vessels that entered and exited Chesapeake Bay past Cape Henry filled every description and method of construction known to man since the discovery of the New World.

4. GEOLOGICAL AND CULTURAL SETTING

The Chesapeake Bay is centered within Maryland and Virginia's coastal plain region (Figure 2). Directly to the west are the Piedmont plateau and the Appalachian Mountains. These three regions roughly parallel the Atlantic coastline increasing in elevation and relief to the west (Wilke and Thompson 1979:17). The coastal plain is described as:

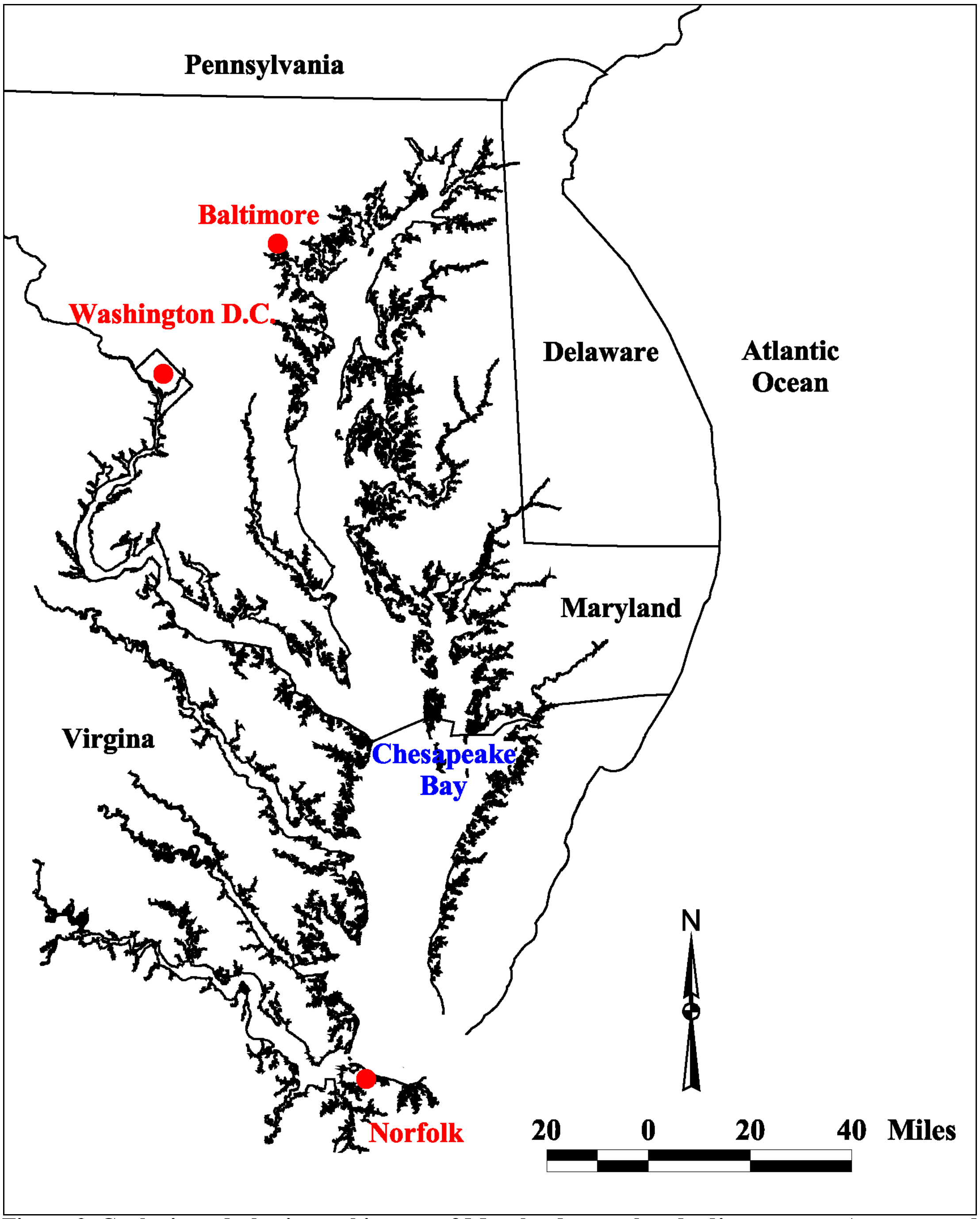

Figure 2. Geologic and physiographic map of Maryland coastal and adjacent areas (as presented in Wilke and Thompson 1979:18).

> A low, flat surface that extends from the coast of Maryland to the Fall line west of Chesapeake Bay. This plain is a wedge of unconsolidated clays, silts, and sands with some gravels, ranging, in age from Cretaceous to Pleistocene. Underlying these sediments is an eroded surface of predominantly Pre-Cambrian crystalline rocks that emerge at the Fall Line. While the Eastern Shore coastal plain is low and flat, the Western Shore is a rolling upland marked by relatively higher elevations.
>
> Most of the Maryland shoreline is broken and sinuos because sediments of the coastal plain offer little resistance to erosion and because low-lying portions are easily inundated. Only the bayshore of Calvert County and parts of Anne Arundel, Queen Annes, and Kent Counties are marked by higher bank or relatively straighter shorelines (Wilke and Thompson 1979:17-19).

Variations in temperature and precipitation affected the expansion and contraction of the large continental ice sheets during the Pleistocene epoch (1,000,000 to 10,000 B.P.). The nearest ice sheet to the Chesapeake Bay way approximately 200 km north of Maryland during the last continental glaciation (around 25,000 B.P.). Sea level changes and sediment deposits around the Chesapeake Bay are the indirect effects of this nearby glaciation. Covering much of the land around the Chesapeake Bay is a layer of loess (windblown silt) deposited in the region approximately 14,000 to 10,000 B.P. Evidence suggest the Chesapeake Bay is very young, perhaps no more than 8,000 to 10,000 years old. The Bay and the lands that surround it are the result of changes in sea levels associated with the fluctuations of major ice sheets during the Pleistocene era (Wolman 1968:17). Today, the most pronounced geologic process affecting the coastal plain is erosion associated with surface runoff and shoreline wave action (Wilke and Thompson 1979:19).

By definition the Chesapeake Bay is an estuary (one of the largest in the world), a coastal body of water with connection to the Atlantic Ocean as well as dilution of sea water by land drainage. The Chesapeake Bay is approximately 180 miles in length with a mean width of 15 miles. Overall there are 50 major tributaries with numerous smaller tributaries emptying into the Bay. Average water depth within the Bay is 27.7 feet and 21.4 feet near the tributaries (Wolman 1968:7-8).

CULTURAL RESOURCES AND THE GEOLOGY OF THE CHESAPEAKE BAY

Composed of the drowned drainage system of the ancestral Susquehanna River, the Chesapeake Bay continues to evolve as natural processes affect the local environment. Some of these natural processes include the transportation and deposition of sediments as well as shoreline erosion. The evolution of the bay includes the continued submergence of low profile parts of the coastal zone. As a result many cultural resources, located along previously existing shoreline areas, are being inundated (Wilke and Thompson 1979:23).

A study (by Singewald and Slaughter) in 1949 indicates that between 1845 and 1942 "approximately 6,000 acres of land had been lost to shore erosion along this 230 miles [the linear miles of Chesapeake Bay shoreline within Maryland] or an average of 26 acres per mile" (Wolman 1968:27). However the rate of inundation throughout the Bay is variable depending upon a variety of factors. These factors include (but are not limited to) shoreline configuration, wind/wave action, movement of sediment, and the consistency/structure of coastal material:

> In some areas several thousand feet of erosion has taken place in the period of approximately 100 years. Elsewhere the amount is perhaps 25 to 50 feet or even zero in the same period of time. The net loss from 1845 to 1942 is exceedingly high in Dorchester County, for example, while the amount lost in Baltimore County in considerably less (Wolman 1968:27).

Erosion constitutes the greatest threat to archaeological sites within the Chesapeake Bay region. As of 1994 it was estimated that 66 (75 percent) of known prehistoric sites were suffering from erosion. Since the majority of known prehistoric sites are located along the Chesapeake Bay shoreline, erosion has become the paramount concern regarding the protection of these sites. Other less destructive impacts to prehistoric resources within the bay include (but are not limited to) vandalism, commercial fishing, and channel maintenance (Blanton and Margolin 1994:83).

The historical and cultural landscape (both past and present) as well as the geology of the Chesapeake Bay is inextricably intertwined. The dynamic nature of the Bay and its historic landscape have together formed a region rich in cultural history.

CULTURAL RESOURCE TYPES WITHIN THE DMMP

The Chesapeake Bay encompasses approximately 2,500 square miles of water; its watershed (including 64,000 square miles of land in six states) is drained by 124,000 miles of streams and rivers. As a collective whole the Bay is a complex ecosystem including an extensive history of cultural diversity.

The National Park Service (NPS), responding to a request from Congress, produced the Draft Chesapeake Bay Special Resource Study (SRS) and Environmental Impact Statement to describe conceptual alternatives for how the NPS might represent the national significance of the Bay. As a result a comprehensive list of cultural resource types was compiled by the NPS and confirmed through public workshops and consultations:

- ➢ Water oriented settlement sites
    - American Indian
    - Colonial
    - Plantations
    - Port/maritime communities
        - Docks
        - Boatyards, shipbuilding sites
        - Fishing piers and wharves
        - Seafood processing establishments
        - Maritime historic districts
    - Chesapeake Bay vessels (Skipjacks, Bugeyes, etc.)
    - Water based transportation routes
    - Waterman fishing areas
    - Bay-oriented agricultural landscapes, working farms
- ➢ Water connected military sites on the Bay
    - Revolutionary War sites
    - War of 1812 sites
    - Civil War sites

- 20th century sites
- (National Park Service 2003:24-25)

This list represents the variety of cultural resources within the Bay as well as those that may be affected by the proposed DMMP.

VESSEL TYPES WITHIN THE CHESAPEAKE BAY

The types of watercraft that have been used throughout the Chesapeake Bay have evolved through time based on the cultural and economic requirements during both the prehistoric and historic periods. The change was gradual as new types of boats were added to supplement or replace exiting watercraft.

A multitude of European-built or European-style vessels were in use during early American history. However, there is little specific information on vessels in use prior to 1870. Most records only give brief descriptions of the vessel type and little else. Therefore, it is often hard to distinguish among various types of vessels of the period by description alone. Many vessels were described by hull type, whereas others were described by their rig or sail configuration - still others are described by both hull and rigging type. Naval vessels are usually described by armament and personnel. For example, a sloop is commonly used to refer to a small single-masted sailing vessel with a fore-and-aft rig, but in the case of a naval vessel, it is described as an armed vessel having all its guns on a single deck regardless of sailing rig or hull configuration. It's also used to refer to any naval vessel, regardless of armament, sailing rig, or hull configuration, that is commanded by an officer one rank lower than Captain. In any case, differences in vessel type are not always clear, and it is not always certain that any given vessel was described correctly at the time. However, certain types can be discerned, and are listed and discussed below.

Little evolution of sailing craft occurred from the time of early colonization to the eighteenth century. Upon the introduction of the schooner in the early eighteenth century, great improvements in ship design began to take place. The large, billowy sails of the age of exploration disappeared, replaced by taller masts and more sails of smaller dimension. Hulls became longer and more hydrodynamic, while the fore and aftercastles disappeared. Rigging became lighter and stronger as better materials were developed. In the nineteenth century, the sizes of vessels increased dramatically, culminating in the huge clipper ships and down-easters of the 19th century. Metals replaced wood in the construction of hulls and fittings, while wire replaced hemp in the rigging. Eventually, steam replaced sail altogether, although not until the twentieth century. Schooners were the last to go, lasting through the first half of the twentieth century, however large square rigged vessels disappeared in the nineteenth century, driven out by the efficiency and ease of steam. The last square-rigged vessel built in the Chesapeake was the *Baltimore* in 1889, and the last schooner, the *Lillian E. Kerr,* in 1920.

Brig/brigantine

One type of vessel in use in the area was the brig. A brig is two-masted, square-rigged on the foremast and mainmast, with a jib sail on the mainmast (Kemp 1993:109) (Figure 3). Early examples ranged in size from 30-150 tons burden and 40-60 feet in length (Chapelle 1935:11).

Knowledge of their use prior to the nineteenth century is sketchy, although according to Surrey (1916:71), prior to 1731; the Company of the Indies began construction of a "brigantin" approximately 45 feet in length with a 19-foot beam. The vessel had a draught of nine feet and a 76-ton capacity. This indicates the possible presence in America of the brig at an early time; although the importance of the vessel in the Chesapeake Bay area was overshadowed by more specialized locally developed types discussed below.

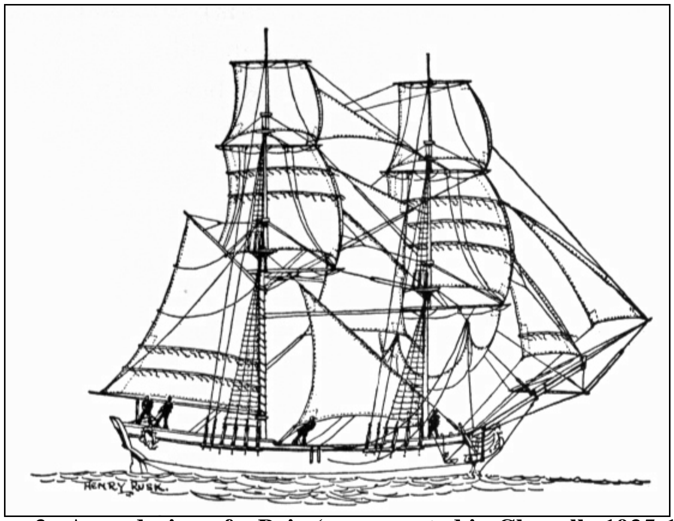

Figure 3. A rendering of a Brig (as presented in Chapelle 1935:16).

Bark

The bark (or *barque*) has been described as a vessel having at least three masts with the fore, mainmast, and any subsequent mast square rigged, while the mizzenmast (the mast closest the stern) was fore-and-aft rigged (Kemp 1993:61–62) (Figure 4). Those barks recorded by Chapman during the eighteenth century ranged in length from 64 feet (17 feet in beam) to 112 feet (27 feet in beam) (Chapman 1768:37-40).

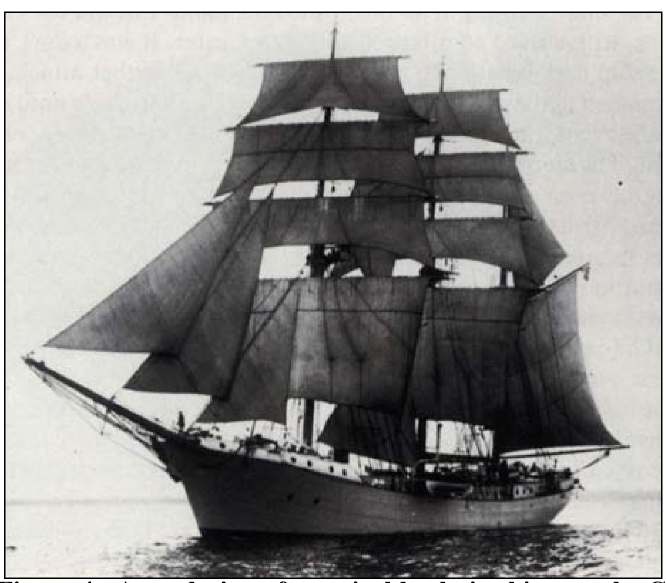

Figure 4. A rendering of a typical bark, in this case the German vessel *Niobe* (as presented in Naval Institute Press 1981).

Barkentine

The barkentine has been described as a vessel having at least three masts with square rig on the foremast and fore and aft rig on all subsequent masts (Figure 5). Like barks, barkentines ranged in size from approximately 60 - 120 feet in length and 15 to 30 feet in the beam.

Ship

The ship, or clipper ship, is a square-rigged vessel with three or four masts (Figure 6). The fore, main, and mizzen masts are square rigged, with a fore and aft spanker on the mizzen mast. In addition, jibs are rigged from the foremast to the jib boom, as well as between the fore and main, and main and mizzen masts. Such vessels were developed in the mid-nineteenth century in response to the increased competition from steam powered vessels, and were typically used in international commodity trade. They were designed for maximum speed and cargo capacity, as well as economy, and so were designed to hoist the maximum possible sail

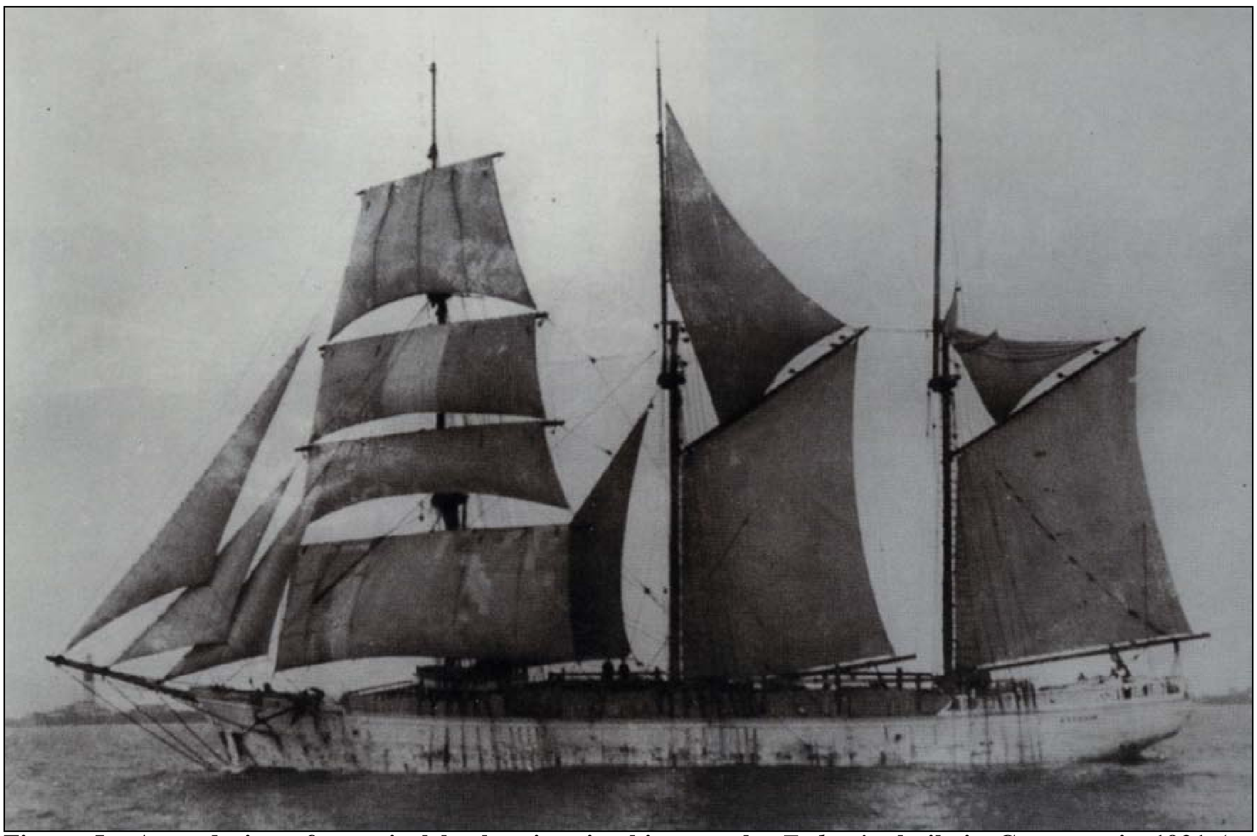

Figure 5. A rendering of a typical barkentine, in this case the *Esthonia*, built in Germany in 1921 (as presented in Naval Institute Press 1981).

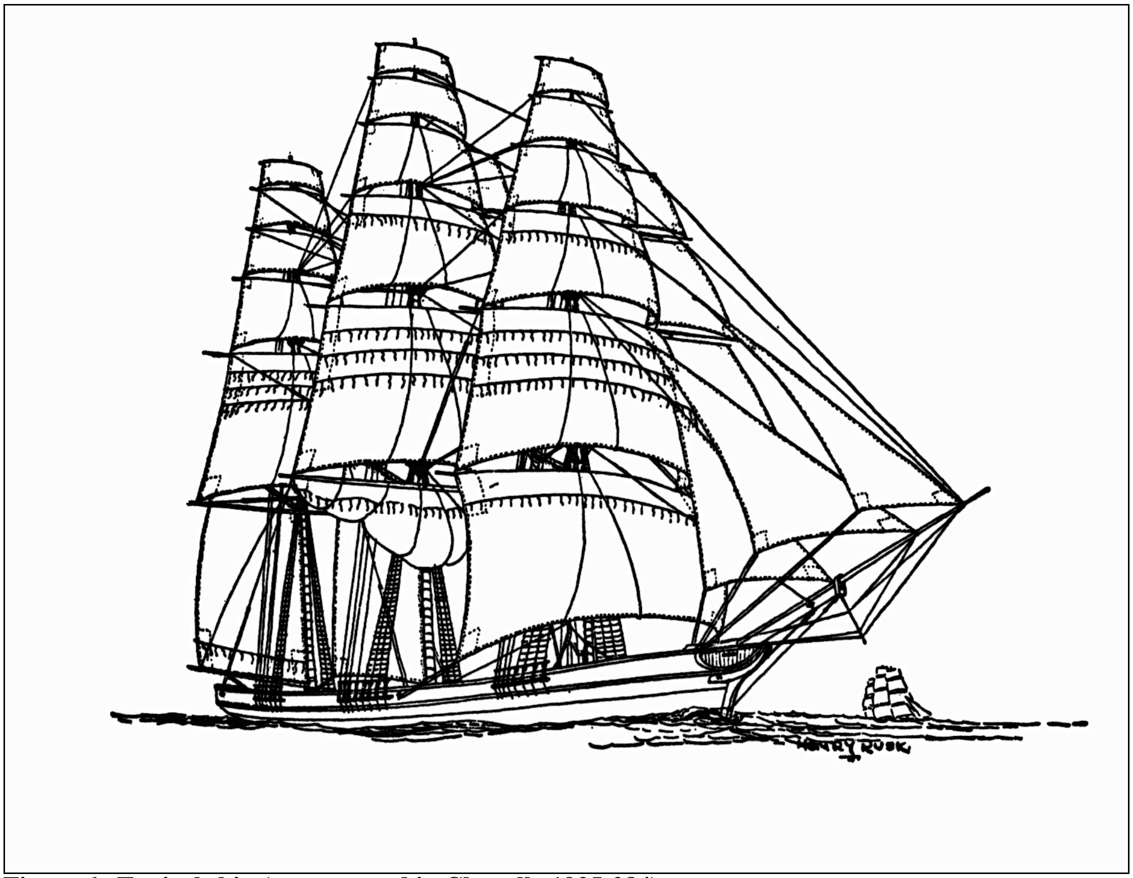

Figure 6. Typical ship (as presented in Chapelle 1935:284).

Canoe, Brogan and Bugeye

These three vessel types represent an evolutionary track, and therefore should be discussed together. Beginning with the basic dugout canoe depicted in Figure 7, English and Dutch settlers of the seventeenth century slowly adapted the vessels to their own uses. By increasing the length, increasing the beam through the use of multiple logs, sharpening the ends, and adding the sail rig and keel (Figure 8), the settlers were able to create a craft suitable for work and transportation (Figure 9). The dugout canoe evolved into what is known as a brogan, which is essentially a much larger canoe with a partial deck constructed of several large hewn logs (Figure 10), often approaching 40 feet in length. The brogan was essentially an intermediate step between the canoe and the bugeye. The Bugeye was a large, complex vessel measuring 40 to 85 feet in length, often used with a sloop or schooner rig (Figure 11), and having large holds and accommodations for crew. According to Brewington (1956:63), the earliest known use of the term bugeye occurred in 1868. It is almost certain the vessel developed after the Civil War, when the legalization of the heavy-iron oyster dredge resulted in the need for a more powerful vessel that could pull them. The larger schooners could do the job, but the main advantage of the log-built bugeye was that it was cheap and easy to build and easy to operate. As with most vessels, several subtypes made their appearance, including rounded stern bugeyes and later frame built vessels. Eventually, the large logs of which bugeyes were constructed became too difficult and costly to obtain and construction of bugeyes began to follow conventional plank and frame methods.

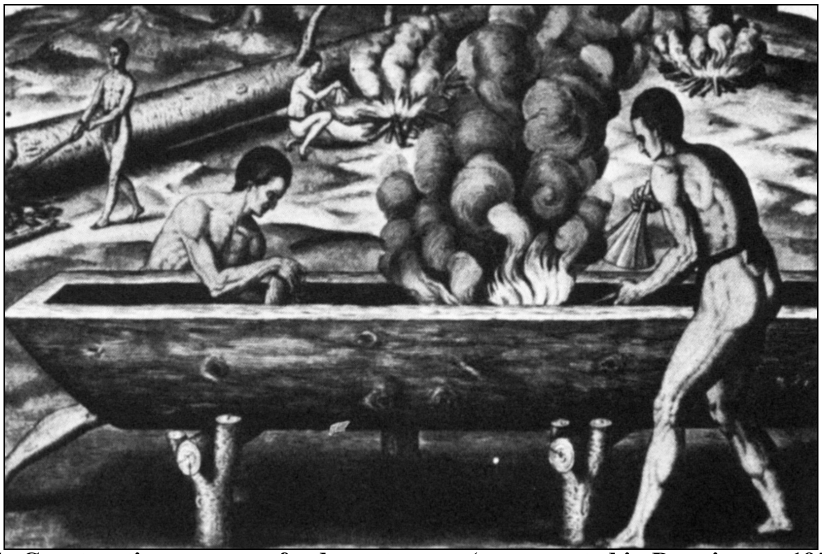

Figure 7. Construction process of a dugout canoe (as presented in Brewington 1956:68).

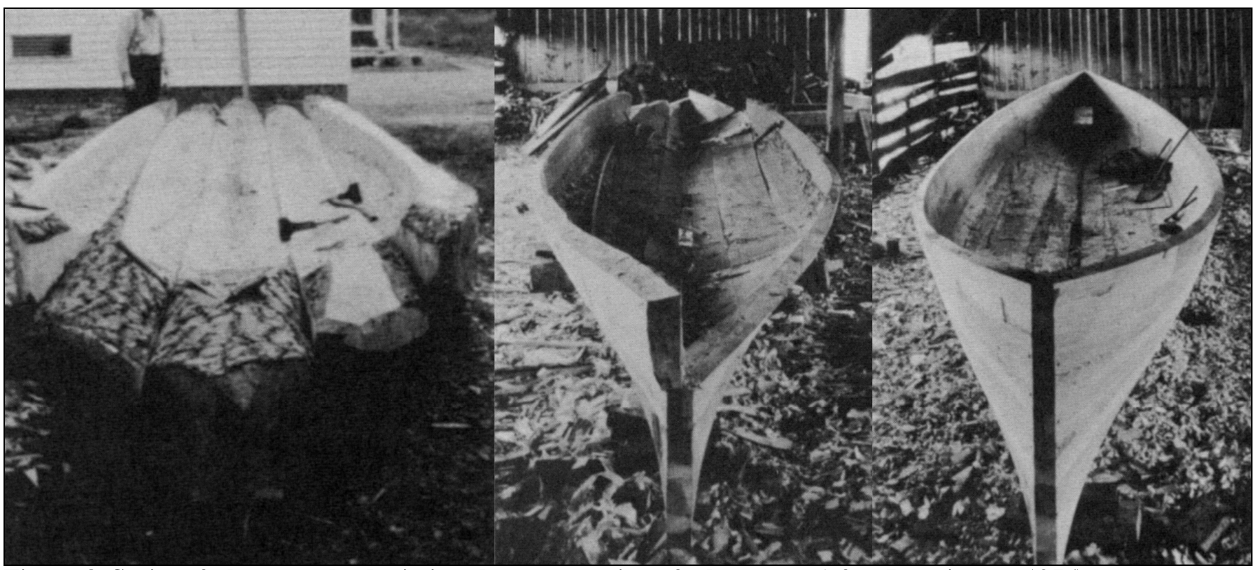

Figure 8. Series of photographs depicting the construction of a log canoe (after Brewington 1956).

Sailing work vessels

The evolution of sailing work vessels on the Chesapeake is quite unique to the area, and includes importation of sailing vessel types from Europe as well as development of local types. Beginning with the dugout canoes of the native Indians in the late sixteenth century (Figure 9), English settlers began to create their own working vessels. Changes were made to the basic dugout canoe, including sharp ends, broader beam, and the addition of sails. Eventually, large vessels made from several large logs were constructed, which eventually gave way to plank on frame construction. The schooner rig, common on the east and gulf coasts by the early eighteenth century, was adapted early and evolved into specialized types, including the Virginia pilot schooner, the Baltimore Clipper, and the pungy. Another vessel, born of the economic depression of the late nineteenth century, was the skipjack. This vessel evolved from the common skiff and was cheap to construct and easy to operate.

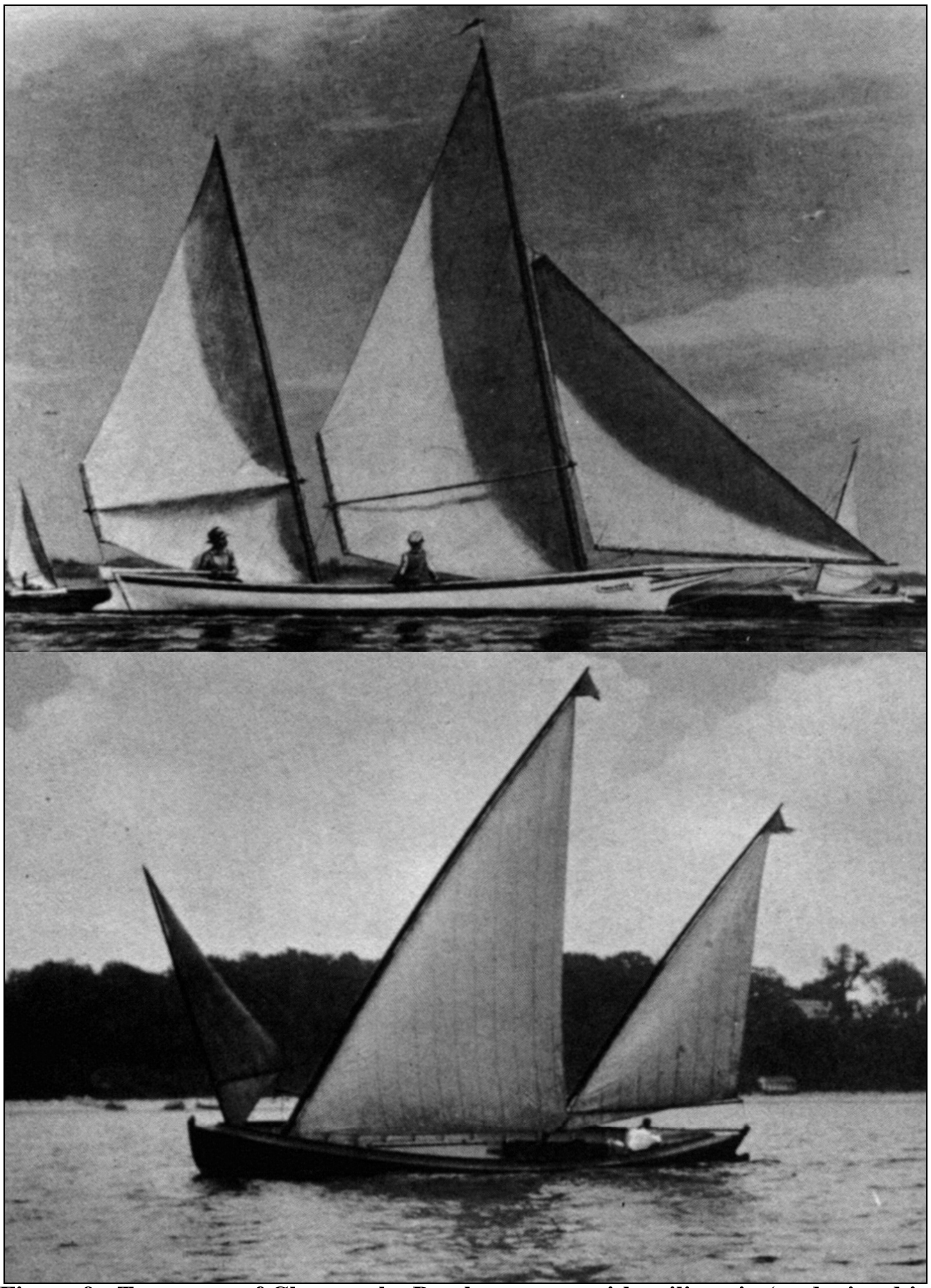

Figure 9. Two types of Chesapeake Bay log canoes with sailing rig (as depicted in Brewington 1956).

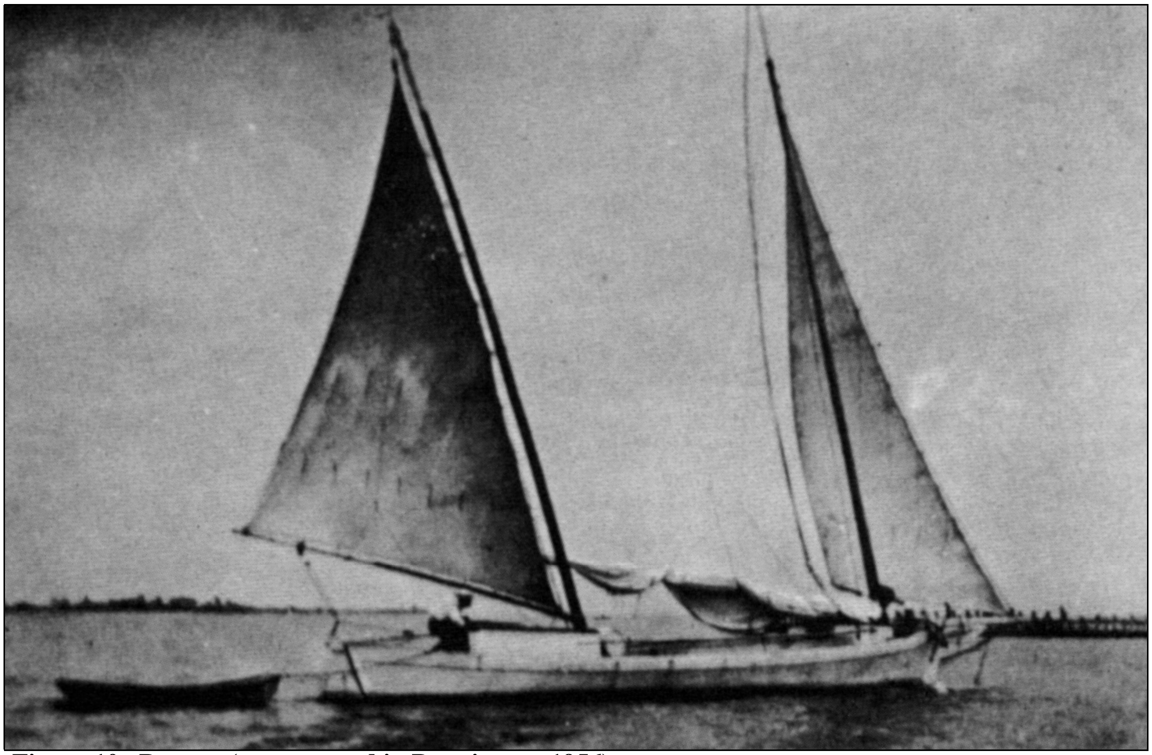

Figure 10. Brogan (as presented in Brewington 1956).

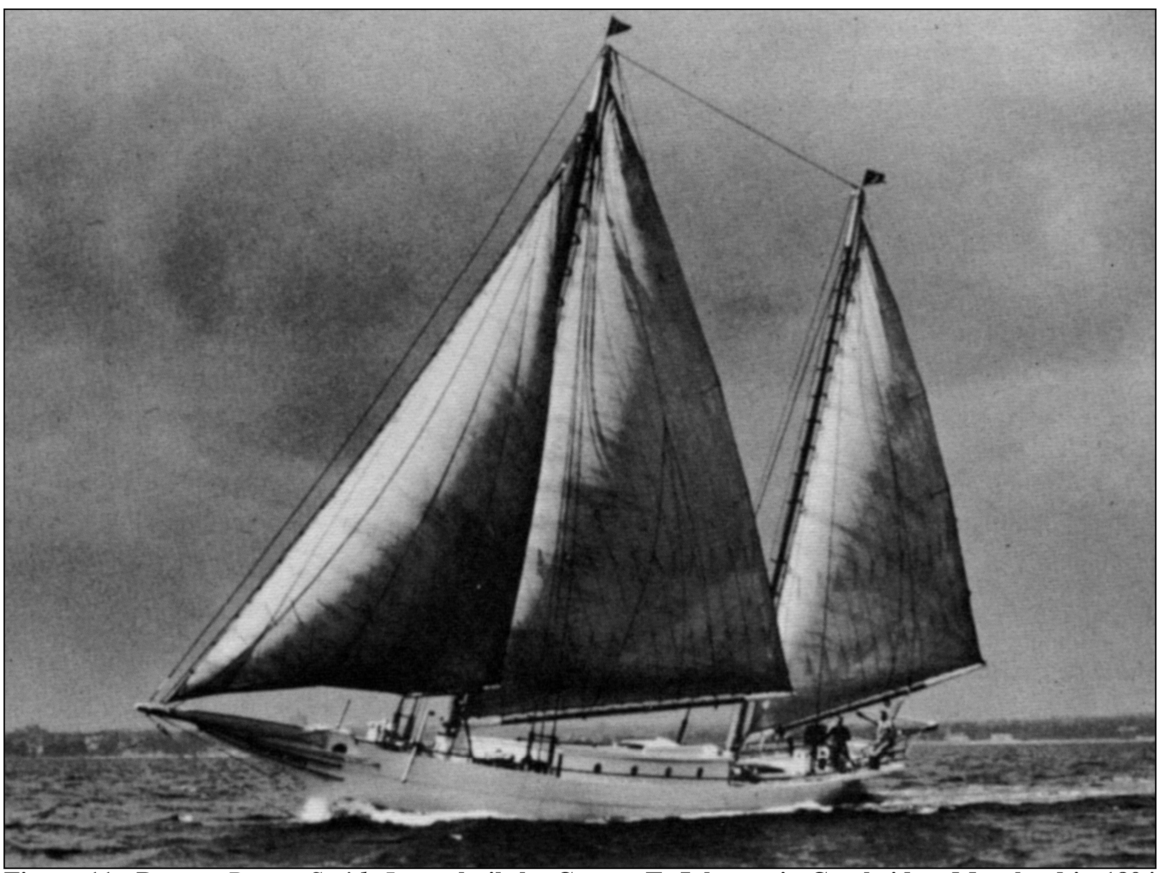

Figure 11. Bugeye *Brown Smith Jones,* built by George T. Johnson in Cambridge, Maryland in 1894 (as presented in Brewington 1956).

Sloop

In contrast with the locally developed vessel types, the sloop was imported directly to North America by Dutch and English settlers. According to Brewington, the vessel was in use in the bay by 1648 (64) (Figure 12). A local variety called the scow sloop developed in the nineteenth century (Figure 13)

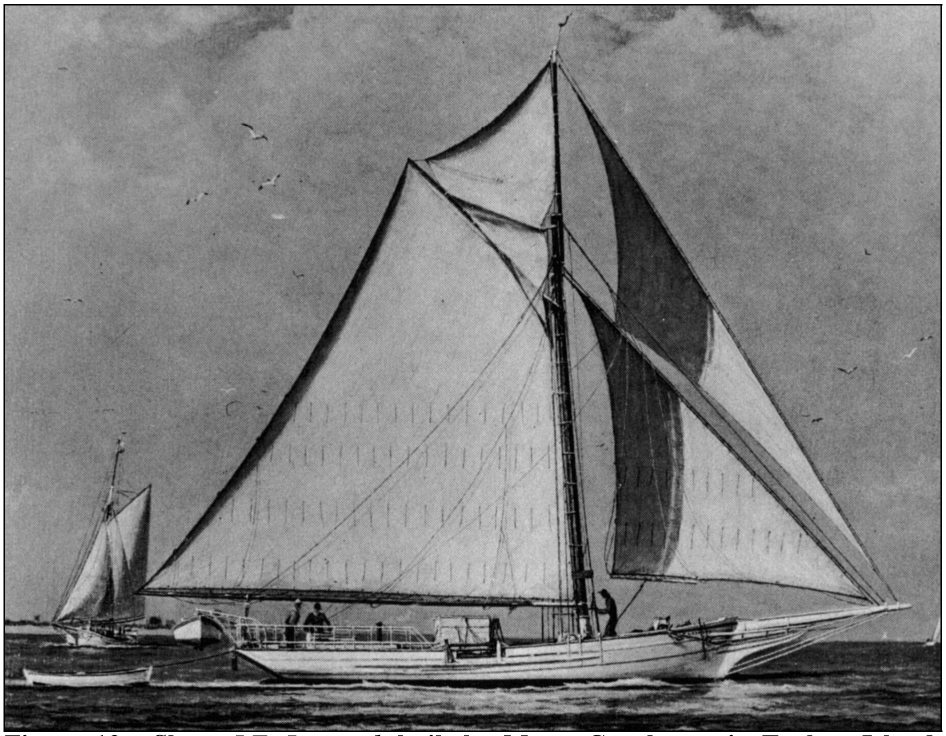

Figure 12. Sloop *J.T. Leonard,* built by Moses Geoghegan in Taylors Island, Maryland in 1882 (as presented in Brewington 1956).

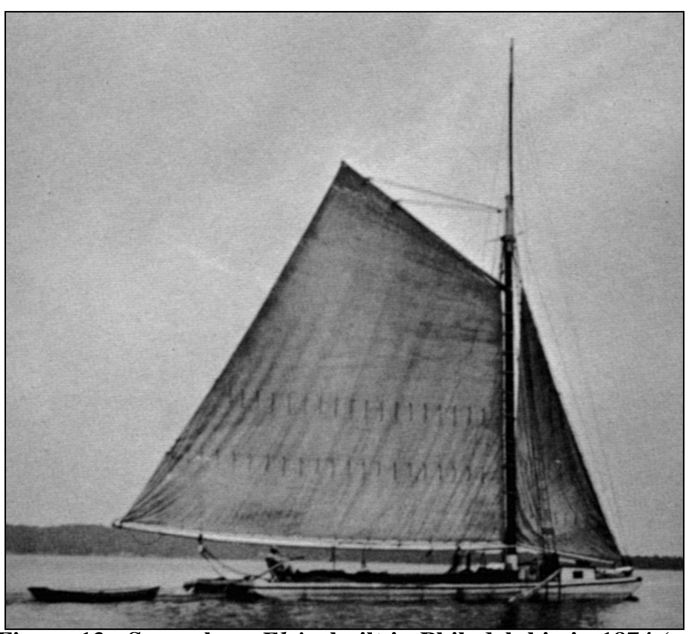

Figure 13. Scow sloop *Elsie,* built in Philadelphia in 1874 (as presented in Brewington 1956).

Schooner, pungy, Baltimore clipper

Though less romanticized than the steamboats that plied the bay and rivers, one of the most prolific classes of vessels found on the area's waters were the schooners. While the origin of the schooner is cloudy, there is little doubt that it was well suited to the coastal environment. By 1713, the name was in use in New England, and there is mention of the schooner *Mayflower* of North Carolina appearing in the bay (Brewington 1956:64). Other schooners arrived in that same year from elsewhere on the east coast, indicating its widespread use and suitability. Within 20 years, the generalized coasting schooner had evolved into several specialized types for use on Chesapeake Bay, including the Virginia pilot boat and later the Baltimore clipper, known as a fast, deep water vessel, and the pungy, a schooner or sometimes sloop rigged shallow draft bay boat (Figure 14). Both the Baltimore clipper and the pungy were keel vessels, as opposed the more common centerboard schooner, and featured sharp bows, low bulwarks, and lofty, raked sail plans. Further adaptation of the schooner rig resulted in what became known as a ram, which was developed for use on the Chesapeake and Delaware Canal in the nineteenth century. This canal-boat like vessel was fitted with a shortened schooner rig and centerboard and takes a form similar to that of the canal schooners of Lake Champlain.

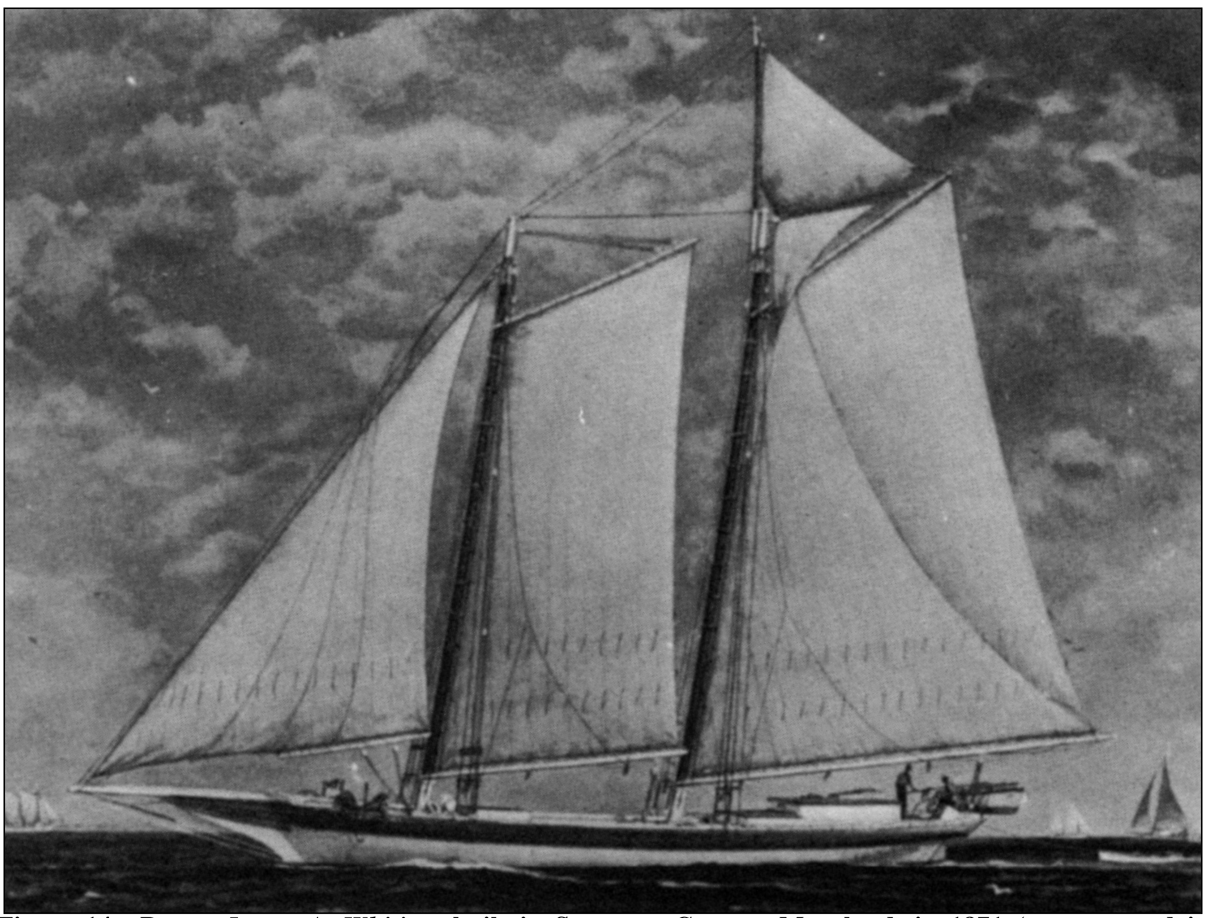

Figure 14. Pungy *James A. Whiting,* built in Somerset County, Maryland, in 1871 (as presented in Brewington 1956).

Skiff

A skiff is a small rowing workboat, sometimes with sailing rig. These vessels tended to be long, fairly heavy craft, as they often had to be rowed great distances against tide and wind, and rowing a small, wide, light craft in these conditions is difficult at best. For this reason, skiffs bear little resemblance to the yacht dingies that are common today. Skiffs of the nineteenth and early twentieth centuries were seldom less than 14 feet in length or less then 250 pounds (Chapelle 1951:194). Skiffs on Chesapeake Bay were widely varied in type and construction; some had small cabins, while others were double ended, flat bottomed or v-hulled, square stern, some partially decked and others open. Since they were often built by the watermen who used them, many local types developed as fathers taught sons or learned from other waterman. Most skiffs were workboats used for crabbing or oyster tonging (Figure 15).

Figure 15. Small skiff ca. 1920s (Courtesy of Florida Photographic Collection).

Skipjack

The skipjack, also known as a bateau or a deadrise, developed out of the common skiff, and was the result of the economic downturn of the late nineteenth century. Like other vessels born of economic necessity, the skipjack was cheap to build and easy to operate - almost any waterman of the nineteenth and early twentieth centuries could and did build skipjacks and often could sail them and operate the oyster dredge at the same time (Brewington 1956:65). The first skipjacks were small (Figure 16), but by the early twentieth century, they had become large enough to carry their oyster catch to Baltimore. The skipjack culminated in size with the 60-foot *Robert L. Webster,* built by Sylvester Muir in Oriole, Maryland in 1915 (66).

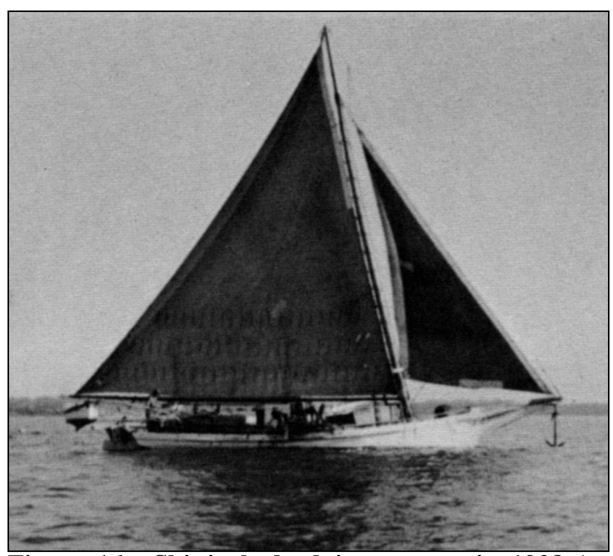

Figure 16. Skipjack dredging oysters in 1938 (as presented in Brewington 1956).

Sharpie

A sharpie is a long, sharp, flat-bottomed boat of skiff construction, usually in excess of 20' length, with sailing rig (Figure 17). Rig varied. According to Chapelle (1951:104), sharpies employed one or two masts, with the most common sailing rig being a cat, sloop, or schooner. They are often called Fair Haven sharpies, after the place on the coast of Connecticut where they originated in the 1870s.

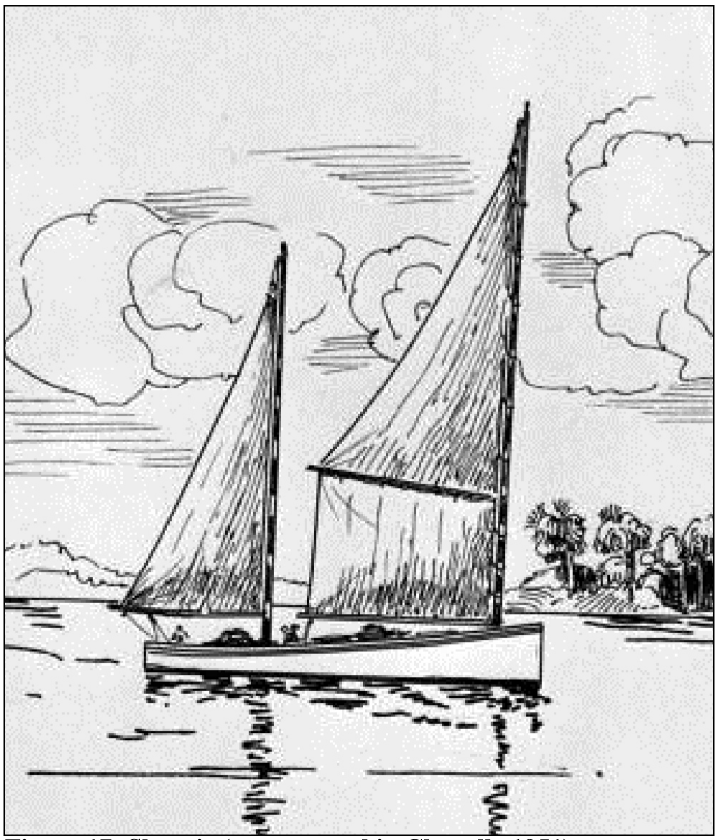

Figure 17: Sharpie (as presented in Chapelle 1951).

Steamboats

In the U.S., John Fitch experimented with marine steam power on the Delaware River near Philadelphia, while John Stevens and Robert Fulton worked between New York and Hoboken, New Jersey. When Robert Fulton built the world's first commercially successful steamboat, *North River Steam Boat,* in 1807 (Figure 18), he had little idea what the appropriate hull form should be. The vessel seems to have had a shape similar to a large canal boat (Brouwer 1996), though Dayton (1939) suggests lines similar to a sailing ship. In describing the boat, enrollment records state "she is a square-sterned boat, has a square tuck: no quarter galleries and no figurehead" (Morrison 1958:21). The vessel, built at the Charles Brown Shipyard on the East River near Manhattan, originally measured 140 feet in length by 16 feet in breadth, a ratio of almost 1 to 10 (Morrison 1958). The copper boiler (low-pressure) measured 20 feet long by 8 feet wide (Dayton 1939).

Rebuilt after its first season, the steamboat measured 149 feet. Peter A. Schenck, Surveyor of the Port, certified that the boat had one deck and two masts, a breadth of 17 feet 11 inches, and a 7-foot depth (Morrison 1958:21). A contemporary drawing of the boat, later named *North River*, shows a stern similar to those on sailing ships of the period, though with a proportionately wider transom. The paddlebox extended out from the hull with no additional structure forward or aft. There are two masts, one forward and one aft, with yards for square sails, which are furled.

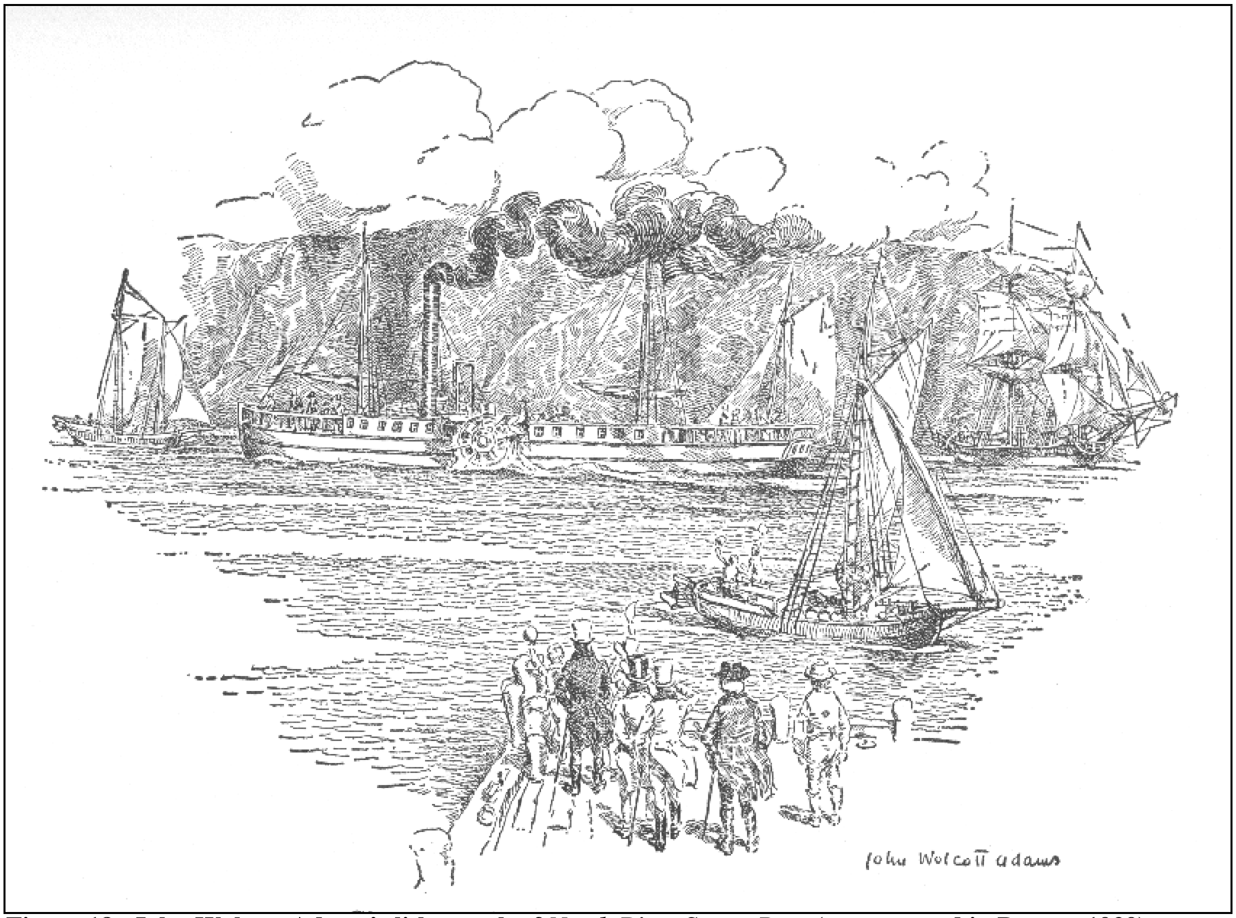

Figure 18. John Wolcott Adams's lithograph of *North River Steam Boat* (as presented in Dayton 1939).

Ship paddlewheels, called waterwheels at the time, had the same basic design as waterwheels used in powder mills. These wheels, easily modified for marine use, "ideally suited…the conditions which existed on American waterways in Fulton's time" (Whittier 1987:7). On a shallow-draft hull, a pair of paddlewheels generated ample thrust without projecting below the keel line.

The 1820s witnessed two major changes in steamboat design. Sails disappeared within a few years, and length-to-breadth ratios declined (7 to 1 or less). Aside from these developments, boats of the early 1820s had most of the same features as the *Paragon*. The *Constitution*, built in New York, had a similar bow and a transom stern with six or seven windows. The guards around the paddleboxes did not extend very far forward or aft, but did create some additional space for storing boiler wood. The vessel included a second deck aft of the engine, sheltered by an awning (Brouwer 1996).

On Chesapeake Bay, Captain Edward Trippe and his Union Line of Baltimore introduced steam navigation to the bay in 1813 with a pair of exhibition trips. These were a success, and on June 21, 1813, she began regular runs from Baltimore to Frenchtown on the Elk River. Proving a success, the Union Line quickly drove the sailing passenger lines out of business, although some, including the Briscoe and Partridge and the Norfolk-Baltimore Lines quickly converted to steam. In 1815, competition started with the Briscoe and Partridge Line's charter of the Eagle, while the Union Line built and operated the Baltimore the same year. Service also began on the Potomac in that year with the steamboat *Washington* (Figure 19).

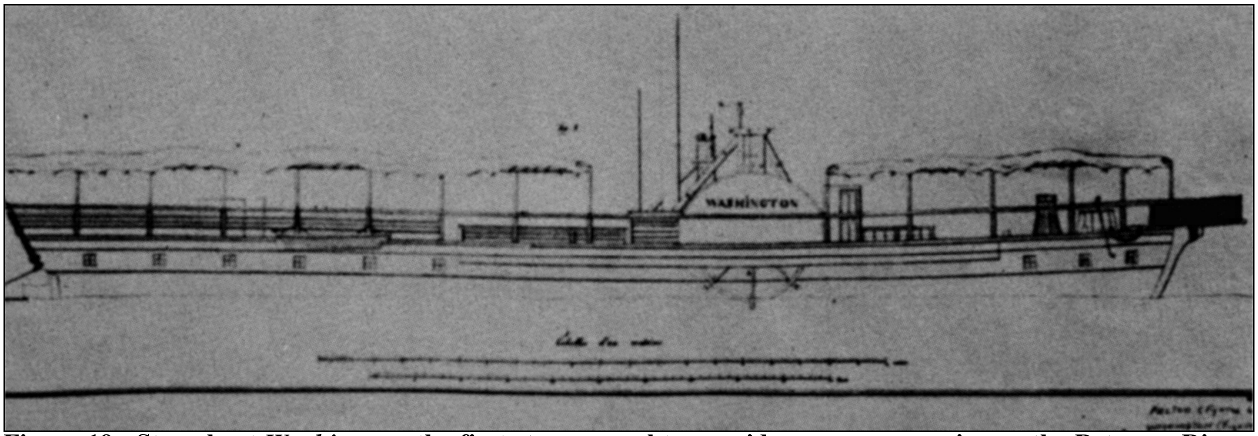

Figure 19. Steamboat *Washington,* the first steam vessel to provide passenger service on the Potomac River, in 1815 (as presented in Brewington 1956:45).

Marestier (1824) expressed concern over the stress engines and boilers placed on wooden hulls once they exceeded a certain length. Several methods provided additional support. A heavy-timbered truss ran fore and aft on either side, with the highest point sometimes arching over the paddlewheels (Ringwald 1965). These trusses were a distinctive feature on early wooden-hulled steamboats. Some vessels had masts on the centerline supporting “hogging chains,” iron rods extending to either side, offering additional support for the guards. These rods distributed the stress and provided support for the guards. Additionally, the wooden hulls were equipped with massive engine bed timbers because of the great weight of the engine.

Crosshead engines powered early steamboats. Developed from Fulton’s basic vertical-cylinder layout, this type of engine is named after the crosshead frame shown in Figure 20 (the small cylinder below the steam cylinder is the condenser). A long piston rod extended above the cylinder to form a T with the horizontal crosshead. The crosshead, a device forming a connection between the piston rod and connecting rod, is similar to the joints in the human body (Hawkins 1987[1904]). The engine, positioned athwartships, moved up and down on vertical guides. The first guides were mounted on simple upright timbers. Later a pair of A-frames (linked together at the top) replaced these timbers. Some steamboaters called it the “gallows frame” because of its shape (Whittier 1987). Near the outer ends of the crosshead, two connecting rods attached together. These came down on either side of the cylinder to crank throws on the paddlewheel shafts. As the crosshead rose and fell, the connecting rods rotated the cranks, turning the wheels.

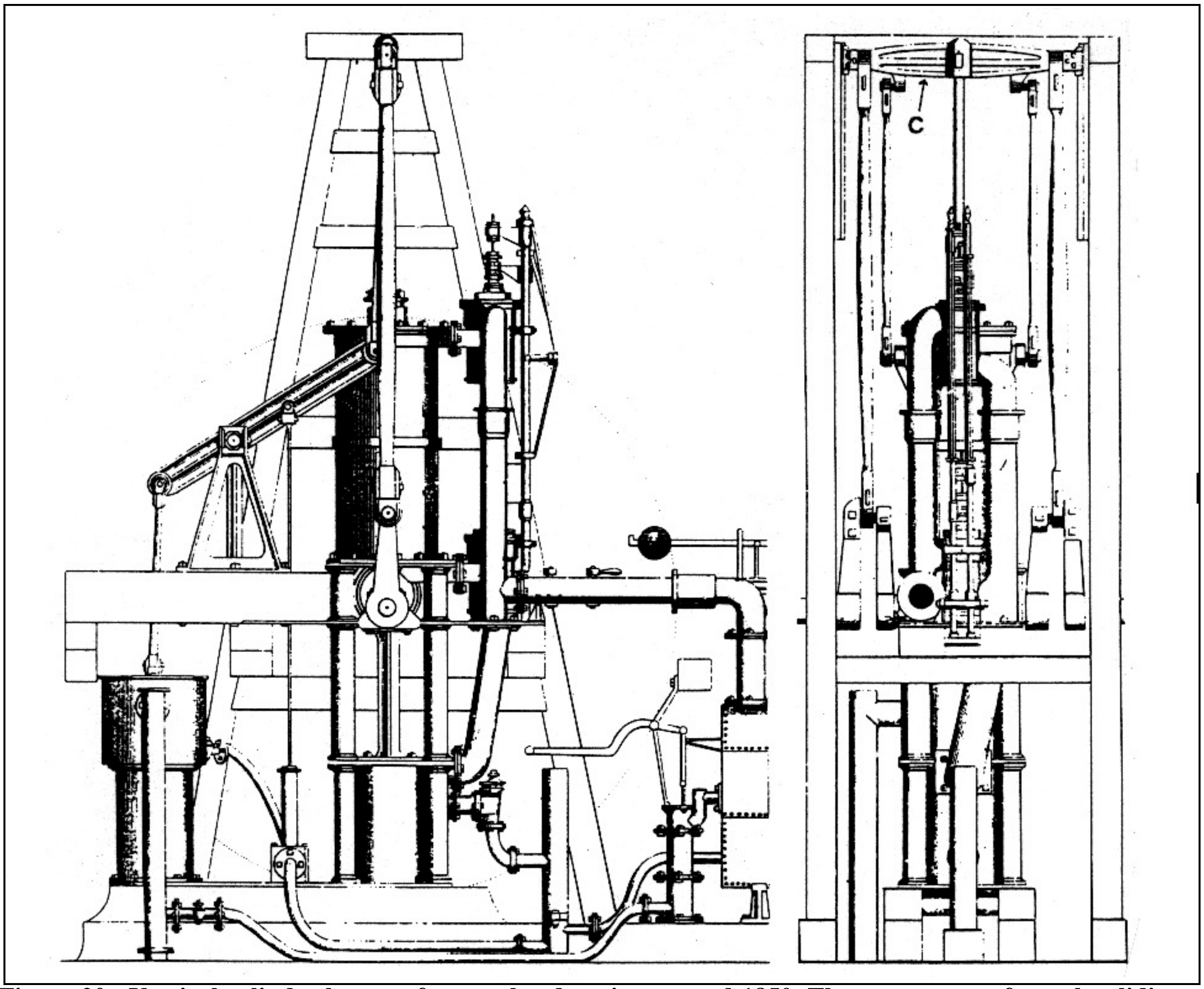

Figure 20. Vertical cylinder layout of a crosshead engine around 1850. The name comes from the sliding member marked "C" (as presented in Whittier 1987).

The vertical beam engine, known as the "walking beam," is a uniquely American technology. Developed around 1820, the engine's design was used as late as the 1950s. Its popularity revolved around its simplicity. Despite the popularity of the walking beam engine, crosshead engine production continued sporadically through the 1830s. Introduced as a solution for space and balance problems associated with bigger engines, the walking beam engine also had a vertical cylinder (Whittier 1987). A piston rod attached to a crosshead above; above the crosshead, a second rod connected to one end of a diamond-shaped beam. The beam rotated at its center on a bearing mounted at the top of an A-frame, similar to the A-frame of earlier engines. A connecting rod to the single crank throw was attached to the other end of the diamond-shaped beam. In this way the beam, rocking back and forth, transferred the up-and-down motion of the piston to the crank, turning the paddlewheels.

Figure 21 shows a walking beam engine built by T.F. Secor and Company, New York. A typical 1850 design, the long stroke piston and double poppet valves minimized the force needed to open them against steam pressure. Cold water passed through the injector pipe, then flowed through openings in a perforated plate into the condenser chamber. From there it mixed and condensed exhaust steam. The water/vapor mixture was withdrawn by air (Whittier 1987).

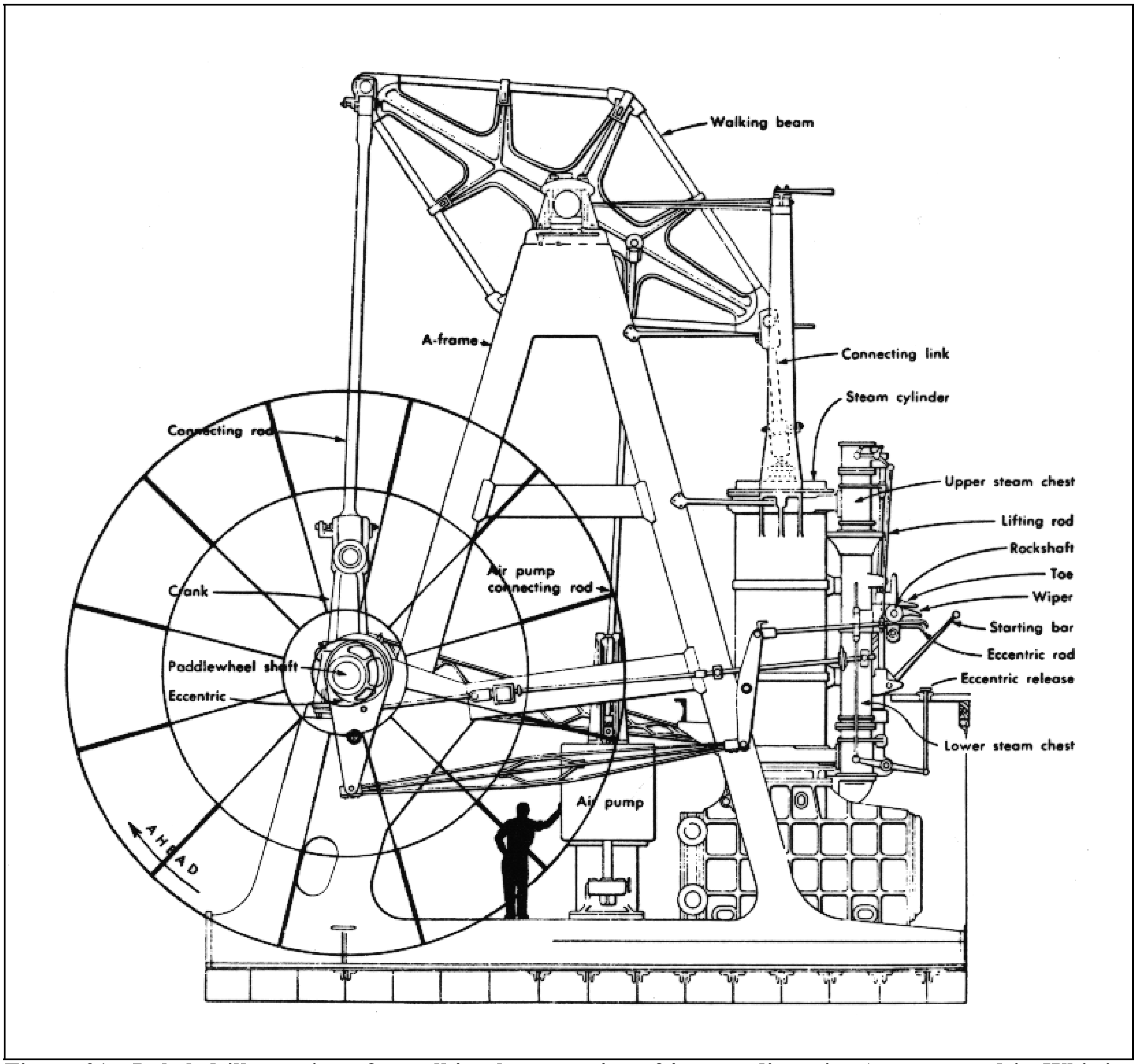

Figure 21. Labeled illustration of a walking beam engine of intermediate size (as presented in Whittier 1987:50).

The walking beam apparently got its name from the rate at which it moved, usually in full view above the roof of the steamboat's uppermost deck. In a few later steamboats, it was enclosed in a small uppermost deck. Later still, it was enclosed in a small, greenhouse-like structure (Brouwer 1996). By the mid-1800s, wrought-iron straps over a cast-iron framework replaced heavy wooden timbers, though wooden frames appeared right up to the end of the walking beam era (Whittier 1987). In the 1880s, A-frames consisted of iron and then steel angular plating. Three known examples of the walking beam engines survive, two in the United States: the ferry *Eureka*, preserved at San Francisco, and the lake steamer *Ticonderoga*, preserved at Shelburne, Vermont. Figure 22 shows a typical nineteenth century walking beam steamer.

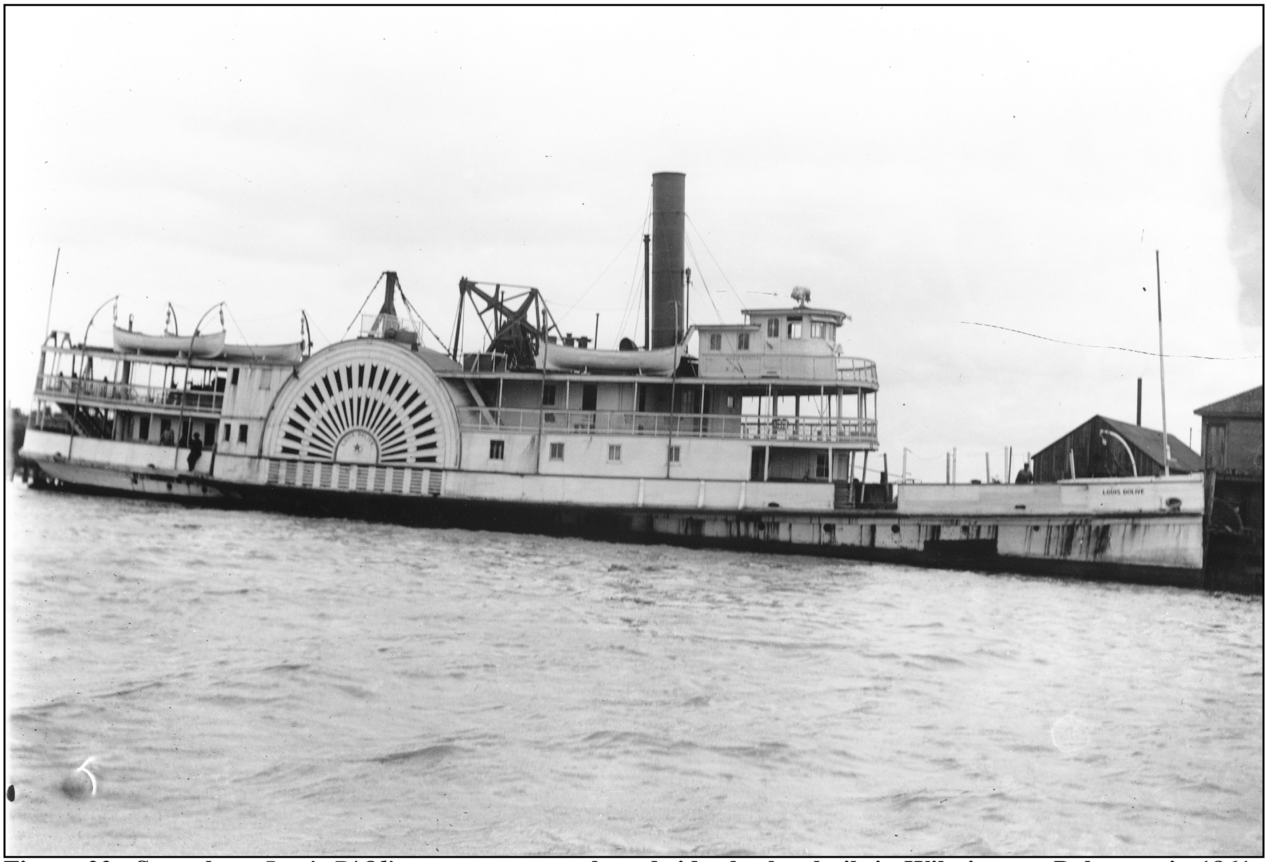

Figure 22. Steamboat *Louis D'Olive*, an eastern seaboard sidewheeler, built in Wilmington, Delaware in 1861 (courtesy of Overbey Collection, University of South Alabama Archives).

The inclined engine was designed in 1839 by Charles Copeland, its patent issued in 1841. The placement of the inclined engine in the hold affected the beam-to-width ratio of inclined versus walking beam engine vessels, with the former being much beamier (Hall 1888:64). The engine and frame of an inclined engine are presented in Figure 23. Describing this figure, Copeland's patent of one engine states:

> The cylinders in this arrangement of the engine are inclined at an angle dependent upon the depth of the hold and the length of stroke, and they are fastened to inclined beams extending from the paddle-wheel shaft to the keelsons, said beams being connected with the keelsons along their whole length by other beams and by bolts, the whole constituting truss-frames, which may be of wood or iron, which sustain and divide the weight and jar of the engines [Hall 1888:38].

Boiler locations varied from boat to boat, some positioned deep in the hold, others located near the paddlewheels. Wood originally provided heat for steam, though coal replaced it as a primary heating source in the early 1830s (Cotterell 1978). As one would suspect with wooden vessels, fire proved an immediate danger during operation. The *Williamsburg* ferry, operating between Manhattan and Williamsburg, Brooklyn, "adopted…every precaution…to guard against fire, the boilers being quickly felted, and the decks and woodwork around the boilers and chimneys protected by facings of zinc" (*NYT*, January 21, 1858). Fire protection for most ferries probably mimicked the *Williamsburg* vessel.

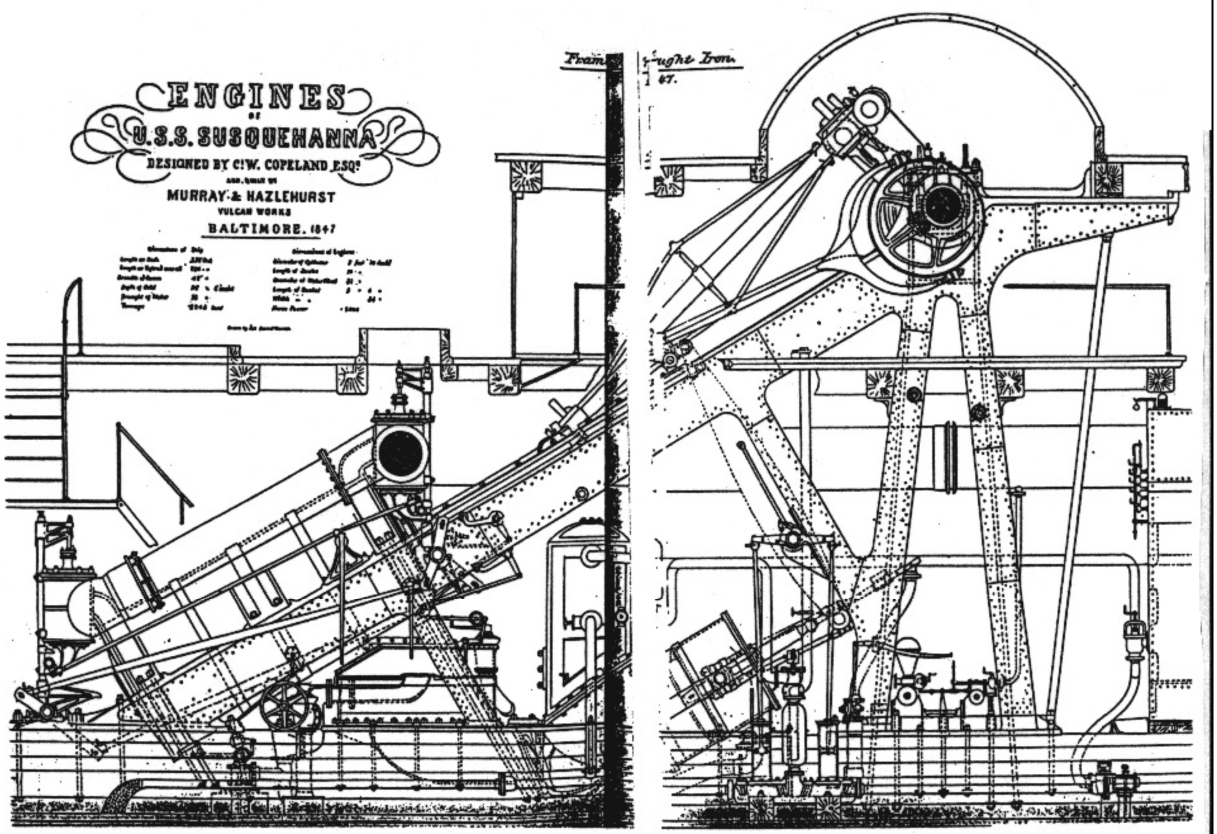

Figure 23. Inclined marine engine developed by Charles Copeland in 1839 The majority of the engine rests below the level of the main deck (as presented in Hall 1888:Figure 13).

As passenger traffic increased, builders in the 1850s included a second cabin above the main cabin. This addition commonly appeared on long-distance service, i.e., Staten Island ferryboats. The promenade, or upper deck, supported the upper cabin and the fore and aft pilothouse, and provided additional passenger space. The hurricane deck sat atop the promenade deck cabin. Generally, three pilothouse patterns appeared in New York City. A freestanding circular house and a freestanding square house usually appeared on single-decked ferries. A rectangle backed by an upper cabin is normally associated with double-decked boats (Spirek 1993).

5. RESULTS

This reconnaissance-level cultural resources survey sought to identify known, as well as potential cultural resources, within existing and proposed dredged material placement sites within and near the Chesapeake Bay, Maryland and Virginia. Cultural resources pertinent to the survey include buildings, archaeological sites, structures, objects, and districts. Definition of an archaeological site is defined as:

> An archaeological site is defined as the physical remains of any area of human activity greater than 50 years of age for which a boundary can be established. Examples of such resources would include the following: domestic/habitation sites, industrial sites, earthworks, mounds, quarries, canals, roads, shipwrecks, etc. Under the general definition, a broad range of site types would qualify as archaeological sites manifested exclusively by artifacts, the recovery of a minimum of three items is needed, related temporally or functionally and located within a spatially restricted area (300 feet square is suggested. Exception to this definition may include any cultural material that has been redeposited, reflects casual discard, or represents one episode of behavior. Other items to consider in deciding whether or not an area warrants a site designation includes survey conditions, survey methods and site types…
>
> Estimates of site boundaries may be based on the spatial distribution of artifacts and/or cultural features and their relationship to other features of the natural (landform, drainage) and cultural environment (historic landscape features). In addition, historic background information should be taken into consideration when defining the boundaries of a historic site. It is recognized that the boundaries for resources located in urban or underwater environments may be difficult to estimate at the Phase I level (Virginia Department of Historic Resources 2001:79).

It must be stated that while the boundaries of the existing dredged material placement sites are definable, the boundaries for the proposed placement sites remain somewhat ephemeral. As a result the review of known resources within these proposed placement sites attempted to focus on the general area versus a specific location.

A reconnaissance-level cultural resources survey is valuable to the DMMP because it will aid in determining the necessity for subsequent archaeological work. As stated in the *Standards and Guidelines for Archaeological Investigations in Maryland*:

> The goals of a archival study or archaeological assessments are to inventory, locate, and predict the location of prehistoric and historic archaeological properties within a given area of potential effects, through the study of relevant archival documents, maps and other sources. Goals also include the development of justifiable recommendations on the nature and extent of additional investigations (such as Phase I or II work) warranted to identify and evaluate archeological properties in the project area (Shaffer and Cole 1994:34).

Proposed placement sites (including expansion of existing sites) will be considered as Areas of Potential Effect (APE). A definition of an APE (by the State of Maryland) is as follows:

> The Area of Potential Effect means the geographical area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The area of potential effect is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR § 800.16(d)).

> The first and most essential step in the compliance review process is determining the Area of Potential Effect using a map (i.e., U.S. Geological Survey 7.5-min. quadrangle, or other 1”=2,000’ scale map) showing the area and indicating the acreage surveyed for the project. Factors to be considered in preparing an APE are the anticipated impact of the project, the characteristics of resource types expected to be found within the APE, the number and types of alternatives under consideration, and potential geographic and topographic changes (Maryland Historical Trust 2000:49).

With this said, an APE has been developed for each of the proposed and existing DMMP sites within and near Chesapeake Bay, Maryland and Virginia. A review of all cultural resources within each of these APE’s has been undertaken by Panamerican and is presented below.

PREDICITVE MODELING

During this reconnaissance-level cultural resources survey a number of predictive models were identified in previous investigations throughout the Chesapeake Bay region. When applicable these predictive models have been applied to the various DMMP scenarios proposed by the Baltimore District. One predictive model that addresses the potential for prehistoric and historic cultural resources within the Chesapeake Bay was proposed by Koski-Karell (1979a). With regards to submerged prehistoric sites, Koski-Karell states:

> In predicting locations for inundated prehistoric sites, it appears most probable that they would occur in a distribution analogous to their distribution on land during the same temporal period. Based on this assumption, a tentative locational model for prehistoric settlements is inundated areas of the Bay may be postulated. It is likely that such sites would be located on formerly subaerial terraces near former tributaries of the ancient Susquehanna, in locales selected on the basis of subsistence criteria. Sites associated with subsistence activities would be located at places formerly favorable to gathering, fishing, and hunting, or those near to raw materials favored by the culture’s technology (Koski-Karell 1979a:73).

Regarding the potential for historic sites (in the form of historic shipwrecks) within the Chesapeake Bay, Koski-Karell employs the following predictive model:

> This predictive model for the locations of sunken vessels in the project area[s] is based upon several assumptions. They have been used in conjunction with the documentary evidence presented earlier to rank the several project areas according to their apparent probability for containing historically significant cultural resources. These assumptions are as follows:
>
> - Vessel losses are not randomly distributed, but rather tend to cluster in areas characterized by certain environmental and cultural factors.
> - Vessel losses in a given area vary in proportion to the amount of shipping traffic, if maritime technology is held constant.
> - The less advanced a maritime technology, the more likely its vessels will be lost due to environmental factors.
> - If submarine geomorphology and maritime technology are held constant, vessel losses will be greater in areas subject to more adverse climatic and sea-state conditions.
> - Areas which have been deeply dredged in the past are unlikely to contain historically significant sunken vessels. However, in dredged areas where bottom is soft mud, buried cultural resources may remain below the depth dredged (Koski-Karell 1979a:74).

Koski-Karell states that this predictive model is hypothetical and would have to be tested to determine its validity and to develop refinements. Other predictive models (applicable to this reconnaissance-level cultural resources survey) are presented below on a site-by-site basis.

With regards to shipwrecks within the Chesapeake Bay, it must be stated with fair confidence that there were more vessels losses within or near the proposed/existing project areas than have been historically accounted. This includes early-period watercraft whose presence within the Chesapeake Bay preceded many of the historic mediums used to report such losses, such as newspapers. Other vessel losses that were not always reported might include utilitarian watercraft (i.e., barges) and small vernacular watercraft. Losses of these types of watercraft were not typically reported or documented, as their demise was often less than spectacular. These vessels were typically abandoned after out-living their usefulness, often deposited in out-of-the-way locations (i.e., creeks, bays) and eventually forgotten.

AGRICULTURAL PLACEMENT - MARYLAND

Project Area Environment

The representative area is located within both Dorchester and Wicomico Counties, Maryland (Figure 24). Dredged material would be hauled up the Nanticoke River by barge as close as possible to the agricultural site. Material would then be pumped from the barge (using a hydraulic unloader) to the agricultural site in two lifts of 8 inches each. Considered an "innovative use" option, this concept "would improve marginal, sandy agricultural soils through the addition of fine-grained dredged materials, increasing the ability of agricultural soils to hold water and nutrients and resulting in greater crop production" (Murphy 2003:149).

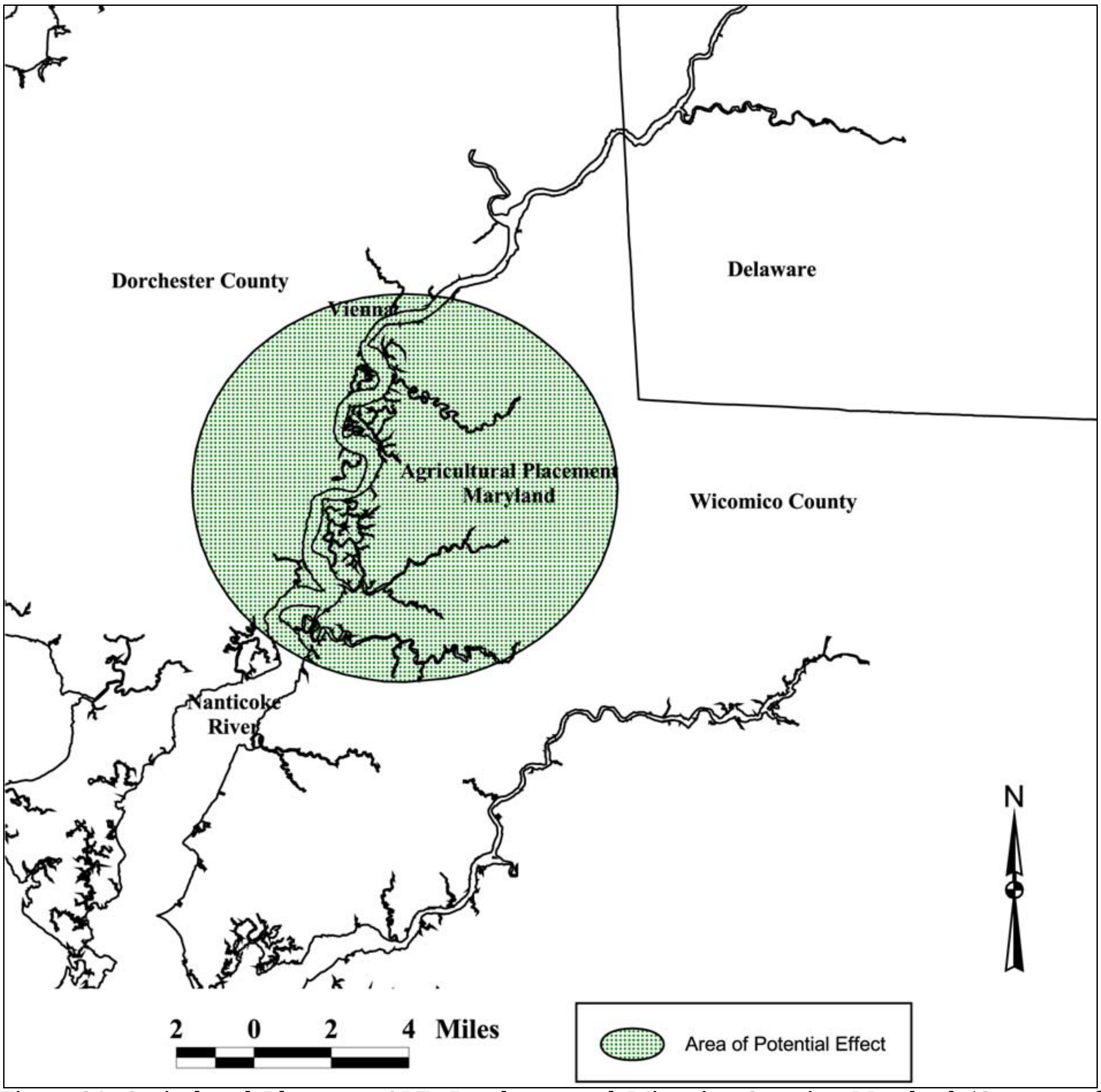

Figure 24. Agricultural Placement APE, Dorchester and Wicomico Counties, Maryland (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

Review of the State Site Files at the MHT (Mardela Springs 7.5-min. quadrangle map) identified twenty documented archaeological sites (Figure 25) including prehistoric base camps, procurement camps, shell middens and a variety of historic sites (Table 2). The data presented in Table 1 (see *Introduction*) includes the site number, site name, site type, USGS quad. name, county, and whether the site remains within the Area of Potential Effect (APE). Because the APE has not been specifically defined, the potential impact areas remain speculative.

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 25. Known archaeological sites located within the Maryland Agricultural Placement Area, Dorchester/Wicomico Counties, Maryland (Mardela Springs, Maryland 7.5-min. quadrangle map, 1982).

Table 2. Known archaeological resources located within the Maryland Agricultural Placement Area, Dorchester/Wicomico Counties, Maryland.

Site Number	Site Name	Site Type	USGS 7.5-min. quadrangle	County	Within APE?
18DO22	Vienna	Late Woodland short term procurement camp	Mardela Springs	Dorchester	Y
18DO47	Fletcher	Prehistoric base camp	Mardela Springs	Dorchester	Y
18DO48	Outten Farm	Prehistoric short-term resource procurement camp	Mardela Springs	Dorchester	Y
18DO54	Indian Town Road	Late Woodland short -term resource procurement camp and historic scatter	Mardela Springs	Dorchester	Y
18DO59	Royer-Weston	Unknown	Mardela Springs	Dorchester	Y
18DO61	Perry Flegel II	Prehistoric shell midden	Mardela Springs	Dorchester	Y
18DO62	Perry Flegel IV	Prehistoric possible hamlet or base camp, possibly Late Woodland	Mardela Springs	Dorchester	Y
18DO63	Perry Flegel V	Prehistoric shell midden	Mardela Springs	Dorchester	Y
18DO64	Perry Flegel VI	Prehistoric shell midden	Mardela Springs	Dorchester	Y
18DO124	Royer #1	Woodland short-term resource procurement camp	Mardela Springs	Dorchester	Y
18DO126	Royer Peach Orchard	Late Woodland shell and historic scatter	Mardela Springs	Dorchester	Y
18DO125	Royer #2	Late Woodland shell midden	Mardela Springs	Dorchester	Y
18DO153	West Pole Point	Prehistoric shell midden	Mardela Springs	Dorchester	Y
18DO201	Lewis Landing House	18th Century gambrel roof dwelling	Mardela Springs	Dorchester	Y
18DO403	Lewis Landing #2	18th-20th century wharf/landing, artifact concentration	Mardela Springs	Dorchester	Y
18WC3	Barren Creek 1	Woodland base camp	Mardela Springs	Wicomico	Y
18WC14	Hancock Farm	Woodland base camp	Mardela Springs	Wicomico	Y
18WC62	Viennna Ferry Landing East	18th and 19th century ferry landing	Mardela Springs	Wicomico	Y
18WC64	Canoe	19th century three-log canoe ruin	Mardela Springs	Wicomico	Y
18WC102	Nutter's Neck--Manumsco	Possible Late Woodland village, 17th Indian fur trading site and 17th-19th century structures, landing, artifacts	Mardela Springs	Wicomico	Y

Review of the Architectural Property list and NRHP properties for the area was undertaken to determine if any significant properties are located within or near the proposed APE. A NRHP nomination form for the Lewis Landing House (DO201) was located. The house was built around the 1720s, which is likely one of the earliest residential structures in Dorchester County (Figures 26 and 27). The Lewis Landing House is one of four gambrel roof dwellings in the county. Recommendations for the building include additional research and recordation to determine its history and possible nomination to the NRHP as well as restoration.

In addition, during 2003 the Vienna Historic District was nominated to the NRHP:

> The town of Vienna, located on the western side of the Nanticoke River off MD Rte. 50, was established in 1706 by legislative enactment. The historic core of the town incorporates three NE to SW oriented streets (Water, Middle and Market Streets) and two NW to SE oriented streets (Race and Church Streets).
>
> Today the town contains many good examples of early and late 19th century architecture as well as some examples from the early twentieth century. With few exceptions, the historic core is

primarily residential. The residences are frame, mostly simple buildings, though there are a couple of high-style Victorians extant. Despite some gaps where buildings seemed to have been demolished over time, the town maintains a cohesiveness and architectural integrity. The narrow streets and views of the river bind the historic core.

The Vienna Historic District is eligible for the National Register as an example of a small river town on the Eastern Shore (Tully 2003:1).

Figure 26. The Lewis Landing House (DO201) located in Dorchester County has been nominated to the NRHP (Photo courtesy of the Maryland Historical Trust).

Potential for Cultural Resources

The presence of the known cultural resources within the proposed agricultural placement area suggests the potential for additional resources. It should be stated that the majority of known sites are located along the Nanticoke River, suggesting the high probability of additional sites within the APE (see Figure 25). Review of documented vessel losses within Dorchester County identified eight historic vessels lost within the Nanticoke River (Table 3). To date, none of these vessels have ever been located. As stated in Shomette:

On September 29, [1780] in was reported that the flotilla had ascended the Nanticoke to the town of Vienna where they landed, though only thirty-two men in number without the slightest opposition from the local militia or the residents. While at Vienna the picaroons went about their business of destruction. A new brigantine belonging to Robert Dashiell, and another belonging to James Shaw, and another belonging to a certain Mr. Travers, were seized in the river and burned to the waterline (Shomette 1982:50).

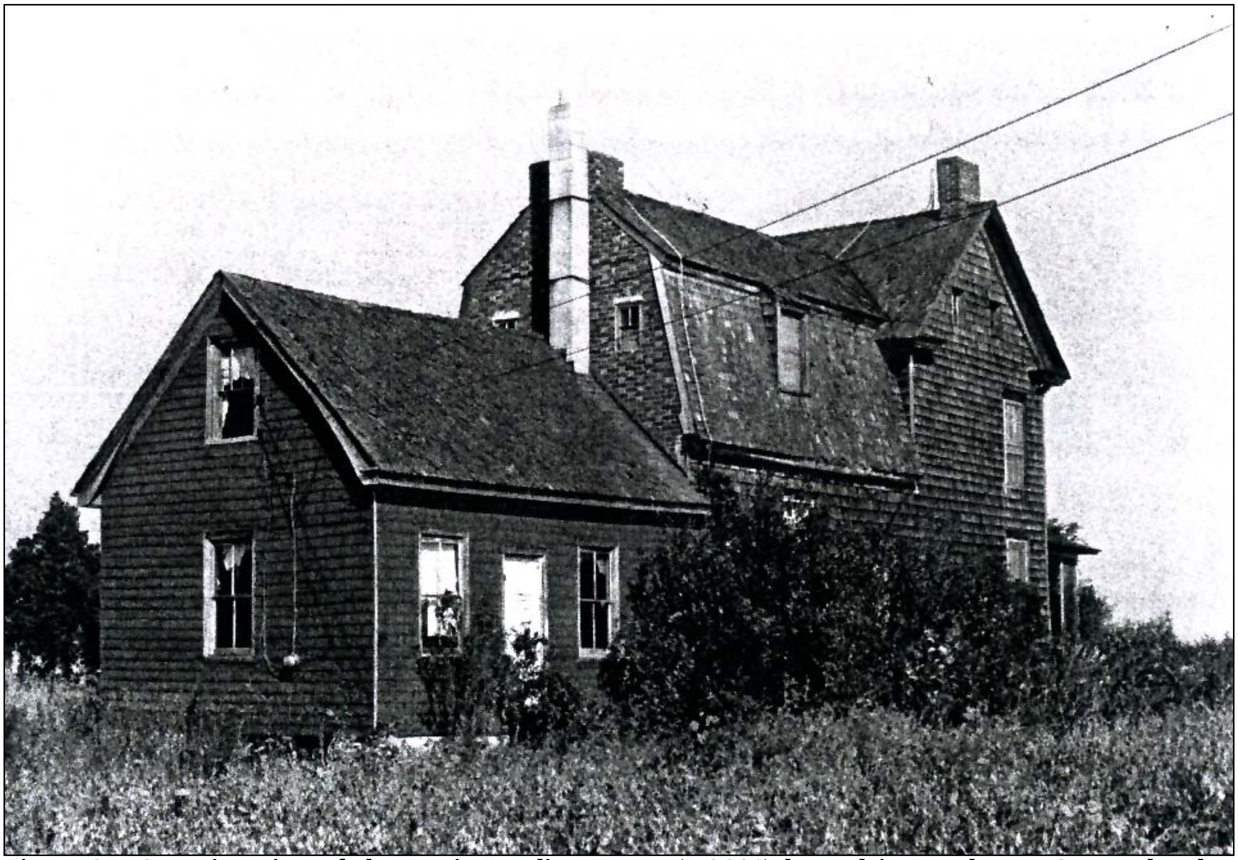

Figure 27. Opposing view of the Lewis Landing House (DO201) located in Dorchester County has been nominated to the NRHP (Photo courtesy of the Maryland Historical Trust).

Table 3. Documented vessel losses in the Nanticoke River, Dorchester/Wicomico Counties.

Vessel Name	Type	Year Lost	Location
Unidentified	Ship	September 29, 1780	Vienna
Unidentified	Ship	September 29, 1780	Vienna
Unidentified (2)	Brigs	September 29, 1780	Vienna
Lord Charlemont	Unknown	1785	Nanticoke River
M. Colbourne	Schooner	March 4, 1909	Nanticoke River
Victor Lynn	Gas Screw	March 10, 1924	Whitehaven
Eureka	Schooner	October 10, 1913	Nanticoke River

(as presented in Thompson 2000:43-44).

Review of known cultural resources and documented vessel losses suggests the potential for additional cultural resources within the APE. It is recommended that any proposed agricultural placement areas within this APE be surveyed for additional cultural resources prior to any project activities.

AGRICULTURAL PLACEMENT-VIRGINIA

Project Area Environment

The representative area is located within Isle of Wight County, and Suffolk City, Virginia (Figure 28). Dredged material would be hauled via barge as close as possible to the agricultural site. The material would then be pumped from the barge (using a hydraulic unloader) to the agricultural site in two lifts of 8 inches each. Considered an "innovative use" option, this concept "would improve marginal, sandy agricultural soils through the addition of fine-grained dredged materials, increasing the ability of agricultural soils to hold water and nutrients and resulting in greater crop production" (Murphy 2003:149).

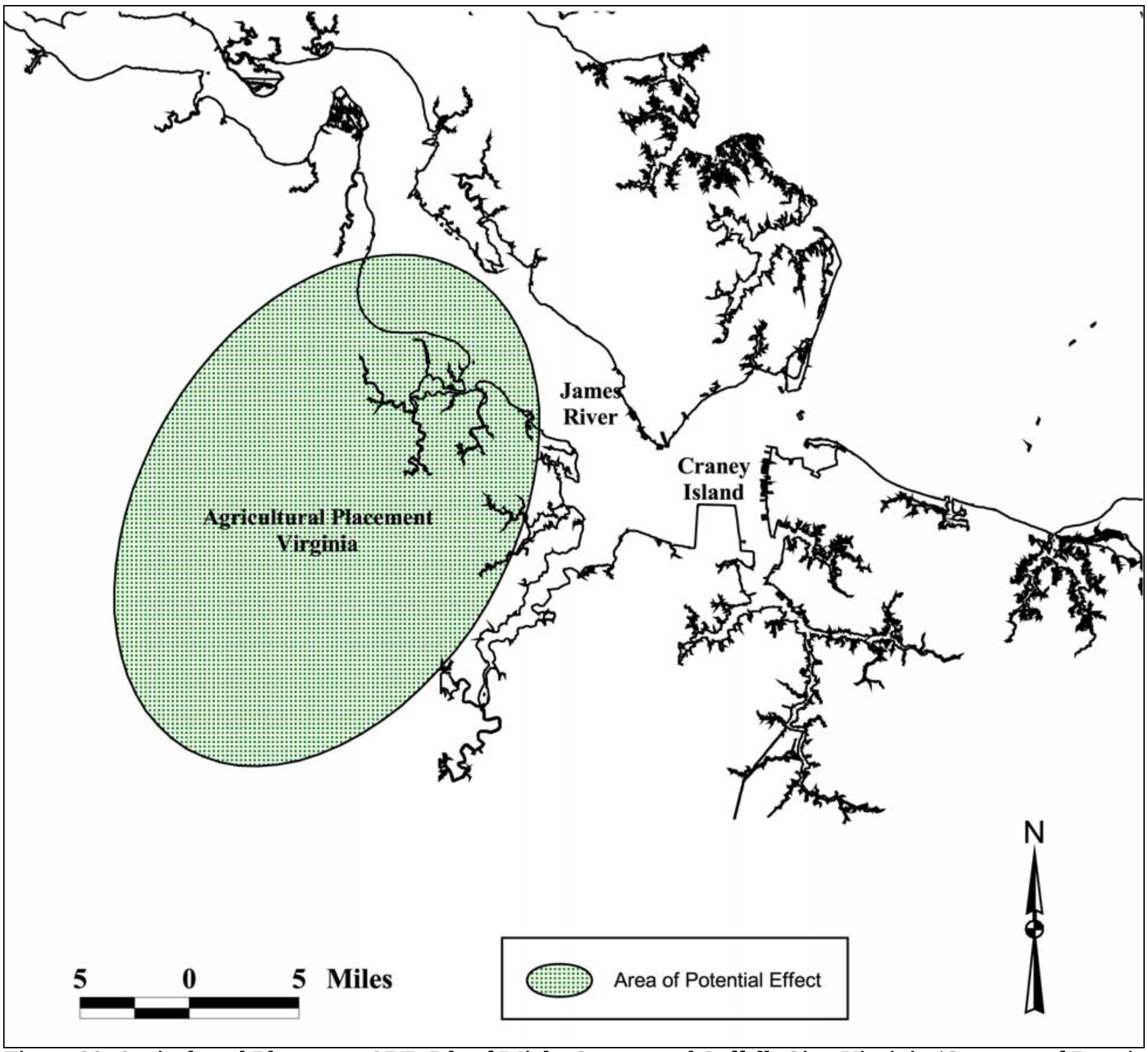

Figure 28. Agricultural Placement APE, Isle of Wight County and Suffolk City, Virginia (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

In an effort to identify known cultural resources within the APE, the State Site Files at the VDHR (including Bacons Castle, Mulberry Island, Smithfield, and Benns Church 7.5-min. quadrangle maps) were reviewed. A total of 61 documented archaeological sites (Bacons Castle=11, Mulberry Island=33, Benns Church=14, Smithfield=3) have been identified (Table 4). These sites include prehistoric to nineteenth-century sites (Figures 29, 30, 31, and 32).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 29. Known archaeological sites located within the Agricultural Placement Area, Isle of Wight County, Virginia (Bacons Castle, Virginia 7.5-min. quadrangle map, minor revised 1992).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 30. Known archaeological sites located within the Agricultural Placement Area, Isle of Wight County/Newport News City, Virginia (Mulberry Island, Virginia 7.5-min. quadrangle map, photorevised 1986).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 31. Known archaeological sites located within the Agricultural Placement Area, Isle of Wight County, Virginia (Smithfield, Virginia 7.5-min. quadrangle map, photorevised 1986).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 32. Known archaeological sites located within the Agricultural Placement Area, Isle of Wight County/Suffolk City, Virginia (Benns Church, Virginia 7.5-min. quadrangle map, photorevised 1986).

Table 4. Known cultural resources within the Virginia Agricultural Placement Area.

Site Number	Site Name	Site Type	USGS 7.5-min. quadrangle	County	Within APE?
44IW1	Rife Site	Archaic to Late Woodland-era site	Bacons Castle	Isle of Wight	Y
44IW3	Turkey Neck Site	Pottery and points	Mulberry Island	Isle of Wight	Y
44IW4	None	Light density shell midden	Bacons Castle	Isle of Wight	Y
44IW11	Turkey Neck Site	Prehistoric-Woodland	Mulberry Island	Isle of Wight	Y
44IW13	Basse's Choice	Shell scatter, historic debris	Mulberry Island	Isle of Wight	Y
44IW14	Basse's Choice	Shell scatter, historic debris	Mulberry Island	Isle of Wight	Y
44IW17	Basse's Choice	Historic debris	Mulberry Island	Isle of Wight	Y
44IW18	None	Early Woodland	Mulberry Island	Isle of Wight	Y
44IW19	None	17th century site (shell scatter; sm. amount of brick)	Mulberry Island	Isle of Wight	Y
44IW20	Fort Boykin	Historic: Colonial-Civil War	Mulberry Island	Isle of Wight	Y
44IW21	Bay Church Site	Brick kiln, 18th century Cemetery	Bacons Castle	Isle of Wight	Y
44IW32	Bryant Site	Late Woodland	Mulberry Island	Isle of Wight	Y
44IW33	Lloyd King Site	Historic scatter	Benns Church	Isle of Wight	Y
44IW34	None	Historic scatter	Benns Church	Isle of Wight	Y
44IW35	Basse's Choice	Shell deposit	Mulberry Island	Isle of Wight	Y
44IW36	Basse's Choice	Archaic/Woodland 17th century (2nd quarter)	Mulberry Island	Isle of Wight	Y
44IW37	Basse's Choice	18th century scatter	Mulberry Island	Isle of Wight	Y
44IW38	Basse's Choice	18th century scatter	Mulberry Island	Isle of Wight	Y
44IW39	Basse's Choice	17th century (2nd quarter)	Mulberry Island	Isle of Wight	Y
44IW40	Basse's Choice	Prehistoric/Historic (17th century)	Mulberry Island	Isle of Wight	Y
44IW41	Basse's Choice	19th century	Mulberry Island	Isle of Wight	Y
44IW42	Basse's Choice	Woodland/18th century	Mulberry Island	Isle of Wight	Y
44IW43	Basse's Choice	Prehistoric/Historic (post 1770)	Mulberry Island	Isle of Wight	Y
44IW44	Basse's Choice	Prehistoric/Possible 17th century	Mulberry Island	Isle of Wight	Y
44IW45	Basse's Choice	Prehistoric/Historic	Mulberry Island	Isle of Wight	Y
44IW46	Basse's Choice	Associated with 44IW43	Mulberry Island	Isle of Wight	Y
44IW47	Basse's Choice	Prehistoric/Possible 17th century	Mulberry Island	Isle of Wight	Y
44IW48	Basse's Choice	18th century scatter	Mulberry Island	Isle of Wight	Y
44IW49	Basse's Choice	Prehistoric/Historic	Mulberry Island	Isle of Wight	Y
44IW50	Basse's Choice	Late 18th/19th century scatter	Mulberry Island	Isle of Wight	Y
44IW51	Basse's Choice	18th century scatter	Mulberry Island	Isle of Wight	Y
44IW52	Stott Site	Historic (19th century)	Bacons Castle	Isle of Wight	Y
44IW53	Warren Creek Site	Prehistoric	Bacons Castle	Isle of Wight	Y
44IW63	None	Prehistoric shell midden	Mulberry Island	Isle of Wight	Y
44IW64	None	Prehistoric	Mulberry Island	Isle of Wight	Y
44IW65	Fort Huger	Historic (19th century)	Bacons Castle	Isle of Wight	Y
44IW71	None	Prehistoric (Woodland)	Mulberry Island	Isle of Wight	Y
44IW72	Johnson Site	17th century Anglo-american	Bacons Castle	Isle of Wight	Y
44IW77	None	Early to Late Woodland	Smithfield	Isle of Wight	Y
44IW78	Basse's Choice	Prehistoric	Mulberry Island	Isle of Wight	Y
44IW79	Battery Park Intersection	Archaic(?)	Benns Church	Isle of Wight	Y
44IW80	Town Creek Farm	Late 18th/early-mid. 19th century scatter	Benns Church	Isle of Wight	Y
44IW81	None	Prehistoric/Historic scatter	Bacons Castle	Isle of Wight	Y

Table 4, continued

Site Number	Site Name	Site Type	USGS 7.5-min. quadrangle	County	Within APE?
44IW82	None	Prehistoric shell midden	Bacons Castle	Isle of Wight	Y
44IW96	None	Woodland/18th century	Benns Church	Isle of Wight	Y
44IW111	Boothe Site	Angloamerican ca. 1650-1800	Mulberry Island	Isle of Wight	Y
44IW112	Ostrich Park	Prehistoric/Historic scatter	Benns Church	Isle of Wight	Y
44IW113	None	Pottery and points	Benns Church	Isle of Wight	Y
44IW114	None	17th century Anglo-american	Benns Church	Isle of Wight	Y
44IW132	Smithfield Site #1	19th century	Benns Church	Isle of Wight	Y
44IW145	None	Late Archaic to Early Woodland/17th. Century	Benns Church	Isle of Wight	Y
44IW146	None	Prehistoric/17th century	Benns Church	Isle of Wight	Y
44IW148	None	17th century (?)	Benns Church	Isle of Wight	Y
44IW149	None	19th century/Early 20th century	Smithfield	Isle of Wight	Y
44IW150	None	Late 19th century/Early 20th century	Smithfield	Isle of Wight	Y
44IW159	None	Prehistoric (?) shell midden	Benns Church	Isle of Wight	Y
44IW161	None	Late 18th century/Early 20th century	Benns Church	Isle of Wight	Y
44IW163	Branch House site	Historic/Late 19th-Early 20th century	Benns Church	Isle of Wight	Y
44IW183	Customs House	Historic	Mulberry Island	Isle of Wight	Y
44IW184	Burwell	17th century Euro-American	Bacons Castle	Isle of Wight	Y
44IW185	Middle Woodland Shell Midden	Middle Woodland	Mulberry Island	Isle of Wight	Y
44IW191	Bay Cliff Manor	Historic trash deposit	Bacons Castle	Isle of Wight	Y

Examination of the architectural and NRHP records identified multiple properties within each quadrangle map reviewed for the proposed agricultural placement area. While only three properties (46-44, 46-1, 46-35) are located within the Bacons Castle quad. map, approximately 63 were identified within the Benns Church 7.5-min. quadrangle. The majority of these properties are located within the historic district of Smithfield, Virginia. A total of four architectural/NRHP sites are located within the Mulberry Island 7.5-min. quadrangle, whereas a total of 45 properties were identified within the Smithfield quadrangle. These sites have not been plotted due to the sheer number of architectural and NRHP sites within this proposed APE. It should be stated that this APE retains the largest number of architectural and NRHP sites of any reviewed for the Baltimore Districts DMMP.

Potential for Cultural Resources

The presence of the known cultural resources within the proposed agricultural placement area suggests the potential for additional resources. It should be stated that the majority of known sites are located along the tributary systems suggesting the high probability of additional sites within the APE. It is recommended that all agricultural placement areas be surveyed for additional cultural resources prior to proposed project activities.

ARTIFICIAL ISLAND CREATION-LOWER BAY, VIRGINIA

Project Area Environment

The representative area is located within Accomack County, Virginia, near Watts Island (Figure 33). More specifically the proposed area is along the east/leeward side of Tangier Island.

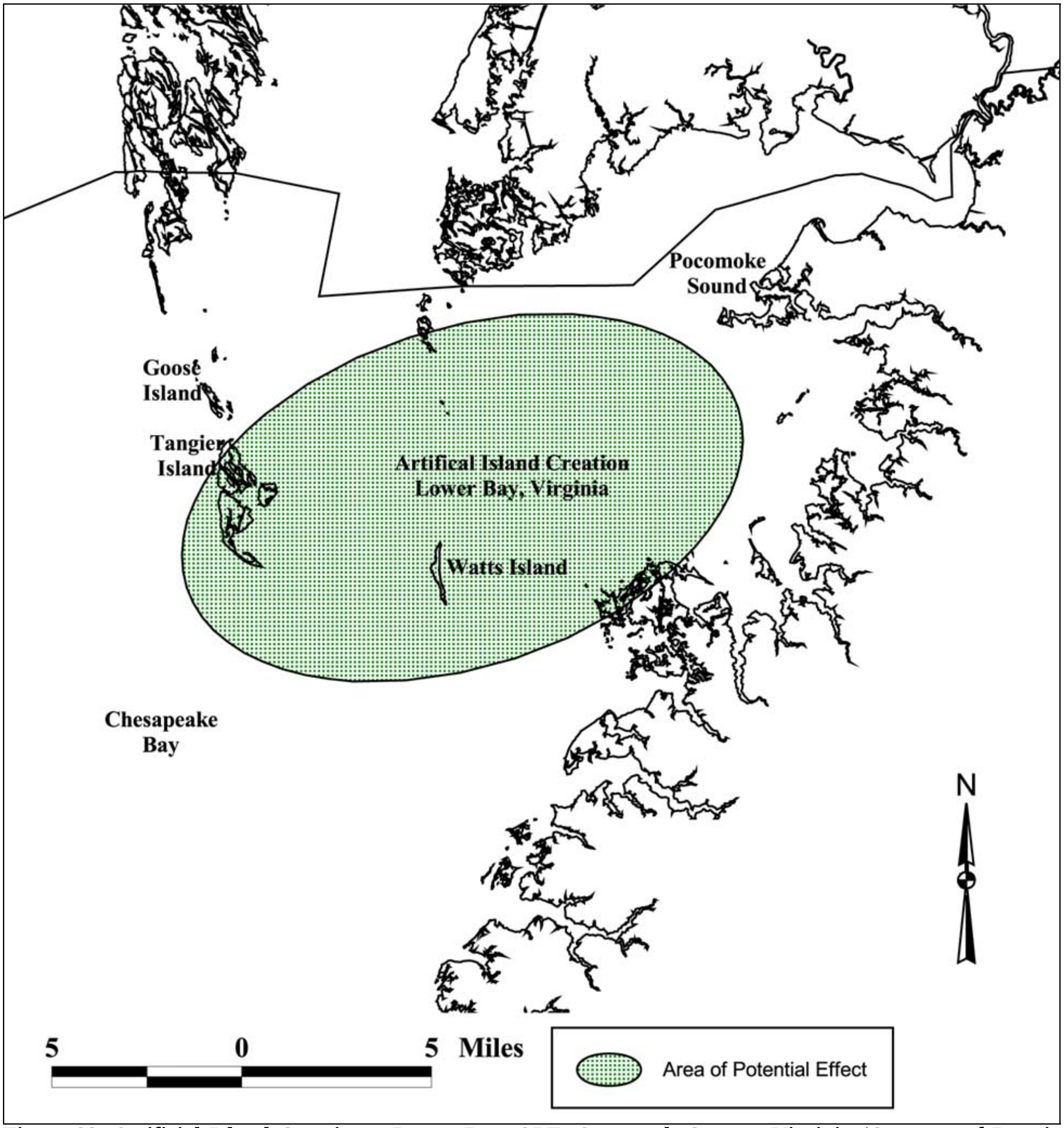

Figure 33. Artificial Island Creation – Lower Bay, APE, Accomack County, Virginia (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

All State Site Files at the VDHR (including the Goose Island and Tangier Island 7.5-min. quadrangle maps) were reviewed for the proposed Artificial Island Creation, Lower Bay, Virginia (Figure 34). No archaeological sites, architectural or NRHP sites were identified on the Goose Island 7.5-min. quadrangle. While only one site (44AC524) has been catalogued on Tangier Island, a total of six sites are located on Watts Island (Table 5). The sites include one Paleoindian site (44AC524), five Prehistoric sites, and one historic site (44AC522). Archival research identified a recent investigation documenting two additional archaeological sites (TI-1 and TI-2). Site TI-1 is the remains of a nineteenth-century cemetery and well, whereas Site TI-2 represents a pier once associated with the Goose Island store. Both of these sites are considered potentially eligible for the NRHP until an additional assessment can be made (Richards and Cooke 2003:28). These sites have not yet been assigned Virginia State Site numbers.

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 34. Known archaeological sites located within the Artificial Island Creation, Lower Bay, Virginia (Goose Island and Tangier 7.5-min quadrangle map, 1992).

Table 5. Known archaeological resources within the Lower Bay, Virginia Artificial Island Creation Area.

Site Number	Site Name	Site Type	USGS 7.5-min. quadrangle	County	Within APE?
44AC214	Watts Island site	Prehistoric	Tangier Island	Accomack	Y
44AC397	Watts Island #2	Prehistoric - Woodland	Tangier Island	Accomack	Y
44AC520	East Watts Island	Prehistoric	Tangier Island	Accomack	Y
44AC521	Southeast Watts Island	Prehistoric - Early Archaic	Tangier Island	Accomack	Y
44AC522	Watts Island #2	Historic/ Late 17th to early/mid-18th century	Tangier Island	Accomack	Y
44AC523	Watts Island #3	Prehistoric	Tangier Island	Accomack	Y
44AC524	NW Tangier Island	Paleoindian through Late Woodland	Goose/Tangier Island	Accomack	Y
TI-1	North Tangier Island	19th century cemetery and well	Tangier Island	Accomack	Y
TI-2	NW Goose Island	Pier	Goose Island	Accomack	Y

Two properties, Tangier Island Historic District (VDHR File No. 01-175) and Tangier Sound Light (VDHR File No. 1-79) are located within the APE. The Tangier Island Historic District has been deemed potentially eligible for the NRHP. The Tangier Sound Light (Figure 35) was built in 1890 and is classified as a square, screwpile lighthouse.

Figure 35. The Tangier Sound Lighthouse (Photo courtesy of the Maryland Historical Trust).

Review of NRHP properties within Accomack County identified 20 NRHP properties and two historic districts; the Accomac Historic District in Accomac, Virginia and the Onancock Historic District (VDHR File No. 273-1), Onancock, Virginia. Both are located outside the APE.

Potential for Cultural Resources

Identification of known cultural resources as well as review of previous investigations suggests the potential for additional resources within the proposed APE. As stated by Richards and Cooke:

> With regard to the potential for unidentified historic period sites to lie within the project area, nearly the entirety of Goose Island and Uppards [Tangier Island] have at least a moderate potential to contain sites, with much of the area having high potential. Historic artifacts were scattered across much of the shoreline of both islands…In addition, the size and shape of the Islands have changed a great deal over the years. In fact, as much as 25 feet of Tangier Island have eroded in a one-year time frame. There are several areas along the shoreline that are no longer testable due to water inundation and the development of inlets crossing the Islands…
>
> The same is true of prehistoric resources. While CRI archaeologists did not encounter any prehistoric artifacts during the course of the walkover, the number of points recovered by Islanders indicates that indeed such resources are in abundance…
>
> There is also the potential for underwater historic resources to exist off the shoreline of Goose Island and Uppards. In 1926 when the water hit an all time low, a Spanish Galleon was visible off the western shore of Tangiers. Because the waters adjacent to the islands have been historically shallow, a deep channel was not dredged until the early twentieth century and there is a moderate potential for historic shipwrecks to be encountered within the project area (Richards and Cooke 2003:28-29).

A number of historic vessel losses have been reported at or near Tangier Island (Table 6). One of these historic vessels was apparently uncovered after a cold northwest gale blew through the area in February of 1926. Local residents from Tangier Island reported a wreck exposed during an unusually low tide after the gale:

> They soon discovered, however, that the blowout revealed the encrusted upper works of a wrecked ship jutting just above the water's surface. Some of the oystermen, it was later claimed, were actually able to tread upon its slippery, worm-eaten decks (Shomette 1982:4).

Table 6. Vessels lost in the vicinity of Tangier Island.

Vessel Name	Type	Year Lost
5 Unidentified Ships	Spanish	ca. 1565
Jean d'Orleans	French Warship	ca. 1600
Unidentified	Sloop	1814
Stephen Decatur	Baltimore Packet	1817
At least 5 Vessels	Confederate	1861-1865
William F. Dunn	Schooner	1932

(as presented in Koski-Karell 1979a:52).

In addition to historically documented vessel loss in the area, a sunken vessel has been identified on a nautical chart predating 1912 (Koski-Karell 1979a:53). With this said, the presence of known archaeological sites, and historically documented shipwrecks in the area suggests potential for additional sites within the proposed APE.

Review of the National Oceanic and Atmospheric Administrations (NOAA) Advanced Wreck and Obstruction Information System (AWOIS) database identified 23 unknowns, eight obstructions, and 13 named vessels within the general vicinity of the APE (Appendix A). It must be stated that position accuracy of AWOIS wrecks and/or obstructions is highly variable and usually poor.

ARTIFICIAL ISLAND CREATION-UPPER BAY, MARYLAND

Project Area Environment

The representative site is located west of Tolchester Channel, within Kent County, Maryland (Figure 36). Located in the vicinity of Gales Lump Reef, this site is considered a potential island creation site. This island will be designed with a minimum 50 percent wetland component. Water depths in the area average 12 feet, and range from 10 to 16-feet MLLW (Murphy 2003:71)

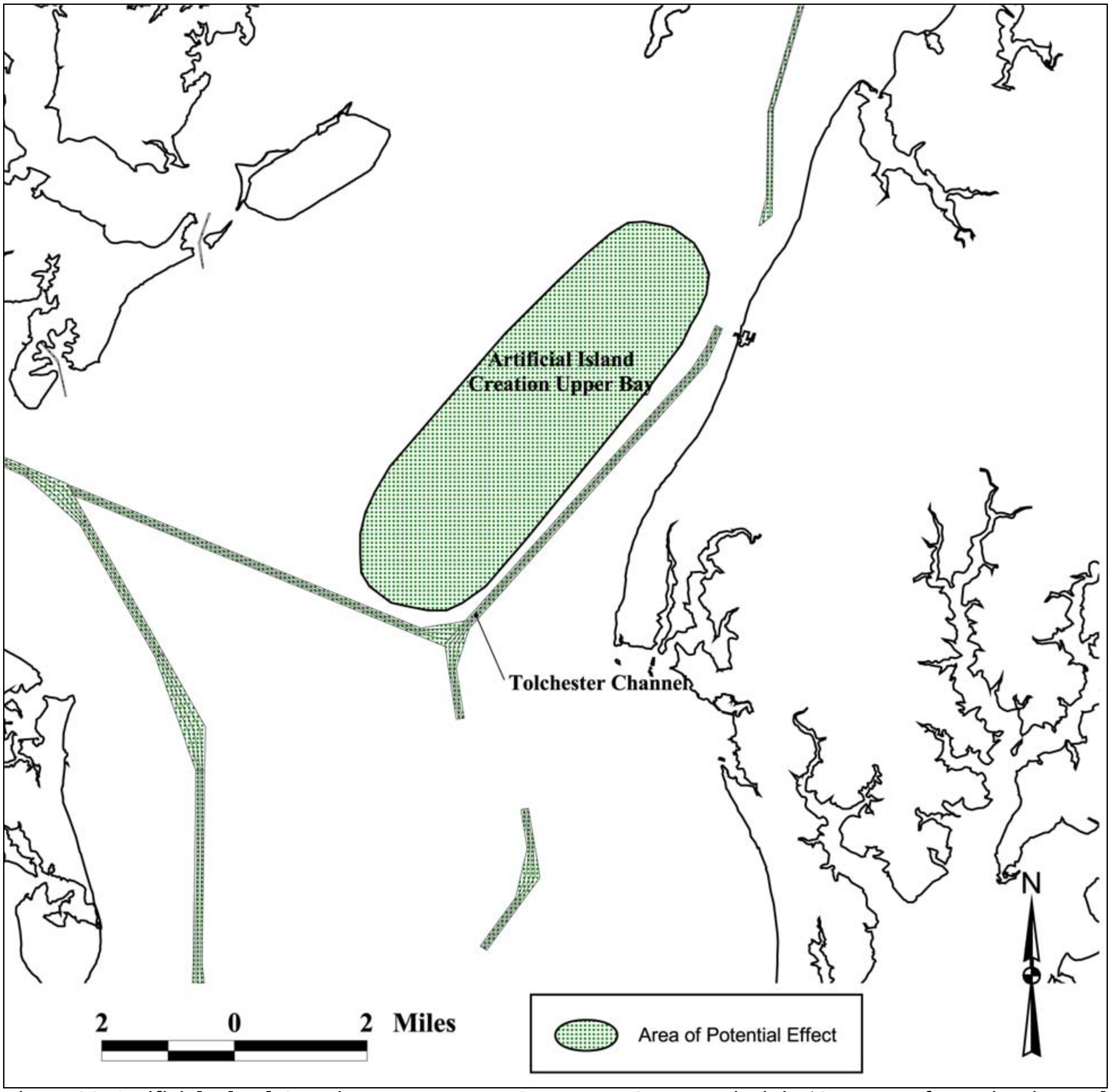

Figure 36. Artificial Island Creation – Upper Bay, APE, Kent County, Virginia (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

A review of known cultural resources within the proposed open water site (immediately west of Tolchester Channel) identified no known cultural resources within the area. Considered an "open-water" site, cultural resources within the area may consist of inundated prehistoric sites and/or historic shipwrecks.

A review of NRHP properties within the proposed project area was also undertaken. No known NRHP properties exist within this area.

Potential for Cultural Resources

While no known cultural resources are present within the proposed area a review of previous investigations within the general area can lend some insight into the potential for cultural resources within the proposed Artificial Island Creation site.

In 1979, the Karell Institute conducted a cultural resources reconnaissance survey in support of the Baltimore Harbor and Channels 50-foot Planning Study. While the report covers several areas within the Chesapeake Bay relative to the proposed open-water site, the Karell Institute addresses potential sites within the Baltimore Harbor Approach Channel. Located west of the Tolchester Channel, the Baltimore Approach Channel is relatively close to the proposed APE. Findings from the survey identified a number of historic vessels lost in the vicinity of the Baltimore Approach Channels (Table 7). Additionally, a side scan sonar and sub-bottom profile survey of the Baltimore Approach Channels in 1978 (Mueser 1978) identified 23 anomalies, two of which may represent historic shipwrecks (Koski-Karell 1979a:61-62). Koski-Karell states that while the approach to Baltimore Harbor has a high potential to yield potentially significant cultural resources, the extensive dredging in the area has likely already impacted any remaining site. Since very little dredging has taken place in the proposed APE, coupled with the APE's close proximity to existing shipping channels and Gales Lump Reef, the potential for cultural resources in the form of shipwrecks may be considered moderate to high.

Table 7. Vessels lost in the vicinity of the Baltimore Approach Channels.

Vessel Name	Type	Year Lost
Unidentified	Schooner Flat	1746
Unity	Ship	1758
Paul Jones	Steam Vessel	1845
George Weems	Steamship	1871
Port Smith	Schooner	1876
Vineland	Steam Vessel	1888
St. Mary's	Steamship	1907
Gertrude	Barge	1908
Elizabeth E. Vane	Barge	1911
G.W. North	Schooner	1911
Della May	Sloop	1911
Alum Chive	Ammunition Ship	1913
Starlight	Steam Vessel	1914

Table 7, continued

Vessel Name	Type	Year Lost
Sturdy	Motor Vessel	1915
John Wethered	Schooner	1915
Irene	Barge	1918
Old Point Comfort	Steamship	1920
Madison	Schooner	1920
E.T. Williams	Steam Vessel	1921
Howard L. Neff	Barge	1922
R.C. & T. Co. No. 386	Scow	1924
Arrow	Steam Yacht	1925
Lucie Wheately	Schooner	1928
E.S. Johnson	Schooner	1928
Calvin	Barge	1930
Jane	Motor Yacht	1932
Annapolis	Steamship	1935
City of Baltimore	Steamship	1937
Tolchester	Steamship	1941
Columbia	Barge	1942
Undercliff	Motor Vessel	1943
Robejan	Motor Vessel	1966

(as presented in Koski-Karell 1979a:60).

The Karell Institute completed an additional cultural resource reconnaissance survey in 1979. This survey, in support of the Baltimore Harbor and 42-foot Planning Study, sought to identify cultural resources that may be affected by dredging activity in three shipping channels (Brewerton Channel Extension, the Tolchester Channel, and the Swan Point Channel) east of Baltimore.

In 1993, Ocean Surveys, Inc. (OSI), of Old Saybrook, Connecticut conducted a cultural resource investigation of Area “G-West,” east of Pooles Island. Located in the Upper Chesapeake Bay, results of the survey may serve to illustrate the potential for submerged cultural resources in the proposed APE. Results of the historical research identified 12 shipwrecks within or near Area G-West (Ocean Surveys, Inc. 1993:8). The 12 vessels and an additional unidentified vessel are presented in Table 8.

Table 8. Vessels lost within or near the proposed APE.

Vessel Name	Type	Year Lost	Location	Cause	Source
Unidentified	Schooner	1753	Pooles Island	Stranded	Shomette 1982
Pennsylvania	Schooner	1875	Pooles Island	Foundered	Shomette 1982
Hughes Brothers	Gas Screw	1946	Pooles Island	Foundered	Shomette 1982
Weezie	Gas Screw	1972	Pooles Island	Stranded	Shomette 1982
Alice	Schooner	1881	Off Pooles Island	Foundered	Shomette 1982
Industry	Ship	1753	Near Worton Point	Unknown	Ocean Surveys, Inc 1993
Hawke	Merchantman	1766	Upper Bay	Foundered	Ocean Surveys, Inc 1993

Table 8, continued

Vessel Name	Type	Year Lost	Location	Cause	Source
Henry	Ship	1772	4 miles below Sassafras River	Ice	Ocean Surveys, Inc 1993
Antares	Gas Screw	1931	Handy's Point, Worton Creek	Burned	Ocean Surveys, Inc 1993
John C. Baxter	Barge	1935	Stoops Point, Fairlee Creek	Explosion	Ocean Surveys, Inc 1993
Maguire	Oil Screw	1944	Near Worton Point	Burned	Ocean Surveys, Inc 1993
Howard Wood	Barge	1944	Near Worton Point	Foundered	Ocean Surveys, Inc 1993
Cohasset	Barge	1948	Near Worton Point	Collision	Ocean Surveys, Inc 1993

(as presented in OSI 1993:12).

The remote-sensing survey of Area G-West identified 32 side scan sonar targets and 52 magnetic anomalies. OSI also reviewed the shipwreck and submerged obstructions data list at the Maryland Historical Trust under the reference listing “Pooles Island and Vicinity,” which identified 11 reported obstructions in that region of the Bay (Ocean Surveys, Inc. 1993:7).

In 1995 a Phase I remote-sensing survey was conducted by R. Christopher Goodwin & Associates (Goodwin & Associates 1995a) within the Tolchester Beach Reach of the Tolchester Channel:

> Three magnetic anomalies were found in the Tolchester Beach Reach, but all were associated with modern debris. Within the proposed straightening area, two magnetic anomalies were identified in the upper part of the bend (proposed channel) and six were identified in the lower part of the proposed channel. All except one were attributed to modern debris or natural channel features (U.S. Army Corps of Engineers, Baltimore District 2001:4-37).

During 1996 a Phase II remote-sensing survey and diver investigation was conducted in the vicinity of the proposed S-Turn realignment by Tidewater Atlantic Research, Inc., of Washington, North Carolina (Tidewater Atlantic Research, Inc., 1996). One anomaly exhibited characteristics of a shipwreck, but subsequent diver investigations identified the target as a disturbance from previous dredging activities and an anchor chain from a buoy (U.S. Army Corps of Engineers, Baltimore District 2001:4-37).

In 1996 a Phase I submerged cultural resources investigation was completed of the G-East Disposal Site and Disposal Site #92 (Cox and Hunter 1996). Performed for the U.S. Army Corps of Engineers, Philadelphia District, the survey included background and documentary research, an underwater archaeological survey, and analysis of data. These two disposal sites are located north of the proposed Artificial Island APE.

Results of the investigation identified no known prehistoric resources within the project area(s). However:

> …it should be noted that the level of study precluded a full evaluation of prehistoric archaeological potential. For further large-scale studies of the Upper Chesapeake Bay, it is suggested that consideration be given to limited core sampling as a means of reconstructing the paleoenvironment of formerly exposed terrain that has been inundated over the past 10 to 15 millennia. This would provide a more solid basis for assessing prehistoric archaeological potential (Cox and Hunter 1996:Management Summary).

Analysis of the remote-sensing survey data identified 21 anomalies within the two disposal sites. Of these 21 anomalies, all but two were judged to derive from modern debris or single, isolated objects. Recommendations for Target #15:844, in the G-East Disposal site and Target #27:958 in Disposal Site #92 included additional Phase I-level survey (in the form of remote sensing, diving, visual inspection, probing) to identify the source of the anomalies (Cox and Hunter 1996:6-1).

In 1999 R. Christopher Goodwin & Associates, Inc. of Frederick, Maryland conducted a Phase I remote-sensing survey for the DNR Shellfish Dredging Project within the Upper Chesapeake Bay Maryland. The survey area for the project included three survey blocks located east and southeast of Pooles Island, near the proposed Artificial Island creation APE. The survey identified 102 magnetic and 67 acoustic anomalies within the three areas. All targets except Target #8 and Target #11 exhibited a low potential for representing submerged cultural resources (Pelletier et al. 1999:103). Avoidance of Targets #8 and #11 was recommended. The report also identifies a number of vessels lost within the vicinity of the DNR Dredge Survey areas. Those listed as lost near Tolchester are presented below in Table 9.

A review of the AWOIS Files within the general area of the Artificial Island Creation – Upper Bay, Maryland site identified 63 obstructions, 18 unknowns, and 15 vessels within the area (Appendix A**)**. As stated earlier, the position accuracy of AWOIS wrecks and/or obstructions is highly variable and usually poor. These records simply serve to illustrate the potential for additional cultural resources within the proposed project area.

Table 9. Vessels lost at or near the vicinity of the DNR Dredge Survey Area.

Vessel Name	Type	Year Lost	Location	Cause	Source
Desdemona	Gas Yacht	1926	Tolchester Beach	Burned	Pelletier et al. 1999:17
Alliance	Barge	1896	Off Tolchester Beach	Foundered	Pelletier et al. 1999:17
Monitor	Screw Steamer	1887	Tolchester	Stranded	Pelletier et al. 1999:17
Penta	Schooner	1887	Tolchester	Stranded	Pelletier et al. 1999:17

(as presented in Pelletier 1999:17).

While not specifically located within the proposed APE, these previous investigations serve to illustrate the potential for both prehistoric and historic submerged cultural resources within the proposed Artificial Island Creation site.

BEACH NOURISHMENT-VIRGINIA

Project Area Environment

The representative areas include three beach areas located within the Lower Chesapeake Bay, including Buckroe Beach, Willoughby Spit/Ocean View, and Virginia Beach, Virginia (Figure 37). Similar to the Buckroe Beach site, the Willoughby Spit/Ocean View site and Virginia Beach sites are located within both residential and business areas.

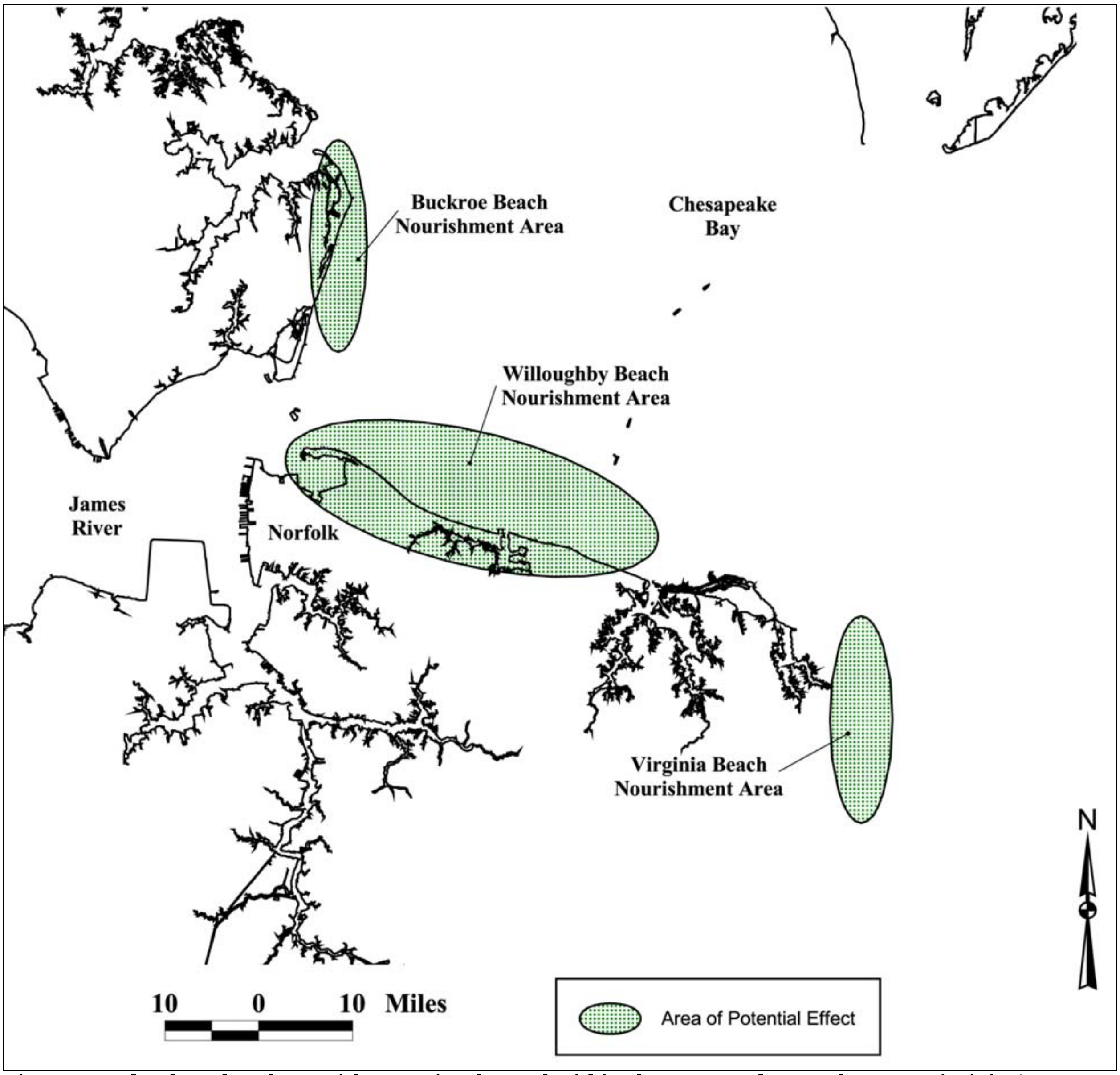

Figure 37. The three beach nourishment sites located within the Lower Chesapeake Bay, Virginia (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Buckroe Beach

Buckroe Beach is located within the City of Hampton, Virginia (Hampton 7.5-min. quadrangle map). Located along the west shore of the Chesapeake Bay (Figure 38), Buckroe Beach is extensively used and includes a populous residential development. Next to Buckroe Beach are private residential properties, adjoining salt ponds, marshes, and a nature preserve (Norfolk Harbor and Channels Long-Term Disposal, Inner Harbor, 1990:159).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 38. Known archaeological sites located within the proposed Buckroe Beach Nourishment APE (Hampton, Virginia 7.5-min. quadrangle map, photorevised 1986).

Known Cultural Resources

All State Site Files and records for the Buckroe Beach nourishment area were reviewed at the VDHR requisite to known cultural resources. A total of five documented prehistoric archaeological sites (Figure 38) were identified north of the proposed nourishment area (Table 10).

Table 10. Known archaeological resources within or near the Buckroe Beach Nourishment Area, City of Hampton/Poquqson City, Virginia.

Site Number	Site Name	Site Type	USGS 7.5-min. quadrangle	County	Within APE?
44YO081	None	Anglo-American	Hampton	Poquqson City	N
44YO082	None	Woodland shell midden	Hampton	Poquqson City	N
44YO105	Messick Point	Early Woodland	Hampton	Poquqson City	N
44YO155	None	Prehistoric shell midden	Hampton	Poquqson City	N
44YO156	Plumtree Island	Prehistoric/historic	Hampton	Poquqson City	N

These sites are all located north of Buckroe Beach near the Plum Tree Island National Wildlife Refuge, and are therefore outside of the APE. Review of the Architectural and NHRP property lists identified seven properties (114-05, 114-61, 114-5136, 114-5137. 114-5134, 114-5135, and 114-5138) within the Buckroe Beach vicinity. These properties are all located within the APE. Numerous Architectural and NRHP properties are located within the City of Hampton, Virginia.

Immediately south of Buckroe Beach is the Fort Monroe Military Reservation:

> Fort Monroe is located on Old Point Comfort, a peninsula at Hampton Roads (the confluence of the James River and the Chesapeake Bay). The peninsula is approximately 1.9 miles (10,000 feet) long and varies between 800 and 5,000 feet wide. Relief is low, at the highest point the elevation is 10 feet above sea level. Water surrounds virtually all of Old Point Comfort. It is connected to the mainland only on the north edge of the base in the area called Dog Beach. To the west, Mill Creek separates the peninsula from the mainland. Hampton Roads borders the east, south, and southwest side of the peninsula…Geologically, Old Point Comfort is of recent origin, forming during environmental changes starting ca. 11,000 years ago. These changes marked a major climatic shift from the Ice Age environments of the Pleistocene into the modern environment of the Holocene (Balicki et al. 1999:6).

In 1999, an archaeological assessment of Fort Monroe (44HA27) and Old Point Comfort was completed by John Milner and Associates, of Alexandria, Virginia. Fort Monroe (44HA27) is a National Historic Landmark property and is subject to the National Historic Preservation Act of 1966 (Balicki et al. 1999:185). Findings from the 568-acre survey area concluded that:

> …archaeological resources at Fort Monroe are rich and varied ranging from terminal Late Woodland activity to military fortifications. Nineteen loci, numerous isolated buried ground surfaces, and archaeologically sensitive areas were identified. Of the 19 loci, 12 are considered potentially eligible to the National Register of Historic Places and five are considered to be eligible. Of the latter group, four are contributing resources to the National Landmark and one is eligible for the information it can contribute to the understanding of the prehistory of the area. The remaining two loci and the isolated buried ground surfaces are not considered eligible and no further work is recommended. The remaining archaeologically sensitive areas could not be tested

> during the Phase I investigations, but documentary research suggests that there is a potential for archaeological resources in these areas (Balicki et al. 1999:194).

Fort Monroe is located immediately south of the proposed APE and will not be affected by project activities.

Review of historic districts identified six properties within Hampton City, Virginia (Table 11). These properties are all located outside the APE and will not be affected by proposed project activities.

Table 11. Historic districts within Hampton City, Virginia.

District Name	Location	County	VDHR No.	Within APE?
Aberdeen Gardens	Hampton	Hampton	114-146	N
Fort Monroe	Old Point Comfort	Hampton	N/A	N
Fort Wool	Island between Willoughby Spit and Old Point Comfort, Hampton	Hampton	N/A	N
Hampton Institute	NW jct. Of U.S. 60 and the Hampton Roads Bridge Tunnel, Hampton	Hampton	N/A	N
Hampton Veterans Affairs Medical Center	Hampton	Hampton	N/A	N
Victoria Boulevard Historic District	Hampton	Hampton	VHLC No. 114-112	N

Potential for Cultural Resources

No archaeological sites have been documented within the APE. Although there are seven Architectural and NHRP properties within the APE, project activities will likely not affect these properties. None of the historic districts within Hampton are located within the APE.

Review of the AWOIS files identified 22 obstructions, 20 unknowns, and 11 vessels within the general area. Again, the area researched is larger than the proposed APE and does not reflect the actual number of obstructions, unknowns, and vessels within the APE. This review simply illustrates the potential for additional submerged cultural resources within the proposed APE.

Willoughby Spit/Ocean View

The Willoughby Spit/Ocean View beach nourishment area is located along the north-facing shoreline within the City of Norfolk (Norfolk North and Little Creek 7.5-min. quadrangle maps), Virginia (see Figure 38).

Known Cultural Resources

All State Site Files were reviewed for known cultural resources relative to the Willoughby Spit/Ocean View Beach Nourishment option, located within the City of Norfolk, Virginia. The two quadrangle maps reviewed for cultural resources were Norfolk North and Little Creek. Two archaeological sites were identified along the proposed beach nourishment area including a German U-Boat (44NR15) and a prehistoric shell midden (44NR19) (Figure 39 and 40; and Table 12).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 39. Known archaeological sites located within the proposed Willoughby Spit/Ocean View Nourishment APE (Norfolk North, Virginia 7.5-min. quadrangle map, photorevised 1986).

Table 12. Known archaeological resources within or near the Willoughby Spit/Ocean View Nourishment Area, City of Norfolk, Virginia.

Site Number	Site Name	Site Type	USGS 7.5-min. quadrangle	County	Within APE?
44NR15	German U-Boat	Historic	Norfolk North	City of Norfolk	Y
44NR19	Edward Bottoms Va. 10	Prehistoric	Norfolk North	City of Norfolk	Y

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 40. Known architectural sites located within the proposed Willoughby Spit/Ocean View Nourishment APE (Little Creek, Virginia 7.5-min. quadrangle map, photorevised 1986).

The German U-Boat (44NR15) is located along the western extent of Willoughby Spit, immediately west of the I-64 Hampton Roads Bridge/Tunnel. The shipwreck apparently shows during periods of low tide. The prehistoric shell midden (44NR19) is apparently located near Willoughby Spit at Susan Constance Shrine, between Route 60 and Chesapeake Bay. Locational datum for this site was provided by Edward Bottoms of Chesapeake, Virginia. The site location and size has not been field verified.

A number of architectural and NRHP properties have also been identified within and near Willoughby Spit. Review of the Norfolk North 7.5-min. quadrangle map identified 18 properties. A VDHR Reconnaissance Survey Form of the Willoughby Beach Neighborhood describes the area:

> The Willoughby Beach neighborhood occupies the land formation known as Willoughby Spit, which is essentially a great sand dune that formed during the nineteenth century in a position extending or arching northwestward into the Hampton Roads of Chesapeake Bay…The Willoughby Beach Neighborhood contains approximately 200 dwellings dating to the period ca. 1900-1950. With regard to architectural style, the vernacular bungalow is by far the predominant stylistic form found among the pre-1951 Willoughby Beach houses…Willoughby Beach began to evolve as the City of Norlfolk's "beach neighborhood" around 1900…Considering the neighborhood as a potential historic district, it is the opinion of the surveyor that Willoughby Beach does not demonstrate the important hisotrical associations or qualities of architectural distinction that would meet the criteria for National Register eligibility (Berger 2000:1-10).

Review of cultural resources within the Little Creek 7.5-min. quadrangle identified no recorded archaeological sites and eight architectural/NRHP sites (see Figure 40). All of these properties are located within Ocean View, Bay View Beach, and East Ocean View, Virginia. Although located inshore, these properties are within the proposed APE. A total of 13 historic districts have been identified within the City of Norfolk (Table 13). None of these are located within the proposed APE and will therefore not be affected by project activities

Table 13. Historic districts within the City of Norfolk, Virginia.

District Name	Location	County	VDHR No.	Within APE?
Berkeley North Historic District	Norfolk	Norfolk City	122-0824	N
Colonial Place	Norfolk	Norfolk City	N/A	N
Downtown Norfolk Historic District	Norfolk	Norfolk City	N/A	N
Downtown Norfolk Historic District (Boundary increase)	Norfolk	Norfolk City	N/A	N
Fort Norfolk	Norfolk	Norfolk City	N/A	N
Ghent Historic District	Norfolk	Norfolk City	N/A	N
Jamestown Exposition Site Buildings	Norfolk	Norfolk City	N/A	N
Lafayette Residence Park	Norfolk	Norfolk City	N/A	N
North Ghent	Norfolk	Norfolk City	N/A	N
Riverview	Norfolk	Norfolk City	122-0823	N
Saint Mary's Catholic Cemetery	Norfolk	Norfolk City	122-1036	N
West Freemason Street Area Historic District	Norfolk	Norfolk City	N/A	N
Winona	Norfolk	Norfolk City	122-0828	N

Potential for Cultural Resources

Since there are known archaeological sites, architectural/NRHP properties, and shipwrecks within the proposed APE, the potential for additional cultural resources within the APE exists.

Review of the AWOIS files identified 169 obstructions, 45 unknowns, and 20 named vessels. It should be stated that the named vessels include both historic and modern vessels. The results of the AWOIS file search serve to illustrate the large number of hangs, obstructions, and vessels within the general area of the APE (although the area researched is larger than the proposed APE. These findings may indicate the potential for additional submerged cultural resources within the APE.

Virginia Beach

The Virginia Beach nourishment site is located immediately outside Chesapeake Bay proper (see Figure 37), facing the Atlantic Ocean within the City of Virginia Beach County (North Virginia Beach and Virginia Beach 7.5-min. quadrangle maps). Dredged material to be deposited at these locations would come from the Cape Henry Channel.

Known Cultural Resources

Review of known cultural resources within the Virginia Beach Nourishment Area included review of all State Site Files and records at the VDHR. No archaeological sites have been documented within the APE. However, numerous architectural and NRHP properties are located within this area. Within the North Virginia Beach quadrangle map, a total of 24 properties have been identified. Of these, 15 are located within close proximity to the beach. A total of 138 architectural and NRHP properties have been recorded within the Virginia Beach area (Virginia Beach 7.5-min. quadrangle map). Of these, approximately 46 are located within the Virginia Beach APE.

A number of historic vessel losses have been documented within the general area of Virginia Beach. Review of Shipwrecks of the Virginia Coast (Pouliot and Pouliot 1986) indicates a large number of distressed vessels received assistance from the United States Life Saving Service (USLSS) off the Virginia Coast. Records from the USLSS identified approximately 580 vessels that were wrecked, beached or in need of rescue assistance.

From 1875 to 1914, the USLSS had 16 life-saving stations along the Virginia Coastline. The Cape Henry and Seatack/Virginia Beach Stations were the two closest to the APE. The Cape Henry station was involved in 79 documented rescues, while the Seatack/Virginia Beach station was involved in at least 33 rescues (Pouliot and Pouliot 1986:159-179). As illustrated in Figure 41, numerous wrecks were located between Cape Henry and Virginia Beach.

No historic districts have been identified within or near the APE.

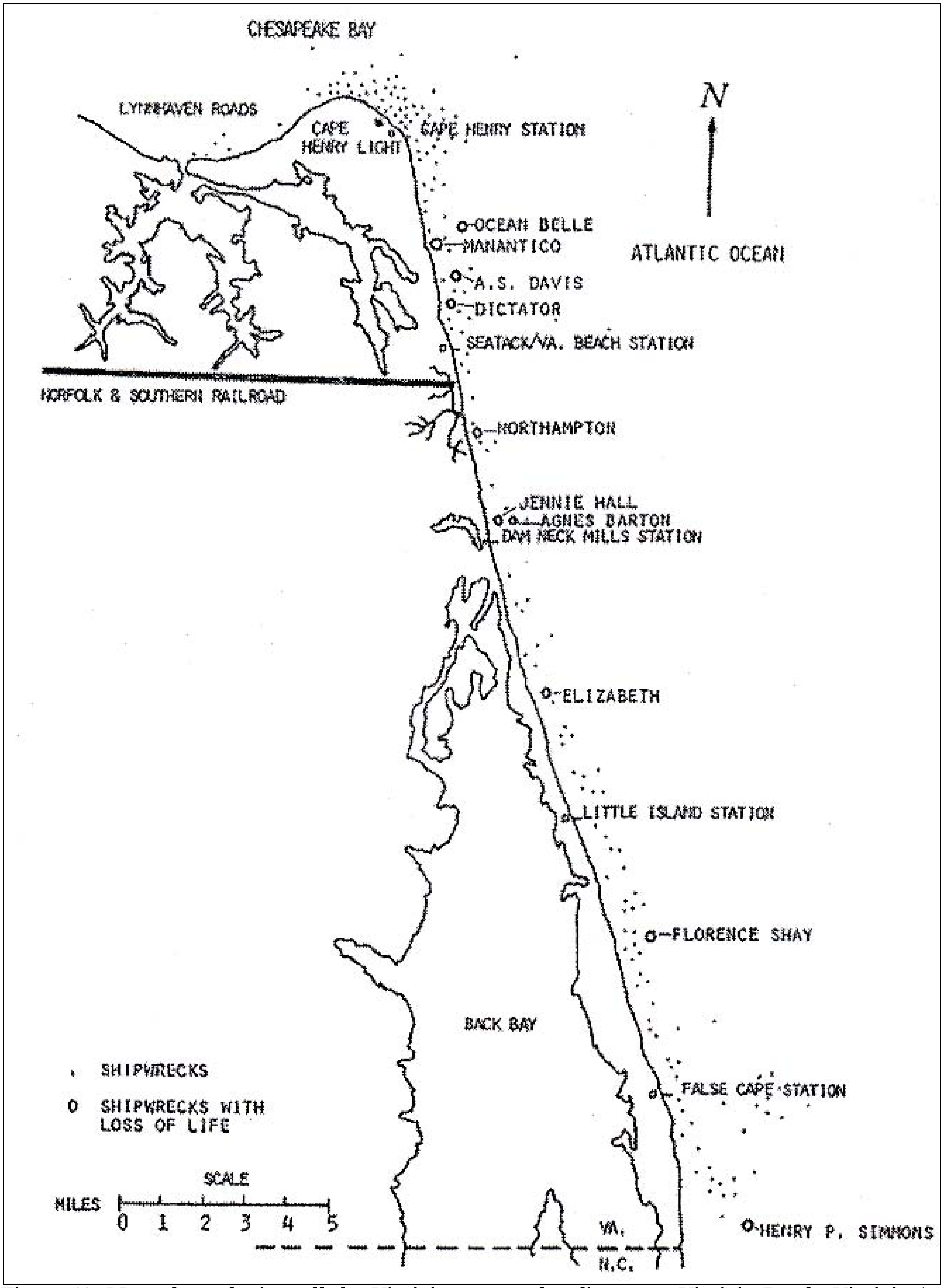

Figure 41. Map of wreck sites off the Virginia eastern shoreline, near Virginia Beach, Virginia (as presented in Pouliot and Pouliot 1986:27).

Potential for Cultural Resources

Review of historic vessel losses, as well as previous cultural resource investigations in the general area suggests the potential for additional cultural resources within the APE. In 2000 a remote-sensing investigation by Tidewater Atlantic Research (TAR) off Cape Henry and Thimble Shoals, Virginia, identified 85 magnetic anomalies, 26 of which were deemed potentially significant (Watts 2000).

Review of the AWOIS files identified 191 obstructions, 59 unknowns, and 26 named vessels in the general area of the proposed APE. It should be stated that the named vessels include both historic and modern vessels. The results of the AWOIS file search serve to illustrate the large number of hangs, obstructions, and vessels within the general area of the APE (although the area researched is larger than the proposed APE. These findings may indicate the potential for additional submerged cultural resources within the APE.

As a follow-up to the TAR survey, Panamerican conducted archaeological diver investigations of the 26 anomalies during the summer of 2001. Dive operations identified 21 of the anomalies as non-significant, while four could not be successfully relocated. The remaining target was located in an active shipping channel and could not be safely investigated (Tuttle 2001:19).

Historic research (Koski-Karell 1979b, Pouliot and Pouliot 1986) has documented shipwreck losses in the general area and previous investigations (Watts 1987, 2000; Tuttle 2001) have identified the potential for additional cultural resources. Numerous architectural and NRHP properties are also located within the APE.

C&D CANAL UPLAND SITES EXPANSION

Project Area Environment

Located in northeast Maryland along the Elk River, the Chesapeake and Deleware (C&D) Canal connects the Chesapeake Bay and the Delaware River, Cecil County, Maryland (Figure 42). The site considered for expansion is the Pearce Creek Confined Disposal Facility that covers 260-diked acres. The expansion would include raising the existing dike 10 feet to increase capacity by approximately 4.2 million cubic yards (myc).

Known Cultural Resources

Panamerican reviewed previous investigations relative to known cultural resources within the C&D Canal Upland Sites Expansion Area. In 1994 a Phase I remote-sensing survey for submerged cultural resources was conducted by R. Christopher Goodwin & Associates, Inc., that covered 2,355 acres extending from Tolchester Beach to the entrance of the C&D Canal. Results of the survey identified 74 magnetic anomalies and 40 side scan sonar targets. Additional testing of eight targets was recommended to determine their potential eligibility to the NRHP (Irion et al. 1995:ii)

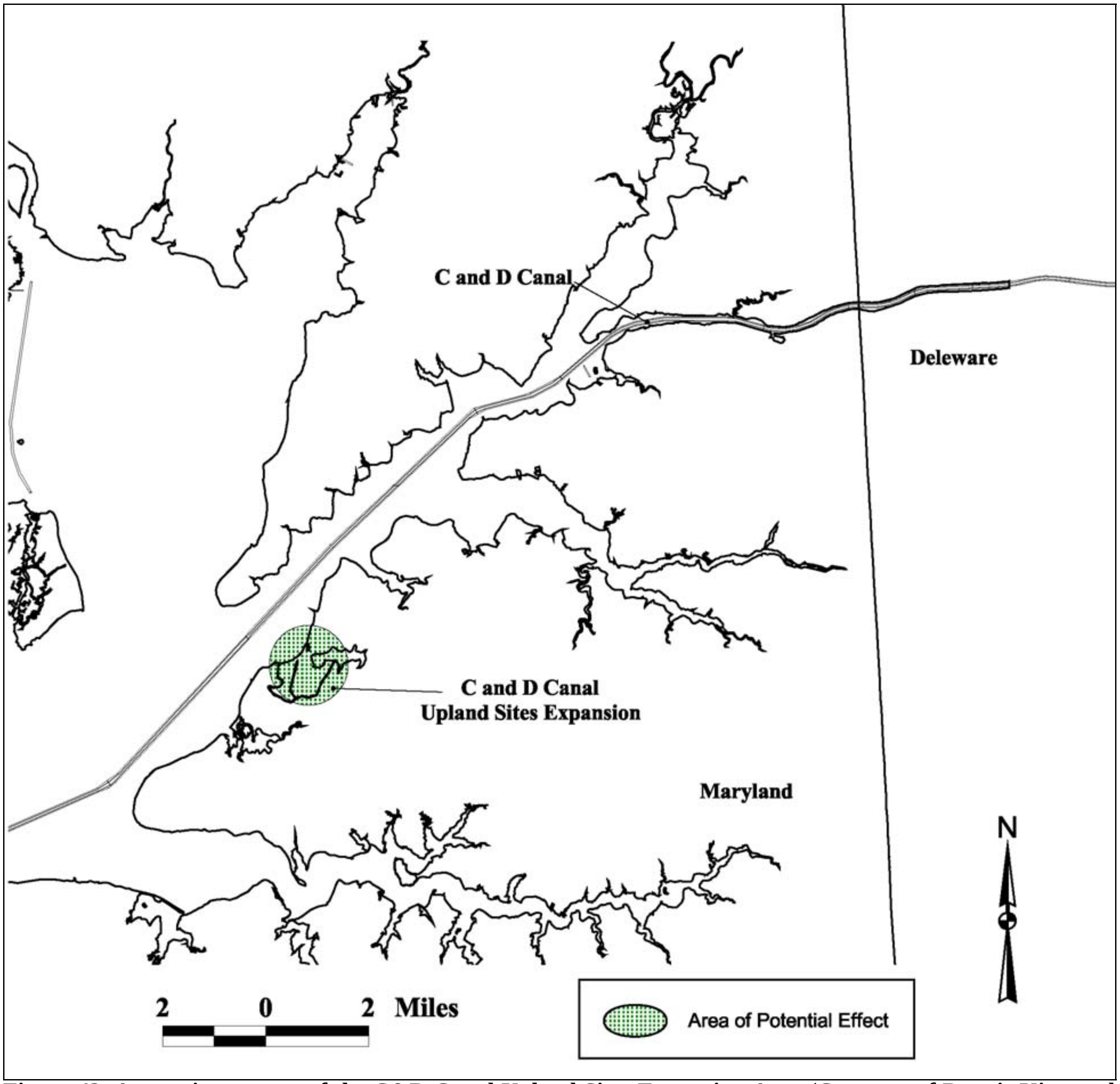

Figure 42. Approximate area of the C&D Canal Upland Sites Expansion Area (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Also in 1994, an evaluation of the C&D Canal was undertaken by Cultural Heritage Research Services, Inc., of North Wales, Pennsylvania. The purpose of the report was to determine the eligibility of the canal for listing in the NRHP and to highlight those areas that are potentially eligible for listing on the NRHP:

> The Main Channel and the Delaware City Branch Channel of the Chesapeake and Delaware Canal are not eligible for nomination to the National Register of Historic Places. Both resources lack integrity. Although the canal is one of the few remaining nineteenth century canals that continues to serve its historic function, is associated with the nationwide canal building boom of the early nineteenth century, and is associated with three nationally important architect engineers of the nineteenth century (Benjamin Latrobe, William Strickland, and Benjamin Wright), the channels of

> the Chesapeake and Delaware Canal have been altered beyond recognition. Along the Main channel three alteration projects (1921, 1935 and 1954) have transformed the thirty-six-foot-wide barge “ditch” into a 450-foot-wide shipping channel. Each improvement erased all traces of the previous form of the canal and obliterated the physical evidence of historical continuity.
>
> Rather than representing a remnant of the early lock canal, the Branch Channel reflects construction activities conducted after 1919 to compensate local interests for the loss of commerce after construction of the Reedy Point entrance. During this period, the Branch Channel was not an element in the Intercoastal Waterway, contained no distinctive elements of engineering or workmanship and carried no freight after 1929. The historical integrity of the Branch Channel is further compromised by significant alterations occurring during the past fifty years.
>
> Today, the Pump House Complex in Chesapeake City and the Eastern Lock in Delaware City constitute the only remaining nineteenth century materials of the canal, and both are listed in the National Register of Historic Places. Although the Fifth Street Bridge retains its original fabric, the elements that made it historic (its operating equipment) have been removed. Therefore the bridge is not eligible for listing in the National Register of Historic Places (Epperson and Coneybeer 1994:36)

During 1995, Tidewater Atlantic Research, Inc., conducted a Phase II submerged cultural resource investigation relative to the C&D Canal Deepening, Maryland and Delaware. The investigation included the identification of targets RPU 1-22, TPA 16-58, APA 30-491, CH4L 6-238, WPA 3-4, and TBL 8-168. Results of the investigation “revealed that four of the six targets are debris related to modern dredging activity, one is fragmentary remains of a wooden structure possibly associated with past navigation on the Chesapeake and Delaware Canal, and one is a sunken navigation buoy” (Morris 1995:4-V).

No additional NRHP or architectural properties were identified during the archival research phase of the current investigation. Review of historic districts within Cecil County was also undertaken. Results of the review identified seven historic districts within the county (Table 14). However, none are located within the proposed APE.

Table 14. Historic districts within Cecil County, Maryland.

District Name	Location	County	VDHR No.	Within APE
Brown, Jeremiah, House and Mill Site	Rising Sun	Cecil	N/A	N
Charlestown Historic District	Charlestown	Cecil	N/A	N
Perry Point Mansion House and Mill	Perryville	Cecil	N/A	N
Port Deposit	Port Deposit	Cecil	N/A	N
South Chesapeake City Historic District	Chesapeake City	Cecil	N/A	N
Tome School for Boys Historic District	Port Deposit	Cecil	N/A	N
West Nottingham Academy Historic District	Colora	Cecil	CE-1450	N

Potential for Cultural Resources

Review of previous investigations and historic use of the C&D Canal suggests the potential for additional cultural resources within the APE. Although Epperson and Coneybeer (1994) suggest the Canal lacks structural integrity, the potential does exist for isolated cultural resources in the form of prehistoric and historic sites as well as shipwrecks.

CAPPING-ELIZABETH RIVER, VIRGINIA

Project Area Environment

The potential site placement would assume a 3-foot cap (2 feet of dredged material and 1 foot of sand) placed over contaminated sediment within the Elizabeth River, Portsmouth County, Virginia (Figure 43). The Elizabeth River is a tributary of the James River and is influenced by tides. Both river systems empty into the Chesapeake Bay about two miles from their confluence. There are three branches of the Elizabeth River. The western branch of the Elizabeth River winds through the industrial and developed areas of Portsmouth before emptying into the Elizabeth River approximately 5 miles from the confluence with the James River. The southern branch of the Elizabeth River serves as the end of the Chesapeake and Albemarle Canal and the Dismal Swamp Canal (Watts 1999a:2). The eastern branch extends east along the south edge of the City of Norfolk.

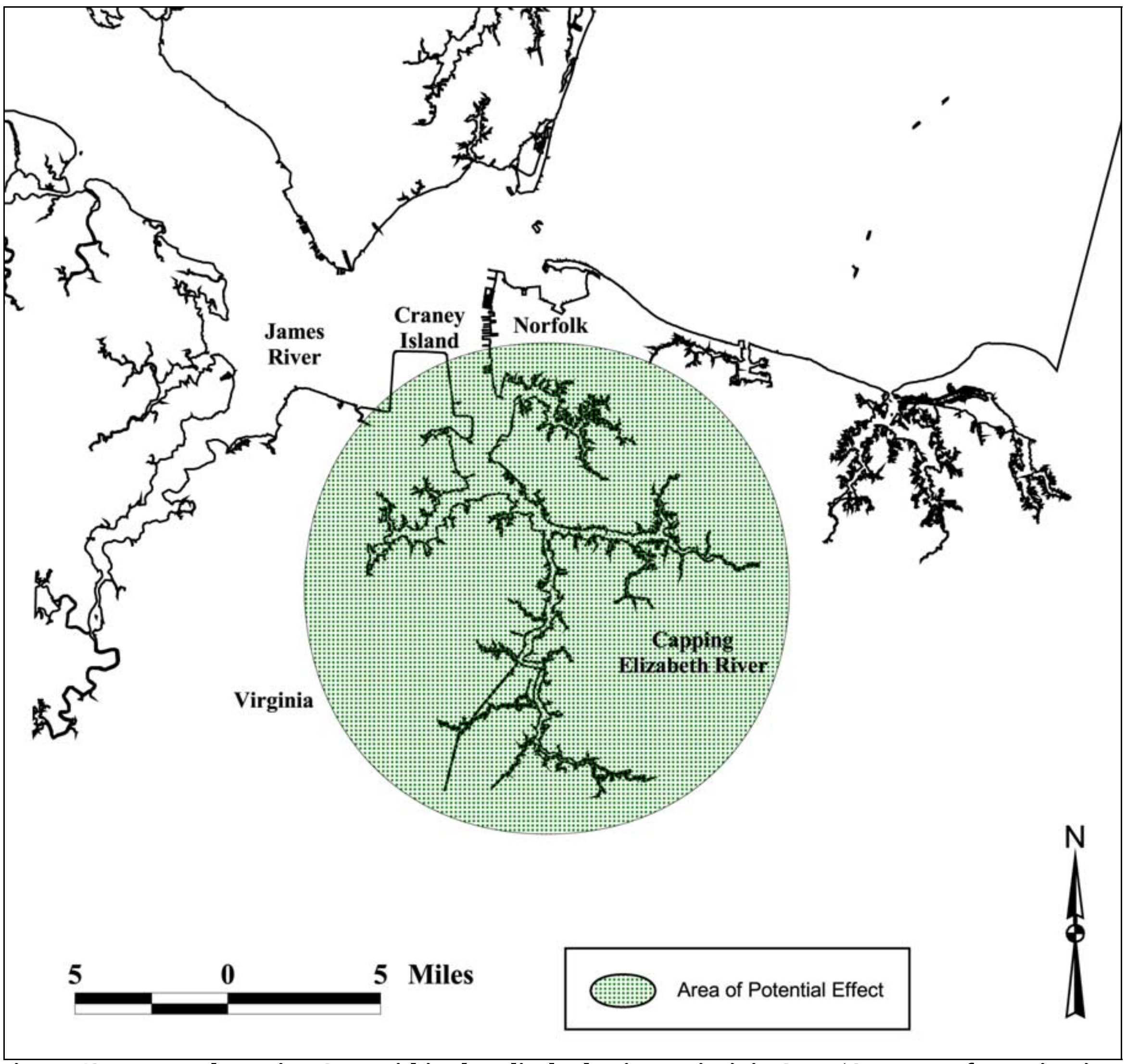

Figure 43. Proposed capping APE within the Elizabeth River, Virginia Area (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

A review of known cultural resources identified 13 documented archaeological sites (Figure 44 and 45) within or near the proposed APE (Table 15). Because this APE was not clearly defined, all sites are considered to be within the APE.

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 44 Known archaeological sites located within the proposed Elizabeth River capping APE (Norfolk North 7.5-min. quadrangle, 1994).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 45. Known archaeological sites located within the proposed Elizabeth River capping APE (Norfolk South 7.5-min. quadrangle, photoinspected 1989).

Table 15. Known archaeological resources within or near the Elizabeth River Capping Area, Portsmouth/Suffolk County, Virginia.

Site Number	Site Name	Site Type	USGS 7.5-min quadrangle	County	Within APE?
44PM1	None	Archaic	Norfolk South	Portsmouth	Y
44PM2	None	Historic (1820-1850)	Norfolk South	Portsmouth	Y
44PM3	None	Archaic	Norfolk South	Portsmouth	Y
44PM4	None	Archaic	Norfolk South	Portsmouth	Y
44PM5	None	Archaic	Norfolk South	Portsmouth	Y
44PM6	None	Archaic	Norfolk South	Portsmouth	Y
44PM7	None	Archaic	Norfolk South	Portsmouth	Y
44PM12	Beanfield 1	Woodland	Norfolk North	Portsmouth	Y
44PM14	None	Archaic	Norfolk South	Portsmouth	Y
44PM26	Coalhaul 13	Historic (late 19th/early 20th century)	Norfolk South	Portsmouth	Y
44PM27	Coalhaul 14	Historic (late 19th/early 20th century)	Norfolk South	Portsmouth	Y
44PM57	None	Historic (19th to 20th century)	Norfolk North	Portsmouth	Y
44CS234	Target 86/88	19th century shipwreck	Norfolk South	Suffolk	Y

Review of all architectural, NRHP and District properties identified 21 properties and districts within the City of Portsmouth, Virginia (Table 16).

Table 16. NRHP properties and Historic Districts within Portsmouth, Virginia.

Site Name	Location	County	Date Listed
Cedar Grove Cemetery	301 Fort Lane	Portsmouth (Independent City)	10/15/92
Commodore Theatre	421 High Street	Portsmouth (Independent City)	2/27/97
Confederate Monument	Jct. Of High and Court Streets	Portsmouth (Independent City)	9/4/97
Craddock Historic District	Bounded by Paradise Creek, Victory Blvd., and George Washington Hwy.	Portsmouth (Independent City)	6/20/74
Downtown Portsmouth Historic District	Bounded by I-264, Middle Street, Primrose Street, and Queen Street	Portsmouth (Independent City)	1/16/04
Drydock No. 1	Norfolk Naval Shipyard	Portsmouth (Independent City)	2/26/70
Lightship No. 101, Portsmouth	London Slip, Elizabeth River	Portsmouth (Independent City)	5/5/89
Monumnetal Methodist Church	450 Dinwiddie St.	Portsmouth (Independent City)	1/15/04
Park View Historic District	Bounded by Elm and Parkview Aves., Fort Lane, Blair, and Harrell Streets	Portsmouth (Independent City)	10/4/84
Port Norfolk Historic District	Roughly bounded by Bayview Blvd., Chataqua Ave., Hartford St., Douglas Ave., and Hull Creek	Portsmouth (Independent City)	9/30/83
Portsmouth Courthouse	NE corner of Court and High Streets	Portsmouth (Independent City)	4/29/70
Portsmouth Historic District (Boundary increase)	Green and Queen Streets	Portsmouth (Independent City)	10/6/83
Portsmouth Naval Hospital	On Hospital Point at Washington and Crawford Streets	Portsmouth (Independent City)	4/13/72
Portsmouth Olde Town Historic District	Bounded by Crawford Prkwy., London Street., the Elizabeth River, and extending 0.1 miles west of Washington Street	Portsmouth (Independent City)	9/8/70
Pythian Castle	610-612 Court Street	Portsmouth (Independent	10/30/80

Table 16, continued

Site Name	Location	County	Date Listed
Quarters A,B, and C, Norfolk Naval Shipyard	Norfolk Naval Shipyard	Portsmouth (Independent City)	12/19/74
Seaboard Coastline Building	1 High Street	Portsmouth (Independent City)	10/10/85
Shea Terrace Elementary School	253 Constitution Ave.	Portsmouth (Independent City)	9/14/02
St. Pauls Catholic Church	518 High Street	Portsmouth (Independent City)	6/6/02
Trinity Episcopal Church	High and Court Streets	Portsmouth (Independent City)	5/14/73
Truxtum Historic District	Portsmouth and Deep Creek Blvds., Manly, Dahlin, Hobson, Dewey and Bagley Streets	Portsmouth (Independent City)	9/16/82

An additional number of historic districts were identified within the City of Norfolk (Table 17).

Table 17. Historic districts within the City of Norfolk, Virginia.

District Name	Location	County	VDHR No.	Within APE
Berkeley North Historic District	Norfolk	Norfolk City	122-0824	N
Colonial Place	Norfolk	Norfolk City	N/A	N
Downtown Norfolk Historic District	Norfolk	Norfolk City	N/A	N
Downtown Norfolk Historic District (Boundary increase)	Norfolk	Norfolk City	N/A	N
Fort Norfolk	Norfolk	Norfolk City	N/A	N
Ghent Historic District	Norfolk	Norfolk City	N/A	N
Jamestown Exposition Site Buildings	Norfolk	Norfolk City	N/A	N
Lafayette Residence Park	Norfolk	Norfolk City	N/A	N
North Ghent	Norfolk	Norfolk City	N/A	N
Riverview	Norfolk	Norfolk City	122-0823	N
Saint Mary's Catholic Cemetery	Norfolk	Norfolk City	122-1036	N
West Freemason Street Area Historic District	Norfolk	Norfolk City	N/A	N
Winona	Norfolk	Norfolk City	122-0828	N

A total of 46 NRHP properties have been listed within the City of Norfolk, indicating the extensive history of the area.

Potential for Cultural Resources

In 1982, Tidewater Atlantic Research (TAR), under sub-contract to Envirosphere Company of New York, New York, directed a remote-sensing reconnaissance survey in the Elizabeth River near West Norfolk, Virginia (Watts 1982). Located near the southeast side of Craney Island the survey sought to identify any potentially significant submerged cultural resources within the proposed dredge area. Results of the survey identified ninety-one targets and/or target clusters, sixteen of which were considered to be high probability targets “because of the intensity, duration, and contour configuration of the magnetic signature and/or size and configuration of the acoustic signature" (Watts 1982:12).

Watts also discusses the potential for shipwrecks within the general area project area (including the Elizabeth River):

> In the "Index of Documented Vessel Losses section of his study, Shomette lists a total of one hundred forty-nine vessels lost in the Elizabeth River and its tributaries and the Hampton Roads area. These losses span the years from 1699 to 1970. Of these, he indicates that sixteen vessels may be considered as high probabilities for having been lost in the survey area [southeast portion of Craney Island]. These sixteen vessels were lost from 1750 through 1968, include a sloop, a schooner, barges, lighters, and screw steamers. Also included in this category is the C.S.S. *Virginia* (Watts 1982:6).

During late 1986 and early 1987, TAR conducted a remote-sensing reconnaissance of the remains of the USS *Cumberland*, CSS *Florida*, and the wreck site of the CSS *Virginia* in the James and Elizabeth Rivers of Virginia (Watts 1987). Each of the sites had a differing level of preservation and structural integrity. While the *Florida* was found to have "…an excellent state of preservation. (Watts 1987:34)," the exposed portions of the *Cumberland* lying on the riverbed "…appears to be disarticulated" (Watts 1987: 33).

In 1999, TAR was contracted to assess the archaeological significance of derelict vessels at two sites (WB-55, MS-26) prior to their removal as obstructions and as a threat to navigation. In an effort to establish a historical context for these derelict vessels and the surrounding area (Elizabeth River), TAR utilized cartographic and historical records from repositories in Norfolk, Richmond, and Washington D.C. (Watts 1999b:2).

Results of the research, conducted by TAR, indicate the potential for additional cultural resources within and near the Elizabeth River:

> Historical data indicated that the Southern Branch of the Elizabeth River had a long history of maritime activity. The river has been the site of settlements since the early days of the Virginia colony. Settlements along the Southern Branch of the Elizabeth River followed in the wake of growth spurred by the tobacco industry during the 17th century. During the middle of the 18th century Norfolk and Portsmouth were established primarily as port and shipbuilding centers to take advantage of the river's increasing trade with the West Indies and British Isles. The Elizabeth River's commercial potential grew during the 19th century with the development of the Gosport Naval Yard, the Dismal Swamp Canal, and western sections of the state. This extended history of human activity combined with a stable riverine environment supports a high potential for well preserved archaeological resources including shipwrecks, abandoned derelicts and submerged structures (Watts 1999b:21).

The presence of both prehistoric and historic sites within the general area of the Elizabeth River suggests the potential for additional cultural resources within the area. NRHP properties and the presence of historic districts within the City of Portsmouth and the City of Norfolk may raise viewshed issues although work in the Elizabeth River would remain consistent with port activities. Therefore, the potential for viewshed disturbances and other aesthetic impacts is likely to be minimal.

Continue Appendix E

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APPENDIX E (Continued)

CULTURAL RESOURCES STUDY

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CAPPING-PATAPSCO RIVER, MARYLAND

Project Area Environment

Located within the City of Baltimore, Baltimore County (Figure 46), the potential capping site would assume a 3-foot cap (2 feet of dredged material and 1 foot of sand) placed over harbor material placed in a sand mining pit (see Confined Aquatic Disposal – Patapsco River below). More specifically, the location of the proposed capping includes an area near Sollers Point:

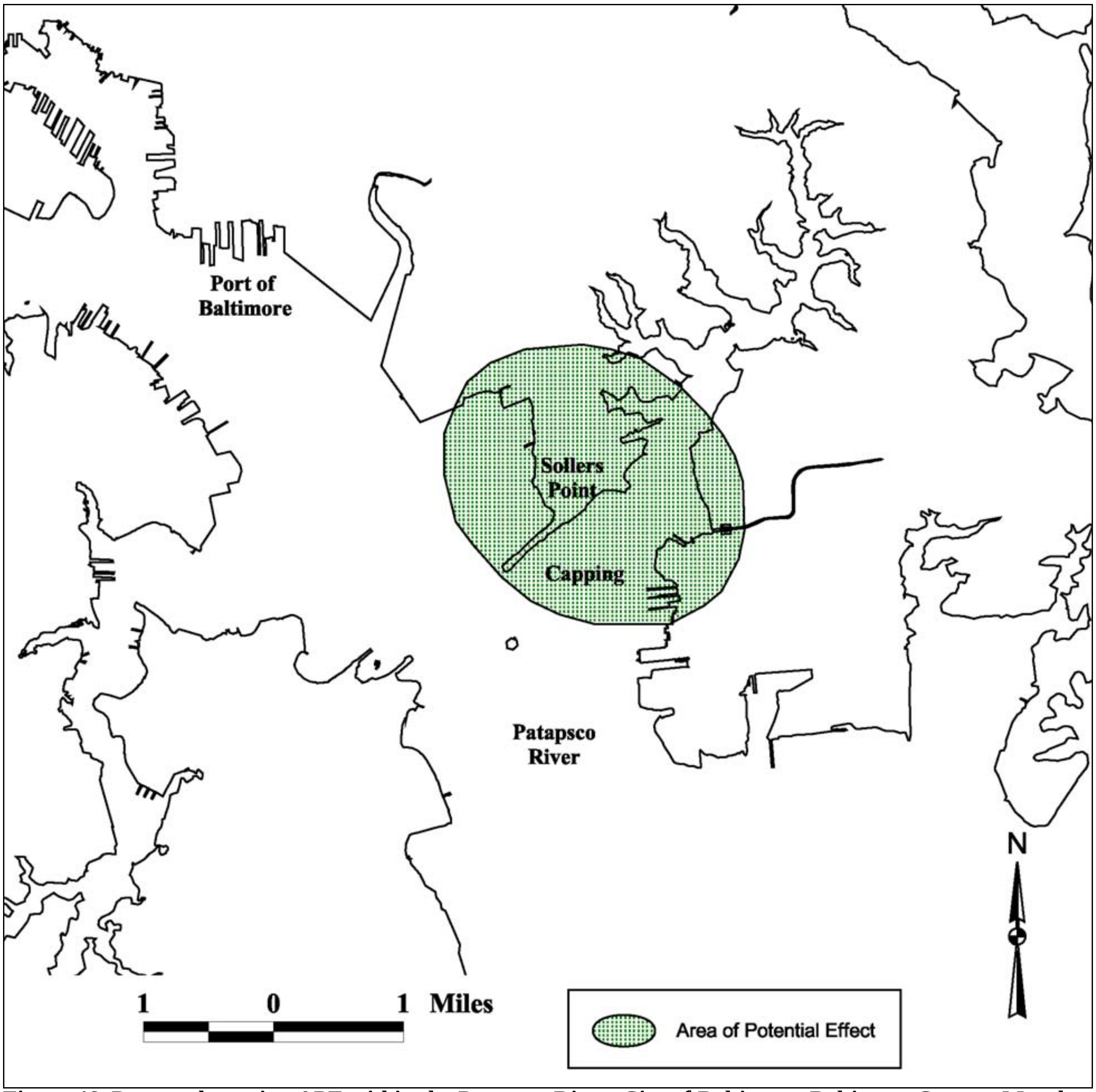

Figure 46. Proposed capping APE within the Patapsco River, City of Baltimore, Baltimore County, Maryland (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 47. Known archaeological sites located within the Patapsco River, City of Baltimore, Baltimore County, and Anne Arundel County, Maryland (Curtis Bay 7.5-min. quadrangle, photorevised 1974).

> Sollers Point is a spit of land that runs under and supports the northern part of the Key Bridge. The area identified as Sollers Point for the purposes of this study also includes adjacent lands and near shore waters…Sollers Point is currently owned and managed by MDOT [Maryland Department of Transportation] and by the State Highway Administration (SHA) as a maintenance area. The northwest side of Sollers Point is adjacent to the former Baltimore Gas and Electric (BG&E) Riverside power plant now owned and operated by Constellation Energy. The east-southeastern area parallels the Key Bridge and lies within the mouth of Bear Creek (EA Engineering, Science & Technology 2003b:i)

Sollers point is considered environmentally degraded and the bottom material is unfavorable for dike construction (Baltimore Harbor Anchorages and Channels, Maryland and Virginia 1997:2-31 to 2-32).

Known Cultural Resources

Archival research at the MHT identified seven known archaeological sites near the APE (Table 18). All archaeological are located outside of the APE and will not be affected by proposed activities (Figure 47).

Table 18. Known archaeological resources near the proposed capping APE, Patapsco River, Maryland.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18AN2	Curtis Bay	Shell Midden	Curtis Bay	Anne Arundel	N
18AN6	Hawkins Point	Prehistoric lithics	Curtis Bay	Anne Arundel	N
18AN508	Swan Marsh	Prehistoric lithic scatter	Curtis Bay	Anne Arundel	N
18AN509	Swan Creek	Prehistoric lithic scatter	Curtis Bay	Anne Arundel	N
18AN771	Beltway Crossing II	Late 19th-early 20th century artifact concentration	Curtis Bay	Anne Arundel	N
18BC12	Fort Armistead	Late 19th/early 20th cent. Military fortifications	Curtis Bay	Baltimore City	N
18BA440	Sala II	Archaic, Woodland, late 18th century site	Sparrows Point	Baltimore	N

Additional research identified a number of NRHP properties/districts within the Baltimore area (Table 19).

Table 19. NRHP properties/districts within the Baltimore, Maryland area.

Site Name	Location	County	Date Listed
Arundel Cove Archaeological Site	Address Restricted	Anne Arundel	7/21/83
U.S. Coast Guard Yard Curtis Bay	Off MD 173	Anne Arundel	8/5/83
Bare Hills House	N. of Baltimore at 6222 Falls Road	Baltimore	8/6/80
Craighill Channel Lower Range Front Light Station	3.5 miles SE of Fort Howard	Baltimore	12/2/02
Gay Street Historic District	Bounded by N. Gay, Fallsway, Low and N. Exeter Streets	Baltimore	11/21/03
South Central Avenue Historic District	Approx. 8 blocks centering Central Ave.Bet. Pratt and Fleet Streets	Baltimore	11/11/01

Table 19, continued

Site Name	Location	County	Date Listed
Tuscany-Canterbury Historic District	Roughly bounded by Charles St., University Pkwy., Stony Run, and Warrenton Rd.	Baltimore	10/28/01
Tyconnell	120 Woodbrook Lane	Baltimore	3/14/85

An assessment of the U.S Coast Guard Yard at Curtis Bay and other NRHP properties in the general area was made relative to proposed dredged material placement sites within Baltimore Harbor:

> The U.S. Coast Guard Yard – Curtis Bay was placed on the National Register of Historic Places in 1983 and is the closest historic site to the proposed site at Dead Ship Anchorage site…Fort Armistead (on the east side of Hawkins Point, east of the Key Bridge) is the closest historic property to the Hawkins Point/Thomas Cove site and lies well outside of any Proposed alignment. Ft. Carroll, in the middle of the Patapsco River just east of the Key Bridge, lies near some of the alignments proposed for Sollers Point, but well outside of any of the potential footprints (EA Engineering, Science & Technology 2003b:IH-31)

No adverse effect to these NRHP properties is anticipated relative to proposed capping within the Patapsco River. An additional National Historic Landmark Nomination Form regarding the Harbor Inspection Tug, *Baltimore* was located during archival research. The *Baltimore* (official number 203700), was built in 1906 by the Skinner Shipbuilding Company in Baltimore Maryland:

> The hull is constructed of riveted iron, and the deckhouse is built of wood. A single "scotch" boiler provides steam for the compound reciprocating engine. The tug is maintained as an operating floating exhibit by the Baltimore Museum of Industry, Inc., near the dock area where she tied up during her working life (National Historic Landmark Nomination Form 1993:2).

The *Baltimore*, located near downtown Baltimore, is the oldest operational steam-powered, coal-fired tugboat in the United States. This property is not located within the APE.

A miscellaneous building identified during the archival research includes Fort Carroll, located off Sollers Point, Baltimore County, Maryland (Figure 48). Fort Carroll was built in 1847 to protect the City of Baltimore. The Fort was manned throughout the Civil War and the Spanish American War (1898) but was eventually abandoned by the Army in 1920. Today, Fort Carroll is privately owned and in a state of disrepair. This property is not listed on the NRHP but is located within close proximity to the APE.

Figure 48. Fort Carroll, located just east of Sollers Point is outside the APE (Photo courtesy of AFN 2001).

Potential for Cultural Resources

A series of previous investigations within the Patapsco River may indicate the potential for additional cultural resources within the APE. An archaeological reconnaissance of Fort Holabird, located near Baltimore Harbor, within Baltimore City limits was conducted in 1979 (Marshall and Knight 1979). Addressing the potential for prehistoric sites within the area, Marshall and Knight state:

> There is very little information available concerning the prehistoric occupation of the area of the Patapsco River now occupied by Baltimore Harbor. Non-urbanized area and littoral zones in the immediate vicinity of the project area [Fort Holabird] exhibit a very low density of recorded archaeological sites. At this time the quantity and quality of date relating to the area's prehistory is inadequate to facilitate a meaningful attempt at predictive modeling for the location of prehistoric archaeological resources.
>
> From a theoretical perspective, the environmental characteristics of the study area suggest that the area's close proximity to the Patapsco River and its location on a tidal estuary makes it a likely location for prehistoric occupation and exploitation. This would hold true for the full range of Maryland's prehistoric cultural history (Marshall and Knight 1979:1-2).

The Karell Institute has conducted a number of remote-sensing surveys within Baltimore Harbor (Koski-Karell 1979a, Koski-Karell 1980, Koski-Karell 1981). During 1979, the Karell Institute conducted a Phase I remote-sensing survey in conjunction with the Baltimore Harbor and Channels 42-foot Project. The survey located 15 targets within the Brewerton Channel Extension; all of which were judged to be "buoys, debris of wrecks of recent origin, or items severely damaged by previous dredging" (Irion and Hirrel 1994:7). The 1980 Phase I cultural resources reconnaissance survey in conjunction with the Baltimore Harbor and Channels 50-foot Project failed to locate any acoustic anomalies in the project area (Irion and Hirrel 1994:7).

A Phase I remote-sensing survey was conducted in 1980 to improve access to the Skyline Terminal Docking Facility, located along the south shore of the Patapsco River (Figure 49). The remote-sensing project was completed by the Karell Institute of Arlington, Virginia. Results of the magnetometer and side scan sonar survey identified three potentially significant anomalies. "Of the three significant target located, two were determined to be located just outside the boundary of the project area, and the other appears to be a length of cable or chain. No anomalies characteristic of sunken vessels were found to be located within the project area" (Koski-Karell 1980:ii).

In 1992 the U.S. Army Corps of Engineers, Baltimore District, conducted an archival survey of the Baltimore Harbor anchorages and channels. Results of the survey identified no historic sites within the project area (U.S. Army Corps of Engineers, Baltimore District 1992).

During 1994, R. Christopher Goodwin & Associates, Inc., conducted a Phase I remote-sensing survey of approximately 280 acres for the proposed Baltimore Harbor and Anchorages Project. A review of previous investigations by Irion and Hirrel conclude that:

> No underwater archaeological sites at any locations in the project area are listed in the National Register of Historic Places. A number of floating vessels located in Ports around northern Chesapeake Bay are listed in the National Register, but none are located permanently in the immediate vicinity of the project area (Irion and Hirrel 1994:7).

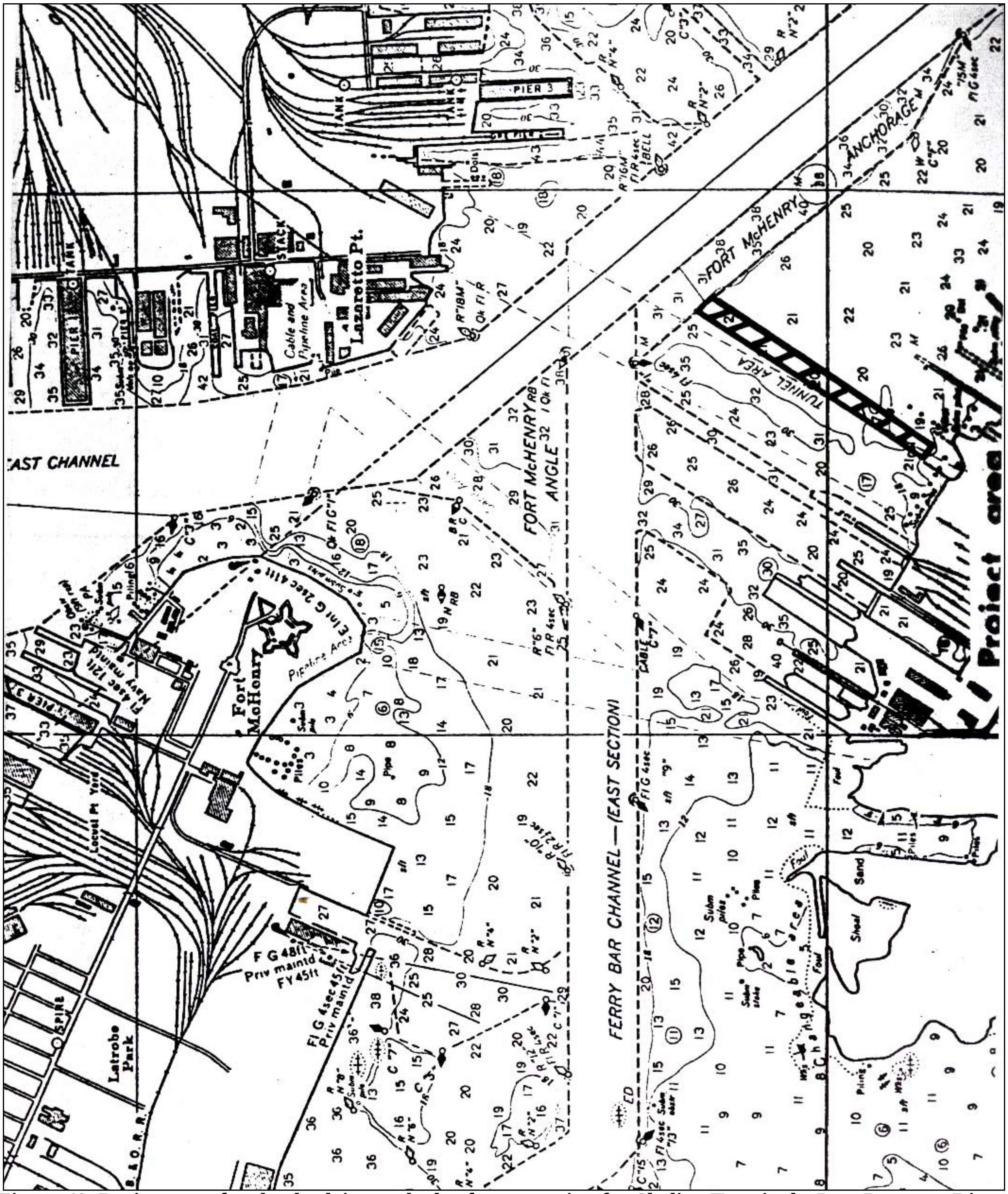

Figure 49. Project area for the dredging and wharf construction for Skyline Terminals, Inc., Patapsco River, Maryland (as presented in Koski-Karell 1980:2).

Results of the remote-sensing survey identified 47 magnetic anomalies within the project area. Most of the anomalies were considered low amplitude and short duration, not indicative of potentially significant submerged cultural resources. Use of a sub-bottom profiler discounted the remainder of the anomalies as potentially significant (Irion and Hirrel 1994:52).

Review of the AWOIS files only identified 16 obstructions and one unknown within Baltimore Harbor (Appendix A**)**. While this number seems low for a high-use harbor, it may indicate the lack of positional accuracy of the AWOIS list.

The Reconnaissance Study of Baltimore Harbor Sites for Upland Confined Placement of Harbor Dredged Material addresses the potential for cultural resources within the area as well as other potential impacts:

> No historical resources are expected to be affected at any of the sites. All of the currently known historic sites are outside of any proposed construction. Because the area is urbanized and no dwellings occur near any of the proposed sites, the potential for viewshed disturbances and other aesthetic impacts is minimal. Viewshed changes, construction and filling would be consistent with other Port activities…Some parts of the largest alignment (#4) at Sollers Point would reach within fairly close proximity to Turner Station but would not be expected to impact the community because the BG&E property lies between the proposed project and Turner Station (EA Engineering, Science & Technology 2003b:iv)

An additional assessment relative to the potential for cultural resources within the Patapsco River was preformed for the Baltimore Harbor Anchorages and Channels Study:

> A literature review of the existing maritime history was performed for the Baltimore Harbor Anchorages and Channels Study project area. The search included a review of the Maryland Historical Trust files, USACE Wreck Removal documentation, and Coastal and Geodetic and National Oceanic and Atmospheric Administration charts. Approximately 80 individual wrecks and 10 ship graveyards have been recorded within the 45-mile Patapsco River estuary waterfront that encompasses approximately 13 square miles of water.
>
> The study area has been assessed to determine its potential for significant maritime resources, and was subsequently divided into areas of high, moderate and low potential. A high potential area is defined as those areas of the Patapsco estuary where shipwrecks have been recorded, including the undisturbed shorelines and tributaries. A moderate potential includes the offshore portions of the estuary that have not been disturbed by previous construction; these areas also have a recorded history of shipwrecks. A low potential area includes those areas of the Patapsco estuary that have been disturbed by recent maritime-related construction, including navigation channels, marine wharves and terminals, shipyards, tunnels, and military construction.
>
> The project area [Baltimore Harbor Anchorages and Channels Study] has been highly disturbed by several centuries of harbor activities and development; no archaeological resources have been found in the study area. Therefore the Baltimore District determined that the proposed Baltimore Harbor and Channels Project will have no effect on cultural resources (Baltimore Harbor Anchorages and Channels, Maryland and Virginia 1997:2-57 to 2-58).

With this said, the proposed capping site would be considered a low-potential area for submerged cultural resources. The close proximity to the existing navigation channel, construction of the I-695 Baltimore Beltway, and existing dredge material placement site may have already impacted submerged cultural resources. While the area may be considered a low-probability area, the potential does exist for submerged cultural resources (in the form of inundated prehistoric sites and shipwrecks) within the area. The potential exists for additional cultural resources within those areas not previously surveyed.

CONFINED AQUATIC DISPOSAL AREA-PATAPSCO RIVER, MARYLAND

Project Area Environment

Located within the City of Baltimore, Baltimore County, and Anne Arundel County (Figure 50), the potential Confined Aquatic Disposal (CAD) site would assume a 3-foot cap (2 feet of dredged material and 1 foot of sand) placed over harbor material placed in a sand mining pit. More specifically the location of the proposed CAD includes Sollers Point:

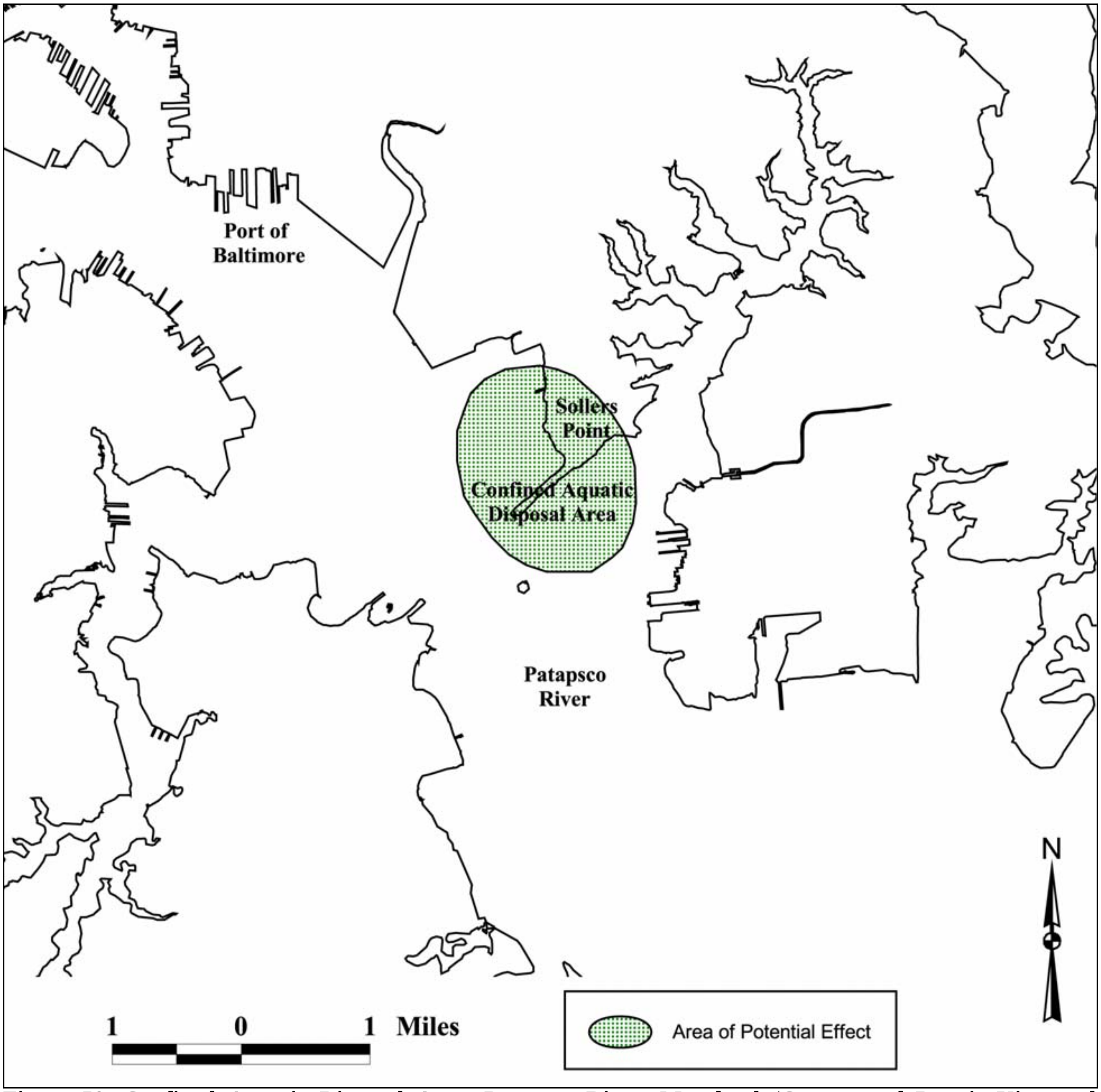

Figure 50. Confined Aquatic Disposal Area, Patapsco River, Maryland (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 51. Known archaeological sites located within the Patapsco River, City of Baltimore, Baltimore County, and Anne Arundel County, Maryland (Curtis Bay 7.5-min. quadrangle, photorevised 1974).

> Sollers Point is a spit of land that runs under and supports the northern part of the Key Bridge. The area identified as Sollers Point for the purposes of this study also includes adjacent lands and near shore waters…Sollers Point is currently owned and managed by MDOT [Maryland Department of Transportation] and by the State Highway Administration (SHA) as a maintenance area. The northwest side of Sollers Point is adjacent to the former Baltimore Gas and Electric (BG&E) Riverside power plant now owned and operated by Constellation Energy. The east-southeastern area parallels the Key Bridge and lies within the mouth of Bear Creek (EA Engineering, Science & Technology 2003a:i)

Sollers point is considered environmentally degraded and the bottom material is unfavorable for dike construction (Baltimore Harbor Anchorages and Channels, Maryland and Virginia 1997:2-31 to 2-32).

Known Cultural Resources

Archival research at the MHT identified seven known archaeological sites near the APE (Table 20). All archaeological sites are located outside of the APE and will not be affected by proposed project activities (see Figure 51).

Table 20. Known archaeological resources within or near the Patapsco River, Maryland.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18AN2	Curtis Bay	Shell Midden	Curtis Bay	Anne Arundel	N
18AN6	Hawkins Point	Prehistoric lithics	Curtis Bay	Anne Arundel	N
18AN508	Swan Marsh	Prehistoric lithic scatter	Curtis Bay	Anne Arundel	N
18AN509	Swan Creek	Prehistoric lithic scatter	Curtis Bay	Anne Arundel	N
18AN771	Beltway Crossing II	Late 19th-early 20th century artifact concentration	Curtis Bay	Anne Arundel	N
18BC12	Fort Armistead	Late 19th/early 20th cent. Military fortifications	Curtis Bay	Baltimore City	N
18BA440	Sala II	Archaic, Woodland, late 18th century site	Sparrows Point	Baltimore	N

Archival research identified a number of NRHP properties/districts within the Baltimore area (Table 21).

Table 21. NRHP properties/districts within the Baltimore area.

Site Name	Location	County	Date Listed
Arundel Cove Archaeological Site	Address Restricted	Anne Arundel	7/21/83
U.S. Coast Guard Yard Curtis Bay	Off MD 173	Anne Arundel	8/5/83
Bare Hills House	N. of Baltimore at 6222 Falls Road	Baltimore	8/6/80
Craighill Channel Lower Range Front Light Station	3.5 miles SE of Fort Howard	Baltimore	12/2/02
Gay Street Historic District	Bounded by N. Gay, Fallsway, Low and N. Exeter Streets	Baltimore	11/21/03
South Central Avenue Historic District	Approx. 8 blocks centering Central Ave., Bet. Pratt and Fleet Streets	Baltimore	11/11/01
Tuscany-Canterbury Historic District	Roughly bounded by Charles St., University Pkwy., Stony Run, and Warrenton Rd.	Baltimore	10/28/01
Tyconnell	120 Woodbrook Lane	Baltimore	3/14/85

An assessment of the U.S Coast Guard Yard at Curtis Bay and other properties within the area was made relative to proposed dredged material placement sites within Baltimore Harbor:

> The U.S. Coast Guard Yard – Curtis Bay was placed on the National Register of Historic Places in 1983 and is the closest historic site to the proposed site at Dead Ship Anchorage site…Fort Armistead (on the east side of Hawkins Point, east of the Key Bridge) is the closest historic property to the Hawkins Point/Thomas Cove site and lies well outside of any Proposed alignment. Ft. Carroll, in the middle of the Patapsco River just east of the Key Bridge, lies near some of the alignments proposed for Sollers Point, but well outside of any of the potential footprints (EA Engineering, Science & Technology 2003a:IH-31)

An additional National Historic Landmark Nomination Form regarding the Harbor Inspection Tug, *Baltimore* was located during archival research. The *Baltimore* (official number 203700), was built in 1906 by the Skinner Shipbuilding Company in Baltimore, Maryland:

> The hull is constructed of riveted iron, and the deckhouse is built of wood. A single "scotch" boiler provides steam for the compound reciprocating engine. The tug is maintained as an operating floating exhibit by the Baltimore Museum of Industry, Inc., near the dock area where she tied up during her working life (National Historic Landmark Nomination Form 1993:2).

The *Baltimore*, located near downtown Baltimore, is the oldest operational steam-powered, coal-fired tugboat in the United States. This property is not located within the APE.

A miscellaneous building identified during the archival research includes Fort Carroll, located off Soller's Point, Baltimore County, Maryland (see Figure 48). Fort Carroll was built in 1847 to protect the City of Baltimore. The Fort was manned throughout the Civil War and the Spanish American War (1898) but was eventually abandoned by the Army in 1920. Today, Fort Carroll is privately owned and in a state of disrepair. This property is not listed on the NRHP but is located within close proximity to the APE. No adverse effects to these NRHP properties and/or historic landmarks is anticipated relative to proposed CAD Site within the Patapsco River, Baltimore Harbor, Maryland.

Potential for Cultural Resources

A series of previous investigations within the Patapsco River may help determine the potential for additional cultural resources within the APE. An archaeological reconnaissance of Fort Holabird, located near Baltimore Harbor, within Baltimore City limits was conducted in 1979. Addressing the potential for prehistoric sites within the area Marshall and Knight state:

> There is very little information available concerning the prehistoric occupation of the area of the Patapsco River now occupied by Baltimore Harbor. Non-urbanized area and littoral zones in the immediate vicinity of the project area [Fort Holabird] exhibit a very low density of recorded archaeological sites. At this time the quantity and quality of date relating to the area's prehistory is inadequate to facilitate a meaningful attempt at predictive modeling for the location of prehistoric archaeological resources.
>
> From a theoretical perspective, the environmental characteristics of the study area suggest that the area's close proximity to the Patapsco River and its location on a tidal estuary makes it a likely location for prehistoric occupation and exploitation. This would hold true for the full range of Maryland's prehistoric cultural history (Marshall and Knight 1979:1-2).

The Karell Institute has conducted a number of remote-sensing surveys within Baltimore Harbor (Koski-Karell 1979a, Koski-Karell 1980, Koski-Karell 1981). During 1979 the Karell Institute conducted a Phase I remote-sensing survey in conjunction with the Baltimore Harbor and

Channels 42-foot Project. The survey located 15 targets within the Brewerton Channel Extension all of which were judged to be "buoys, debris of wrecks of recent origin, or items severely damaged by previous dredging" (Irion and Hirrel 1994:7). The 1980 Phase I cultural resources reconnaissance survey in conjunction with the Baltimore Harbor and Channels 50-foot Project failed to locate any acoustic anomalies in the project area (Irion and Hirrel 1994:7).

A Phase I remote-sensing survey was conducted in 1980 to improve access to the Skyline Terminal Docking Facility, located along the south shore of the Patapsco River (see Figure 46). The remote-sensing project was completed by the Karell Institute of Arlington, Virginia. Results of the magnetometer and side scan sonar survey identified three potentially significant anomalies. "Of the three significant target located, two were determined to be located just outside the boundary of the project area, and the other appears to be a length of cable or chain. No anomalies characteristic of sunken vessels were found to be located within the project area" (Koski-Karell 1980:ii).

In 1992 the U.S. Army Corps of Engineers, Baltimore District conducted an archival survey of the Baltimore Harbor anchorages and channels. Results of the survey identified no historic sites within the project area (U.S. Army Corps of Engineers, Baltimore District 1992). During 1994, R. Christopher Goodwin & Associates, Inc., conducted a Phase I remote-sensing survey of approximately 280 acres for the proposed Baltimore Harbor and Anchorages Project. A review of previous investigations in the area concluded that:

> No underwater archaeological sites at any locations in the project area are listed in the National Register of Historic Places. A number of floating vessels located in Ports around northern Chesapeake Bay are listed in the National Register, but none are located permanently in the immediate vicinity of the project area (Irion and Hirrel 1994:7).

Results of the remote-sensing survey identified 47 magnetic anomalies within the project area. Most of the anomalies were considered low amplitude and short duration, not indicative of potentially significant submerged cultural resources. Use of a sub-bottom profiler discounted the remainder of the anomalies as potentially significant (Irion and Hirrel 1994:52).

Review of the AWOIS files only identified 16 obstructions and 1 unknown within Baltimore Harbor (Appendix A). While this number seems low for a high-use harbor it may indicate the lack of positional accuracy of the AWOIS list.

The Reconnaissance Study of Baltimore Harbor Sites for Upland, Confined Placement of Harbor Dredged Material addresses the potential for cultural resources within the area as well as other potential impacts:

> No historical resources are expected to be affected at any of the sites. All of the currently known historic sites are outside of any proposed construction. Because the area is urbanized and no dwellings occur near any of the proposed sites, the potential for viewshed disturbances and other aesthetic impacts is minimal. Viewshed changes, construction and filling would be consistent with other Port activities…Some parts of the largest alignment (#4) at Sollers Point would reach within fairly close proximity to Turner Station but would not be expected to impact the community because the BG&E property lies between the proposed project and Turner Station (EA Engineering, Science & Technology 2003a:iv)

CONFINED DISPOSAL FACILITY-LOWER BAY, VIRGINIA

Project Area Environment

The Federally-owned Craney Island Dredged Material Area is a 2,500 acre, man-made dredged material placement area located in Portsmouth, Virginia (Figure 52). Craney Island was authorized as a placement area by the Rivers and Harbors Act of 1946 and was subsequently constructed from 1956 to 1958 (Navigation Management Plan for the Port of Hampton Roads, Virginia 2000:96). This alternative proposes to expand the western berm of Craney Island. Legislation in place since 1946 currently precludes the placement of dredged material from outside Norfolk Harbor and the general vicinity.

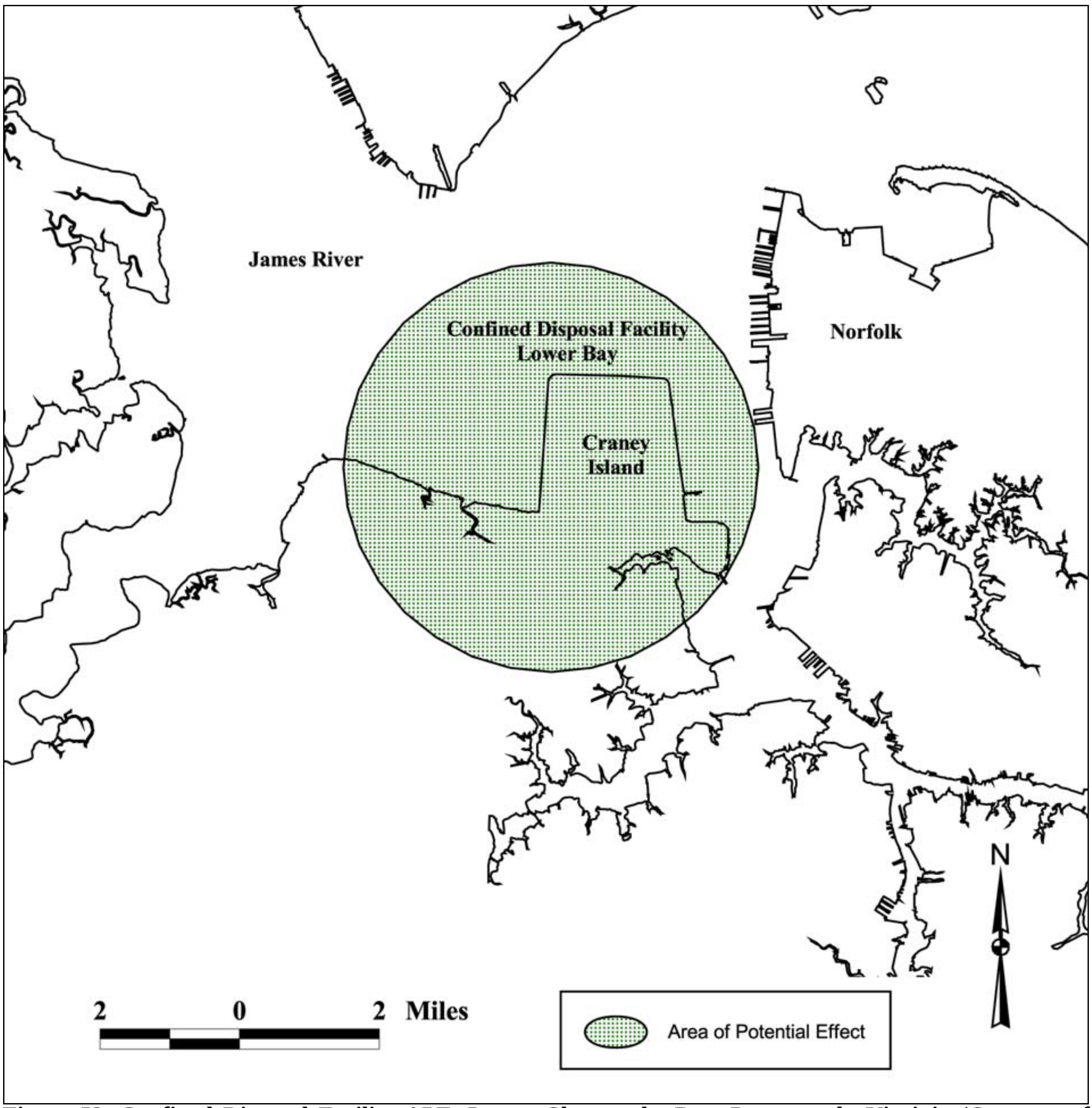

Figure 52. Confined Disposal Facility APE, Lower Chesapeake Bay, Portsmouth, Virginia (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

All pertinent State Site Files and records were reviewed at the VDHR relative to the proposed expansion of the Craney Island Dredged Material Area. Results identified numerous archaeological sites within the APE (Figures 53 and 54). It should be noted that all archaeological sites which are located within the proposed "umbrella" APE have been listed as such in Table 22; although they will likely not be affected by project activities.

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 53. Known archaeological resources within or near the Confined Disposal Facility (CDF), Lower Bay, Portsmouth City and Suffolk City, Virginia (Norfolk North 7.5-min. quadrangle, photoinspected 1989).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 54. Known archaeological resources within or near the Confined Disposal Facility (CDF), Lower Bay, Portsmouth City and Suffolk City, Virginia (Newport News South 7.5-min. quadrangle, photoinspected 1989).

Table 22. Known archaeological resources within or near the Confined Disposal Facility (CDF), Lower Bay, Portsmouth City and Suffolk City, Virginia.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
44PM8	None	Prehistoric	Norfolk North	Portsmouth City	Y
44PM9	None	Prehistoric (Archaic)	Norfolk North	Portsmouth City	Y
44PM10	None	Prehistoric (Archaic)	Norfolk North	Portsmouth City	Y
44PM11	None	Unknown - Shell deposit	Norfolk North	Portsmouth City	Y
44PM12	Beanfield 1	Woodland	Norfolk North	Portsmouth City	Y
44PM28	PM-AI	20th century	Norfolk North	Portsmouth City	Y
44PM29	PM-B1	Prehistoric/historic material	Norfolk North	Portsmouth City	Y
44PM30	PM-BII	Prehistoric/historic material	Norfolk North	Portsmouth City	Y
44PM31	PM-DI	Prehistoric/historic material	Norfolk North	Portsmouth City	Y
44PM32	PM-FI	Prehistoric/historic material	Norfolk North	Portsmouth City	Y
44PM33	PM-GI	Prehistoric/historic material	Norfolk North	Portsmouth City	Y
44PM34	PM-II	Prehistoric/historic material	Norfolk North	Portsmouth City	Y
44PM35	PM-KI	Prehistoric/historic material	Norfolk North	Portsmouth City	Y
44PM38	PM-MI	Prehistoric/historic material	Norfolk North	Portsmouth City	Y
44PM40	PM-NI	Prehistoric/historic material	Norfolk North	Portsmouth City	Y
44PM41	PM-QI	Prehistoric/historic material	Norfolk North	Portsmouth City	Y
44PM42	PM-RI	Prehistoric/historic material	Norfolk North	Portsmouth City	Y
44PM43	PM-RII	Prehistoric/historic material	Norfolk North	Portsmouth City	Y
44PM44	PM-RIII	Prehistoric/historic material	Norfolk North	Portsmouth City	Y
44PM45	PM-RIV	Prehistoric/historic material	Norfolk North	Portsmouth City	Y
44PM56	None	Historic	Norfolk North	Portsmouth City	Y
44PM58	None	Historic	Norfolk North	Portsmouth City	Y
44PM59	None	Historic	Norfolk North	Portsmouth City	Y
44SK6	Pig Point Beach Site	Early Colonial	Newport News South	Suffolk City	Y
44SK149	Pebble Beach	Archaic through Late Woodland	Newport News South	Suffolk City	N
44SK185	Harbor View	Prehistoric and Colonial	Newport News South	Suffolk City	N
44SK191	Harbor View	Prehistoric and possible 17th century	Newport News South	Suffolk City	N
44SK313	Harbor View	Prehistoric and historic	Newport News South	Suffolk City	Y
44SK394	PP-1	Historic (20th century)	Newport News South	Suffolk City	N
44SK395	PP-2	Historic (20th century)	Newport News South	Suffolk City	N
44SK396	None	Historic (20th century)	Newport News South	Suffolk City	N
44SK481	NOD Burial 1	Unknown prehistoric, funnery	Newport News South	Suffolk City	Y

Review of all architectural, NRHP and District properties identified numerous properties and districts within the City of Portsmouth, Virginia (Table 23).

Table 23. NRHP properties and Historic Districts within Portsmouth, Virginia.

Site Name	Location	County	Date Listed
Cedar Grove Cemetary	301 Fort Lane	Portsmouth (Independent City)	10/15/92
Commodore Theatre	421 High Street	Portsmouth (Independent City)	2/27/97
Confederate Monument	Jct. Of High and Court Streets	Portsmouth (Independent City)	9/4/97
Craddock Historic District	Bounded by Paradise Creek, Victory Blvd., and George Washington Hwy.	Portsmouth (Independent City)	6/20/74
Downtown Portsmouth Historic District	Bounded by I-264, Middle Street, Primrose Street, and Queen Steeet	Portsmouth (Independent City)	1/16/04
Drydock No. 1	Norfolk Naval Shipyard	Portsmouth (Independent City)	2/26/70
Lightship No. 101, Portsmouth	London Slip, Elizabeth River	Portsmouth (Independent City)	5/5/89
Monumnetal Methodist Church	450 Dinwiddie St.	Portsmouth (Independent City)	1/15/04
Park View Historic District	Bounded by Elm and Parkview Aves., Fort Lane, Blair, and Harrell Streets	Portsmouth (Independent City)	10/4/84
Port Norfolk Historic District	Roughly bounded by Bayview Blvd., Chataqua Ave., Hartford St., Douglas Ave., and Hull Creek	Portsmouth (Independent City)	9/30/83
Portsmouth Courthouse	NE corner of Court and High Streets	Portsmouth (Independent City)	4/29/70
Portsmouth Historic District (Boundary increase)	Green and Queen Streets	Portsmouth (Independent City)	10/6/83
Portsmouth Naval Hospital	On Hospital Point at Washington and Crawford Streets	Portsmouth (Independent City)	4/13/72
Portsmouth Olde Town Historic District	Bounded by Crawford Pkwy., London Street., the Elizabeth River, and extending 0.1 miles west of Washington Street	Portsmouth (Independent City)	9/8/70
Pythian Castle	610-612 Court Street	Portsmouth (Independent City)	10/30/80
Quarters A,B, and C, Norfolk Naval Shipyard	Norfolk Naval Shipyard	Portsmouth (Independent City)	12/19/74
Seaboard Coastline Building	1 High Street	Portsmouth (Independent City)	10/10/85
Shea Terrace Elementary School	253 Constitution Ave.	Portsmouth (Independent City)	9/14/02
St. Pauls Catholic Church	518 High Street	Portsmouth (Independent City)	6/6/02
Trinity Episcopal Church	High and Court Streets	Portsmouth (Independent City)	5/14/73
Truxtum Historic District	Portsmouth and Deep Creek Blvds., Manly, Dahlin, Hobson, Dewey and Bagley Streets	Portsmouth (Independent City)	9/16/82

In 1974 a NRHP nomination form was submitted for the Craney Island Fuel Facility, Naval Supply Center Norfolk. The form describes the Craney Island site as “fuel storage tanks with pipe lines, fuel dispensing facilities, ship docking facilities, administrative buildings, scattered patches of pine and hardwood trees and grass” (National Register of Historic Places Inventory – Nomination Form 1974:2). After World War II, the Craney Island Fuel Facility became the largest Government fuel storage site in the United States. It does not appear that the property was ever successfully nominated to the NRHP since it is not currently listed.

Potential for Cultural Resources

Numerous investigations have taken place within and near the proposed APE. The results of these investigations may aid in determining the potential for additional cultural resources within the APE.

In 1982, Tidewater Atlantic Research (under sub-contract to Envirosphere Company of New York, New York) directed a remote-sensing reconnaissance survey in the Elizabeth River near West Norfolk, Virginia (Watts 1982). Located near the southeast side of Craney Island the survey sought to identify any potentially significant submerged cultural resources within the proposed dredge area. Results of the survey identified ninety-one targets and/or target clusters, sixteen of which were considered to be high probability targets "because of the intensity, duration, and contour configuration of the magnetic signature and/or size and configuration of the acoustic signature" (Watts 1982:12).

Watts also discusses the potential for shipwrecks within the general area project area:

> In the "Index of Documented Vessel Losses section of his study, Shomette lists a total of one hundred forty-nine vessels lost in the Elizabeth River and its tributaries and the Hampton Roads area. These losses span the years from 1699 to 1970. Of these, he indicates that sixteen vessels may be considered as high probabilities for having been lost in the survey area [southeast portion of Craney Island]. These sixteen vessels were lost from 1750 through 1968, include a sloop, a schooner, barges, lighters, and screw steamers. Also included in this category is the C.S.S. *Virginia* (Watts 1982:6).

During late 1986 and early 1987, TAR conducted a remote-sensing reconnaissance of the remains of the USS *Cumberland*, CSS *Florida*, and the wreck site of the CSS *Virginia* in the James and Elizabeth Rivers of Virginia (Watts 1987). Each of the sites had a differing level of preservation and structural integrity. While the *Florida* was found to have "…an excellent state of preservation. (Watts 1987:34)," the exposed portions of the *Cumberland* lying on the riverbed "…appears to be disarticulated" (Watts 1987:33).

Also in 1986 the USACE, Norfolk District conducted a underwater remote-sensing survey in the vicinity of the Craney Island disposal area containment dike (United States Army Corps of Engineers, Norfolk District 1986). This survey was conducted relative to the potential expansion (to the north and west) of the existing dredge placement site. Remote sensing equipment utilized during the survey included an electronic positioning system, Raytheon fathometer, and Klein Model 531 side scan sonar with a 500 kHz sensor. No magnetometer was used during this survey. Results of the survey located over three hundred side scan sonar targets:

> As would be expected in any active harbor, numerous small isolated targets ranging from crab traps to cable and pipe were seen throughout the survey area. Sunken dredge pipes and associated trenches were seen throughout both survey areas. Trawl and anchor scars were also noted throughout the areas. No clustering of targets that might represent vessel remains were identified in the side scan sonar data nor were any of the individual targets of sufficient size or configuration to represent a sunken vessel. No additional underwater archeological investigations appear to be warranted for the Craney Island Disposal site (United States Army Corps of Engineers, Norfolk District 1986:3-3).

An investigation by James et al. (1994) of two Civil War sites, the CSS *Florida* and the USS *Cumberland* in the James River off Newport News indicate the potential for cultural material in the region. Both vessels were involved in historic events in American History. The *Cumberland* was the first vessel destroyed by the ironclad CSS *Virginia*, while the CSS *Florida* was a Confederate raider that aided in the decline of Union shipping during the war. The environment where the wrecks lie limit diving operations due to depth and tide, depths limited bottom time and tidal currents were to strong for diving operations (James et al. 1994:96-98). However, diver investigations indicated that the *Cumberland* was severely disarticulated by both battle, salvage, and dredge spoil deposition, while the *Florida* lay relatively intact.

A 1994 cultural resources management plan conducted relative to Craney Island included a survey of previous remote-sensing investigations in the area. Of the two previous remote sensing projects referenced, no significant cultural material was found. A 1986 survey conducted in the vicinity of the Craney Island Dredged Material Management Area concluded that three targets needed additional work, but were ultimately found to be modern ferrous debris (United States Army Corps of Engineers, Norfolk District 1994:8). The other project investigated the north and west of Craney Island and titled *Norfolk Harbor and Channels Long Term Dredged Materials Management Report.* The report indicated over 300 side scan targets; none of which were identified as potentially historically significant (United States Army Corps of Engineers, Norfolk District 1994:8).

Another study conducted relative to the sites of the CSS *Florida* and USS *Cumberland* was conducted by R. Christopher Goodwin & Associates, Inc. (Robinson 1995). The investigation concentrated on inventory and conservation needs of 535 artifacts recovered from both vessels. The conclusions, based on four levels of physical condition and three levels of historic significance indicate that “Three-hundred and sixty-six artifacts (68.41 percent of the collection) that are not critical or important for the interpretation of the collection should not receive treatment: these items require extensive documentation, and they may then be deaccessioned” (Robinson 1995:115). As a model, this study may be indicative of the materials recovered from any site in from a similar historic and environmental context.

A remote-sensing investigation conducted in Hampton Roads during 1999, in conjunction with the Hampton Roads Crossing Study, identified 78 remote sensing targets (Cox 1999). The research was confined to Hampton Roads, a historically busy area relative to maritime activity. Thirty of the targets were considered to have the characteristics that could represent significant submerged resources. Of the remaining 48 targets, many were identified with the side scan sonar as pipe or cable, or had a magnetic signature that was not considered significant (Cox 1999:1).

A remote-sensing project was conducted east of Craney Island in 2000 (Lydecker and Tuttle 2000). The Craney Island study was conducted in the relatively shallow waters bounded by an existing dredge spoil area. Over 400 anomalies were located in an area approximately 680 acres in size. Modern debris, construction materials, and crab traps were noted along the shore and within the survey area. Numerous single-point sources were recorded as well as 32 distinct clusters of anomalies. “Due to its history as a work area, as well as its proximity to the Dredged Material Management Area, these single point sources were considered to represent modern trash and debris, and are therefore not considered significant” (Lydecker and Tuttle 2000:1).

Although the area has the potential to contain historic properties, the extensive, industrial use of the area took precedence in evaluating the magnetic anomalies relative to their significance. No anomalies were recommended for additional investigation.

Review of the AWOIS files identified 134 obstructions and 36 unknowns and 18 vessels within the general area of Confined Disposal Facility, Lower Bay, Virginia (Appendix A). These high numbers are typical in a high-use harbor environment such as Norfolk Harbor/Craney Island and may serve to illustrate the propensity for modern debris as well as the potential for additional submerged cultural resources within the proposed APE.

Review of these previous investigations suggests a high probability for additional submerged cultural resources within the proposed APE. While review of previous investigations identified a remote-sensing survey already completed in the APE (U.S. Army Corps of Engineers, Norfolk District 1986), a magnetometer was not used during the survey. Considered the “tool of choice” by underwater archaeologists, it is recommended that a magnetometer survey be completed within the area prior to expansion of the Confined Disposal Facility at Craney Island. No terrestrial archaeological sites are expected at Craney Island since it is a man-made dredged material placement area.

CONFINED DISPOSAL FACILITY-PATAPSCO RIVER, MARYLAND

Project Area Environment

The proposed nearshore Confined Disposal Facility (CDF) is located within the Patapsco River, in the City of Baltimore, Baltimore County, and Anne Arundel County (Figure 55). The CDF would be constructed for material placement with no habitat creation. Assuming there is enough sand near the site to build the dikes, a top dike height would be +10 MLLW (assuming an average water depth of –12 MLLW).

Known Cultural Resources

Results of the archival research identified a total of 39 sites within the Curtis Bay 7.5-min. quadrangle map. However, only seven known archaeological sites (Table 24) are considered to be within the APE (Figure 56). While these archaeological sites are located within the APE, they would likely not be affected by proposed project activities.

Table 24. Known archaeological resources within the CDF, Patapsco River, Maryland.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18AN2	Curtis Bay	Shell Midden	Curtis Bay	Anne Arundel	Y
18AN6	Hawkins Point	Prehistoric lithics	Curtis Bay	Anne Arundel	Y
18AN508	Swan Marsh	Prehistoric lithic scatter	Curtis Bay	Anne Arundel	Y
18AN509	Swan Creek	Prehistoric lithic scatter	Curtis Bay	Anne Arundel	Y
18AN771	Beltway Crossing II	Late 19th-early 20th century artifact concentration	Curtis Bay	Anne Arundel	Y
18BC12	Fort Armistead	Late 19th/early 20th cent. Military fortifications	Curtis Bay	Baltimore City	Y
18BA440	Sala II	Archaic, Woodland, late 18th century site	Sparrows Point	Baltimore	N

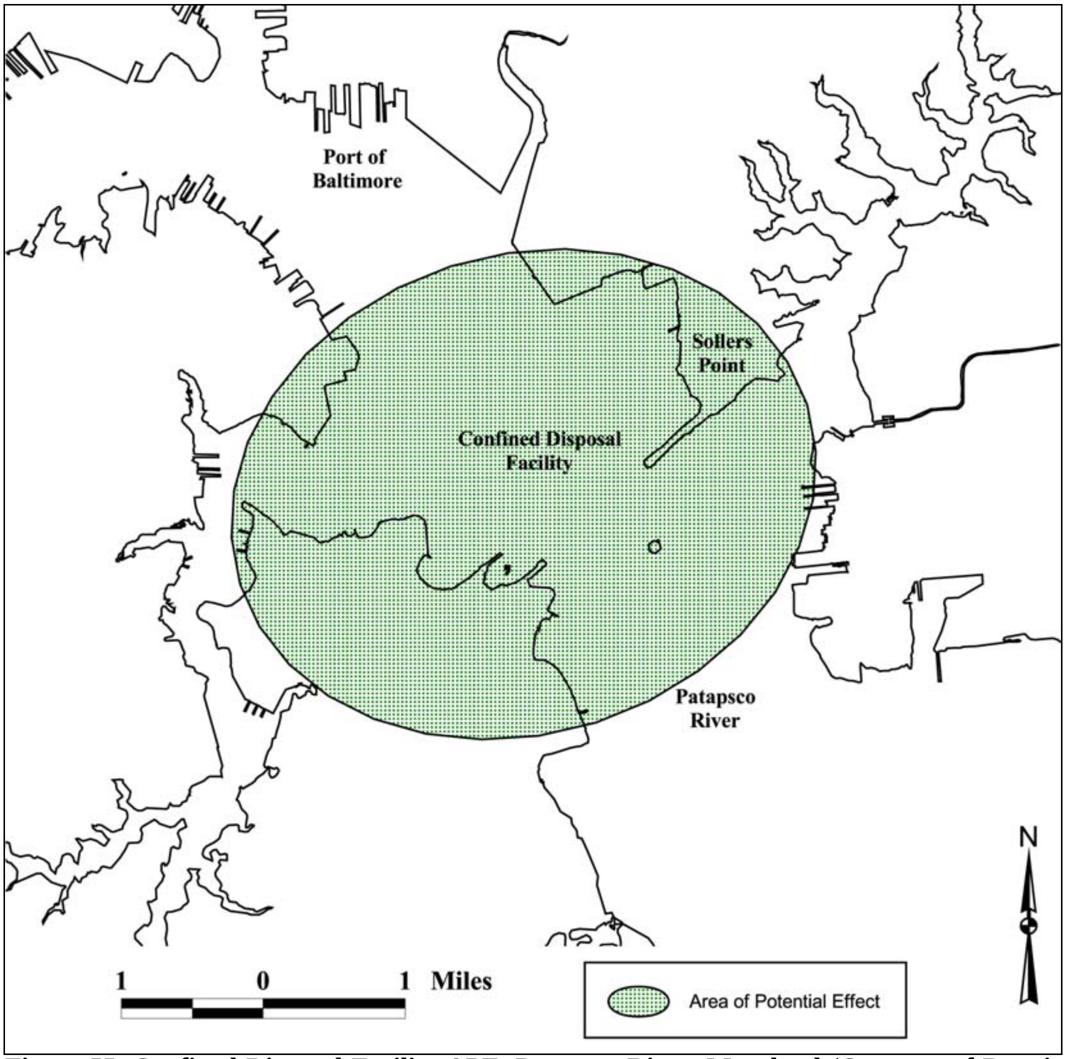

Figure 55. Confined Disposal Facility APE, Patapsco River, Maryland (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Additional research identified a number of NRHP properties/districts within the Baltimore area (Table 25).

Table 25. NRHP properties and Historic Districts within the Baltimore, Maryland area.

Site Name	Location	County	Date Listed
Arundel Cove Archaeological Site	Address Restricted	Anne Arundel	7/21/83
U.S. Coast Guard Yard Curtis Bay	Off MD 173	Anne Arundel	8/5/83
Bare Hills House	N. of Baltimore at 6222 Falls Road	Baltimore	8/6/80
Craighill Channel Lower Range Front Light Station	3.5 miles SE of Fort Howard	Baltimore	12/2/02
Gay Street Historic District	Bounded by N. Gay, Fallsway, Low and N. Exeter Streets	Baltimore	11/21/03
South Central Avenue Historic District	Approx. 8 blocks centering Central Ave.Bet. Pratt and Fleet Streets	Baltimore	11/11/01
Tuscany-Canterbury Historic District	Roughly bounded by Charles St., University Pkwy., Stony Run, and Warrenton Rd.	Baltimore	10/28/01
Tyconnell	120 Woodbrook Lane	Baltimore	3/14/85

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 56. Known archaeological sites located within the Patapsco River, City of Baltimore, Baltimore County, and Anne Arundel County, Maryland (Curtis Bay 7.5-min. quadrangle, photorevised 1974).

An assessment of the U.S Coast Guard Yard at Curtis Bay was made relative to proposed dredged material placement sites within Baltimore Harbor:

> The U.S. Coast Guard Yard – Curtis Bay was placed on the National Register of Historic Places in 1983 and is the closest historic site to the proposed site at Dead Ship Anchorage site…Fort Armistead (on the east side of Hawkins Point, east of the Key Bridge) is the closest historic property to the Hawkins Point/Thomas Cove site and lies well outside of any Proposed alignment. Ft. Carroll, in the middle of the Patapsco River just east of the Key Bridge, lies near some of the alignments proposed for Sollers Point, but well outside of any of the potential footprints (EA Engineering, Science & Technology 2003a:IH-31)

No adverse effects to these NRHP properties is anticipated relative to proposed confined disposal facility within the Patapsco River, Maryland.

An additional National Historic Landmark Nomination Form regarding the Harbor Inspection Tug, *Baltimore* was located during archival research. The *Baltimore* (official number 203700), was built in 1906 by the Skinner Shipbuilding Company in Baltimore Maryland:

> The hull is constructed of riveted iron, and the deckhouse is built of wood. A single "scotch" boiler provides steam for the compound reciprocating engine. The tug is maintained as an operating floating exhibit by the Baltimore Museum of Industry, Inc., near the dock area where she tied up during her working life (National Historic Landmark Nomination Form 1993:2).

The *Baltimore*, located near downtown Baltimore, is the oldest operational steam-powered, coal-fired tugboat in the United States. This property is not located within the APE.

Potential for Cultural Resources

A series of previous investigations within the Patapsco River may help indicate the potential for additional cultural resources within the APE. An archaeological reconnaissance of Fort Holabird, located near Baltimore Harbor, within Baltimore City limits was conducted in 1979. Addressing the potential for prehistoric sites within the area Marshall and Knight state:

> There is very little information available concerning the prehistoric occupation of the area of the Patapsco River now occupied by Baltimore Harbor. Non-urbanized area and littoral zones in the immediate vicinity of the project area [Fort Holabird] exhibit a very low density of recorded archaeological sites. At this time the quantity and quality of date relating to the area's prehistory is inadequate to facilitate a meaningful attempt at predictive modeling for the location of prehistoric archaeological resources. From a theoretical perspective, the environmental characteristics of the study area suggest that the area's close proximity to the Patapsco River and its location on a tidal estuary makes it a likely location for prehistoric occupation and exploitation. This would hold true for the full range of Maryland's prehistoric cultural history (Marshall and Knight 1979:1-2).

The Karell Institute has conducted a number of remote-sensing surveys within Baltimore Harbor (Koski-Karell 1979a, Koski-Karell 1980, Koski-Karell 1981). During 1979 the Karell Institute conducted a Phase I remote-sensing survey in conjunction with the Baltimore Harbor and Channels 42-foot Project. The survey located 15 targets within the Brewerton Channel Extension all of which were judged to be "buoys, debris of wrecks of recent origin, or items severely damaged by previous dredging" (Irion and Hirrel 1994:7). The 1980 Phase I cultural resources reconnaissance survey in conjunction with the Baltimore Harbor and Channels 50-foot Project failed to locate any acoustic anomalies in the project area (Irion and Hirrel 1994:7).

A Phase I remote-sensing survey was conducted in 1980 to improve access to the Skyline Terminal Docking Facility, located along the south shore of the Patapsco River (see Figure 49). The remote-sensing project was completed by the Karell Institute of Arlington, Virginia. Results of the magnetometer and side scan sonar survey identified three potentially significant anomalies. “Of the three significant target located, two were determined to be located just outside the boundary of the project area, and the other appears to be a length of cable or chain. No anomalies characteristic of sunken vessels were found to be located within the project area” (Koski-Karell 1980:ii).

In 1992 the U.S. Army Corps of Engineers, Baltimore District conducted an archival survey of the Baltimore Harbor anchorages and channels. Results of the survey identified no historic sites within the project area (U.S. Army Corps of Engineers, Baltimore District 1992). During 1994, R. Christopher Goodwin & Associates, Inc., conducted a Phase I remote-sensing survey of approximately 280 acres for the proposed Baltimore Harbor and Anchorages Project. A review of previous investigations by Irion and Hirrel conclude that:

> No underwater archaeological sites at any locations in the project area are listed in the National Register of Historic Places. A number of floating vessels located in Ports around northern Chesapeake Bay are listed in the National Register, but none are located permanently in the immediate vicinity of the project area (Irion and Hirrel 1994:7).

Results of the remote-sensing survey identified 47 magnetic anomalies within the project area. Most of the anomalies were considered low amplitude and short duration, not indicative of potentially significant submerged cultural resources. Use of a sub-bottom profiler discounted the remainder of the anomalies as potentially significant (Irion and Hirrel 1994:52).

Review of the AWOIS files only identified 16 obstructions and one unknown within Baltimore Harbor (Appendix A). While this number seems low for a high-use harbor, it may indicate the lack of positional accuracy of the AWOIS list.

The Reconnaissance Study of Baltimore Harbor Sites for Upland, Confined Placement of Harbor Dredged Material addresses the potential for cultural resources within the area as well as other potential impacts:

> No historical resources are expected to be affected at any of the sites. All of the currently known historic sites are outside of any proposed construction. Because the area is urbanized and no dwellings occur near any of the proposed sites, the potential for viewshed disturbances and other aesthetic impacts is minimal. Viewshed changes, construction and filling would be consistent with other Port activities…Some parts of the largest alignment (#4) at Sollers Point would reach within fairly close proximity to Turner Station but would not be expected to impact the community because the BG&E property lies between the proposed project and Turner Station (EA Engineering, Science & Technology 2003b:iv)

Due to known archaeological sites, NRHP properties, Historic Districts, and shipwrecks within the APE the potential exists for additional cultural resources within the proposed APE.

COX CREEK EXPANSION, PATAPSCO RIVER, MARYLAND

Project Area Environment

The Cox Creek Expansion Site is located approximately 1 mile south of the Francis Scott Key Bridge, along the west bank of the Patapsco River, in Anne Arundel County, Maryland (Figure 57).

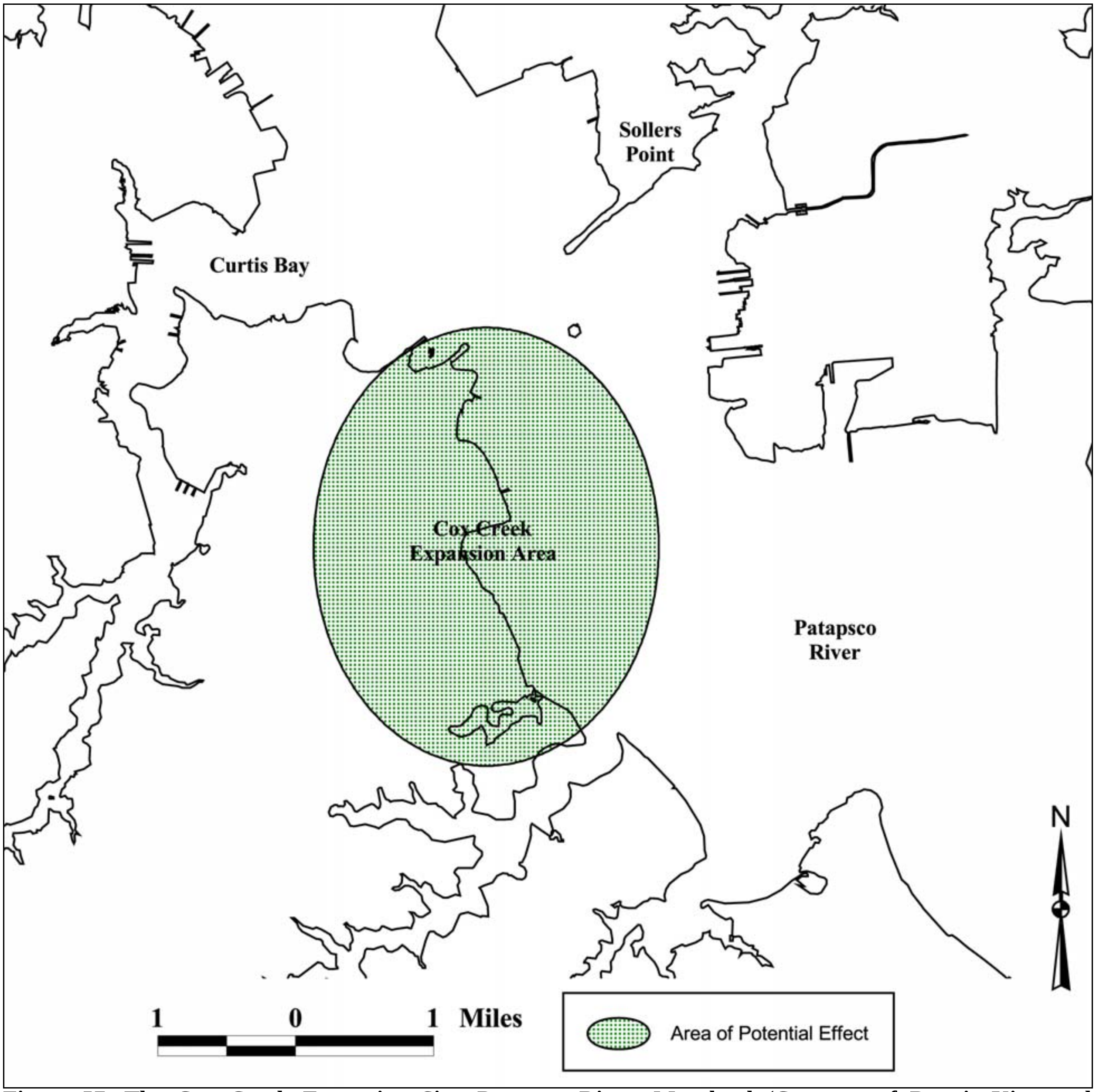

Figure 57. The Cox Creek Expansion Site, Patapsco River, Maryland (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

The existing Cox Creek property was originally developed as a containment site for dredged material from the 42-foot-deep navigation channel of Baltimore Harbor and Channels project. The site has not been actively used as a dredged material placement site since the mid-1960s. The current dikes at Cox Creek are now +24 feet MLLW with a planned expansion to +36 feet MLLW. The alternative calls for raising the dikes an additional 10 feet to +46 feet MLLW with no beneficial use. Increasing the elevation of the dikes will extend the outside slope of the dike upward with no impact to the Patapsco River.

The Maryland Port Administration (MPA) is considering an innovative use (beneficial use or reuse) of dredged material from Baltimore Harbor, west of the North Point/Rock Point line. This Innovative-Use project would use the existing Cox Creek Dredged Material Containment Facility (DMCF) to manufacture “environmentally safe commercial products that may be marketed, used, or otherwise disposed of off site by the service provider” (Murphy 2003:158).

With no expansion of the footprint or discharges into the DMCF from innovative use systems “there are no foreseen adverse environmental effects associated with using the facility as a transfer and interim storage site for dredged material in conjunction with planned facility operations, consistent with applicable regulatory criteria” (Murphy 2003:158).

Known Cultural Resources

A review of all known cultural resources in the vicinity of the Cox Creek Expansion Area was undertaken at the MHT. Results of the research identified a total of 39 sites within the Curtis Bay 7.5-min. quadrangle map. However, only seven of these are within close proximity to the Cox Creek Expansion Site (Table 26 and Figure 58).

Table 26. Known archaeological resources within or near the Cox Creek Expansion Site, Patapsco River, Maryland.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18AN2	Curtis Bay	Shell Midden	Curtis Bay	Anne Arundel	N
18AN6	Hawkins Point	Prehistoric lithics	Curtis Bay	Anne Arundel	Y
18AN508	Swan Marsh	Prehistoric lithic scatter	Curtis Bay	Anne Arundel	Y
18AN509	Swan Creek	Prehistoric lithic scatter	Curtis Bay	Anne Arundel	Y
18AN771	Beltway Crossing II	Late 19th-early 20th century artifact concentration	Curtis Bay	Anne Arundel	N
18BC12	Fort Armistead	Late 19th/early 20th cent. Military fortifications	Curtis Bay	City of Baltimore	N
18BA440	Sala II	Archaic, Woodland, late 18th century site	Sparrows Point	Baltimore	N

The archaeological resources include prehistoric sites, a shell midden, and a variety of historic sites. Of the seven archaeological sites only three are located within close proximity to the proposed expansion site (18AN6, 18AN508, and 18AN509).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 58. Known archaeological sites located near the Cox Creek Expansion Site, Anne Arundel County, Maryland (Curtis Bay 7.5-min. quadrangle, photorevised 1974).

Only two NRHP properties are located within proximity to the Proposed Cox Creek Expansion Site (Table 27). These two sites include the Arundel Cove Archaeological Site (18AN523) and the U.S. Coast Guard Yard, Curtis Bay (AA-783). No historic districts have been identified in the area. Proposed project activities will not have any impact on these known properties.

Table 27. NRHP properties near the Cox Creek Expansion Site, Patapsco River, Anne Arundel County, Maryland.

Site Number	Name	Location	7.5' quad. Map
18AN523	Arundel Cove Archaeological Site; Coast Guard Site	Location not to be released	Curtis Bay
AA-783	U.S. Coast Guard Yard, Curtis Bay	Address not available, Curtis Bay	Curtis Bay

Potential for Cultural Resources

An assessment regarding the potential for cultural resources within the Cox Creek Expansion Site has been addressed in the Integrated Feasibility Report and Environmental Impact Statement, “The 61-acre Cox Creek diked placement area is an area identified in early maps as a tidal flat. For that reason no cultural resources are expected there” (Baltimore Harbor Anchorages and Channels, Maryland and Virginia 1997:2-46).

Review of the AWOIS database identified 40 obstructions, 14 unknowns, and 19 named vessels within the general area of the Cox Creek Expansion Site. Since the APE was expanded for the AWOIS search, these numbers are likely high and do not reflect the true number of obstructions, unknowns and vessels (historic and modern) within the actual proposed expansion site.

Although there are known archaeological sites and NRHP properties within the proposed APE, the raising of dikes will likely not impact any cultural resources. The potential for viewshed disturbances (by raising the dike an additional 10 feet) and other aesthetic impacts remains a possibility.

HART-MILLER ISLAND EXPANSION, MARYLAND

Project Area Environment

Hart-Miller Island (HMI) is located in the Upper Chesapeake Bay, just north of the mouth of the Patapsco River, Baltimore County, Maryland (Figure 59).

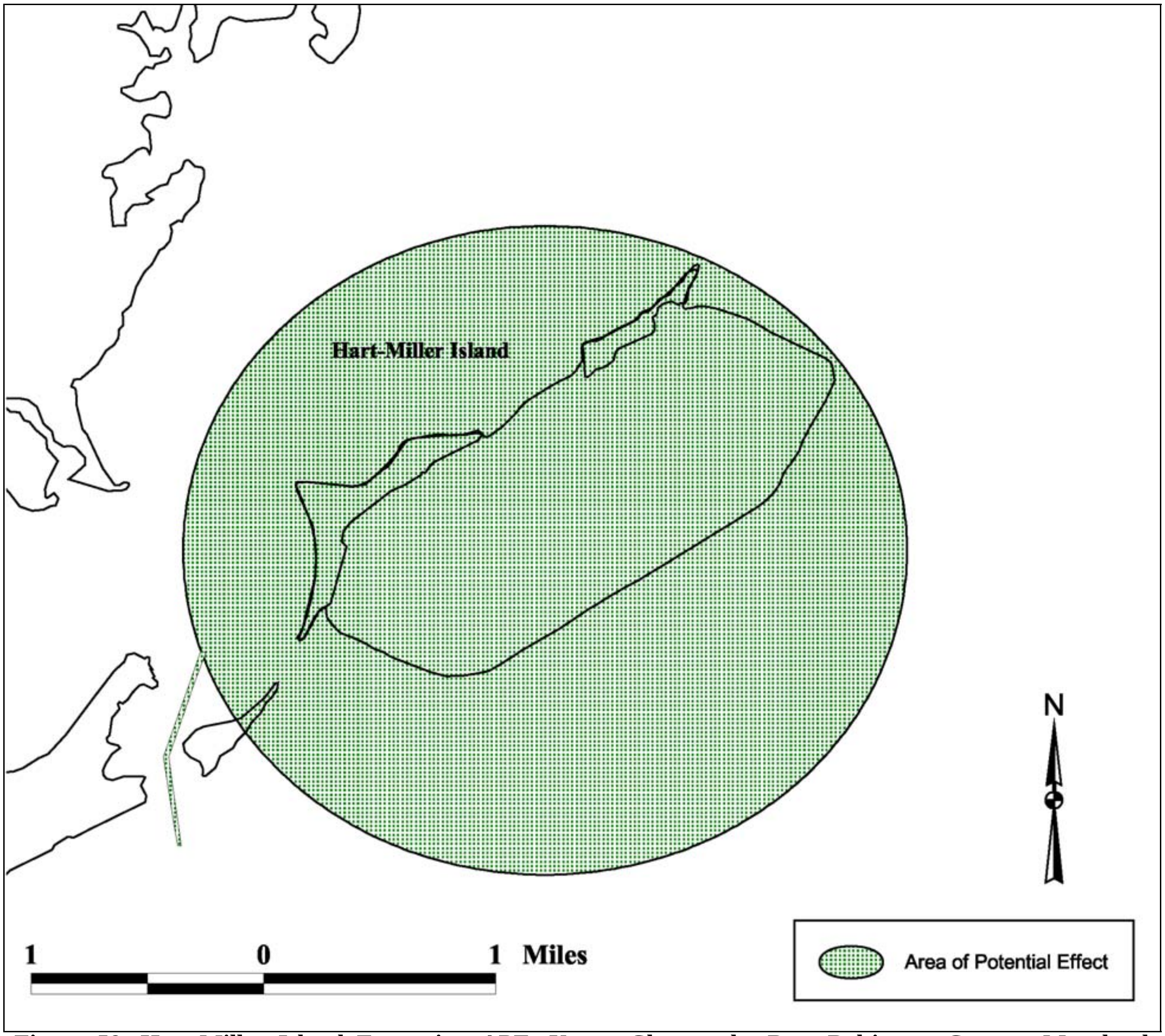

Figure 59. Hart-Miller Island Expansion APE, Upper Chesapeake Bay, Baltimore County, Maryland (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Located approximately 13 miles due east of Baltimore City, HMI is comprised of two distinct islands located approximately 3,400 feet offshore between the Black and Middle Rivers. HMI used to be a continuous island but a combination of post-Pleistocene sea-level rise and erosion have separated the two. These environmental factors have also separated the two islands from the mainland. The elevation of the island ranges from sea level to 5.5-feet mean sea level (Rose 1998:2). Proposed activities would include vertical and lateral expansion of the island to the south. The placement of material includes clean material.

Construction of the existing HMI site began in 1981 and by 1984, the height of the dikes were built to +18 feet MLLW. In 1988 the dike height was raised an additional 10 feet (to an overall height of 28 feet above MLW). The 1,140-acre HMI placement site was then divided into two cells and the north cell dike raised to +44 feet MLLW by removing material from the south cell dike. The existing capacity of HMI is approximately 10 million cubic yards (mcy).

Known Cultural Resources

A number of previous investigations have identified cultural resources on HMI. During the early twentieth century Mayre (1938) identified a shell midden on Cuckolds Point as well as others within the Upper Chesapeake Bay region. Later, in the 1970s McNamara surveyed the islands relative to an environmental assessment for the Hart-Miller Island (HMI) Dredged Material Containment Facility. McNamara's survey:

> Found no artifacts on Miller Island. On Hart Island he could not find 18BA96, a previously recorded site; or the Hart Island House, a 18th century house, and reported that they had probably eroded into the bay. At one location on the eastside of the island, he found an Orient Fishtail projectile point (Terminal Archaic), a biface fragment, and a flake. He excavated test pits inland from the artifacts but found no other cultural remains. On the west side of the island he found the distal portion of a projectile, two flakes, and a grit-tempered pot sherd…McNamara did not examine the shipwreck off the southern tip of the island because it was outside the project area (Rose 1998:3).

Review of documented cultural resources at MHT identified five sites on Hart-Miller Island (Table 28). The sites include prehistoric sites, shell midden, and a lithic scatter (Figures 60, 61, and 62).

Table 28. Known cultural resources within the Hart-Miller Island Expansion Area.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18BA96	Hart Island	Prehistoric	Gunpowder Neck	Baltimore	Y
18BA65	Cedar Point	Late Archaic to Late Woodland shell midden	Middle River/Sparrows Point	Baltimore	Y
18BA74	Porter Field	Archaic lithic scatter	Middle River	Baltimore	Y
18BA98	Porters Park	Prehistoric shell midden	Middle River	Baltimore	Y
18BA133	Cuckold Point	Prehistoric shell midden	Sparrows Point	Baltimore	Y

Rose (1998) compiled a table of all known sites and historic properties on and near Hart-Miller Island (Table 29). The table includes an NRHP property (Todd Farmhouse), the Craighill Channel Range Light, which is listed on the Maryland Register of Historic Properties (Figure 63), prehistoric sites, twentieth century houses, three shipwrecks, and one bridge.

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 60. Known archaeological sites located within or near the Hart-Miller Island Expansion Area (Gunpowder Neck 7.5-min. quadrangle, 1995).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 61. Known archaeological sites located within or near the Hart-Miller Island Expansion Area (Middle River 7.5-min. quadrangle, photorevised 1985).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 62. Known archaeological sites located within or near the Hart-Miller Island Expansion Area (Sparrows Point 7.5-min. quadrangle, photorevised 1974).

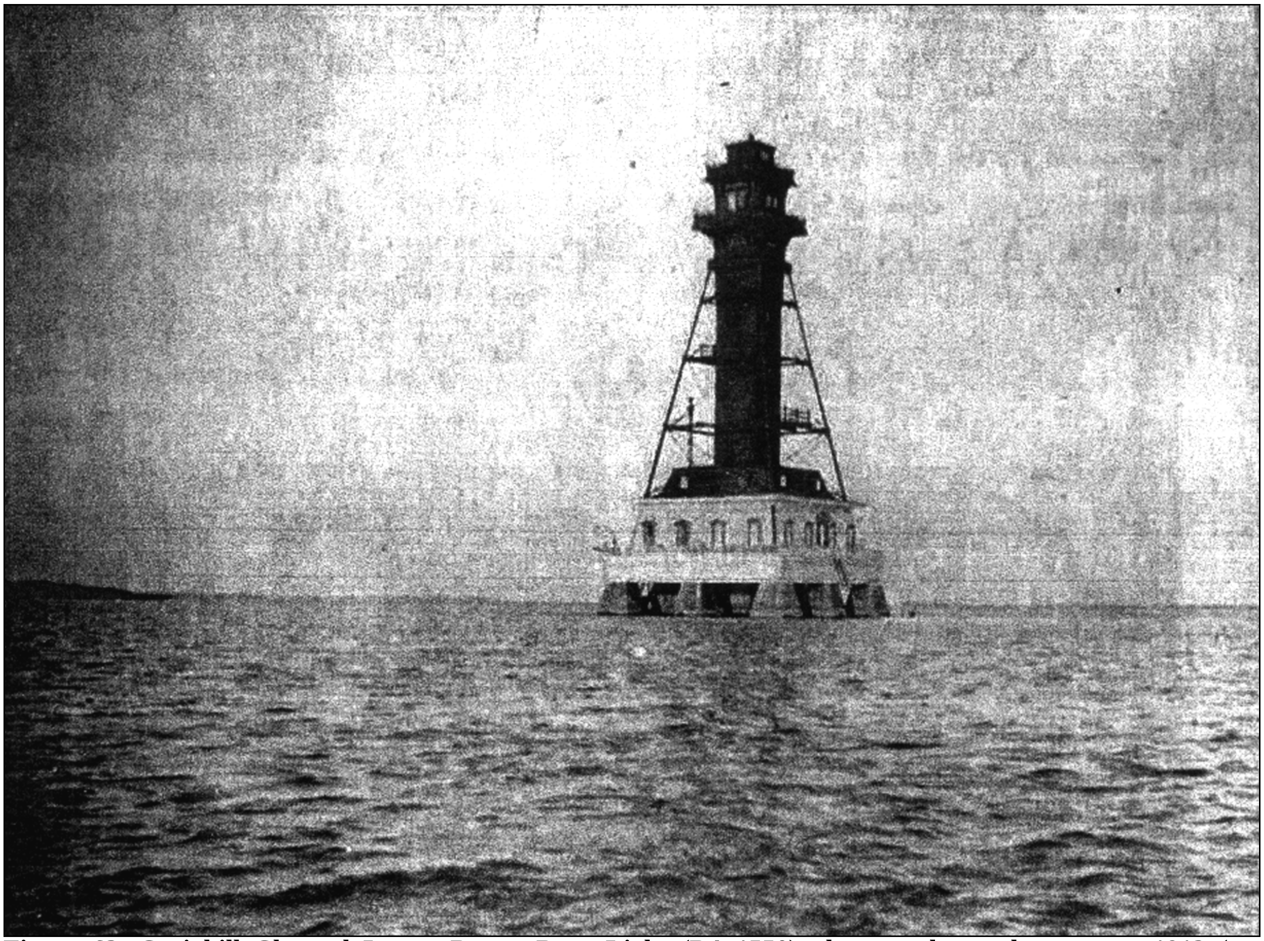

Figure 63. Craighill Channel Lower Range Rear Light (BA-1550) photographer unknown, ca. 1912 (as presented in the NRHP Registration Form 2002:15).

Table 29. Sites and Historic Properties in Vicinity of Hart-Miller Island Area.

Site	Site Type	Cultural Affiliation	Distance to Hart-Miller Island Project
Todd Farmhouse (Site 18BA370	Plantation, NRHP listed	Historic, 19th Century	4.7 Kilometers (2.9 mile)
Craighill Channel Range Light	Lighthouse, MRHP listed	Historic, 19th Century	1,770 meters (5,800 feet)
Site 18BA96	Camp (?), MIHP listed	Prehistoric	Hart Island
Hart Island House	Farmhouse (?)	18th Century	Hart Island
Structures 1-3	Summer home (?)	20th Century	1,400 meters (4,600 feet)
Structures 4-7	Summer home (?)	20th Century	1,465 meters (4,800 feet)
Structures 8-11	Summer home (?)	20th Century	1,280 meters (4,200 feet)
Pleasure Island Bridge	Bridge	20th Century	1,610 meters (5,200 feet)
Shipwreck #1	Shipwreck	17th Century	425 meters (1,400 feet)
Shipwreck #2	Shipwreck	Unknown	275 meters (900 feet)
Potential Shipwreck	Shipwreck	Unknown	1,250 meters (4,100 feet)
Potential Prehistoric Site	Unknown	Prehistoric	60 meters (200 feet)

(as presented in Rose 1998:6).

Review of the Sparrows Point 7.5-min. quadrangle map identifies two shipwreck symbols located near the south end of Hart Island. Regarding the shipwreck site located on the south end of Hart-Miller Island McNamara states:

> A shipwreck, on the southern tip of Hart Island's tidal flats, is graphically displayed on the 1974 photo-revised USGS 7.5-min. Sparrows Point topographic quadrangle [see Figure 62]. According to Mr. Don Stewart, director of the Baltimore Maritime Museum, that is the approximate location of one of the earliest shipwrecks in colonial Maryland waters. The boat was owned by Captain Claiborne, who operated an early 17th century trading post on Kent Island and traded extensively up and down the Bay with various indian groups. The ship was sunk by one of Lord Baltimore's boats between 1638 and 1642 (McNamara 1977:1-2).

A second shipwreck symbol is located off the southwest shore of Hart's Island. Rose states that "NOAA (1985) shows this feature as "stakes," which could mean the feature either consists of ship ribs sticking up above the waterline or pilings placed in the water. The Maryland Historical Trust has no information on this wreck" (Rose 1998:8).

Potential for Cultural Resources

Review of previous investigations infer that:

> The area around the HMI [Hart Miller Island] project saw widespread prehistoric use. Prehistoric occupation began in the Archaic period and lasted until the Late Woodland. There have been no detailed excavations in the vicinity of the HMI project area, and it is impossible to determine if prehistoric occupations were continuous or intermittent. Previous surveys identified numerous prehistoric sites ranging from habitation sites to shell middens on the mainland near Hart Island…
>
> The construction activities proposed for Hart-Miller Island Environmental Restoration Project will primarily take place within the South Cell, except for construction of the pump station on a spur that was created during construction of outer perimeter dike of the dredged material containment facility. These areas have already been disturbed by construction of the HMI facility, and the south cell placement area is now covered by about 5.5 meters (18 feet) of dredged material…The proposed project will have no effect on any historic properties listed on the NRHP or MRHP, and the proposed construction areas requires no further cultural resource action (Rose 1998:8-9).

In response to a cultural resource investigation relative to HMI, the MHT "indicated that no further aquatic cultural investigations are necessary for Hart-Miller Island. Cultural investigations have indicated that use of the site would produce no significant adverse impacts to cultural resources" (Baltimore Harbor Anchorages and Channels, Maryland and Virginia 1997:2-49).

Review of the AWOIS database identified 26 obstructions, 9 unknowns, and 14 named vessels within the general area of the Hart-Miller Island Expansion Site. Since the APE was expanded for the AWOIS search, these numbers are likely high and do not reflect the actual number of obstructions, unknowns, and vessels (historic and modern) within the APE.

The potential exists for additional cultural resources to be located within the APE, most likely in the form of inundated prehistoric sites and shipwrecks. While the vertical expansion of dikes at this site will not affect additional cultural resources, the lateral expansion has potential to impact previously unrecorded archaeological sites.

LARGE ISLAND RESTORATION-LOWER BAY, VIRGINIA

Project Area Environment

The representative area includes New Point Comfort Island, located in Mathews County, Virginia (Figure 64). Proposed action would use dredged material to restore portions of New Point Comfort Island, which has since eroded away.

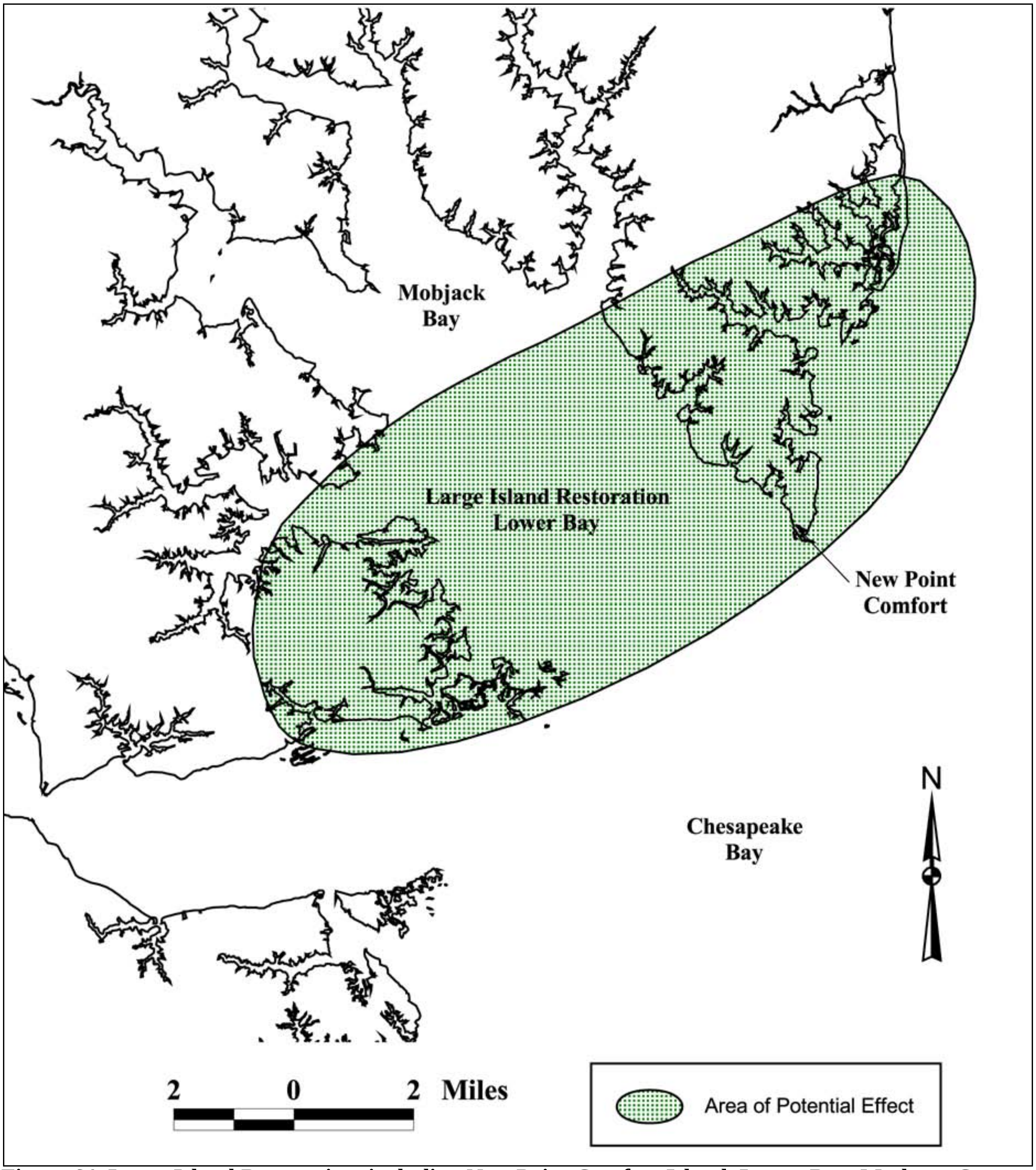

Figure 64. Large Island Restoration, including New Point Comfort Island, Lower Bay, Mathews County, Virginia (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

Review of the State Site files at the VDHR identified eight archaeological sites in the vicinity of New Point Comfort Island (Figure 65). All of these sites are located in close proximity to New Point Comfort Island (Table 30).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 65. Known archaeological sites located within or near the Large Island Restoration, Lower Bay, Mathews County, Virginia (New Pont Comfort 7.5-min. quadrangle map, 1964).

Table 30. Known archaeological resources within and near the proposed Large Island Restoration Area, Lower Bay, Mathews County, Virginia.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
44MT20	Beach Comfort 1	Woodland beach erosion scatter	New Point Comfort	Mathews	Y
44MT22	Beach Comfort 3	Archaic/Woodland beach erosion scatter	New Point Comfort	Mathews	Y
44MT23	Beach Comfort 4	Woodland beach erosion scatter	New Point Comfort	Mathews	Y
44MT24	Beach Comfort 5	Woodland beach erosion scatter	New Point Comfort	Mathews	Y
44MT26	MT-Beach Series #4	Prehistoric (eroding beach site)	Matthews	Mathews	Y
44MT29	MT-Beach Series #1	Prehistoric (eroding beach site)	New Point Comfort	Mathews	Y
44MT30	Beach Comfort 6	Woodland artifact scatter	New Point Comfort	Mathews	Y
44MT0066	None	Prehistoric (eroding beach site)	New Point Comfort	Mathews	Y

Additional cultural resources (i.e buildings, structures, NRHP properties, etc.) within the proposed Large Island Restoration APE include the New Point Comfort Island Lighthouse:

> The site of the New Point Comfort Lighthouse is a small granite rubble island at the southernmost tip of Matthews County. When the light was constructed in 1805, this point was part of a peninsula connected to the mainland, but it has since been separated and reduced by erosion to an island of about one-third acre.
>
> The lighthouse is a tapered octagonal ashlar sandstone structure similar to the Old Point Comfort Light, built in 1802 at Fort Monroe. Both structures encase stone spiral stairs constructed in a manner similar to spiral stairs in medieval structures. Double hung sash windows light the stair as it winds its way up to the light.
>
> Abandonment of the lighthouse as an operating Coast Guard facility has resulted in neglect and vandalism. The walls are no longer freshly whitewashed, windows are boarded up, and the glass of the light cupola has been shattered.
>
> The tower’s stonework survives in good condition; however, and the building is in generally sound structural state. The light keeper’s house disappeared prior to 1963 (Virginia Historic Landmarks Commission 1972:2).

The New Point Comfort Lighthouse, completed in 1805, was put to work in 1806 (Figure 66). The lighthouse went through several repairs throughout the years and in 1930 an automatic light was placed atop the tower. In 1963 the New Point Comfort Spit Light was constructed and the use of the lighthouse was discontinued. The lighthouse was nominated to the NRHP in 1972.

Only one Historic District is located within Mathews County, Virginia. This is the Mathews County Courthouse Square, located in Mathews, Virginia. This district is located outside of the APE and will not be affected by proposed project activities.

Figure 66. New Point Comfort Lighthouse, Mobjack Bay, Mathews County, Virginia (Photograph courtesy of the Maryland Historical Trust, Crownsville, Maryland).

Potential for Cultural Resources

The potential does exist for additional cultural resources to be located within the proposed APE. Prehistoric resources may exist in the APE due to the similarities in landform to those areas immediately north of the APE (which contain known archaeological sites).

Review of the New Point Comfort Lighthouse NRHP nomination form infers that the area posed a threat to mariners until the lighthouse was built in the early nineteenth century. This may suggest the potential for shipwrecks within the area:

> The New Point Comfort peninsula has served as a landmark to navigators entering Mobjack Bay since the seventeenth century and has been known by its present name since before 1690. The point and the surrounding shoals posed a continuous threat to navigation, thus a Congressional act of March 3, 1801 provided for the erection of a permanent light there as soon as the light was deeded by the state (Virginia Historic Landmarks Commission 1972:3).

Review of the AWOIS files within the area identified four obstructions, five unknowns, and four vessels within the general area (see Appendix A). The presence of unknown objects and obstructions may suggest the potential for significant submerged cultural resources within the proposed APE.

LARGE AND SMALL ISLAND RESTORATION-MID BAY, MARYLAND

Project Area Environment

The representative area is located within Dorchester County, Maryland (Figure 67). Located along the east shoreline of the Delmarva Peninsula, the APE includes a large section of the eastern shoreline of Chesapeake Bay.

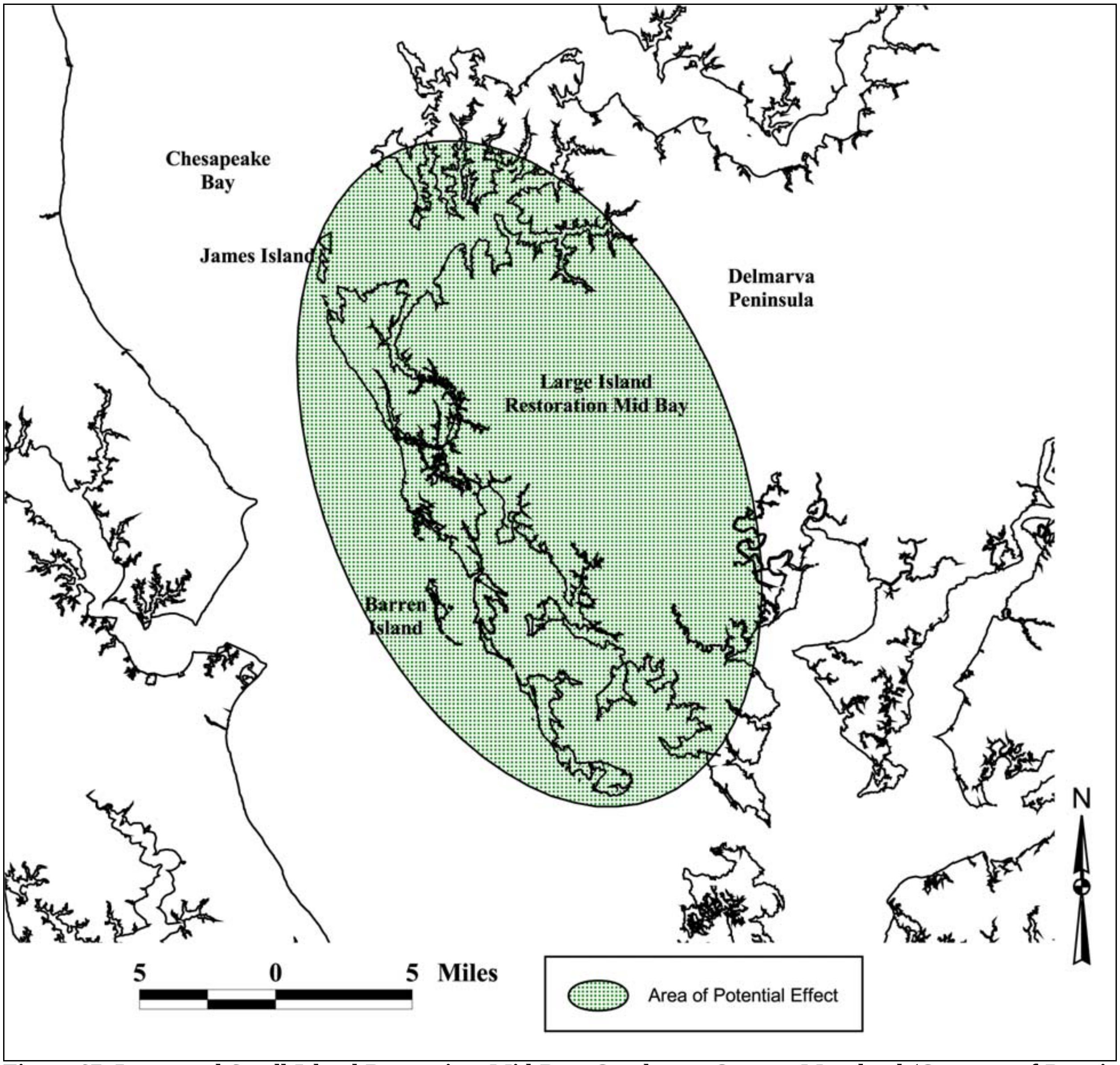

Figure 67. Large and Small Island Resoration, Mid-Bay, Corchester County, Maryland (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

A State Site File check of all cultural resources was conducted at the MHT relative to the proposed APE. The five 7.5-min. quadrangle maps reviewed for known cultural resources within the general area include Hudson, Taylors Island, Honga, Richland Point, and Barren Island (Figures 68, 69, 70, 71, and 72). Only those sites located at or along the shoreline (within the proposed APE) are presented in Table 31. While numerous cultural resources exist within the area, only those on or near the shoreline would likely be affected by proposed project activities.

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 68. Known archaeological sites located within or near the Large and Small Island Restoration APE, Mid-Bay, Dorchester County, Maryland (Hudson 7.5-min. quadrangle, 1982).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 69. Known archaeological sites located within or near the Large and Small Island Restoration APE, Mid-Bay, Dorchester County, Maryland (Taylors Island 7.5-min. quadrangle, 1982).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 70. Known archaeological sites located within or near the Large and Small Island Restoration APE, Mid-Bay, Dorchester County, Maryland (Honga 7.5-min. quadrangle, 1984).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 71. Known archaeological sites located within or near the Large and Small Island Restoration APE, Mid-Bay, Dorchester County, Maryland (Richland Point 7.5-min. quadrangle, 1973).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 72. Known archaeological sites located within or near the Large and Small Island Restoration APE, Mid-Bay, Dorchester County, Maryland (Barren Island 7.5-min. quadrangle, 1984).

Table 31. Known archaeological resources within the proposed Large/Small Island Restoration APE, Mid-Bay, Maryland.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18DO160	East Barren Island	Late Woodland shell midden and 18th century scatter	Barren Island	Dorchester	Y
18DO161	Opossum Island	Late Woodland shell midden and 19th century scatter	Barren Island/Honga	Dorchester	Y
18DO162	Cove point	Prehistoric shell midden	Barren Island	Dorchester	Y
18DO169	Barren Island Gap III	19th and early 20th century house site	Barren Island	Dorchester	Y
18DO327	The Long Marshes	Paleoindian short-term camp	Barren Island	Dorchester	Y
18DO351	NE Barren Island Point	Prehistoric shell midden	Barren Island	Dorchester	Y
18DO103	Field NO. SC	Prehistoric shell midden/19th to early 20th century house site	Hudson	Dorchester	Y
18DO222	Hooper's Point	Late Archaic/Early and MiddleWoodland shell midden, late 17th/early 18th century artifact scatter	Hudson	Dorchester	Y
18DO242	Brights Point	Early and Late Archaic and Late Woodland short-term camp	Hudson	Dorchester	Y
18DO227	Mills Point Boat Launching	Late 19th/early 20th century boat launching site	Hudson	Dorchester	Y
18DO228	Mills Point Site	Prehistoric lithic scatter	Hudson	Dorchester	Y
18DO229	Hills Point	Prehistoric short-term camp	Hudson	Dorchester	Y
18DO329	Savitskey #1	Late 18th/early 19th century possible house site	Hudson	Dorchester	Y
18DO330	Savitskey #2	19th/early 20th century probable tenant house site	Hudson	Dorchester	Y
18DO359	Oyster Cove Point	Early Archaic short-term camp/Middle and Late Woodland shell midden, historic artifact scatter	Hudson	Dorchester	Y
18DO360	E. James Island	Lowery Site #25, 1996 Dorchester County Survey	Hudson	Dorchester	Y
18DO363	W. Cook Point	Prehistoric unknown and 19th century house site	Hudson	Dorchester	Y
18DO366	James Island Cemetery	19th - Early 20th century family cemetery	Hudson	Dorchester	Y
18DO383	North Wroten Shore #1	Prehistoric lithic scatter	Honga	Dorchester	Y
18DO387	Westward Creek	Early and Late Archaic short-term camp	Richland Point	Dorchester	Y
18DO389	Northwest Nancy's Point	Prehistoric lithic scatter	Richland Point	Dorchester	Y
18DO410	Eshelman	18th - 20th century artifact scatter	Hudson	Dorchester	Y
18DO411	Michele	Late 19th/early 20th century possible oyster processing facility	Hudson	Dorchester	Y
18DO159	Sand Point	Prehistoric shell midden	Honga	Dorchester	Y
18DO174	Applegarth Store Complex	Early 20th century store complex	Honga	Dorchester	Y
18DO175	Tyler Windmill	Mid-19th century to early 20th century grist windmill site	Honga	Dorchester	Y
18DO213	White	19th or early 20th century artifact scatter	Honga	Dorchester	Y
18DO352	S. Fishing Creek Narrows	Late Woodland shell midden	Honga	Dorchester	Y
18DO369	Charity Point	Late Woodland (and possibly Middle Woodland) shell midden	Honga	Dorchester	Y
18DO370	Long Point	Prehistoric shell midden. Late 18-19th century artifact concentration/possible house site	Honga	Dorchester	Y
18DO375	South Bentley Point	Prehistoric lithic scatter	Honga	Dorchester	Y
18DO382	East Opossum Island	Early and Late Archaic short-term camp, Late Woodland shell midden, 18th and 19th century possible house site	Honga	Dorchester	Y

A number of NRHP properties and Historic Districts have been identified within Dorchester County, Maryland (Table 32). A total of 25 properties and Districts are currently listed within the County. Of these, ten are located within the APE. While these properties are within the APE, it is likely that proposed project activities will have no impact on this resource.

Table 32. NRHP properties and Historic Districts, Dorchester County, Maryland.

Site Name	Location	County	Date Listed	Within APE?
Bethlehem Methodist Episcopal Church	Taylor's Island	Dorchester	1979	Y
Brinsfield I Site	Cambridge	Dorchester	1975	N
Cambridge Historic District (D-699)	Cambridge	Dorchester	1990	N
Christ Episcopal Church and Cemetery	Cambridge	Dorchester	1984	N
Dale's Right	Cambridge	Dorchester	1979	N
Dorchester County Courthouse and Jail	Cambridge	Dorchester	1982	N
East New Market Historic District	East New Market	Dorchester	1975	Y
Fletcher, K.B., Mill	East New Market	Dorchester	1978	Y
Friendhsip Hall	East New Market	Dorchester	1973	Y
Glasgow	Cambridge	Dorchester	1976	N
Glen Oak Hotel	Hurlock	Dorchester	1983	N
Goldsborough House	Hurlock	Dorchester	1988	N
Grace Episcopal Church Complex	Taylor's Island	Dorchester	1979	Y
Hooper Island Light	Hoopersville	Dorchester	1974	Y
Hooper Island Light Station (D-644)	Hoopersville	Dorchester	2002	Y
LaGrange	Cambridge	Dorchester	1980	N
Oakley, Annie, House	Cambridge	Dorchester	1996	N
Patricia	Cambridge	Dorchester	1985	N
Rehoboth	Eldorado	Dorchester	1972	N
Ridgetown Farm	Taylor's Island	Dorchester	1977	Y
Stanley Institute	Cambridge	Dorchester	1975	N
Sycamore College	Cambridge	Dorchester	1988	N
Wilma Lee (skipjack)	Wingate	Dorchester	1985	Y
Willin Village Archaeological Site	Wingate	Dorchester	1985	Y
Yarmouth	Cambridge	Dorchester	1978	N

Potential for Cultural Resources

The potential exists for additional cultural resources within the proposed APE. Extensive shoreline erosion and the historic use of the region suggest additional sites may include shoreline sites, inundated prehistoric sites, and shipwrecks.

Review of Custer’s management plan (1983) for the Upper Delmarva region of Maryland may help determine the potential for additional sites within the region. Custer reviewed the existing archaeological database (in 1983) and assessed which locations within the region would be likely to produce additional information. Custer also assessed which portions of the eastern shoreline are subject to the greatest incidence of site destruction (Custer 1983:1). Factors affecting Custer’s findings include impacts and stresses on the resource base, site density (by quad map), and research sensitivity (Custer 1983:129-137). Custer classifies the Large Island Restoration – Mid Bay APE as a Zone II area which includes "areas with medium to high significant site probabilities and medium numbers of sites and data quality. It is less sensitive than Zone I due to its slightly higher data quality" (Custer 1983:129). Custer considers the APE as an area that has already been impacted by development (modern urban, suburban, and commercial) and will continue to be impacted in the future.

Previous investigations of the area also suggests the potential for additional cultural resources within the APE. In 1977 a reconnaissance survey of two proposed dredged disposal areas was completed by Thunderbird Research Corporation (TRC) of Front Royal, Virginia. Completed for the USACE, Baltimore District, the disposal areas included the northeastern portion of Barren Island (Disposal Area A) and a 10-acre tract (Area B) near Charity Point and Tyler Cove on Meekins Neck (Gardner and Stewart 1977:1). Results of the survey (and archival research) failed to locate any prehistoric sites within the area (Areas A) to be impacted on Barren Island. However, outside the project area (on Barren Island) archaeological sites have been identified. In the past collectors have retrieved artifacts diagnostic of Archaic and Woodland components eroding from the shoreline during low tide (Gardner and Stewart 1977:17). Another prehistoric site on Barren Island, described as shell pits along the shore, was apparently excavated by William Yates of Cambridge (date unknown). Yates recovered ryholite cache blades and undecorated shell-tempered pottery. One historic site was identified within the proposed boundary of Disposal Area A. The site consisted of a scatter of historic ceramics along a 15-foot stretch of shoreline (see Site18DO169 below). The ceramics were badly waterworn, suggesting the site now remains inundated. Review of historic shorelines and erosion rates from 1848-1942 reaffirm this hypothesis (Gardner and Stewart 1977:18). TRC recommended that Disposal Area A was devoid of significant cultural resources and the proposed project would have no effect upon such resources.

Archival research and results of the survey also failed to locate any prehistoric or historic sites within the 10-acre tract near Charity Point. While prehistoric sites have been located in adjacent areas, the majority of the Area B consists of a wet salt marsh. No additional work was recommended for this area (Gardner and Stewart 1977:19).

Additional archaeological investigations have been undertaken in Dorchester County. A reconnaissance level survey of the terrestrial portion of the Route 16 bridge replacement project area was completed in 1987 (Ballweber 1987). Pilings associated with the historic steamboat landing (on Taylor's Island) were recorded and assigned State Site Number 18DO168. The site was not considered significant relative to NRHP criteria.

The Department of Transportation conducted a number of archaeological surveys to evaluate cultural resources on State Highway Administration property (Wesler et al. 1981). Testing confirmed the absence of archaeological sites (Cox et al. 1988:13). In 1981, Leedecker and Associates conducted a survey at Hooper's Neck immediately north of Slaughter Creek. Results of the investigation identified the remains of a late nineteenth to early twentieth century farmstead, designated State Site 18DO103 (Cox et al. 1988:13).

A underwater archaeological survey of the proposed replacement of the Route 16 bridge over Slaughter Creek was conducted in 1988 by John Milner Associates, Inc. of West Chester, Pennsylvania (Cox et al. 1988). Historic research of the project area indicated an eighteenth-century ferry landing, four bridges, a warehouse, steamboat landing, and an oyster house were located within the general area. Additionally, five schooners were reported destroyed in Slaughter Creek in 1814 (Cox et al. 1988:i). The remote-sensing survey and diver investigation identified five targets, four of which were associated with the previous bridge and wharf structure. The fifth target was associated with the existing bridge. No additional work was recommended for the project area. A number of additional underwater archaeological surveys have been completed in adjacent counties (see Watts 1983, 1985).

In 1995 an archaeological survey of the Little Choptank River drainage was undertaken by Darrin L. Lowery. Selected sections of shoreline were examined and a total of 107 archaeological sites were identified. Components from the Early Archaic (10,000-9000 B.P.) through Late Woodland period (1000-400 years B.P.) prehistoric sites were documented. Additionally historic sites dating from the Contact period (A.D. 1550-1700) through the twentieth century were observed within the Little Choptank River system (Lowery 1995b:1). Results of the survey suggest the high probability for both prehistoric and historic archaeological sites within the drainage system.

During March of 2004, Panamerican conducted two submerged cultural resource surveys within the proposed APE. These two surveys included the proposed alignments (or footprints) of possible environmental restoration projects at James and Barren Islands, in Dorchester County, Maryland (Lydecker and Krivor 2004). Both located in Chesapeake Bay, the proposed footprints included the western side of James Island (at the mouth of the Little Choptank River) and the western side of Barren Island, off Upper Hooper Island. Results from the James Island survey documented 417 magnetic anomalies and 191 side scan sonar targets, whereas the Barren Island survey identified 627 magnetic anomalies and 704 side scan sonar targets. No targets within the James Island survey area were recommended for additional investigation, whereas two targets within the Barren Island area were recommended for avoidance (Lydecker and Krivor 2004:87). Results of these remote-sensing surveys serve to illustrate the potential for additional cultural resources within the proposed APE.

Review of shipwreck losses in the area have identified numerous vessels reportedly lost within Dorchester County. Robert Hurry and David Beard researched documented vessel losses within Maryland (produced under a National Park Service grant administered by the MHT in the 1980s). The inventory of vessel losses was a result of archival research, newspaper articles, contemporary accounts, and field inspections (Thompson 2000:41). Results of their research identified 35 vessels lost within Dorchester County (Table 33)

Table 33. Documented vessel losses within Dorchester County.

Vessel Name	Type	Year Lost	Location
Unidentified	Pilot Boat	April 13, 1748	Choptank River
Unidentified	Ferry	April 10, 1760	Choptank River

Table 33, continued

Vessel Name	Type	Year Lost	Location
Baltimore Packet	Unknown	April 1767	Horn Point
Unidentified	Ship	September 29, 1780	Vienna
Unidentified	Ship	September 29, 1780	Vienna
Unidentified (2)	Brigs	September 29, 1780	Vienna
Lord Charlemont	Unknown	1785	Nanticoke River
Earl of Chatham	Snow	1796	Cambridge
Unidentified (5)	Schooners	July, 1814	Slaughter Creek
Express	Steam Sidewheel	October 22, 1878	Point No Point
J.F. Tull	Schooner	June 29, 1881	Fox Island
Willie F. Thomas	Schooner	November 12, 1883	James Point
Somerset	Schooner	March 12, 1888	Billie's Island
Mary Augusta	Schooner	December 12, 1890	Cambridge
Celeritas	Schooner	July 27, 1895	Choptank River
M. Colbourne	Schooner	March 4, 1909	Nanticoke River
Virginia S. Lawson	Schooner	June 7, 1910	Hill's Point
Mary Thomas	Schooner	March, 1911	Hooper's Strait
Mary Liz Thomas	Schooner	March, 1911	Hooper's Strait
Howard Dail	Schooner	February 17, 1915	Madison
Emma	Schooner	April 3, 1915	Hooper Island
Mary Mills	Schooner	December 31, 1917	Choptank River
Carrie Marie	Sloop	April 1918	Choptank River
Pathway	Schooner	October 6, 1919	Andrews
Dana	Gas Screw	September 18, 1923	Bishop's Head
Wm. H. Finney	Gas Screw	April 25, 1924	Holland's Island
Senora	Schooner	September 5, 1924	Choptank River
Frances Fuller	Gas Screw	October 21, 1925	James Shore
Emily E. Burton	Schooner	November 20, 1925	James Point
Idleon	Gas Screw	November 20, 1926	Sandy Island
Unida	Gas Screw	January 18, 1929	Cambridge
Virginia	Gas Screw	December 9, 1930	James Point
L.E. Williams	Schooner	October 5, 1930	Travers Point
Annie Bell	Schooner	1932	Cambridge

(as presented in Thompson 2000:43-44).

A review of the AWOIS Files within the general area of the Large/Small Island Restoration, Mid Bay Maryland site identified 73 obstructions, 91 unknowns, and 30 vessels (historic and modern) within the general area (Appendix A**)**. As stated earlier, the position accuracy of AWOIS wrecks and/or obstructions is highly variable and usually poor. These records simply serve to illustrate the potential for additional cultural resources within the proposed project area.

QUARRY PLACEMENT-CECIL COUNTY, MARYLAND

Project Area Environment

The representative area includes the Stancill Quarry located adjacent to Furnace Bay, within Cecil County, near Perryville, Maryland (Figure 73). Located near Furnace Bay, the Stancill Quarry is a 130-acre sand and gravel quarry located on Principo Creek, a tributary of Furnace Bay. With an estimated five to seven years of commercial operation remaining, it is proposed to place dewatered dredged material as suitable fill for the mine reclamation (Murphy 2003:155). The proposed plan would fill the existing quarry, providing storage space for approximately 9 million cubic yards (mcy) of dredged material. At an annual rate of 450,000 cubic yards (cy), the site would provide 20 years of storage space (URS Corporation 2002:1-2)

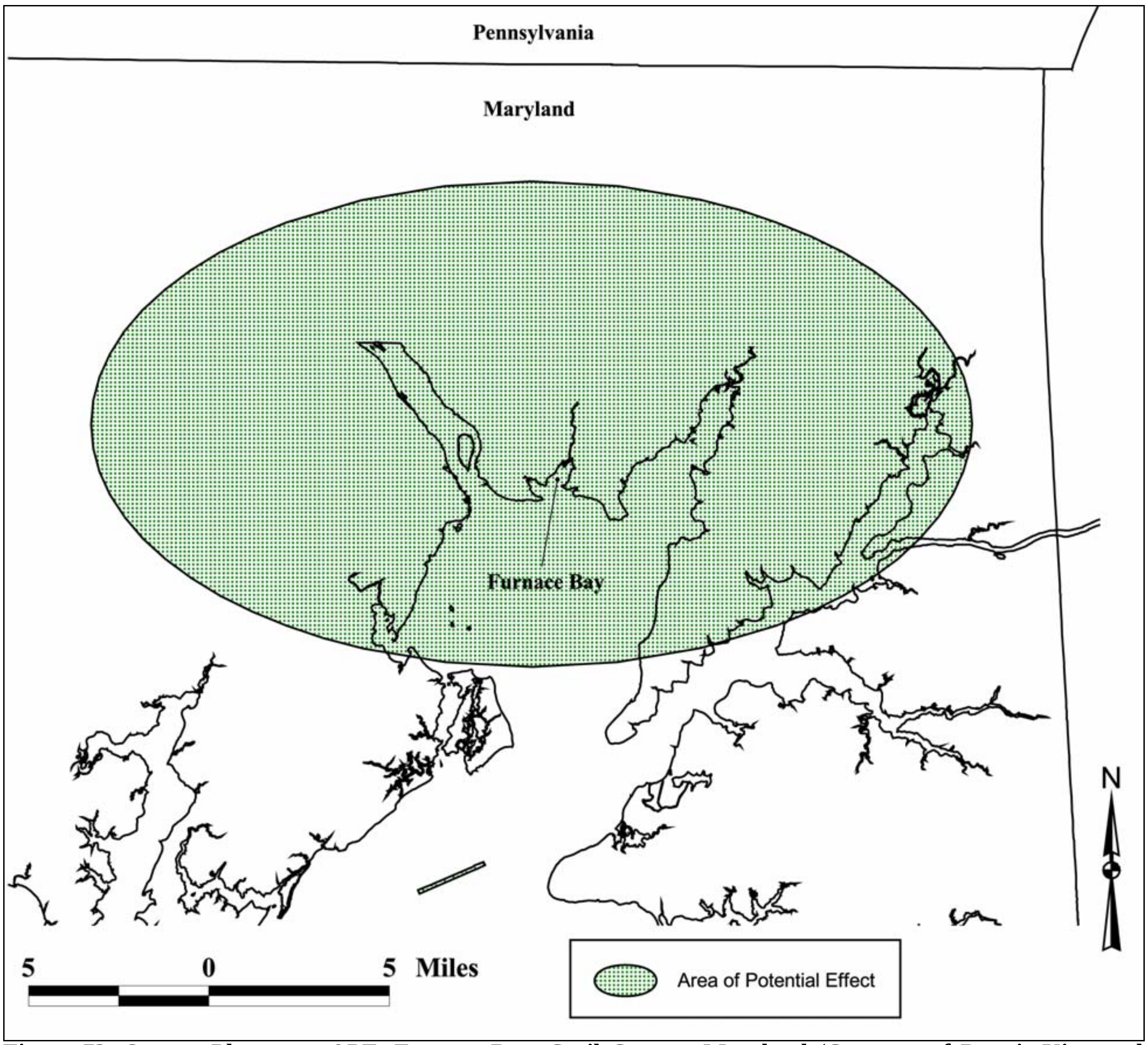

Figure 73. Quarry Placement APE, Furnace Bay, Cecil County, Maryland (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

A review of the State Site Files at MHT identified numerous cultural resource sites near the proposed APE (Table 34 and Figure 74). The closest site to the APE is Principo Furnace, an NRHP property. Principo Furnace, established in 1715, was the first iron furnace in Maryland and was the largest producer of pig and bar iron in the United States during the eighteenth century (including the Revolutionary War). Principo Furnace was listed on the NRHP on February 11, 1972.

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 74. Known archaeological sites located within or near the Quarry Placement APE, Furnace Bay, Cecil County, Maryland (Havre de Grace 7.5-min. quadrangle, 1984).

A description of Principo Furnace is as follows:

> At least 4 furnaces were constructed at the site. The third furnace, built in 1836, was still standing in 1970; the other furnaces were no longer above ground. Other structures on the property included a brick machine shop, a brick shed, a brick wheelwright's shop, a brick saw mill and tool shop, a wooden scrap shed, a wooden charcoal shed, a wooden mule barn, a wooden blacksmith's shop, a wooden building used as the post office unitl 1836, a wooden building constructed in 1836 used ass a post office and a company store, 3 wooden houses probably used by laborers, 2 houses of undetermined use, an ironmaster's house built in 1837 presently occupied by the caretaker for the property owner. At least half the buildings are in good condition.
>
> Artifacts known to have come from the site include: a pig of iron found near the location of the original furnace stamped "Principo 1727", several pigs of iron marked "Principo*1751" found in the bed of the Patapsco River, a cannon found in Chesapeake Bay and stored in a barn at Principo, several iron buckets used to hoist raw materials into the furnace, a charcoal wagon made and used at Principo presently on display at the Hopewell Furnace Site in PA, 2 log carriers discovered in the charcoal burner. It seems likely that a survey of local iron companies, museums, and historical societies would reveal the existence of more artifacts (Summary Archaeological Site Report 18CE48).

Numerous known archaeological sites line Furnace Bay, Mill Creek, and Baker Cove. These sites include an Archaic base camp, a Late Archaic-Woodland base camp, an early twentieth-century munitions plant, Prehistoric base camp and Prehistoric lithic scatter. Since the APE was designated as Furnace Bay, only those sites within the bay proper are considered to be within the proposed APE.

Table 34. Known archaeological resources within or near the proposed quarry placement site, Cecil County, Maryland.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18CE48	Principo Furnace	18th-20th century iron furnace complex	Havre de Grace	Cecil	Y
18CE79	Rudy Farm	Prehistoric unknown, Archaic base camp	Havre de Grace	Cecil	Y
18CE80	Poplar Point	Prehistoric lithic scatter	Havre de Grace	Cecil	N
18CE81	Stump Point	Late Archaic-Woodland base camp, early 20th century munitions plant	Havre de Grace	Cecil	Y
18CE98	W-T,CE-AC8	Prehistoric lithic scatter	Havre de Grace	Cecil	N
18CE99	W-T, CE-AC4	Prehistoric lithic scatter	Havre de Grace	Cecil	N
18CE100	W-T, CE-AC2	Prehistoric lithic scatter	Havre de Grace	Cecil	N
18CE135	W-T, CE-AD2/3, 4/6	Prehistoric base camp	Havre de Grace	Cecil	Y
18CE140	W-T, CE-AD4/6	Middle Archaic lithic scatter	Havre de Grace	Cecil	Y
18CE256	Perry Point I-5	Late Archaic-Woodland base camp, 18th century mill complex	Havre de Grace	Cecil	Y
18CE257	Perry Point I-6	Late Woodland short-term resource procurement	Havre de Grace	Cecil	Y
18CE259	Perry Point I-8	Late Woodland short-term resource procurement	Havre de Grace	Cecil	Y
18CE299	Baker Cove	Prehistoric lithic scatter	Havre de Grace	Cecil	Y
18CE17	Seneca Point	Late 19th century unknown	North East	Cecil	N
18CE59	Harvey	Archaic lithic scatter	North East	Cecil	N
18CE69	Oyster Shell Point	Prehistoric unknown, 18th century isolated find	North East	Cecil	N

Table 34, continued

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18CE70	Garden Point	Woodland lithic scatter, 19th century isolated find	North East	Cecil	N
18CE73	Northeast Heights	Prehistoric unknown	North East	Cecil	N

Review of NRHP properties within Cecil County identified 15 structures within the Havre de Grace area (Table 35). While there are numerous NRHP properties within Cecil County, only those within close proximity to the proposed APE have been listed in Table 35. Only one of these properties, Principo Furnace is considered to be within the APE.

Table 35. NRHP properties within Cecil County, Maryland.

Site Number	Name	Location	7.5' quad.	County	Within APE
CE-1431	Edward W. Haviland House	2464 Frenchtown Road, Port Deposit	Havre de Grace	Cecil	N
HA-1617	Havre de Grace Historic District	Address not available, Havre de Grace	Havre de Grace	Cecil	N
HA-251	Havre de Grace Lighthouse	Concord Street & Lafayette Street, Havre de Grace	Havre de Grace	Cecil	N
CE-291	Paw Paw Building; Old Fellows Hall	98 (old 68) N. Main Street, Port Deposit	Havre de Grace	Cecil	N
CE-146	Perry Point Mansion House and Mill	Sixth Street, Perryville	Havre de Grace	Cecil	N
CE-244	Perry Point Mansion House and Mill	A Avenue, Perry Point	Havre de Grace	Cecil	N
CE-1291	Port Deposit Historic District	Address not available, Port Deposit	Havre de Grace	Cecil	N
CE-112	Principo Furnace; Principo Ironworks	Principo Furnace Road (MD 7), Perryville	Havre de Grace	Cecil	Y
CE-129	Rodgers Tavern; Stevenson's Tavern	Broad Street and River Road	Havre de Grace	Cecil	N
18CE158	Snow Hill Archaeological Site	Location not to be released	Havre de Grace	Cecil	N
HA-112	Southern Terminus, Susquehanna and Tidewater Canal, The Lock House, The Common	Erie Street and Water Street, Havre de Grace	Havre de Grace	Cecil	N
HA-113	Southern Terminus, Susquehanna and Tidewater Canal, The Lock House, The Common	Erie Street and Water Street, Havre de Grace	Havre de Grace	Cecil	N
18HA240	Southern Terminus, Susquehanna and Tidewater Canal, The Lock House, The Common	Address not available	Havre de Grace	Cecil	N
CE-1285	Tome School for Boys Historic District	Address not available, Port Deposit	Havre de Grace	Cecil	N
CE-145	Woodlands	Woodlands Farm Lane N., Perryville	Havre de Grace	Cecil	N

Other known cultural resources in the general area include the Havre de Grace Lighthouse, the Perry Point Mansion, and Rodgers Tavern. These are located outside of Furnace Bay and will not be impacted by proposed project activities.

Archival research also identified seven historic districts within Cecil County, Maryland (Table 36). None of these districts are located within or near Furnace Bay and will therefore not be impacted by proposed project activities.

Table 36. Historic districts within Cecil County, Maryland.

District Name	Location	County	VDHR No.	Within APE?
Brown, Jeremiah, House and Mill Site	Rising Sun	Cecil	N/A	N
Charlestown Historic District	Charlestown	Cecil	N/A	N
Perry Point Mansion House and Mill	Perryville	Cecil	N/A	N
Port Deposit	Port Deposit	Cecil	N/A	N
South Chesapeake City Historic District	Chesapeake City	Cecil	N/A	N
Tome School for Boys Historic District	Port Deposit	Cecil	N/A	N
West Nottingham Academy Historic District	Colora	Cecil	CE-1450	N

Potential for Cultural Resources

The potential for additional cultural resources in the area does exist. Review of known cultural resources within the area has identified a number of archaeological sites along or near Furnace Bay including 18CE79, 18CE80, 18CE81, 18CE135, 18CE140, 18CE299, and 18CE300 (see Figure 74). It has been hypothesized that additional sites may be located along Principo Creek (close to the APE):

> Other geomorphic features in the area which have not systematically surveyed, but are likely to contain archaeological sites, include the Fall Zone between the Piedmont Uplands and the Coastal Plain and higher-order streams, such as Elk and Northeast Rivers, and major lower-order streams, such as Mill and Principo Creeks (Stevens et al. 1989:25).

It is, however, unlikely that project activities will impact any potentially significant cultural resources as the proposed placement of dredged material entails filling an existing sand and gravel pit. Therefore, impacts to any cultural resources within the APE have likely already occurred.

MINE PLACEMENT-WESTERN MARYLAND

Project Area Environment

An inquiry (by representatives from an out-of-state mine) was received by the MPA regarding the feasibility of placing dredged material within an existing mine. Review of the site found the site to be suitable as a placement site (Figure 75). Additional study of the site by MPA and the study team was put on hold pending available information. The study would be expanded by the MPA to "include a general reconnaissance in order to develop planning information on environmental, engineering, transportation and economic issues that would be associated with use of mines and quarries" (Murphy 2003:165).

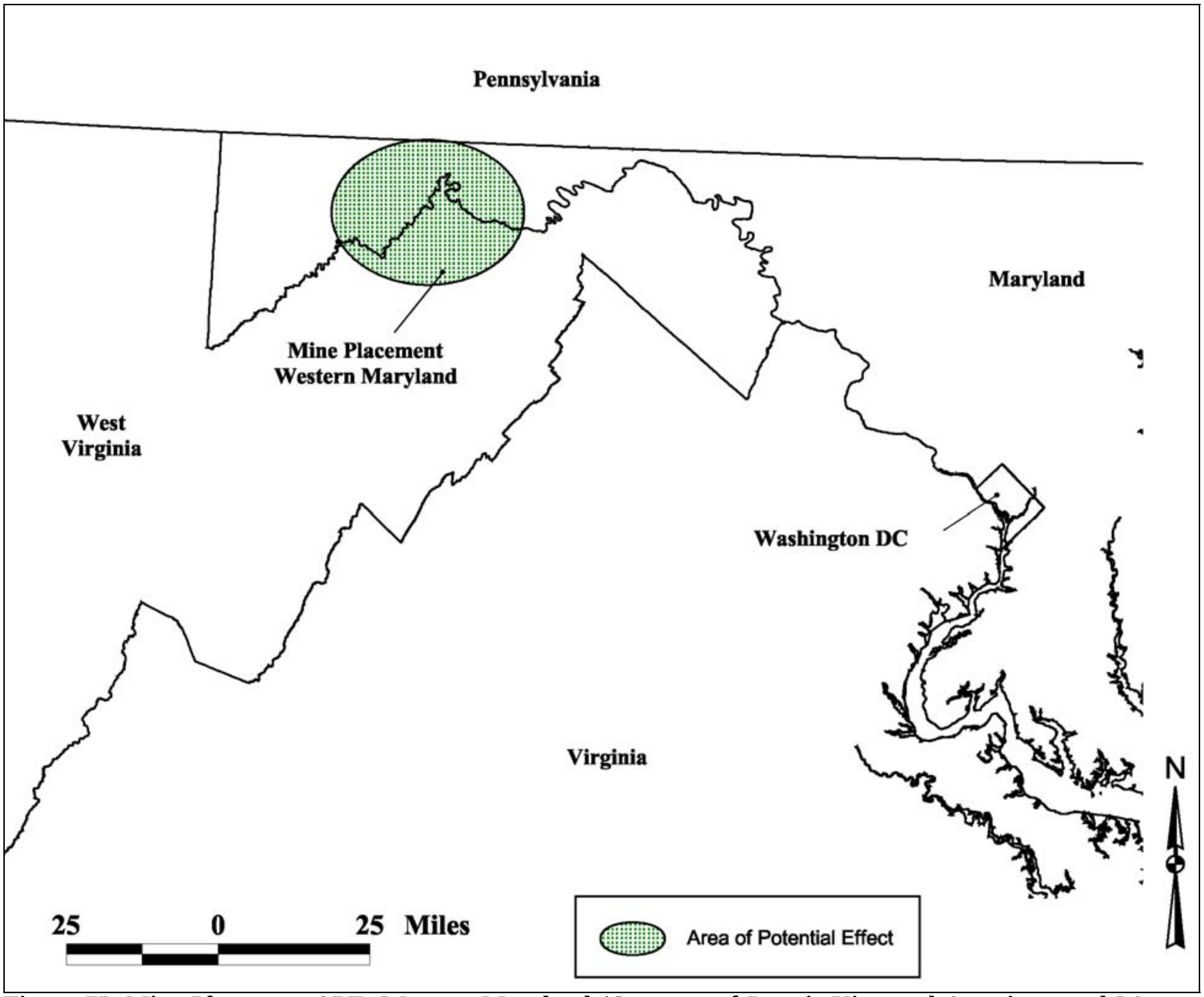

Figure 75. Mine Placement APE, Western Maryland (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

No known cultural resources have been identified within this area. No specific locational information has been provided regarding this site location.

Potential for Cultural Resources

The potential for additional cultural resources within the APE remains unknown at this time. It anticipated that project activities will not impact any potentially significant cultural resources under this alternative. This mine placement alternative involves an existing site (i.e., mine shaft). Therefore, placement of dredged material within an existing mine shaft will likely have no effect on additional cultural resources within the APE. Unless the mine itself is considered a potentially significant cultural resource no impacts are anticipated.

NORFOLK OCEAN OPEN WATER PLACEMENT

Project Area Environment

This existing open water placement site is located approximately 17 nautical miles (19.6 statute miles) east of the mouth of the Chesapeake Bay (Figure 76). The Norfolk Ocean Open Water Placement Site is circular in shape with a radius of 4 nautical miles (approximately 65 square miles). Average water depth on site is –70 feet.

Figure 76. Norfolk Ocean Open Water Placement Site (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

The Norfolk Ocean Open Water Placement Site has an unlimited useful life and has been used as an alternate site for the Dam Neck Ocean Open Water Placement Site. Material placed within this site has come from the lower bay channels, inner harbor channels, as well as material from the Yorktown Naval Weapons Station (Navigation Management Plan for the Port of Hampton Roads, Virginia 2000:II-43). Currently designated as a placement site for dredged material from Virginia channels, authorization for placement of material from Maryland would need to be obtained. Expansion of the site would be unnecessary (Murphy 2003:181).

Known Cultural Resources

No known cultural resources exist within the Norfolk Ocean Open Water Placement Site. Archival research identified no known cultural resource surveys within the Norfolk Ocean Open Water Placement Site.

Potential for Cultural Resources

The potential for submerged cultural resources within the Norfolk Ocean Open Water Placement Site is a possibility. While the potential for prehistoric resources remains immaterial, shipwrecks may exist within the area.

POOLES ISLAND OPEN WATER SITE EXPANSION, MARYLAND

Project Area Environment

Designated as a potential expansion site, Pooles Island Open Water Site is located within the Upper Chesapeake Bay (Figure 77) within Harford County, Maryland. The placement sites associated with Pooles Island are areas G-North, G-West, G-Central, G-South, and Site 92. The expansion consists of connecting the areas of Site 92 and G-West.

Figure 77. Pooles Island Open Water Site Expansion APE, Upper Chesapeake Bay, Harford County, Maryland. (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

Review of the State Site Files at the MHT identified two previously recorded archaeological sites on Pooles Island (Table 37). These two sites (Figure 78) consist of a prehistoric shell midden (18HA77) and an Archaic-Woodland shell midden (18HA246).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 78. Known archaeological sites within or near the Pooles Island Open Water Site Expansion Area, Upper Chesapeake Bay, Harford County, Maryland.

Table 37. Known cultural resources in the Pooles Island Open Water Site Expansion.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18HA77	Pooles Island	Prehistoric shell midden	Gunpowder Neck	Harford	N
18HA246	Pooles Island Midden #1	Archaic-Woodland shell midden	Gunpowder Neck	Harford	N

As stated in Murphy:

> At least four documented shipwrecks are known to be located within the proposed 4B site. The oldest lighthouse in the State is on Pooles Island. SHPO has determined that the lighthouse is eligible for listing on the National Register of Historic Places. Any increase in the size or configuration of the island is subject to the National Historic Preservation Act and must be reviewed for impact by the SHPO. There is an additional 5 range towers that need to be investigated for their eligibility to the National Register. Several archaeological sites have been excavated on Pooles Island and prehistoric Native American artifacts were recovered. A solitary gravestone exists on Pooles Island with a date on 1855 (Murphy 2003:99).

Review of the NRHP list confirms that the Pooles Island Lighthouse (HA-1846) was placed on the list on February 19, 1997. The Pooles Island Lighthouse was built by John Donahoo of Havre de Grace, Maryland. Funds were authorized by Congress in 1824 and work was completed on the lighthouse in 1825. The lighthouse is a 40-foot high conical, land-based masonry tower and remains the oldest standing lighthouse in the State of Maryland (Kaltenbacher 1997:12).

Hurry and Beards shipwreck inventory list (1987) identifies six vessels lost within Harford County, two of which are located at Pooles Island (Table 38).

Table 38. Documented vessel losses at Pooles Island, Harford County, Maryland.

Vessel Name	Type	Year Lost	Location
Unidentified	Schooner	January 1753	Pooles Island
Alice	Schooner	October 28, 1881	Pooles Island

(as presented in Thompson 2000:42).

In 1993, Ocean Surveys, Inc. (OSI), of Old Saybrook, Connecticut conducted a cultural resource investigation of Area "G-West", located immediately east of Pooles Island. Located in the Upper Chesapeake Bay, results of the survey may serve to illustrate the potential for submerged cultural resources in the proposed APE. Results of the historical research identified five shipwrecks near Pooles Island. The five vessels are presented in Table 39.

Table 39. Vessels lost within or near the proposed Pooles Island Open Water Site APE.

Vessel Name	Type	Year Lost	Location	Cause	Source
Unidentified	Schooner	1753	Pooles Island	Stranded	Shomette 1982
Pennsylvania	Schooner	1875	Pooles Island	Foundered	Shomette 1982
Hughes Brothers	Gas Screw	1946	Pooles Island	Foundered	Shomette 1982
Weezie	Gas Screw	1972	Pooles Island	Stranded	Shomette 1982
Alice	Schooner	1881	Off Pooles Island	Foundered	Shomette 1982

(as presented in Ocean Survey's Inc., 1993:8).

The remote-sensing survey of Area G-West identified 32 side scan sonar targets and 52 magnetic anomalies. OSI also reviewed the shipwreck and submerged obstructions data list at the Maryland Historical Trust by the listing “Pooles Island and Vicinity,” which identified 11 reported obstructions in that region of the Bay (Ocean Surveys, Inc., 1993:7). In 1995 a Phase I remote-sensing survey was conducted by R. Christopher Goodwin & Associates Inc. (Goodwin & Associates 1995a) within the Tolchester Beach Reach of the Tolchester Channel. Findings from the remote-sensing survey identified several anomalies during the investigation:

> Three magnetic anomalies were found in the Tolchester Beach Reach, but all were associated with modern debris. Within the proposed straightening area, two magnetic anomalies were identified in the upper part of the bend (proposed channel) and six were identified in the lower part of the proposed channel. All except one were attributed to modern debris or natural channel features (U.S. Army Corps of Engineers, Baltimore District 2001:4-37).

In 1996 a Phase I submerged cultural resources investigation was completed of the G-East Disposal Site and Disposal Site #92 (Cox and Hunter 1996). Performed for the U.S. Army Corps of Engineers, Philadelphia District the survey included background and documentary research, an underwater archaeological survey, and analysis of data. These two disposal sites are located north of the proposed Artificial Island APE.

Results of the investigation identified no known prehistoric resources within the project area(s). However:

> …it should be noted that the level of study precluded a full evaluation of prehistoric archaeological potential. For further large-scale studies of the Upper Chesapeake Bay, it is suggested that consideration be given to limited core sampling as a means of reconstructing the paleoenvironment of formerly exposed terrain that has been inundated over the past 10 to 15 millennia. This would provide a more solid basis for assessing prehistoric archaeological potential (Cox and Hunter 1996:Management Summary).

Analysis of the remote-sensing survey data identified 21 anomalies within the two disposal sites. Of these 21 anomalies, all but two were judged to derive from modern debris or single, isolated objects. Recommendations for Target #15:844, in the G-East Disposal site and Target #27:958 in Disposal Site #92 included additional Phase I-level survey (in the form of remote sensing, diving, visual inspection, probing) to identify the source of the anomalies (Cox and Hunter 1996:6-1).

Potential for Cultural Resources

A review of the AWOIS Files within the general area of the Pooles Island Open Water Site Expansion, Maryland site identified 24 obstructions, 11 unknowns, and six vessels (historic and modern) within the area (Appendix A**)**. As stated earlier, the position accuracy of AWOIS wrecks and/or obstructions is highly variable and usually poor. These records simply serve to illustrate the potential for additional cultural resources within the proposed project area.

Although the Pooles Island Open Water Site already exists, expansion of the area may impact potentially significant submerged cultural resources. The presence of prehistoric sites on Pooles Island and documented vessel losses in the area suggest the potential for additional sites in the area.

POPLAR ISLAND EXPANSION

Project Area Environment

Located in the Upper Chesapeake Bay, Poplar Island is near the confluence of Eastern Bay and Chesapeake Bay, in Talbot County, Maryland (Figure 79). This proposed modification would expand the newly created Poplar Island Environmental Restoration Project (PIERP) by raising existing upland dikes to a height of +25 MLLW and extending the island by 600 acres, allowing for additional capacity. Currently consisting of 570 acres of tidal wetlands and 570 acres of uplands, the PIERP seeks to retain the 50/50 wetland to upland habitat ratio (Murphy 2003:47).

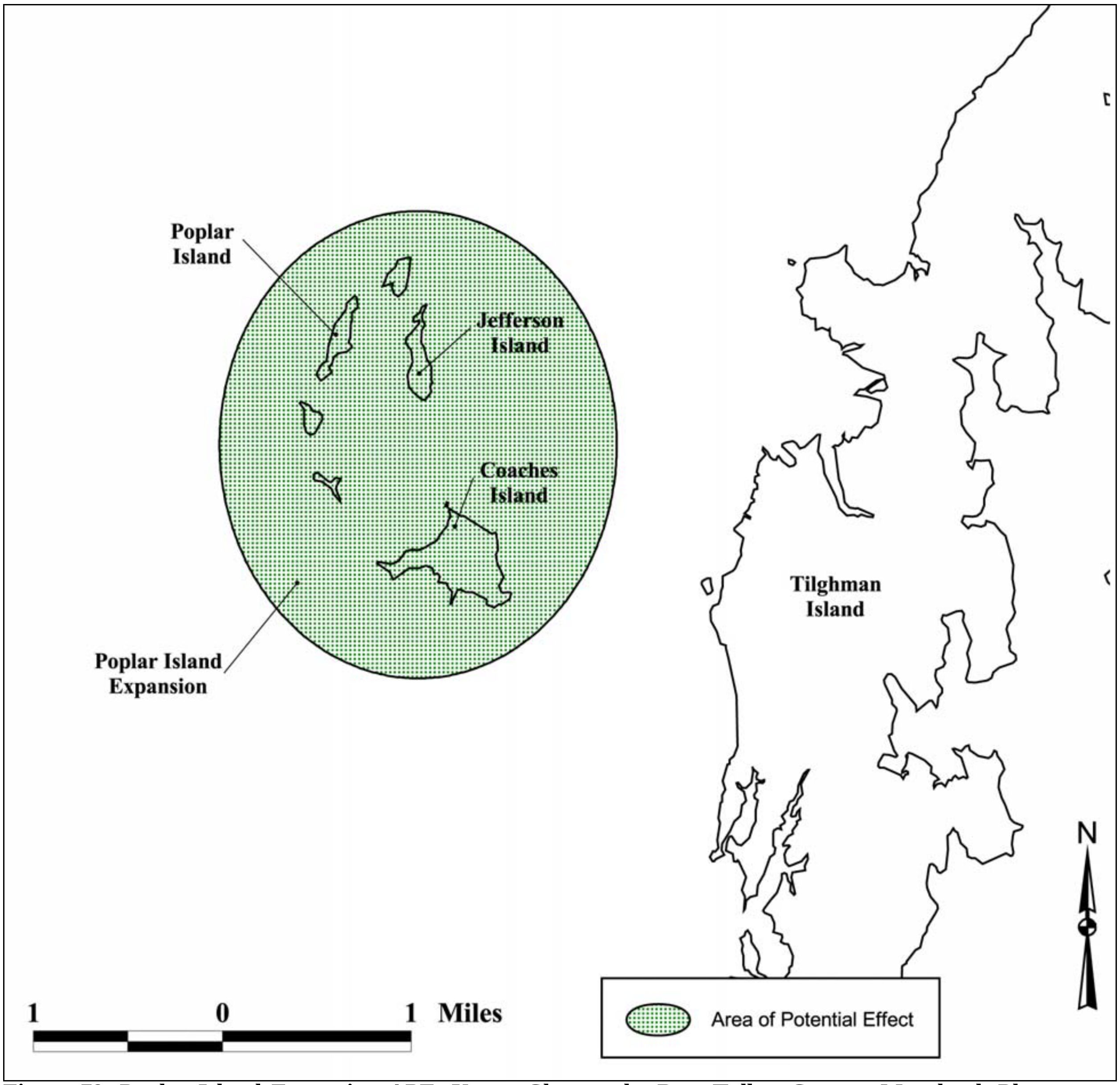

Figure 79. Poplar Island Expansion APE, Upper Chesapeake Bay, Talbot County, Maryland. Please note figure is not representative of the current Poplar Island alignment. (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

A review of documented cultural resources was undertaken at the MHT relative to the expansion of Poplar Island. A total of 10 archaeological sites (Figure 80) are on file at MHT (Table 40). Those sites located on the remnants of Poplar Island (i.e., North Point, Jefferson Island) are considered to be within the APE whereas outlying areas (i.e., Coaches Island) are not. A total of 10 sites are documented within the area; eight of which are located within the APE.

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 80. Known archaeological sites within or near the Poplar Island Expansion APE, Upper Chesapeake Bay, Talbot County, Maryland (Claiborne 7.5-min. quadrangle, photorevised 1986).

Table 40. Known archaeological resources within the Poplar Island Expansion Area.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18TA216	South Coaches Island	Archaic-Woodland short-term resource procurement	Claiborne	Talbot	N
18TA217	South Poplar Island	Archaic-Woodland short-term resource procurement	Claiborne	Talbot	Y
18TA218	South Central Poplar Island	Late Archaic, Middle-Late Woodland short-term resource procurement, Contact, 17th century possible structure	Claiborne	Talbot	Y
18TA219	North Poplar Island	Archaic, Woodland short-term resource procurement	Claiborne	Talbot	Y
18TA220	Jefferson Island	Late Archaic lithic scatter	Claiborne	Talbot	Y
18TA222	Middle Poplar Island	Late Archaic shell midden, lithic scatter	Claiborne	Talbot	Y
18TA223	Minnie Ball Site	Archaic, Woodland short-term resource procurement	Claiborne	Talbot	N
18TA236	Poplar Island South	18th-19th century artifact concentration, possible structure	Claiborne	Talbot	Y
18TA237	Poplar Island North	Late 17th-19th century possible structure, artifact concentration	Claiborne	Talbot	Y
18TA304	MPI	Late 19th-early 20th century house site	Claiborne	Talbot	Y

Results of archival research identified numerous NRHP properties and Historic Districts located within Talbot County, Maryland. However, none of these are located within or near the proposed APE and are therefore not pertinent to this reconnaissance-level survey.

Potential for Cultural Resources

A number of archaeological sites have been documented on and near Poplar Island, therefore, the potential exists for additional sites within the APE. In addition, a number of documented vessel losses have been reported in the Poplar Island area. Review of Hurry and Beard's shipwreck inventory identified 15 vessels lost within Talbot County; five of these are reportedly lost near Poplar Island (Table 41).

Table 41. Documented vessel losses near Poplar Island, Talbot County, Maryland.

Vessel Name	Type	Year Lost	Location
Unidentified	Ship	1773	Poplar Island
Wilson Smail	Steam Sidewheel	August 9, 1867	Poplar Island
Nettie A. Ruark	Gas Screw	May 20, 1911	Poplar Island
Carolina	Barge	February 20, 1912	Poplar Island
Wm Schmink	Schooner	March 16, 1920	Poplar Island

(as presented in Thompson 2000:43).

A review of the AWOIS Files within the general area of Poplar Island, Maryland site identified 18 obstructions, 10 unknowns, and 4 vessels (historic and modern) within the area (Appendix A**)**. As stated earlier, the position accuracy of AWOIS wrecks and/or obstructions is highly variable and usually poor. These records simply serve to illustrate the potential for additional cultural resources within the proposed project area.

While it has been suggested that potentially significant cultural resources may exist on Poplar Island, the original Poplar Island Restoration Project has already disturbed the area:

> Because the site had been known to have a long history of shipwrecks, and significant historical resources once occurred on Poplar Island, Phase I and Phase II marine archaeological investigations were undertaken [by Goodwin & Associates Inc. 1995b]. Although several anomalies were identified by magnetometer and radio-acoustics during Phase I investigations, Phase II investigations indicated that none of the anomalies were of archaeological or historical significance. Construction at the site has already disturbed the area, and use of the site for dredged material placement should involve no cultural or historical resources. The State Historic Preservation Officer concurred with this determination in 1999 (U.S. Army Corps of Engineers, Baltimore District 2001:4-38).

If proposed project activities seek to expand the existing Dredge Material Placement Area (by raising the height of the dikes), additional survey is recommended due to the potential for additional cultural resources within the APE.

RAPPAHANNOCK SHOAL DEEP ALTERNATE OPEN WATER SITE EXPANSION, VIRGINIA

Project Area Environment

The existing Rappahannock Shoal Deep Alternate Open Water Site (Figure 81) lies approximately 15 miles north of Wolf Trap light, 4.5 miles due east of Windmill Point (in Lancaster County), and 12 miles east of the Delmarva Peninsula (Underwater Archaeological Joint Ventures 1985:3).

Known Cultural Resources

To date no known cultural resources have been identified within the existing Rappahannock Shoal Deep Alternate Open Water Site. To date only two surveys have been completed within the Site (U.S. Army Corps of Engineers 1984; Underwater Archaeological Joint Ventures 1985). The U.S. Army Corps of Engineers completed a Phase I remote-sensing survey in 1984 that identified 19 magnetic anomalies (within the Rappahannock Shoal Deep Alternate Open Water Site and the Wolf Trap Alternate Open Water Placement Site) which were recommended for further investigation. In 1985 Underwater Archaeological Joint Ventures conducted a Phase II diver investigation of the 19 magnetic targets. Results of the diver investigation concluded that only one target (Target #14) may potentially represent a historic shipwreck. Recommendations determined that "Spoil disposal activities should have no adverse effect on Target #14 except to render it somewhat less accessible" (Underwater Archaeological Joint Ventures 1985:96). While the conclusions are somewhat unclear it is believed Target #14 is actually located within the Wolf Trap Alternate Open Water Placement Site.

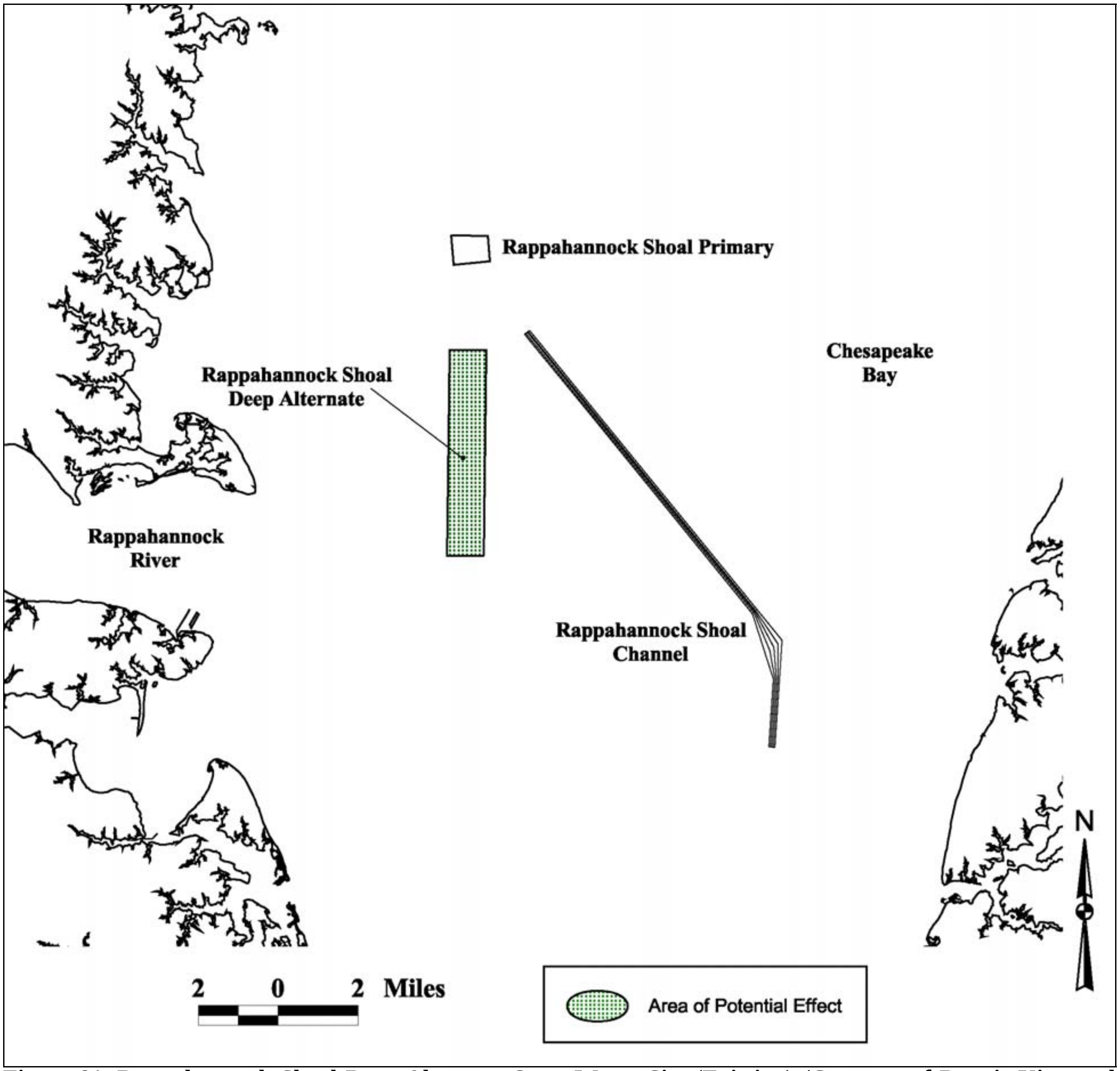

Figure 81. Rappahannock Shoal Deep Alternate Open Water Site (Existing) (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Review of previous investigations have identified a number of historic vessel losses within the general area of Rappahannock Shoal (Table 42).

Table 42. Vessels lost in the vicinity of Rappahannock Shoal.

Vessel Name	Type	Year Lost
Unidentified	Schooner	1745
Hawke	English Merchantman	1766
Tennessee	Schooner	1877

Table 42, continued

Vessel Name	Type	Year Lost
Ney	Schooner	1889
Frank Butler	Schooner	1906
Manaway	Schooner	1918
J.W. Chelton	Schooner	1923
James A. Lewis	Motor Vessel	1936
Fannie Insley	Schooner	1940
Lorraine	Motor Vessel	1950

(as presented in Koski-Karell 1979b:51).

Potential for Cultural Resources

While the potential exists for additional cultural resources within the area, results of previous remote-sensing surveys and diver investigations suggest no significant properties remain in the Rappahannock Shoal Deep Alternate Open Water Site:

> The results of the Phase II cultural resources reconnaissance investigation of anomalies found within the Rappahannock Shoals Alternate and the Wolf Trap Alternate overboard disposal sites may be briefly summarized as follows. Of the 19 magnetic anomalies identified during the 1983 Phase I Reconnaissance, UAJV was able to reverify all but five through remote sensing (i.e. magnetometer) operations…The majority of the targets consisted of iron masses of various shapes and sizes – often pipes, slabs, or sheets – apparently discarded or inadvertantly lost from passing vessels. In only one case (Target 14) did the objects discovered appear to be part of a more integrated cultural resource. Owing to the depth of sediment overlying most of this target, however, UAJV does not believe that the proposed spoil dumping operation will negatively impact the site. Consequently, it is the opinion of UAJV that no further mitigative or investigative procedures need to be undertaken on Target #14 or any of the other anomalies prior to the initiation of the proposed spoil disposal activities (Underwater Archaeological Joint Ventures 1985:vi-vii).

The potential does exist for additional cultural resources within the area in the form of shipwrecks. Although the existing Rappahannock Shoal Deep Alternate Open Water Site has been previously surveyed (U.S. Army Corps of Engineers 1984; Underwater Archaeological Joint Ventures 1985), if proposed project activities seek to expand the boundaries of the site, additional remote-sensing survey (i.e., magnetometer, side scan sonar, DGPS) is recommended.

SHORELINE RESTORATION-LOWER BAY, VIRGINIA

Project Area Environment

The representative area is located along the eastern shoreline of the Chesapeake Bay along the lower Delmarva Peninsula, Northampton County, Virginia (Figure 82). More specifically, the project area is located within the Chesapeake Forelands, or lower terrace. The Chesapeake Forelands is characterized by low-lying flatlands separated by meandering tidal creeks. These creeks form irregularly shaped necks/peninsulas, characteristic of areas bordering the Chesapeake Bay (McSherry et al. 1992:6).

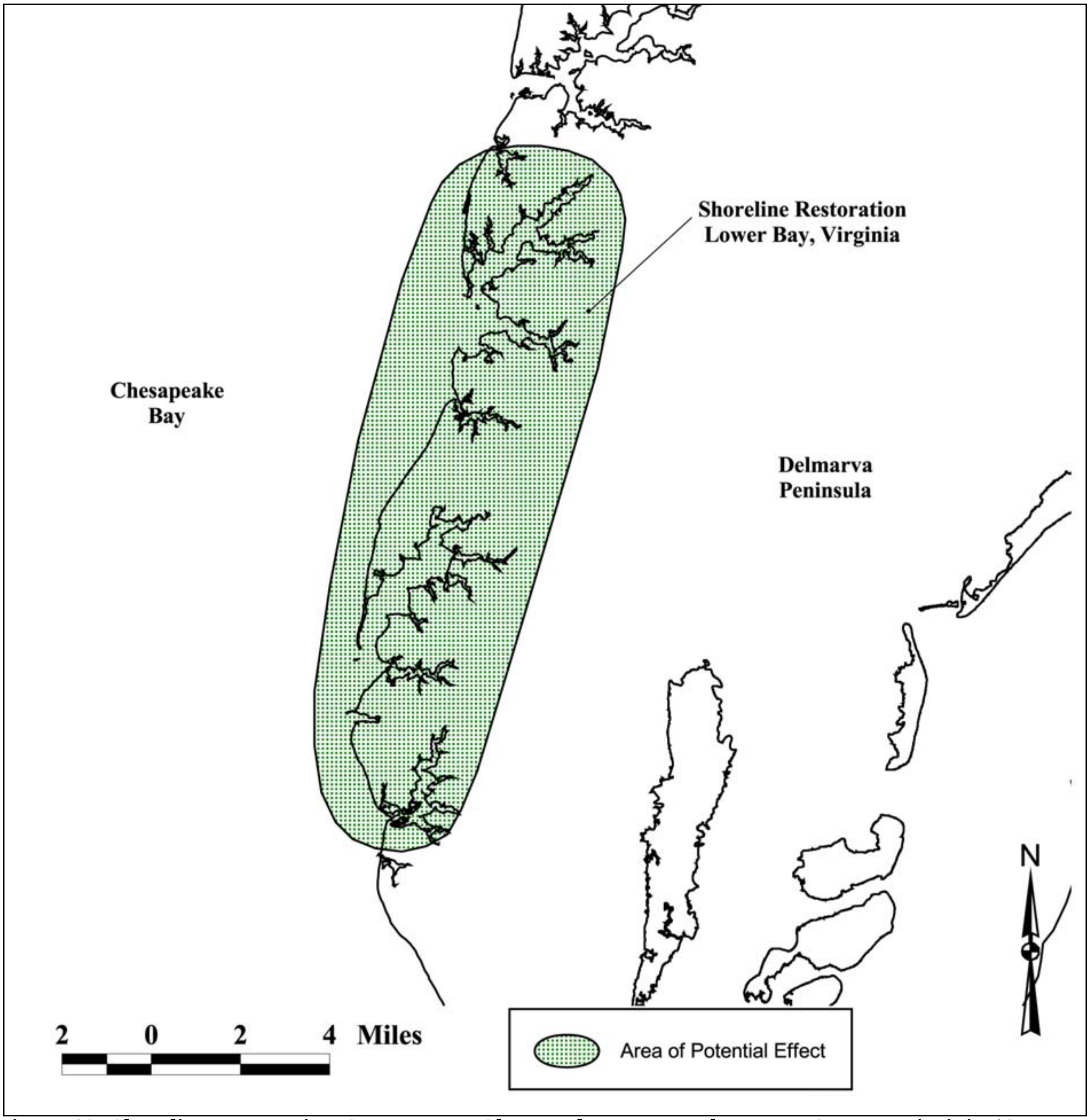

Figure 82. Shoreline Restoration APE, Lower Chesapeake Bay, Northampton County, Virginia (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

The potential APE includes restoring a peninsula using dredged material approximately 1,500 feet by 3,200 feet in size. Four feet of dredged material would be used to create low marsh and high mash habitat. Dike construction is proposed to 6 feet above MLLW.

Known Cultural Resources

Review of State Site Files at MHT has identified numerous archaeological sites (Figures 83, 84, and, 85) within or near the proposed APE (Table 43).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 83. Known archaeological sites within or near the Shoreline Restoration APE, Lower Chesapeake Bay, Northampton County, Virginia (Franktown 7.5-min. quadrangle, minor revision 1992).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 84. Known archaeological sites within or near the Shoreline Restoration APE, Lower Chesapeake Bay, Northampton County, Virginia (Cheriton 7.5-min. quadrangle, photorevised 1986).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 85. Known archaeological sites within or near the Shoreline Restoration APE, Lower Chesapeake Bay, Northampton County, Virginia (Cape Charles 7.5-min. quadrangle, photorevised 1986).

Table 43. Known cultural resources within the Shoreline Restoration APE, Lower Chesapeake Bay, Northampton County, Virginia.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
44NH5	Westcoat Site	Points and pottery	Cape Charles	Northampton	Y
44NH41	None	Earthenwork fort	Franktown	Northampton	Y
44NH49	Hungar's Neck Trash Pit	Trash pit	Franktown	Northampton	Y
44NH59	None	Historic site	Franktown	Northampton	Y
44NH78	Caserta	Historic house site	Franktown	Northampton	Y
44NH85	Bowdoin Hungars	Historic house site	Cheriton	Northampton	Y
44NH116	Floyd Site No. 2	Prehistoric (Early Archaic to Early Woodland)	Franktown	Northampton	Y
44NH118	Floyd Site No. 4	Prehistoric	Franktown	Northampton	Y
44NH221	None	Prehistoric (Late Archaic-Woodland)	Cape Charles	Northampton	Y
44NH222	Tankards Beach Site	Prehistoric (Middle-Late Archaic)	Cape Charles	Northampton	Y
44NH224	Old Town Neck Civil War Gun Emplacements	Historic earthworks	Cheriton	Northampton	Y
44NH225	None	Prehistoric	Cheriton	Northampton	Y
44NH226	None	19th century hotel	Cheriton	Northampton	Y
44NH227	None	Prehistoric (Woodland)	Cheriton	Northampton	Y
44NH228	None	19th century (?) historic structure	Cheriton	Northampton	Y
44NH247	None	19th century historic house ruins	Cheriton	Northampton	Y
44NH248	None	19th century historic house ruins	Cheriton	Northampton	Y
44NH255	None	19th century (?) historic house ruins	Cheriton	Northampton	Y
44NH276	Remus Creek	Surface artifact scatter	Cape Charles	Northampton	Y
44NH426	Hungars Creek Island	Historic - 20th century	Franktown	Northampton	Y
44NH427	Mattawoman-Hungars Creek	Unknown	Franktown	Northampton	Y
44NH434	Savage Neck #1	Prehistoric - Middle Woodland and Late Woodland	Cape Charles	Northampton	Y
44NH435	Savage Neck #2	Prehistoric - Early Woodland	Cape Charles	Northampton	Y
44NH439	Hungars Plantation	Euro-American, 1676-1713/4	Franktown	Northampton	Y

Archival research has also identified 20 NRHP Properties and Historic Districts within Northampton County, Virginia. Of these, eight are located within the APE. While these are located within the APE they will not likely be affected by proposed project activities.

Table 44. NRHP Properties and Historic Districts within Northampton County, Virginia.

Site Name	Location	County	Date Listed	Within APE?
Almhouse Farm at Machipongo (VDHR #065-0053)	Machipongo	Northampton	2002	Y
James Brown's Dry Goods Store	Eastville	Northampton	2002	N
Brownsville	Nassawaddox	Northampton	1970	N
Cape Charles Historic District	Cape Charles	Northampton	1991	Y
Caserta	Eastville	Northampton	2001	N
Custis Tombs	Cheapside	Northampton	1970	N
Eyre Hall	Cheriton	Northampton	1969	Y
Glrbe of Hungar's Parish	Franktown	Northampton	1970	N
Grapeland	Wardtown	Northampton	1980	N

Table 44, continued

Site Name	Location	County	Date Listed	Within APE?
Hungars Church	Bridgetown	Northampton	1970	Y
Kendall Grove	Eastville	Northampton	1982	N
Northampton County Courthouse Historic District	Eastville	Northampton	1972	N
Oak Grove	Eastville	Northampton	1993	N
Pear Valley	Eastville	Northampton	1969	N
Somers House	Jamesville	Northampton	1970	N
Stratton Manor	Cape Charles	Northampton	1980	Y
Vaucluse	Bridgetown	Northampton	1970	Y
Westerhouse House	Bridgetown	Northampton	1974	Y
Westover	Eastville	Northampton	2001	N
Winona	Bridgetown	Northampton	1969	Y

Potential for Cultural Resources

The lower Delmarva Peninsula has been subjected to continual coastal submergence, a critical environmental characteristic affecting the past occupation of the area as well as the survival of cultural resources:

> At the height of the Late Pleistocene glaciation, sea level is estimated to have been as much as 300 feet below modern conditions. The presently exposed Delmarva Peninsula would have therefore constituted an interior landscape with substantially fewer coastal characteristics when man first arrived in this region approximately 12,000 years ago…It is important to recognize that the project area and its region have not remained static through time, and that human adaptation to these changing conditions must also have occurred…The close proximity of such diverse estuarine, terrestrial, and marine settings is a typical feature of the lower Delmarva Peninsula. Such environmental diversity provides behavioral options, and it is the exercising of these options that characterizes cultural adaptation (McSherry et al. 1992:4-5).

A review of the AWOIS Files within the general area identified 13 obstructions, 11 unknowns, and approximately 29 vessels (historic and modern) within the area (Appendix A**)**. As stated earlier, the position accuracy of AWOIS wrecks and/or obstructions is highly variable and usually poor. These records simply serve to illustrate the potential for additional cultural resources within the proposed project area.

The potential for additional cultural resources exists within the proposed shoreline restoration APE. Extensive shoreline erosion and the historic use of the region suggest additional sites may include shoreline sites, inundated prehistoric sites, and shipwrecks.

SHORELINE RESTORATION-MID BAY, MARYLAND

Project Area Environment

The representative area is located within Northwest Dorchester County, Maryland (Figure 86) and involves restoring a peninsula 1,500 feet by 5,100 feet. This would be accomplished by constructing an armored dike to an elevation of +6 MLLW and placing dredged material to create low marsh and high marsh habitat.

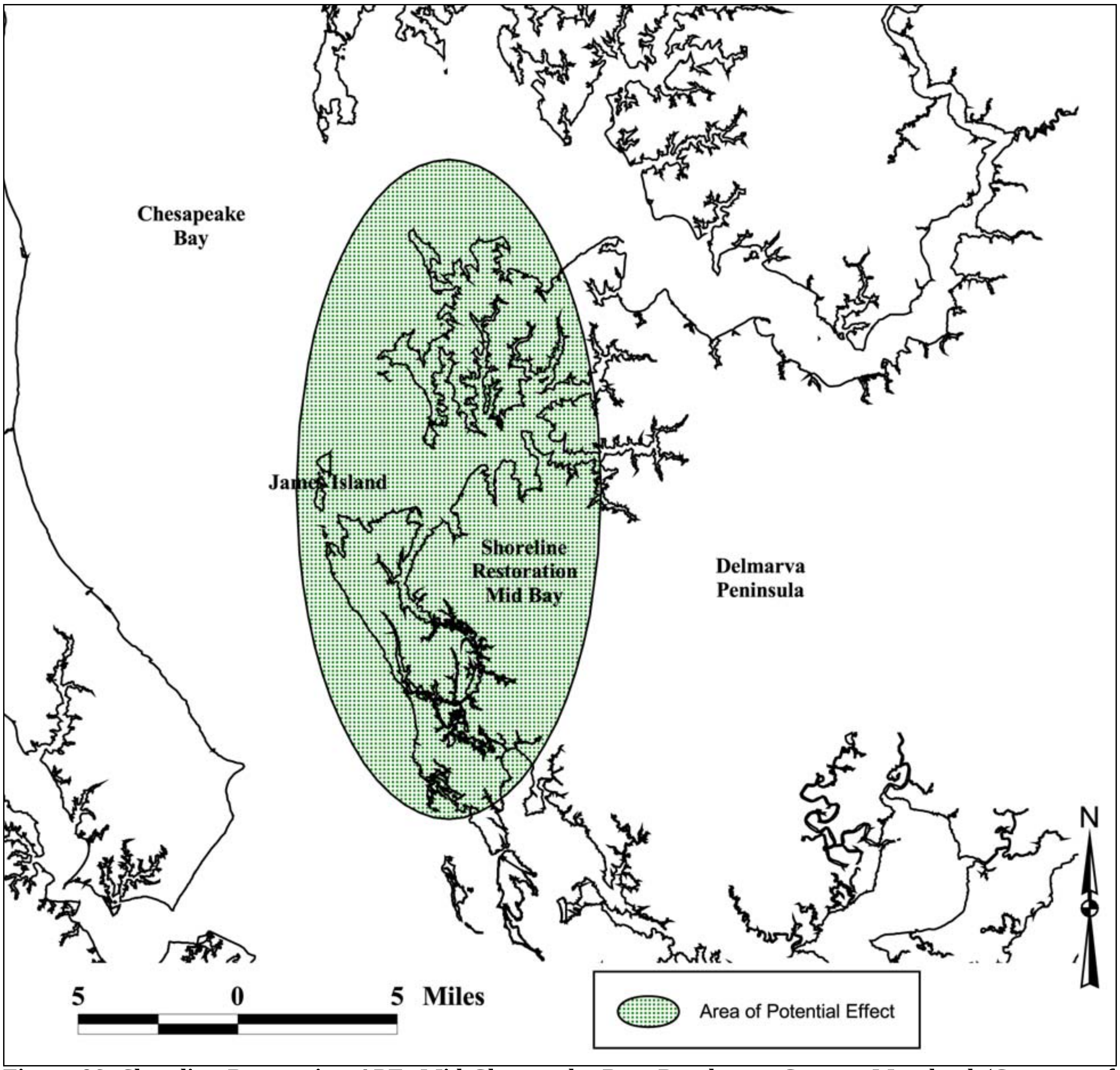

Figure 86. Shoreline Restoration APE, Mid-Chesapeake Bay, Dorchester County, Maryland (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

Review of the State Site Files at MHT identified numerous known archaeological sites (Table 45**)** along within the proposed APE (Figures 87 and 88). Since the APE has not been specifically defined to date, those archaeological sites located along the existing shoreline (within the Hudson and Taylors Island 7.5-min. quadrangle maps) will be considered within the APE.

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 87. Known archaeological sites within or near the proposed Mid-Bay Shoreline Restoration APE, Dorchester County, Maryland. (Hudson 7.5-min. quadrangle, 1982).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 88. Known archaeological sites within or near the proposed Mid-Bay Shoreline Restoration APE, Dorchester County, Maryland. (Taylors Island 7.5-min. quadrangle, 1982).

Table 45. Known archaeological sites within or near the proposed Shoreline Restoration, Mid-Bay APE, Dorchester County, Maryland.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18DO66	Cators Cove	Late Woodland short-term procurement camp	Taylors Island	Dorchester	Y
18DO67	Neale Site	Prehistoric short-term procurement camp	Taylors Island	Dorchester	N
18DO70	Phillips	Paleoindian short-term procurement camp	Taylors Island	Dorchester	Y
18DO71	Shoreline	Multi-component base camp including Paleoindian	Taylors Island	Dorchester	Y
18DO72	Meekins Neck Shell Mound	Archaic and Woodland shell midden	Taylors Island	Dorchester	N
18DO73	Meekins Neck	Woodland base camp	Taylors Island	Dorchester	N
18DO327	The Long Marshes	Paleoindian short-term camp	Taylors Island	Dorchester	Y
18DO103	Field NO. SC	Prehistoric shell midden/19th to early 20th century house site	Hudson	Dorchester	N
18DO222	Hooper's Point	Late Archaic/Early and Middle Woodland shell midden, late 17th/early 18th century artifact scatter	Hudson	Dorchester	Y
18DO242	Brights Point	Early and Late Archaic and Late Woodland short-term camp	Hudson	Dorchester	Y
18DO227	Mills Point Boat Launching	Late 19th/early 20th century boat launching site	Hudson	Dorchester	Y
18DO228	Mills Point Site	Prehistoric lithic scatter	Hudson	Dorchester	Y
18DO229	Hills Point	Prehistoric short-term camp	Hudson	Dorchester	Y
18DO329	Savitskey #1	Late 18th/early 19th century possible house site	Hudson	Dorchester	Y
18DO330	Savitskey #2	19th/early 20th century probable tenant house site	Hudson	Dorchester	Y
18DO359	Oyster Cove Point	Early Archaic short-term camp/Middle and Late Woodland shell midden, historic artifact scatter	Hudson	Dorchester	Y
18DO363	W. Cook Point	Prehistoric unknown and 19th century house site	Hudson	Dorchester	Y
18DO360	E. James Island	Late Archaic/Middle Woodland short-term camp, 19th-early 20th century house site	Hudson	Dorchester	Y
18DO366	James Island Cemetery	19th-early 20th century family cemetery	Hudson	Dorchester	Y
18DO410	Eshelman	18th-20th century artifact	Hudson	Dorchester	Y
18DO411	Michele	Late 19th/early 20th century possible oyster processing facility	Hudson	Dorchester	Y

It should be noted that numerous additional archaeological sites are located inshore of the proposed APE. Since they are not within the proposed APE they are not listed in Table 45.

Potential for Cultural Resources

The potential exists for additional cultural resources to exist within the proposed APE. Extensive shoreline erosion and the historic use of the region suggest additional sites may include shoreline sites, inundated prehistoric sites, and shipwrecks.

Review of Custer's management plan (1983) for the Upper Delmarva region of Maryland may help determine the potential for additional sites within the region. Custer reviewed the existing archaeological database (in 1983) and assessed which locations within the region would be likely to produce additional information. Custer also assessed which portions of the eastern shoreline are subject to the greatest incidence of site destruction (Custer 1983:1). Factors affecting Custer's findings include impacts and stresses on the resource base, site density (by quad. map), and research sensitivity (Custer 1983:129-137). Custer classifies the Shoreline Restoration – Mid Bay APE as a Zone II area which includes "areas with medium to high significant site probabilities and medium numbers of sites and data quality. It is less sensitive than Zone I due to its slightly higher data quality" (Custer 1983:129). Custer considers the APE as an area that has already been impacted by development (modern urban, suburban, and commercial) and will continue to be impacted in the future.

During March, 2004 Panamerican conducted a submerged cultural resource survey within the proposed APE. This survey included the proposed alignments (or footprints) of possible environmental restoration projects at James Island, in Dorchester County, Maryland (Lydecker and Krivor 2004). Located in the Chesapeake Bay, the proposed footprints included the western side of James Island at the mouth of the Little Choptank River. Results from the James Island survey documented 417 magnetic anomalies and 191 side scan sonar targets. No targets within the James Island survey area were recommended for additional investigation (Lydecker and Krivor 2004:87). Results of this remote-sensing survey serves to illustrate the potential for additional cultural resources within the proposed APE.

Review of shipwreck losses in the area identified numerous vessels reportedly lost within Dorchester County. Robert Hurry and David Beard researched documented vessel losses within Maryland (produced under a National Park Service grant administered by the MHT in the 1980s). The inventory of vessel losses was a result of archival research, newspaper articles, contemporary accounts, and field inspections (Thompson 2000:41). Results of their research identified 35 vessels lost within Dorchester County (Table 46)

Table 46. Historically documented vessel losses within Dorchester County, Maryland.

Vessel Name	Type	Year Lost	Location
Unidentified	Pilot Boat	April 13, 1748	Choptank River
Unidentified	Ferry	April 10, 1760	Choptank River
Baltimore Packet	Unknown	April 1767	Horn Point
Unidentified	Ship	September 29, 1780	Vienna
Unidentified	Ship	September 29, 1780	Vienna
Unidentified (2)	Brigs	September 29, 1780	Vienna
Lord Charlemont	Unknown	1785	Nanticoke River
Earl of Chatham	Snow	1796	Cambridge
Unidentified (5)	Schooners	July, 1814	Slaughter Creek
Express	Steam Sidewheel	October 22, 1878	Point No Point
J.F. Tull	Schooner	June 29, 1881	Fox Island
Willie F. Thomas	Schooner	November 12, 1883	James Point
Somerset	Schooner	March 12, 1888	Billies Island

Table 46, continued

Vessel Name	Type	Year Lost	Location
Mary Augusta	Schooner	December 12, 1890	Cambridge
Celeritas	Schooner	July 27, 1895	Choptank River
M. Colbourne	Schooner	March 4, 1909	Nanticoke River
Virginia S. Lawson	Schooner	June 7, 1910	Hill's Point
Mary Thomas	Schooner	March, 1911	Hooper's Strait
Mary Liz Thomas	Schooner	March, 1911	Hooper's Strait
Howard Dail	Schooner	February 17, 1915	Madison
Emma	Schooner	April 3, 1915	Hooper Island
Mary Mills	Schooner	December 31, 1917	Choptank River
Carrie Marie	Sloop	April 1918	Choptank River
Pathway	Schooner	October 6, 1919	Andrews
Dana	Gas Screw	September 18, 1923	Bishop's Head
Wm. H. Finney	Gas Screw	April 25, 1924	Holland's Island
Senora	Schooner	September 5, 1924	Choptank River
Frances Fuller	Gas Screw	October 21, 1925	James Shore
Emily E. Burton	Schooner	November 20, 1925	James Point
Idleon	Gas Screw	November 20, 1926	Sandy Island
Unida	Gas Screw	January 18, 1929	Cambridge
Virginia	Gas Screw	December 9, 1930	James Point
L.E. Williams	Schooner	October 5, 1930	Travers Point
Annie Bell	Schooner	1932	Cambridge

(as presented in Thompson 2000: 43-44).

Previous investigations have identified numerous archaeological sites near the proposed APE. During an archaeological survey of the Little Choptank River Watershed Lowery identified 107 archaeological site (Lowery 1995b:21). Lowery also discusses stresses on the cultural resource base (by topographic quad.) as originally presented in Davidson (1982):

> Sharps Island [Hudson] Quadrangle: A total of 4% of this unit has been developed, largely because in recent years the area has attracted large numbers of retirement and holiday home buyers and because of the concomitant development of recreational facilities along the shoreline. Tilled, cleared, or areas subjected to forestry account for 28% of the unit. Erosion is heavy (more than 8 feet a year) for 18% of the unit, while 57% of the total shore falls into the slight or low (less than 4 feet a year) categories. If the bay coastline is considered by itself however, erosion is classed as heavy for 43% of its total length. Sharps Island itself has lost over 80% of its total land area since 1848.
>
> Taylor’s Island Quadrangle: There is no appreciable amount of developed land within this unit. A total of 21% of the land area of the unit is either tilled, cleared, or subjected to forestry, with much of the land here being unutilized marsh. Erosion is a severe problem. Erosion rates are classed as heavy (more than 8 feet per year) for 41% of the total coastline of the unit and 71% of the Chesapeake Bay coastline of the unit. The western coastline of Meekins Neck has retreated over half a mile since 1848 (Lowery 1995b:3)

Lowery summarizes with an assessment of the potential for additional cultural resources within the Little Choptank River Drainage Basin (close to the APE):

> The Little Choptanks river drainage is included within the low coastal resource zone of Dorchester County. The low topographic relief, poorly drained soils, and the numerous coves and creeks within the watershed have created an environment similar to the coastal areas of Talbot and Queen Anne's Counties. Because of my familiarity with the low coastal areas (Lowery 1992a and 1992b), I believe that certain site settings were preferred by the native prehistoric groups who occupied the low coastal areas. I have recognized four common settlement patterns within the low coastal areas of Queen Anne's County (Lowery 1995a). Typically, the point focus and estuarine wetland focus settlement patterns occur within the marshy areas of the low coastal resource zone. The cove focus and rivershore focus settlement patterns have also been documented within the low coastal resource zone. Generally, the cove focus and rivershore focus patterns occur along the shorelines with higher topographic relief and well-drained soils. Because the shoreline areas of the Little Choptank watershed have low topographic relief, poorly drained soils, and broad marshes, certain settlement patterns would occur within this study area. I would expect that the point focus and estuarine wetland focus patterns would be the most common prehistoric settlement patterns. The rivershore and cove focus settlement patterns may also occur within the drainage (Lowery 1995b:5).

A review of the AWOIS Files within the general area of the Shoreline Restoration, Mid Bay, Maryland site identified 8 obstructions, 34 unknowns, and 11 vessels (historic and modern) within the area (Appendix A**)**. As stated earlier, the position accuracy of AWOIS wrecks and/or obstructions is highly variable and usually poor. These records simply serve to illustrate the potential for additional cultural resources within the proposed project area.

With this said the potential for additional cultural resources within the APE remains high.

SHORELINE RESTORATION, UPPER BAY, MARYLAND

Project Area Environment

The representative area is located west of Rock Hall in Kent County, Maryland (Figure 89). Proposed project activities would restore a peninsula using 4 feet of dredged material to create low marsh and high marsh habitat. The proposed APE includes a 1,500 feet by 3,200 feet dike that is breached, allowing for occasional overtopping.

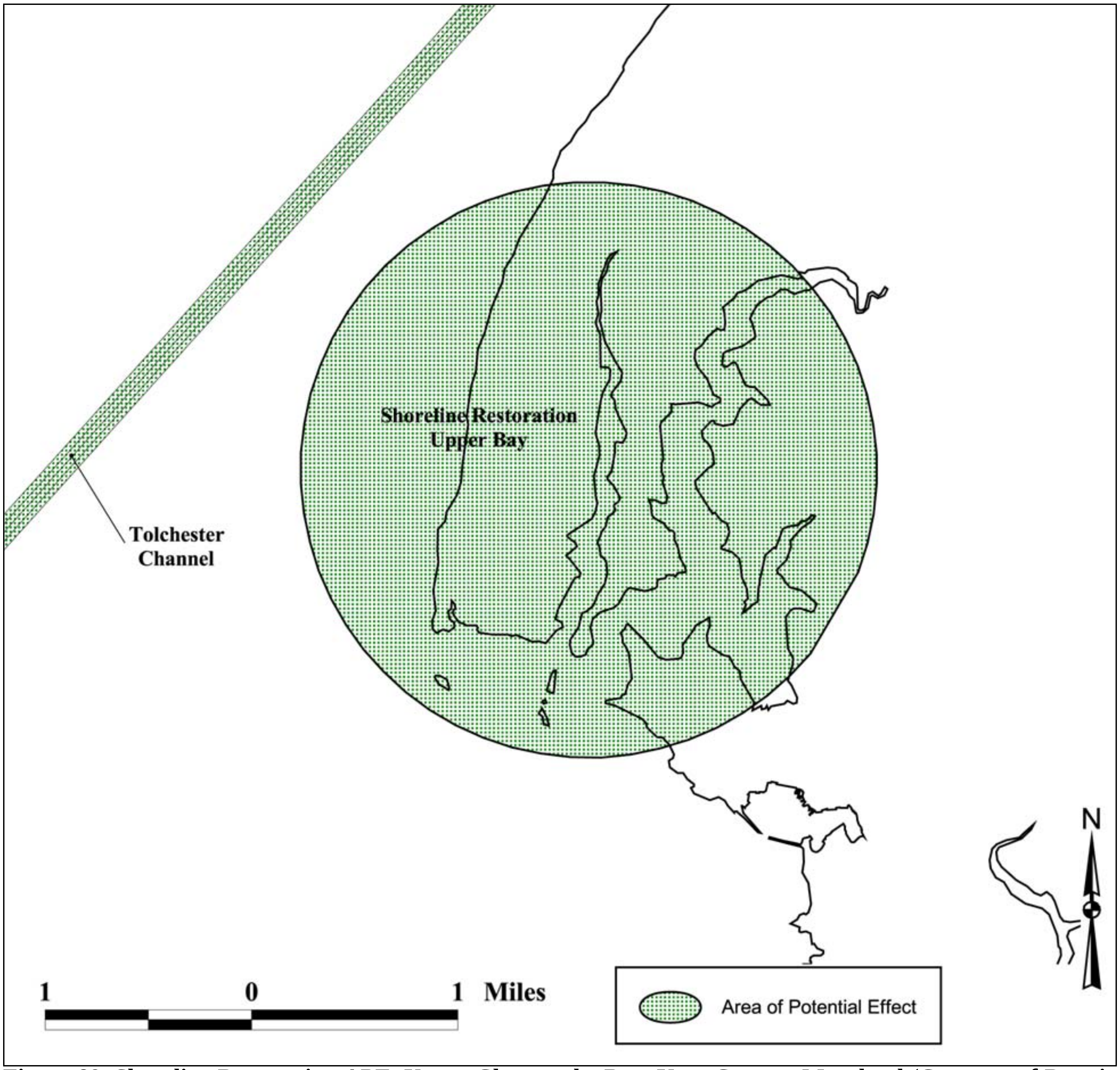

Figure 89. Shoreline Restoration APE, Upper Chesapeake Bay, Kent County, Maryland (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

Review of the State Site Files identified four documented sites within close proximity to Swan Point, Kent County, Maryland (Table 47). All four sites are prehistoric shell middens (Figure 90).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 90. Known archaeological sites within or near the proposed Shoreline Restoration APE, Upper Chesapeake Bay, Kent County, Maryland.

Table 47. Known archaeological resources within the Upper Bay, Maryland Shoreline Restoration APE, Kent County, Maryland.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18KE13	Swan Creek	Shell midden	Swan Point	Kent	Y
18KE21	Townsend 1	Woodland shell midden with lithics and ceramics	Swan Point	Kent	Y
18KE22	Townsend 2	Unknown shell midden	Swan Point	Kent	Y
18KE144	KCARP TO-3	Prehistoric shell midden	Swan Point	Kent	Y

Review of the Maryland Inventory of Historic Properties (at MHT) for Kent County identified 77 historic properties within the county. None are located within or near the proposed APE. Within all of Kent County there are 34 properties listed on the NRHP, none of these are within the APE. A review of NRHP properties (by quadrangle map) only identified one property (Hinchingham; K-101) located in Rock Hall, Maryland. Hinchingham is a well-preserved, large brick house built in 1774 and similar to a number of other eighteenth century, Kent County buildings (National Register of Historic Places Detail Report K-101). This property, listed on the NRHP in 1975, is located outside the APE.

Potential for Cultural Resources

Review of Custer's management plan (1983) for the Upper Delmarva region of Maryland may help determine the potential for additional sites within the region. Custer reviewed the existing archaeological database (in 1983) and assessed which locations within the region would be likely to produce additional information. Custer also assessed which portions of the eastern shoreline are subject to the greatest incidence of site destruction (Custer 1983:1). Factors affecting Custer's findings include impacts and stresses on the resource base, site density (by quad. map), and research sensitivity (Custer 1983:129-137). Custer classifies the Shoreline Restoration – Upper Bay APE as a Zone II area which includes "areas with medium to high significant site probabilities and medium numbers of sites and data quality. It is less sensitive than Zone I due to its slightly higher data quality" (Custer 1983:129). Custer considers the APE as an area that has already been impacted by development (modern urban, suburban, and commercial) and will continue to be impacted in the future.

A review of the AWOIS Files within the general area of the Shoreline Restoration – Upper Bay APE, Maryland site identified 26 obstructions, 20 unknowns, and two vessels within the general area (Appendix A**)**. As stated earlier, the position accuracy of AWOIS wrecks and/or obstructions is highly variable and usually poor. These records simply serve to illustrate the potential for additional cultural resources within the proposed project area.

Since there are known archaeological sites within the proposed APE, the potential exists for additional cultural resources within the APE.

SMALL ISLAND RESTORATION-LOWER BAY, VIRGINIA

Project Area Environment

The proposed APE includes the mouth of Mobjack Bay, located within Gloucester and Mathews Counties, Virginia (Figure 91). Proposed action would include construction of a 10-foot dike 8,311 linear feet (lf) long with a neat dike fill volume of 336,000 cubic yards. With a 4.1 million cubic yard capacity, the project area could have a 12 year design life.

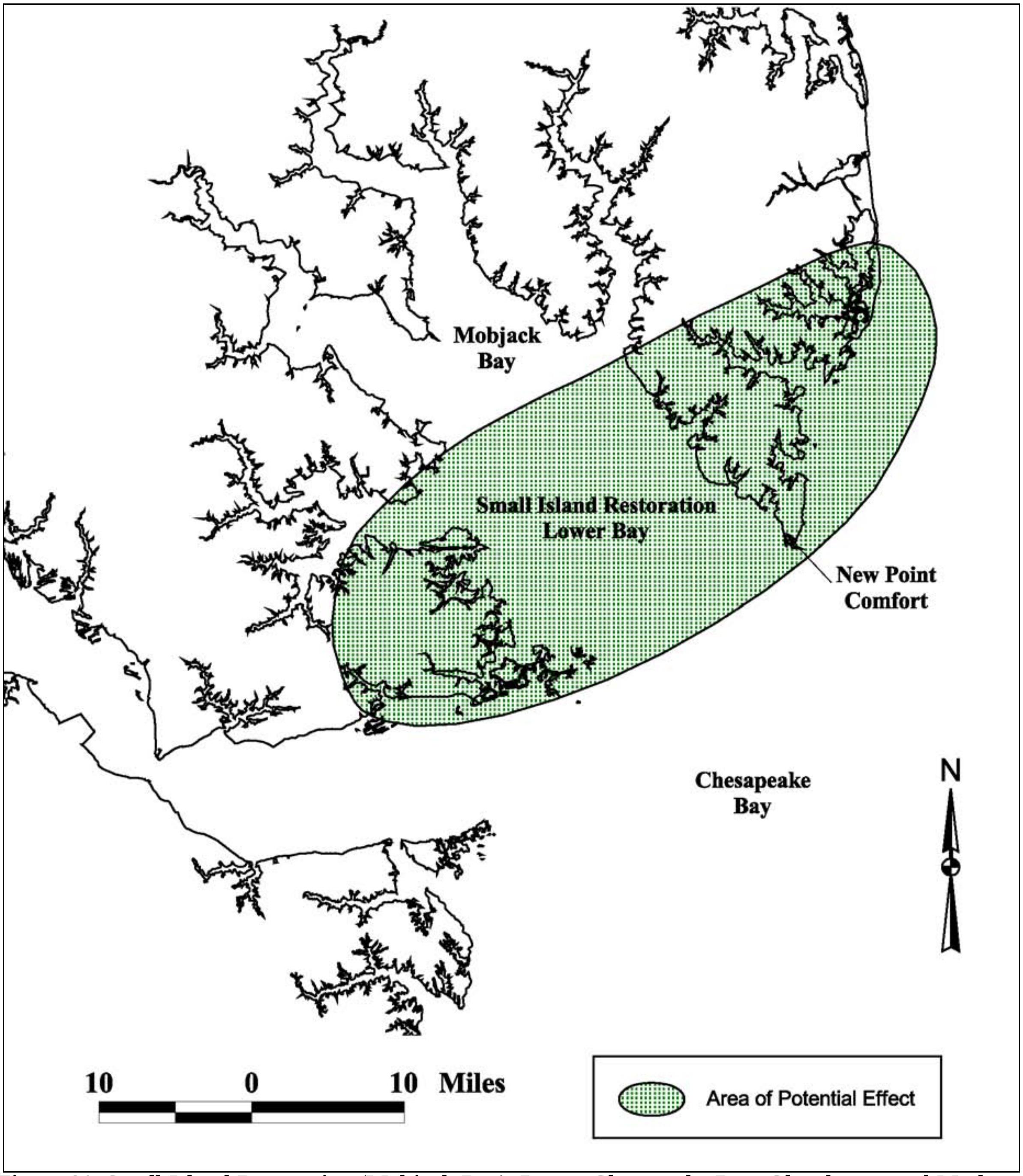

Figure 91. Small Island Restoration (Mobjack Bay), Lower Chesapeake Bay, Gloucester and Mathews Counties, Virginia (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

Review of the State Site Files at the VDHR identified eight known archaeological sites within or near the APE (Figure 92). All of these sites are located along the existing shoreline and most are eroding beach sites (Table 48).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 92. Known archaeological resources within or near the Small Island Restoration Area, Lower Chesapeake Bay, Glouchester and Mathews Counties, Virginia (New Point Comfort 7.5-min. quadrangle, 1986).

Table 48. Known archaeological resources within the Small Island Restoration APE, Lower Chesapeake Bay, Gloucester and Mathews Counties, Virginia.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
44MT20	Beach Comfort 1	Woodland beach erosion scatter	New Point Comfort	Mathews	Y
44MT22	Beach Comfort 3	Archaic/Woodland beach erosion scatter	New Point Comfort	Mathews	Y
44MT23	Beach Comfort 4	Woodland beach erosion scatter	New Point Comfort	Mathews	Y
44MT24	Beach Comfort 5	Woodland beach erosion scatter	New Point Comfort	Mathews	Y
44MT26	MT-Beach Series #4	Prehistoric (eroding beach site)	Matthews	Mathews	Y
44MT29	MT-Beach Series #1	Prehistoric (eroding beach site)	New Point Comfort	Mathews	Y
44MT30	Beach Comfort 6	Woodland artifact scatter	New Point Comfort	Mathews	Y
44MT0066	None	Prehistoric (eroding beach site)	New Point Comfort	Mathews	Y

The only NRHP property (including buildings, structures, districts) in close proximity to the proposed Small Island Restoration APE includes the New Point Comfort Island Lighthouse:

> The site of the New Point Comfort Lighthouse is a small granite rubble island at the southernmost tip of Matthews County. When the light was constructed in 1805, this point was part of a peninsula connected to the mainland, but it has since been separated and reduced by erosion to an island of about one-third acre. The lighthouse is a tapered octagonal ashlar sandstone structure similar to the Old Point Comfort Light, built in 1802 at Fort Monroe. Both structures encase stone spiral stairs constructed in a manner similar to spiral stairs in medieval structures. Double hung sash windows light the stair as it winds its way up to the light. Abandonment of the lighthouse as an operating Coast Guard facility has resulted in neglect and vandalism. The walls are no longer freshly whitewashed, windows are boarded up, and the glass of the light cupola has been shattered. The tower's stonework survives in good condition; however, and the building is in generally sound structural state. The light keeper's house disappeared prior to 1963 (Virginia Historic Landmarks Commission 1972:2).

The New Point Comfort Lighthouse, completed in 1805, was put to work in 1806. The lighthouse went through several repairs throughout the years and in 1930 an automatic light was placed atop the tower. In 1963 the New Point Comfort Spit Light was constructed and the use of the lighthouse was discontinued. The lighthouse was nominated to the NRHP in 1972.

Potential for Cultural Resources

The potential does exist for additional cultural resources to be located within the proposed APE. Additional prehistoric resources may exist in the APE due to the similarities in landform to those areas immediately north of the APE (which contain known archaeological sites). The New Point Comfort Lighthouse NRHP nomination form also infers that the area posed a threat to mariners until the lighthouse was built in the early nineteenth century. This may suggest the potential for shipwrecks within the area:

> The New Point Comfort peninsula has served as a landmark to navigators entering Mobjack Bay since the seventeenth century and ahs been known by its present name since before 1690. The point and the surrounding shoals posed a continuous threat to navigation, thus a Congressional act of March 3, 1801 provided for the erection of a permanent light there as soon as the light was deeded by the state (Virginia Historic Landmarks Commission 1972:3).

Review of the AWOIS files within the area identified 5 unknowns, 4 obstructions, and 4 named vessels within the general area (see Appendix A). The presence of unknown objects and obstructions may suggest the potential for significant submerged cultural resources within the proposed APE.

SMALL ISLAND RESTORATION-MID BAY, MARYLAND

Project Area Environment

The representative area includes Parsons Island, located within Queen Annes County, Maryland (Figure 93). Parsons Island, located in Eastern Bay (south of Kent Narrows), is actively eroding at a rate of 2 to 13 feet per year along select points of the island. Projections indicate the island will be completely eroded by 2058. During the early 1800s Parsons Island and Kent Island were connected but by 1844 both were completely separated (Murphy 2003:36). Parsons Island is situated on a sand/clay shelf within the wide, flat area of Eastern Bay, water depths within 1/2 mile of the island in all directions are less than 6 feet (EA Engineering, Science & Technology, Inc., 2003b:iv).

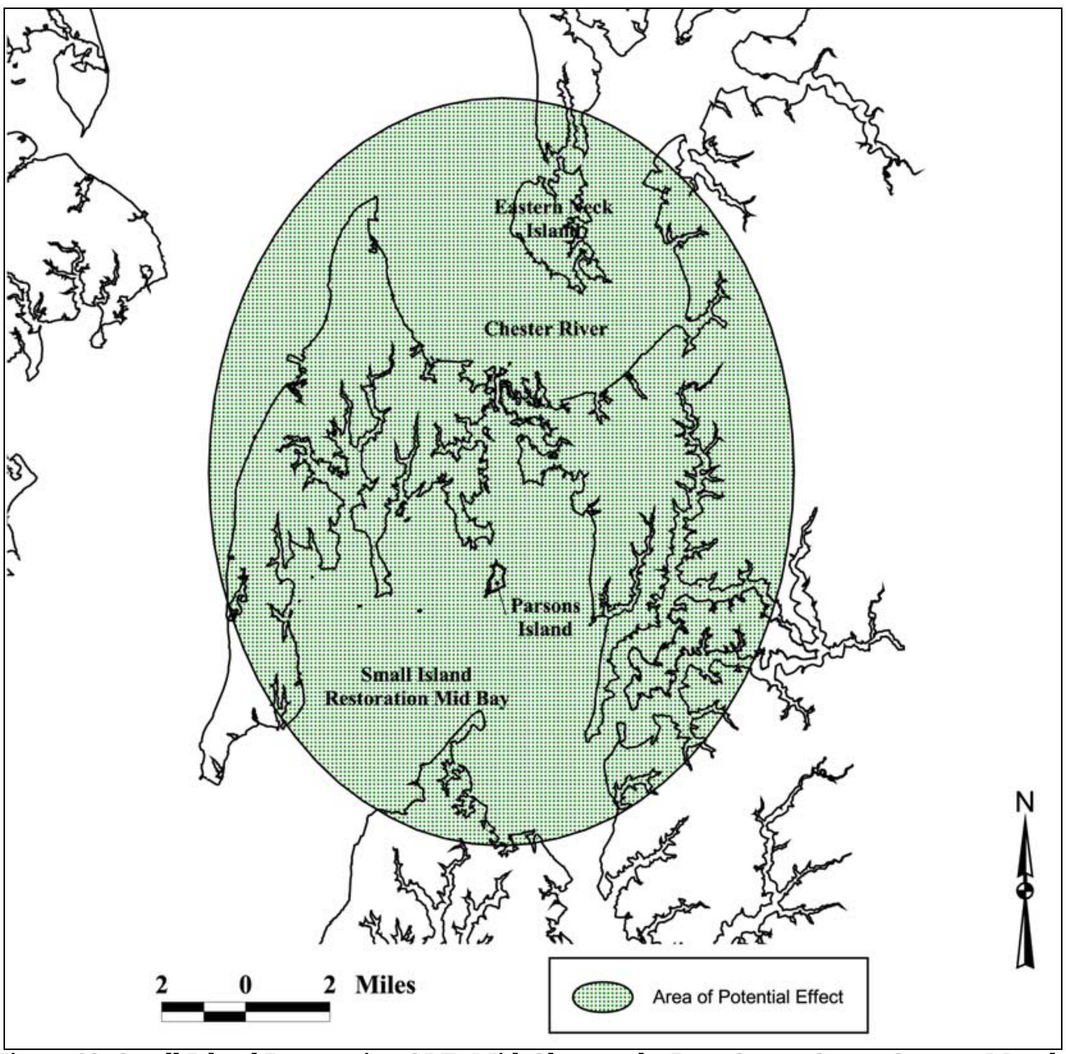

Figure 93. Small Island Restoration APE, Mid-Chesapeake Bay, Queen Annes County, Maryland.

Known Cultural Resources

Archival research at MHT identified numerous archaeological sites within the proposed APE (Table 49). Although there are numerous sites in the APE (Figures 94, 95, 96, and 97), none have been documented on Parsons Island.

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 94. Known archaeological resources within or near the Small Island Restoration APE, Mid-Chesapeake Bay, Queen Annes County, Maryland (Langford Creek 7.5-min. quadrangle, photorevised 1986).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 95. Known archaeological resources within or near the Small Island Restoration APE, Mid-Chesapeake Bay, Queen Annes County, Maryland (Love Point 7.5-min. quadrangle, photorevised 1986).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 96. Known archaeological resources within or near the Small Island Restoration APE, Mid-Chesapeake Bay, Queen Annes County, Maryland (Queenstown 7.5-min. quadrangle, photorevised 1986).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 97. Known archaeological resources within or near the Small Island Restoration APE, Mid-Chesapeake Bay, Queen Annes County, Maryland (Kent Island 7.5-min. quadrangle, photorevised 1973).

Table 49. Known archaeological resources within the Small Island Restoration APE, Mid-Chesapeake Bay, Queen Annes County, Maryland.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18QU42	Kent Narrows/Hood Point	Middle Woodland shell midden	Queenstown	Queen Annes	Y
18QU414	Horsehead Locality No. 2	Woodland lithic scatter	Queenstown	Queen Annes	Y
18QU416	Horsehead Locality No. 4	Early-Late Woodland base camp	Queenstown	Queen Annes	Y
18QU465	Kudner Site No. 5	Late Woodland shell midden	Queenstown	Queen Annes	Y
18QU467	Kudner Site No. 7	Middle Woodland lithic and shell scatter	Queenstown	Queen Annes	Y
18QU469	Kudner Site No. 9	Late Archaic lithic and shell scatter	Queenstown	Queen Annes	Y
18QU471	Kudner Site No. 11	Late Archaic and Late Woodland lithic scatter	Queenstown	Queen Annes	Y

Table 49, continued

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18QU472	Kudner Site No. 12	Colonial house site	Queenstown	Queen Anne's	Y
18QU215	Turkey Point	Colonial brick scatter	Kent Island	Queen Anne's	Y
18QU270	North Turkey Point Cove	Woodland shell midden, 20th century trash dump	Kent Island	Queen Anne's	Y
18QU271	South Turkey Point Cove	Prehistoric lithic scatter	Kent Island	Queen Anne's	Y
18QU272	South Wind Shore	Eroding bricks	Kent Island	Queen Anne's	Y
18QU273	Turkey Neck	Prehistoric lithic and Colonial scatter, eroding shell pits	Kent Island	Queen Anne's	Y
18QU274	Decoy Carver's Cove (Unconfirm)	Possible prehistoric site	Kent Island	Queen Anne's	Y
18QU275	Johnson's Island Narrows	Eroding handmade brick, possible Colonial	Kent Island	Queen Anne's	Y
18QU307	White Site (EA)	Early archaic lithic scatter	Kent Island	Queen Anne's	Y
18QU308	Normans Point	Late Archaic lithic concentration	Kent Island	Queen Anne's	Y
18QU310	Canvasback Cove	Prehistoric lithic scatter	Kent Island	Queen Anne's	Y
18QU311	Marsh Weed	Late Woodland lithic scatter	Kent Island	Queen Anne's	Y
18QU328	East Marlin Farms	Historic brick and shell scatter	Kent Island	Queen Anne's	Y
18QU329	Statue Garden	African-American cemetery	Kent Island	Queen Anne's	Y
18QU330	Prospect Bluff	Late Archaic and Woodland shell midden	Kent Island	Queen Anne's	Y
18QU331	Prospect Bay	Prehistoric shell and lithic scatter	Kent Island	Queen Anne's	Y
18QU332	Boundary	20th century dump/erosion control	Kent Island	Queen Anne's	Y
18QU333	Crab Alley Bay	Paleoindian component, Late Archaic-Woodland shell midden	Kent Island	Queen Anne's	Y
18QU334	Narrow Point Cove	Fire-cracked rock concentration	Kent Island	Queen Anne's	Y
18QU336	Norman/Tanner Graveyard	19th century cemetery	Kent Island	Queen Anne's	Y
18QU337	Barnstable Creek	Historic shell feature	Kent Island	Queen Anne's	Y
18QU338	Barnstable Hill Site #1	Prehistoric shell and fire-cracked rock scatter	Kent Island	Queen Anne's	Y
18QU339	Barnstable Hill Site #2	Eroding shell pit feature	Kent Island	Queen Anne's	Y
18QU340	Barnstable Hill Site #3	Prehistoric shell scatter	Kent Island	Queen Anne's	Y
18QU341	Barnstable Hill Site #4	Eroding fire-cracked rock and charcoal	Kent Island	Queen Anne's	Y
18QU342	Barnstable Hill Site #5	Colonial artifact scatter	Kent Island	Queen Anne's	Y
18QU392	Johnson's Island Narrows	19th century house site	Kent Island	Queen Anne's	Y
18QU393	Little Field	Late Archaic lithic scatter	Kent Island	Queen Anne's	Y
18QU394	Little Creek Crossing	Shell scatter	Kent Island	Queen Anne's	Y
18QU933	Le Clairs Marsh Site #1	Late Archaic lithic scatter	Kent Island	Queen Anne's	Y
18KE235	Cedar Point	Late Woodland short-term resource procurement camp and shell midden	Langford Creek	Kent	Y
18KE236	Headquarters Beach	Middle and Late Woodland short-term procurement camp	Langford Creek	Kent	Y
18KE239	Edwards	19th century farmhouse site with chimney falls and well	Langford Creek	Kent	Y
18KE246	South of Panhandle	Middle to Late Woodland short-term camp and shell midden with burial	Langford Creek	Kent	Y
18KE248	North Shore Shipyard Creek	Possible Woodland shell midden	Langford Creek	Kent	Y
18KE249	Wickes Landing	Unknown shell midden	Langford Creek	Kent	Y
18KE291	New Yarmouth Church	Possible mid-17th century church site	Langford Creek	Kent	Y
18KE320	Panhandle Point Site	Shipwreck	Langford Creek	Kent	Y
18KE360	ESN--065P	Prehistoric lithic scatter	Langford Creek	Kent	Y

Table 49, continued

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18QU29	Love Point	Shell midden and Colonial well barrel	Love Point	Queen Anne's	Y
18QU52	W-T, QA-B 1,2	Shell midden	Love Point	Queen Anne's	Y
18QU53	W-T, QA-B 4	Unknown	Love Point	Queen Anne's	Y
18QU317	Clayland Price Farm	Late Archaic - Late Woodland shell midden	Love Point	Queen Anne's	Y
18QU318	Denny Site	Late Archaic and Middle Woodland artifacts	Love Point	Queen Anne's	Y
18QU353	Love Point East	Colonial artifact scatter	Love Point	Queen Anne's	Y
18QU354	Closed Creek	Prehistoric lithic scatter	Love Point	Queen Anne's	Y

Currently there are no known cultural resources on Parsons Island:

> Parsons Island has not been identified as having any sites of historical or archaeological interest, either on the island or in the waters surrounding the island…The viewshed is of a typical, remote undeveloped Chesapeake Bay shoreline. There are several dwellings on the island that will be within 1,000 feet of some parts of proposed concept areas (EA Engineering, Science & Technology, Inc., 2003b:v).

While there are no known sites on Parsons Island proper, the surrounding areas within the APE contain numerous cultural resources (see Figures 94, 95, 96, and 97).

Potential for Cultural Resources

The potential for additional cultural resources on or around Parsons Island itself remains minimal. Review of Hurry and Beard's shipwreck inventory for Queen Annes County identified 21 historic vessels lost in the area (Table 50). None are reported lost at Parsons Island; however, two (the *Vineyard* and the *H.P. Barnes*) are listed as lost in Eastern Bay.

Table 50. Documented vessel losses within Queen Annes County, Maryland.

Vessel Name	Type	Year Lost	Location
Unidentified	Pilot Boat	June 2, 1748	Kent Island
Unidentified	Unknown	May 1, 1752	Kent Island
Unidentified	Ferry Boat	October 1, 1752	Kent Island
Unidentified	Unknown	April 24, 1753	Kent Island
Eliza	Ship	January 23, 1805	Love Point
Norfolk Packet	Ship	November 23, 1815	Kent Island
Falcon	Schooner	December 9, 1876	Queenstown Creek
Vineyard	Schooner	March 12, 1887	Eastern Bay
Capt'n Miller	Steamboat	April 23, 1887	Centreville
H.P. Barnes	Schooner	August 20, 1908	Eastern Bay
Love Point	Steam sidewheel	March 11, 1909	Love Point
Herbert T. Maxwell	Schooner	May 16, 1910	Brick House Bar
William T. Willing	Gas Screw	April 18, 1911	Kent Narrows
Harriet E. Ford	Schooner	July 8, 1911	Love Point
Carlie and Virginia	Gas Screw	December 9, 1912	Kent Island

Table 50, continued

Vessel Name	Type	Year Lost	Location
Tivoli	Steam sidewheel	November 26, 1915	Kent Island
William W. Curtain	Barge	March 7, 1920	Kent Island
George W. Hardesty	Gas Screw	April 23, 1920	Kent Island
C.L.&T. Co. No.268	Scow	September 27, 1932	Love Point
F.L. Stevens	Gas Screw	February 27, 1932	Corsica River
Mary and Elizabeth	Oil Screw	August 12, 1932	Kent Island

(as presented in Thompson 2000:42-43).

A review of the AWOIS Files within the general area of the Small Island Restoration APE– Mid Bay, Maryland site identified 63 obstructions, 18 unknowns, and 15 vessels within the area (Appendix A**)**. As stated earlier, the position accuracy of AWOIS wrecks and/or obstructions is highly variable and usually poor. These records simply serve to illustrate the potential for additional cultural resources within the proposed project area.

One aspect of the proposed project that should be addressed includes potential viewshed issues:

> Those utilizing the island or boating in the surrounding waters may experience some viewshed disturbances during construction, but these would be short-term. The construction of a beneficial use project would extend the southern portion of the island, permanently altering the viewshed. However, the profile would be consistent with the existing island profile (EA Engineering, Science & Technology, Inc., 2003b:vi).

While the potential for additional cultural resources at Parsons Island remains minimal the large number of sites within the APE suggests otherwise. The large size of the proposed APE and presence of known sites suggests the high potential for additional cultural resources within the area.

WETLANDS RESTORATION-MARYLAND

Project Area Environment

The representative area is located within the Blackwater National Wildlife Refuge (Blackwater NWR), Dorchester County, Maryland (Figure 98). The Blackwater NWR is located within the Embayed Coastal Plain on the lower Delmarva Peninsula, which includes 22,905 acres of tidal marsh, open water, islands, and lowland flats (Millis et al. 1998:i).

This proposed alternative consist of placing 2 feet of dredged material over 1,000 acres of degraded wetlands at the refuge. Within the Blackwater NWR, some wetlands are being lost to subsidence as well as sea level rise. Wetland Enhancement/Restoration may “offer opportunities to both protect ‘at risk’ wetlands and to restore ‘unhealthy’ wetlands” (Murphy 2003:184).

Specific to this alternative includes utilizing an anchored hydraulic unloader and booster pumps able to pump dredged material into the interior of Blackwater NWR.

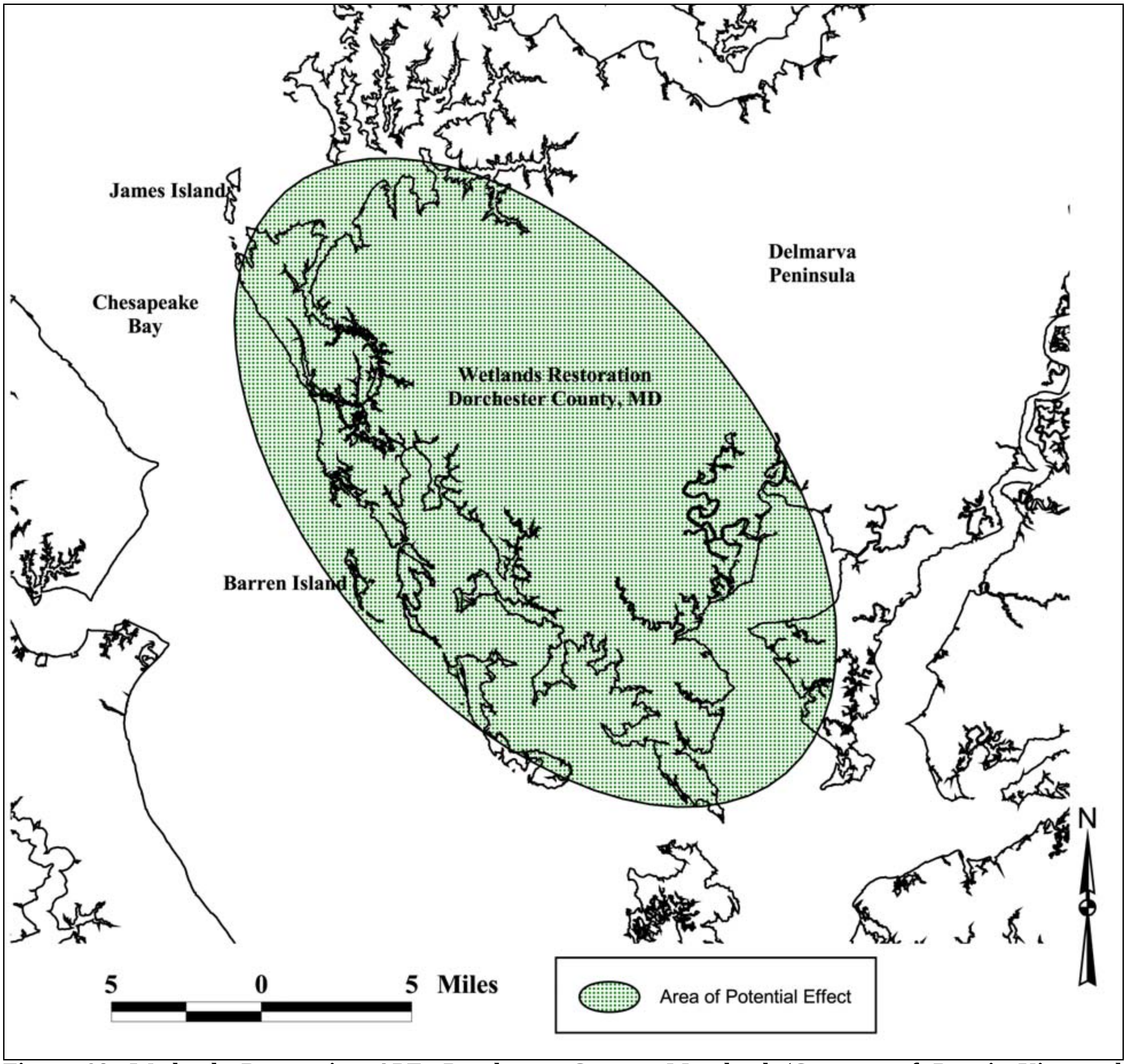

Figure 98. Wetlands Restoration APE, Dorchester County, Maryland (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

A review of the State Site Files at the MHT identified twelve documented archaeological sites within or near the proposed APE (Table 51). All twelve sites are located within the APE (Figures 99 and 100).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 99. Known archaeological resources within or near the Wetlands Restoration APE, Dorchester County, Maryland (Golden Hill 7.5-min. quadrangle, 1981).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 100. Known archaeological resources within or near the Wetlands Restoration APE, Dorchester County, Maryland (Blackwater River 7.5-min. quadrangle, 1982).

Table 51. Known archaeological resources within the Wetlands Restoration APE, Dorchester County, Maryland.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18DO89	M/DOT 21D	19th century trash pit	Golden Hill	Dorchester	Y
18DO93	M/DOT P19	Late 18th and early to mid-19th century possible house site	Golden Hill	Dorchester	Y
18DO166	Gore	Prehistoric lithic scatter and mid-18th to late 19th century scatter	Golden Hill	Dorchester	Y
18DO187	Blackwater Canoe	Historic log canoe	Golden Hill	Dorchester	Y
18DO399	Hog Range North	Late Woodland base camp, 19th-20th century field scatter	Golden Hill	Dorchester	Y
18DO400	Hog Range South	Middle or Late Woodland lithic scatter/short-term camp	Golden Hill	Dorchester	Y
18DO44	Luthy	Two dugout canoes, probably 19th century	Blackwater River	Dorchester	Y
18DO96	Indian Bone Ossuary	Contact period ossuary	Blackwater River	Dorchester	Y
18DO115	West Grogs Point	Late Woodland shell midden and 19th century scatter	Blackwater River	Dorchester	Y
18DO398	07-H (E.W. LeCompte Farmstead)	19th-20th century farmstead	Blackwater River	Dorchester	Y
18DO416	Staplefort Cemetery	Early 19th century cemetery	Blackwater River	Dorchester	Y
18DO419	Harriet Tubman Birth Site	Late 18th-19th century plantation, Harriet Tubman's birthplace, mid-19th century African American site	Blackwater River	Dorchester	Y

Numerous NRHP and architectural properties are located within Dorchester County, Maryland. However, none are located within the proposed APE (Blackwater NWR).

Although there are approximately 40 reported historic shipwrecks within Dorchester County, none are reported within the proposed APE, except for 18DO187 (the Blackwater Canoe).

Potential for Cultural Resources

Due to known archaeological sites within the area the potential exists for additional cultural resources within the APE. The most comprehensive archaeological and geomorphological study of the Blackwater NWR was conducted by TRC Garrow Associates, Inc. of Chapel Hill, North Carolina in 1997. “The purpose of the study was to assist the U.S. Fish and Wildlife Service in fulfilling requirements under Section 110 of the National Historic Preservation Act by developing archaeological sensitivity models to guide future management of cultural resources on the refuge” (Millis et al. 1998:i). Millis et al. developed a predictive model to identify areas of high and moderate potential for archaeological remains:

> In general, the main site locations during the prehistoric period in this region are island and estuarine river shorelines, often adjacent to wetlands, and slightly elevated well-drained landforms along estuarine and freshwater drainages. Seventeenth and eighteenth century population of the Blackwater NWR vicinity was sparse, and was water oriented. Nineteenth and twentieth century residential/agricultural occupations were generally placed adjacent to roads. Hunter/trapper related sites for all time periods are found on the islands and marsh edges of Blackwater River and the shorelines adjacent to the bay (Millis et al. 1998:i).

The study expands upon the potential for sites within the Blackwater NWR by identifying high, moderate and low probability locations:

High Probability Locations

The background research revealed several strong correlations between archaeological site locations and certain environmental setting characteristics. Those patterns that were consistently represented in regional studies are here considered to represent high probability areas for archaeological site location.

- The shorelines of islands and peninsulas for sites from all time periods
- Bay islands, marsh on Bishops Head, and islands and stable marsh (areas of apparent stable surface based on 1982-1984 series of topographic maps) in Blackwater River for hunting/trapping sites during all periods.
- The headwaters of small streams fringed by wetlands that are now either poorly drained or still well drained for Paleoindian through Middle Archaic period sites.
- The mouths of major streams in freshwater or estuarine setting for Late and Terminal Archaic Sites
- Well-drained soils on the fluvial banks of large drainages for Early through Late Woodland period sites.
- Well-drained soils along the major waterways, including coastline, island shores, and the mouths of major rivers for seventeenth through eighteenth century sites.
- Existing road (Routes 16 and 335, Key Wallace Drive, and the north half of Maple Dam Road) for nineteenth through twentieth century sites

Moderate Probability Locations

Moderate probability locations consist of areas for which some correlation between archaeological sites and characteristics has been suggested, but is not strongly documented. These include the following environmental settings

- Elevated sections (> 2m amsl) of interior swamp/ forested wetland settings for hunting camps from all prehistoric periods.
- Areas of sunken, mucky silt loam along the major waterways, including coastline, island shores, and the mouths of major rivers for Early Woodland through eighteenth century sites.

Low Probability Locations

The most apparent characteristic of low site probability for several time periods is poorly drained soils. Interior areas, well off roads or waterways, can also be considered to have low potential for containing sites. Areas within the refuge not shown as high or moderate probability area on the sets of maps for each characteristic are considered low probability (Millis et al. 1998:198-199)

Additional archaeological surveys in the Blackwater NWR have also attempted to determine the potential for sites within the area. An archaeological reconnaissance of the Maryland Route 335 Bridge Replacement over Blackwater River addresses the potential for additional sites within the general area. Utilizing the results of earlier studies in the area (Hughes 1980, Davidson 1982, Wilke and Thompson 1977,Wesler et al. 1981) and establishing a criteria, Boyce determined that the potential for additional prehistoric and historic sites within the area was fair to moderate (Boyce 1986:4).

DAM NECK OCEAN OPEN WATER PLACEMENT AREA

Project Area Environment

The Dam Neck Ocean Open Water Placement Site is located in the Atlantic Ocean approximately 3.6 miles east of Virginia Beach, Virginia (Figure 101). In use since 1967, this existing placement site has accepted dredged material from the Thimble Shoal and Cape Henry Channels (as well as other locations on a limited basis). Proposals to expand the boundaries of the Placement Area during the 1970s were eventually approved by the 1980s. The expanded site now comprises almost 10 square miles, more than double the original size Dam Neck is now the primary placement site for dredged material from Thimble Shoal, Cape Henry, and Atlantic Ocean Channels (Navigation Management Plan for the Port of Hampton Roads, Virginia 2000:II-42).

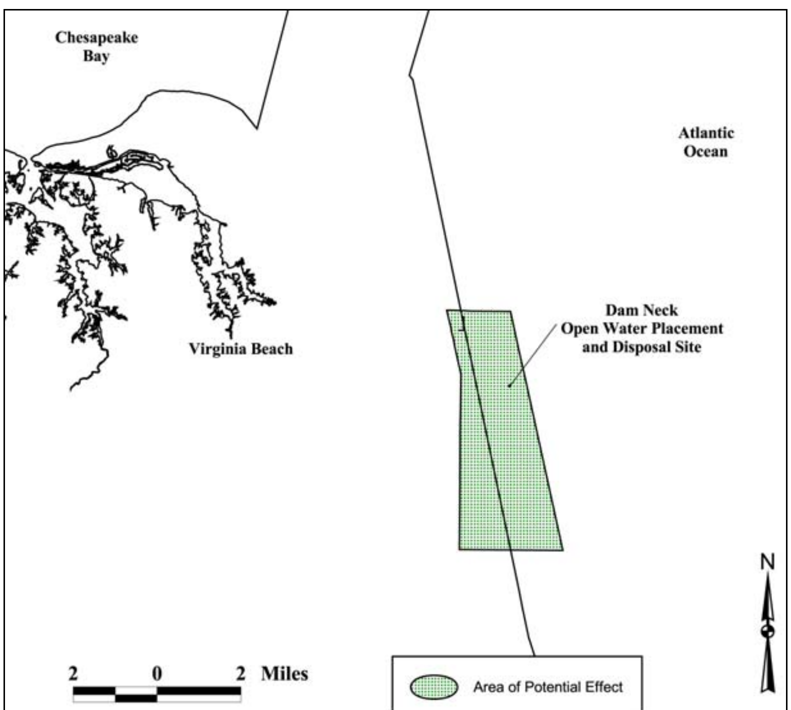

Figure 101. Dam Neck Ocean Open Water Placement Area, Virginia Beach, Virginia (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

A review of previous investigations has identified a number of vessels lost in the vicinity of the Dam Neck Disposal Area (Table 52). Historic research indicates nine vessels purportedly lost in the general area.

Table 52. Vessels lost in the vicinity of Dam Neck Disposal Area.

Vessel Name	Type	Year Lost
Unidentified	English Brig	1757
Unidentified	English Snow	1757
Samuel Smith	Ship	1804
Harriet Thomas	Schooner	1877
Mary D. Cranmer	Schooner	1887
Agnes Boston	Barge	1889
Florence Shay	Schooner	1908
Edwina H. Redmond	Schooner	1915
Rogist	Motor Vessel	1942

(as presented in Koski-Karell 1979b:40).

The USACE, Norfolk District's Environmental Impact Statement (for the Norfolk Harbor and Channels, Virginia Deepening and Disposal Project) discusses cultural resources within the Dam Neck Disposal Area:

> The Virginia Historic Landmarks Commission's (VHLC) Research Center for Archaeology was contacted about cultural resources in the project area of Virginia Beach and offshore in reference to a beach erosion control study at Virginia Beach…Within the proposed area of the enlarged Dam Neck Disposal Site there are no known wrecks or obstructions. The nearest known wreck is located about 1/4 n.m. east of the proposed eastern boundary and has been tentatively identified as a 500-ton vessel called *Kingston Celonite*, which sank in June 1942. Another obstruction has been located about 3/4 n.m. north-northwest of the proposed northwest corner of the site and is listed as a wreck, name unknown. The Dam Neck Disposal Site designation was discussed in detail with Mr. John Broadwater of the VHLC/VRCA and, as proposed, the disposal of dredged material would not likely adversely disturb or otherwise impact marine archaeological resources (U.S. Army Corps of Engineers, Norfolk District 1985:I-69).

Located within the artillery impact zone of the military facility at Dam Neck, it is possible that unexploded projectiles are also likely to be present within the APE (Koski-Karell 1979b:40).

Potential for Cultural Resources

A review of the AWOIS Files within the general area of the Dam Neck Ocean Open Water Placement Site identified 36 obstructions, 13 unknowns, and seven vessels within the general area (Appendix A). As stated earlier, the position accuracy of AWOIS wrecks and/or obstructions is highly variable and usually poor. These records simply serve to illustrate the potential for additional cultural resources within the proposed project area.

Review of known cultural resources within the Dam Neck Ocean Open Water Placement Site indicates that resources potentially within the APE would be limited to shipwrecks. Since several vessels have been reported lost in the area the potential does exist for additional cultural resources in the area.

HART-MILLER ISLAND (EXISTING)

Project Area Environment

Located within Baltimore County, Hart-Miller Island was constructed along two distinct islands located approximately 3,400 feet offshore between the Black and Middle Rivers (Figure 102). Hart-Miller Island used to be once continuos island but a combination of post-Pleistocene sea-level rise and erosion have separated the two. These environmental factors have also separated the two islands from the mainland. Erosion has been a major environmental factor impacting both islands:

> Both islands have a serious erosion problem which has decreased the combined area of Hart and Pleasure Islands (once part of Hart Island) from 150 acres in 1933 to 120 acres in the 1967-1969 period, and has decreased the area of Miller Island from 50 acres in 1933 to 33 acres in 1967. Low-lying portons of the island area in danger of being washed away by a severe storm (U.S. Army Corps of Engineers, Baltimore District 1974:10).

The elevation of the island ranges from sea level to 5.5 feet mean sea level (Rose 1998:2).

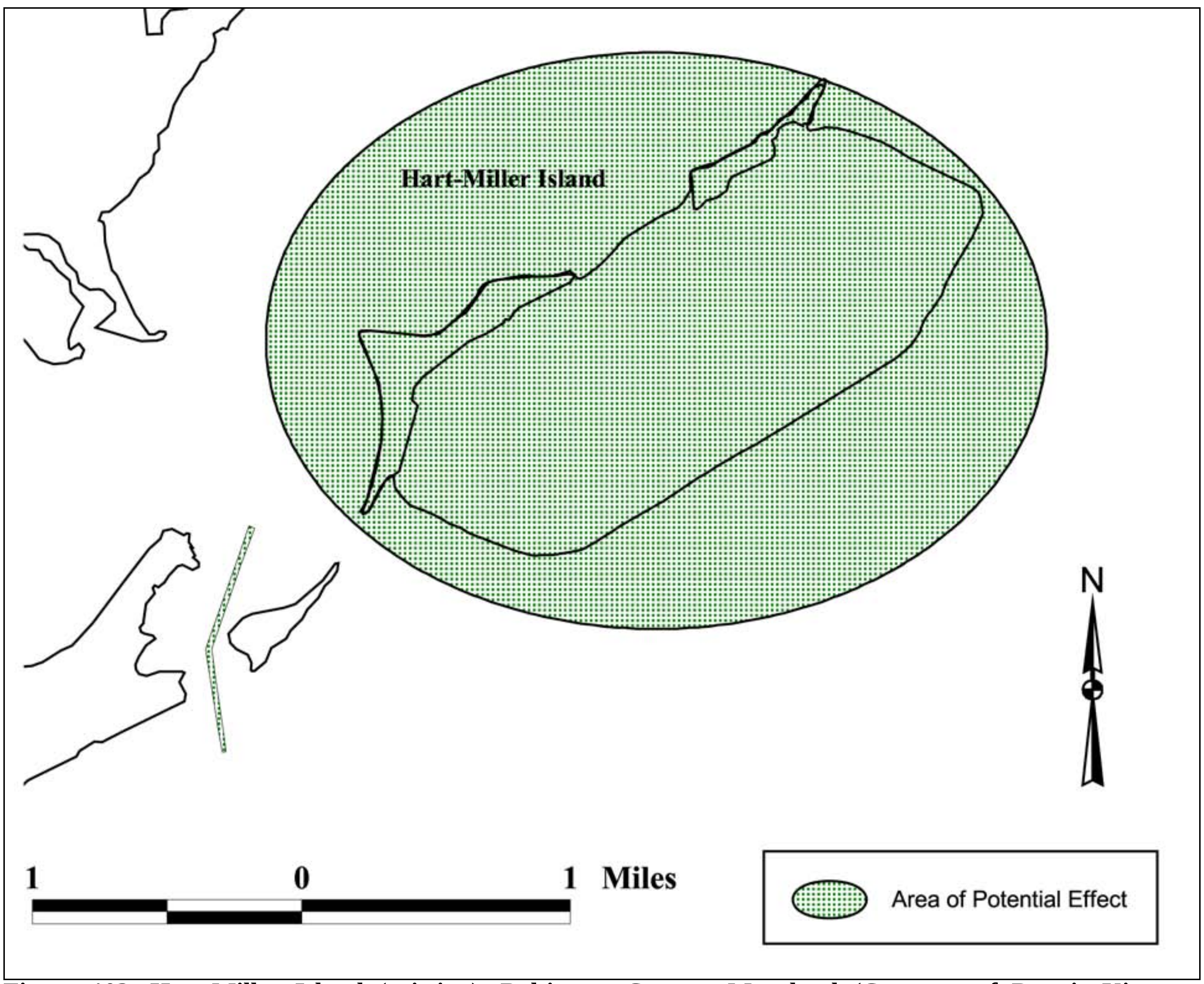

Figure 102. Hart-Miller Island (existing), Baltimore County, Maryland (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

A number of previous investigations have identified cultural resources on Hart-Miller Island. During the early twentieth century, Mayre (1938) identified a shell midden on Cuckolds Point as well as others within the Upper Chesapeake Bay region. Later, in the 1970s McNamara surveyed the islands relative to an environmental assessment for the Hart-Miller Island (HMI) Dredged Material Containment Facility. McNamara's survey:

> Found no artifacts on Miller Island. On Hart Island he could not find 18BA96, a previously recorded site; or the Hart Island House, a 18th century house, and reported that they had probably eroded into the bay. At one location on the east side of the island, he found an Orient Fishtail projectile point (Terminal Archaic), a biface fragment, and a flake. He excavated test pits inland from the artifacts but found no other cultural remains. On the west side of the island he found the distal portion of a projectile, two flakes, and a grit-tempered pot sherd…McNamara did not examine the shipwreck off the southern tip of the island because it was outside the project area (Rose 1998:3).

Review of documented cultural resources at MHT identified five sites on Hart-Miller Island (Table 53). The sites include prehistoric sites, three shell midden, and a lithic scatter (Figures 103, 104, and 105).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 103. Known archaeological sites located within or near the Hart-Miller Island (Gunpowder Neck 7.5-min. quadrangle, 1995).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 104. Known archaeological sites located within or near the Hart-Miller Island (Middle River 7.5-min. quadrangle, photorevised 1985).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 105. Known archaeological sites located within or near the Hart-Miller Island (Sparrows Point 7.5-min. quadrangle, photorevised 1974).

Table 53. Known cultural resources within the Hart-Miller Island Expansion Area.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18BA96	Hart Island	Prehistoric	Gunpowder Neck	Baltimore	Y
18BA65	Cedar Point	Late Archaic to Late Woodland shell midden	Middle River/Sparrows Point	Baltimore	Y
18BA74	Porter Field	Archaic lithic scatter	Middle River	Baltimore	Y
18BA98	Porters Park	Prehistoric shell midden	Middle River	Baltimore	Y
18BA133	Cuckold Point	Prehistoric shell midden	Sparrows Point	Baltimore	Y

Rose (1998) compiled a table of all known sites and historic properties on and near Hart-Miller Island (Table 54). The table includes an NRHP property (Todd Farmhouse), the Craighill Channel Range Light, which is listed on the Maryland Register of Historic Properties, prehistoric sites, twentieth Century houses, three shipwrecks, and one bridge.

Table 54. Sites and Historic Properties in the Vicinity of Hart-Miller Island.

Site	Site Type	Cultural Affiliation	Distance to Hart-Miller Island Project
Todd Farmhouse (Site 18BA370	Plantation, NRHP listed	Historic, 19th Century	4.7 Kilometers (2.9 mile)
Craighill Channel Range Light	Lighthouse, MRHP listed	Historic, 19th Century	1,770 meters (5,800 feet)
Site 18BA96	Camp (?), MIHP listed	Prehistoric	Hart Island
Hart Island House	Farmhouse (?)	18th Century	Hart Island
Structures 1-3	Summer home (?)	20th Century	1,400 meters (4,600 feet)
Structures 4-7	Summer home (?)	20th Century	1,465 meters (4,800 feet)
Structures 8-11	Summer home (?)	20th Century	1,280 meters (4,200 feet)
Pleasure Island Bridge	Bridge	20th Century	1,610 meters (5,200 feet)
Shipwreck #1	Shipwreck	17th Century	425 meters (1,400 feet)
Shipwreck #2	Shipwreck	Unknown	275 meters (900 feet)
Potential Shipwreck	Shipwreck	Unknown	1,250 meters (4,100 feet)
Potential Prehistoric Site	Unknown	Prehistoric	60 meters (200 feet)

(as presented in Rose 1998:6)

Review of the Sparrows Point 7.5-min. quadrangle map identified two shipwreck symbols located near the south end of Hart Island. Regarding the shipwreck site located on the south end of Hart-Miller Island, McNamara states:

> A shipwreck, on the southern tip of Hart Island's tidal flats, is graphically displayed on the 1974 photo-revised USGS 7.5-minute Sparrows Point topographic quadrangle. According to Mr. Don Stewart, director of the Baltimore Maritime Museum, that is the approximate location of one of the earliest shipwrecks in colonial Maryland waters. The boat was owned by Captain Claiborne, who operated an early 17th century trading post on Kent Island and traded extensively up and down the Bay with various indian groups. The ship was sunk by one of Lord Baltimore's boats between 1638 and 1642 (McNamara 1977:1-2).

A second shipwreck symbol is located off the southwest shore of Hart's Island. Rose states that "NOAA (1985) shows this feature as "stakes" which could mean the feature either consists of ship ribs sticking up above the waterline or pilings placed in the water. The Maryland Historical Trust has no information on this wreck" (Rose 1998:8).

Potential for Cultural Resources

Review of previous investigations infer that:

> The area around the HMI [Hart Miller Island] project saw widespread prehistoric use. Prehistoric occupation began in the Archaic period and lasted until the Late Woodland. There have been no detailed excavations in the vicinity of the HMI project area, and it is impossible to determine if prehistoric occupations were continuous or intermittent. Previous surveys identified numerous prehistoric sites ranging from habitation sites to shell middens on the mainland near Hart Island…
>
> The construction activities proposed for Hart-Miller Island Environmental Restoration Project will primarily take place within the South Cell, except for construction of the pump station on a spur that was created during construction of outer perimeter dike of the dredged material containment facility. These areas have already been disturbed by construction of the HMI facility, and the south cell placement area is now covered by about 5.5 meters (18 feet) of dredged material…The proposed project will have no effect on any historic properties listed on the NRHP or MRHP, and the proposed construction areas requires no further cultural resource action (Rose 1998:8-9).

The potential does exist for additional cultural resources to be located within the APE. However, as stated above, construction activities has likely already buried any cultural resources under dredged material. No additional impacts to this area are anticipated.

NEW OPEN WATER PLACEMENT-MID BAY (DEEP TROUGH)

Project Area Environment

This open water dredged material placement area is located in the mid-bay area of Chesapeake Bay, Queen Annes County, Maryland (Figure 106).

Known Cultural Resources

No known cultural resources have been documented within the Deep Trough APE. Current research has identified no previous investigations (pertinent to submerged cultural resources) within the APE.

Potential for Cultural Resources

In an effort to determine the potential for additional cultural resources within the Deep Trough APE, a search of the AWOIS files was undertaken. Results of the database search identified 15 unknown objects, 24 obstructions, and four vessels within the general area of the Deep Trough Placement Site (Appendix A). Results of this record search indicates the potential for submerged cultural resources (in the form of shipwrecks) within the APE.

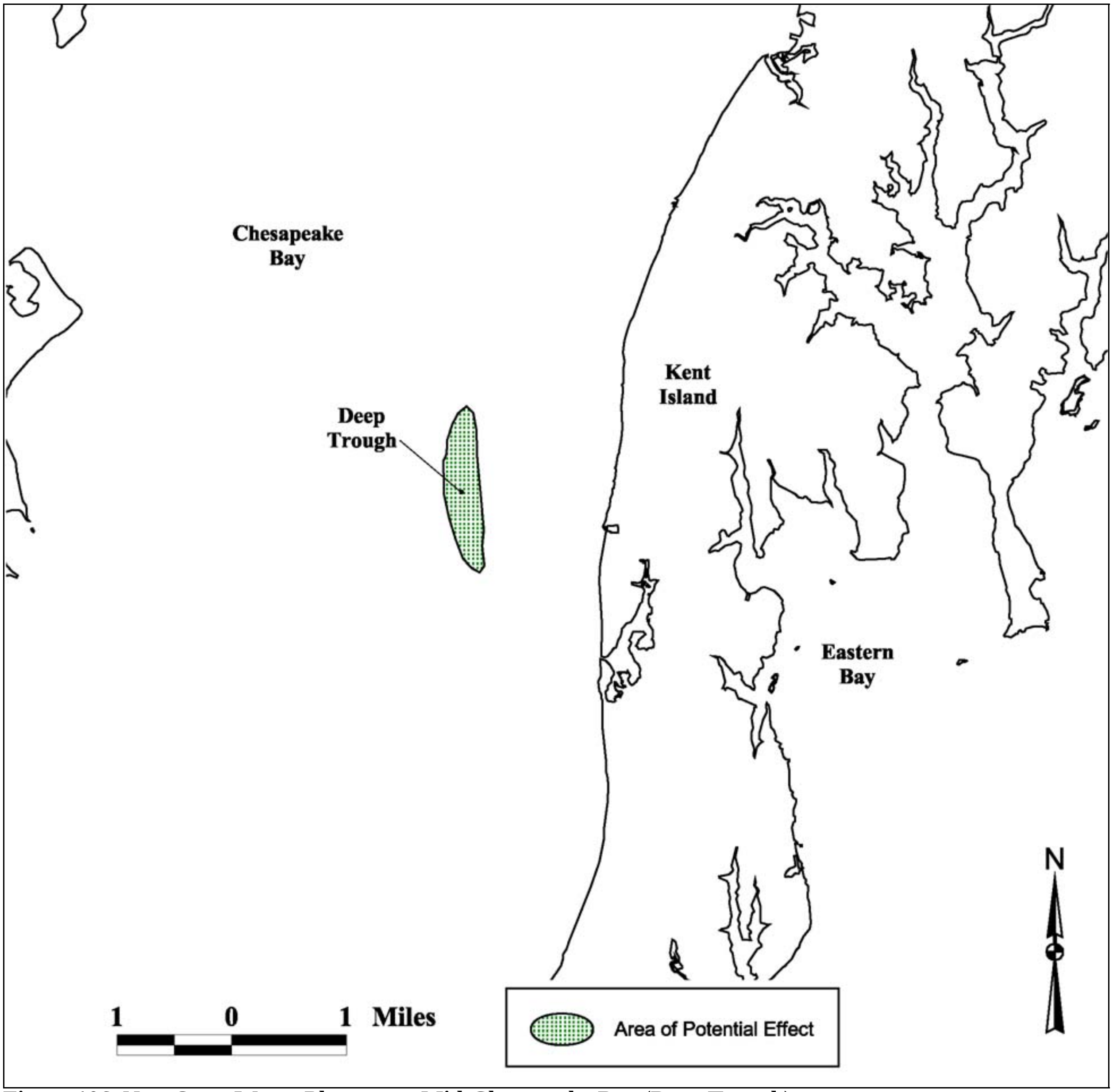

Figure 106. New Open Water Placement, Mid-Chesapeake Bay (Deep Trough),

POOLES ISLAND OPEN WATER SITE (EXISTING)

Project Area Environment

Pooles Island is located within the Upper Chesapeake Bay within Harford County, Maryland (Figure 107). The placement sites associated with Pooles Island are areas G-North, G-West, G-Central, G-South, and Site 92. With the exception of Site 92, the placement sites have reached capacity, or have minimal remaining capacity.

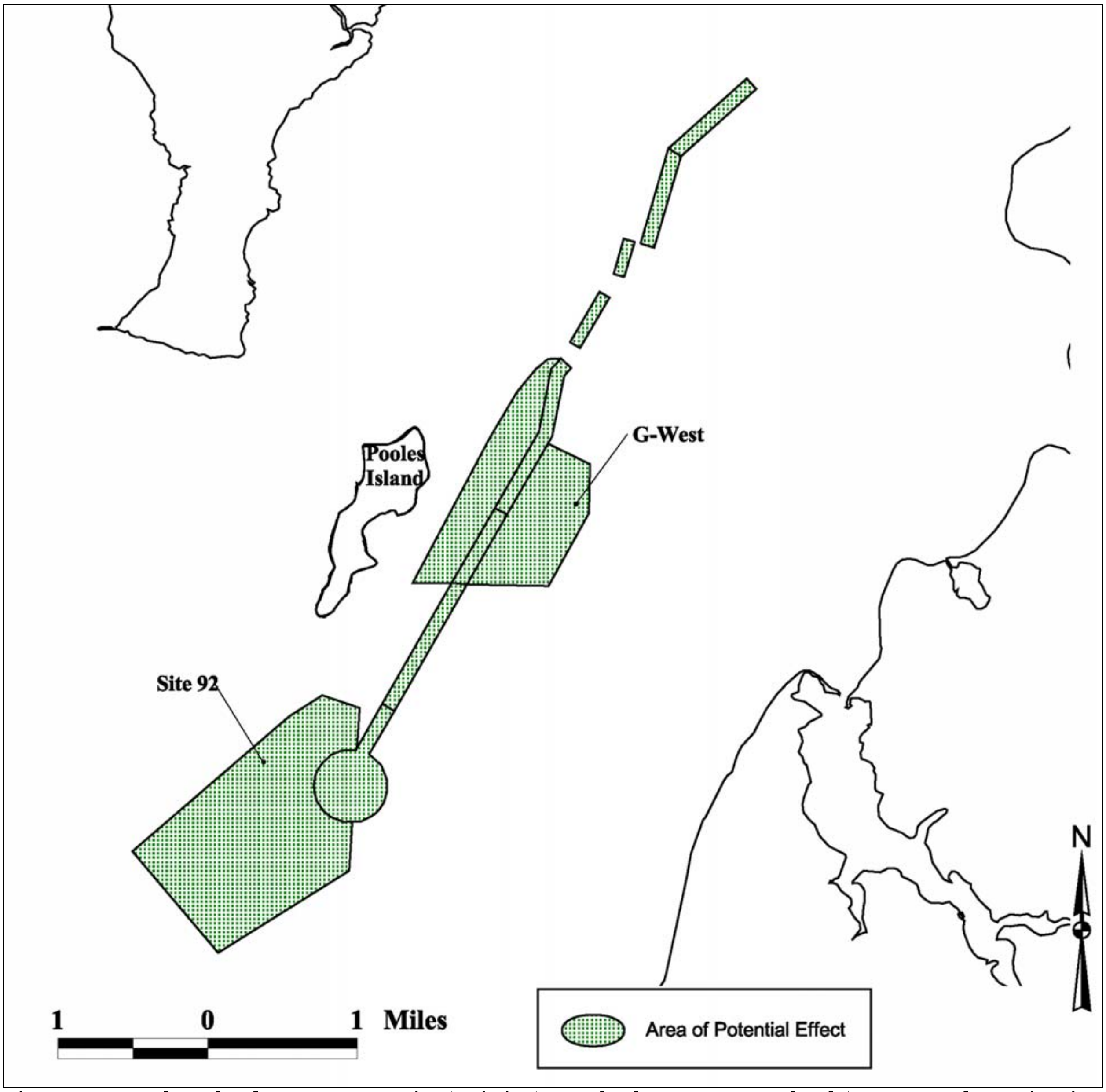

Figure 107. Pooles Island Open Water Site (Existing), Harford County, Maryland (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

Review of the State Site Files at the MHT identified two previously-recorded archaeological sites on Pooles Island (Table 55). These two sites (Figure 108) consist of a prehistoric shell midden (18HA77) and an Archaic-Woodland shell midden (18HA246).

In the interest of cultural resource preservation, this figure is not suitable for public viewing, and has been omitted from this report.

Figure 108. Known archaeological sites within or near the Pooles Island Open Water Site Expansion Area, Upper Chesapeake Bay, Harford County, Maryland (Gunpowder Neck 7.5-min. quadrangle, 1995).

Table 55. Known archaeological resources on Pooles Island, Harford County, Maryland.

Site Number	Site Name	Site Type	USGS 7.5' Quadrangle	County	Within APE?
18HA77	Pooles Island	Prehistoric shell midden	Gunpowder Neck	Harford	Y
18HA246	Pooles Island Midden #1	Archaic-Woodland shell midden	Gunpowder Neck	Harford	Y

As stated in Murphy:

> At least four documented shipwrecks are known to be located within the proposed 4B site. The oldest lighthouse in the State is on Pooles Island. SHPO has determined that the lighthouse is eligible for listing on the National Register of Historic Places. Any increase in the size or configuration of the island is subject to the National Historic Preservation Act and must be reviewed for impact by the SHPO. There are an additional 5 range towers that need to be investigated for their eligibility to the National Register. Several archaeological sites have been excavated on Pooles Island and prehistoric Native American artifacts were recovered. A solitary gravestone exists on Pooles Island with a date on 1855 (Murphy 2003:99).

Review of the NRHP list confirms that the Pooles Island Lighthouse was placed on the list on February 19, 1997. The Pooles Island Lighthouse was built by John Donahoo of Havre de Grace, Maryland. Funds were authorized by Congress in 1824 and work was completed on the lighthouse in 1825. The lighthouse is a 40-foot high conical, land-based masonry tower and remains the oldest standing lighthouse in the State of Maryland (Kaltenbacher 1997:12).

Hurry and Beards shipwreck inventory list (1987) identifies six vessels lost within Harford County, two of which are located at or near Pooles Island (Table 56**).**

Table 56. Documented vessel losses at Pooles Island, Harford County, Maryland.

Vessel Name	Type	Year Lost	Location
Unidentified	Schooner	January 1753	Pooles Island
Alice	Schooner	October 28, 1881	Pooles Island

(as presented in Thompson 2000:42).

In 1993 Ocean Surveys, Inc. (OSI), of Old Saybrook, Connecticut conducted a cultural resource investigation of Area “G-West”, located immediately east of Pooles Island. Results of the historical research identified 5 shipwrecks at or near Pooles Island (Ocean Surveys, Inc. 1993:8). The 5 vessels are presented in Table 57.

Table 57. Vessels lost within or near the existing Pooles Island Open Water Site, Harford County, Maryland.

Vessel Name	Type	Year Lost	Location	Cause	Source
Unidentified	Schooner	1753	Pooles Island	Stranded	Shomette 1982
Pennsylvania	Schooner	1875	Pooles Island	Foundered	Shomette 1982
Hughes Brothers	Gas Screw	1946	Pooles Island	Foundered	Shomette 1982
Weezie	Gas Screw	1972	Pooles Island	Stranded	Shomette 1982
Alice	Schooner	1881	Off Pooles Island	Foundered	Shomette 1982

(as presented in Ocean Surveys, Inc. 1993:8).

The remote-sensing survey of Area G-West identified 32 side scan sonar targets and 52 magnetic anomalies. OSI also reviewed the shipwreck and submerged obstructions data list at the Maryland Historical Trust by the listing "Pooles Island and Vicinity" which identified 11 reported obstructions in that region of the Bay (Ocean Surveys, Inc., 1993:7).

In 1995 a Phase I remote-sensing survey was conducted by R. Christopher Goodwin & Associates (Goodwin & Associates 1995a) within the Tolchester Beach Reach of the Tolchester Channel. Findings from the remote-sensing survey identified several anomalies during the investigation:

> Three magnetic anomalies were found in the Tolchester Beach Reach, but all were associated with modern debris. Within the proposed straightening area, two magnetic anomalies were identified in the upper part of the bend (proposed channel) and six were identified in the lower part of the proposed channel. All except one were attributed to modern debris or natural channel features (U.S. Army Corps of Engineers, Baltimore District 2001:4-37).

In 1996 a Phase I submerged cultural resources investigation was completed of the G-East Disposal Site and Disposal Site #92 (Cox and Hunter 1996). Performed for the U.S. Army Corps of Engineers, Philadelphia District the survey included background and documentary research, an underwater archaeological survey, and analysis of data. Results of the investigation identified no known prehistoric resources within the project area(s). However:

> …it should be noted that the level of study precluded a full evaluation of prehistoric archaeological potential. For further large-scale studies of the Upper Chesapeake Bay, it is suggested that consideration be given to limited core sampling as a means of reconstructing the paleoenvironment of formerly exposed terrain that has been inundated over the past 10 to 15 millennia. This would provide a more solid basis for assessing prehistoric archaeological potential (Cox and Hunter 1996:Management Summary).

Analysis of the remote-sensing survey data identified 21 anomalies within the two disposal sites. Of these 21 anomalies all but two were judged to derive from modern debris or single, isolated objects. Recommendations for Target #15:844, in the G-East Disposal site and Target #27:958 in Disposal Site #92 included additional Phase I-level survey (in the form of remote sensing, diving, visual inspection, probing) to identify the source of the anomalies (Cox and Hunter 1996:6-1).

Potential for Cultural Resources

The presence of prehistoric sites on Pooles Island and documented vessel losses in the area suggest the potential for additional sites in the general area. However, any additional cultural resources within the existing dredged material placement area have likely already been impacted from project activities. No additional work is recommended for dredged material placement within the existing placement area.

RAPPAHANNOCK SHOAL DEEP ALTERNATE OPEN WATER SITE (EXISTING)

Project Area Environment

The existing Rappahannock Shoal Deep Alternate Open Water Site (Figure 109) lies approximately 15 miles north of Wolf Trap light, 4.5 miles due east of Windmill Point (in Lancaster County), and 12 miles east of the Delmarva Peninsula (Underwater Archaeological Joint Ventures 1985:3).

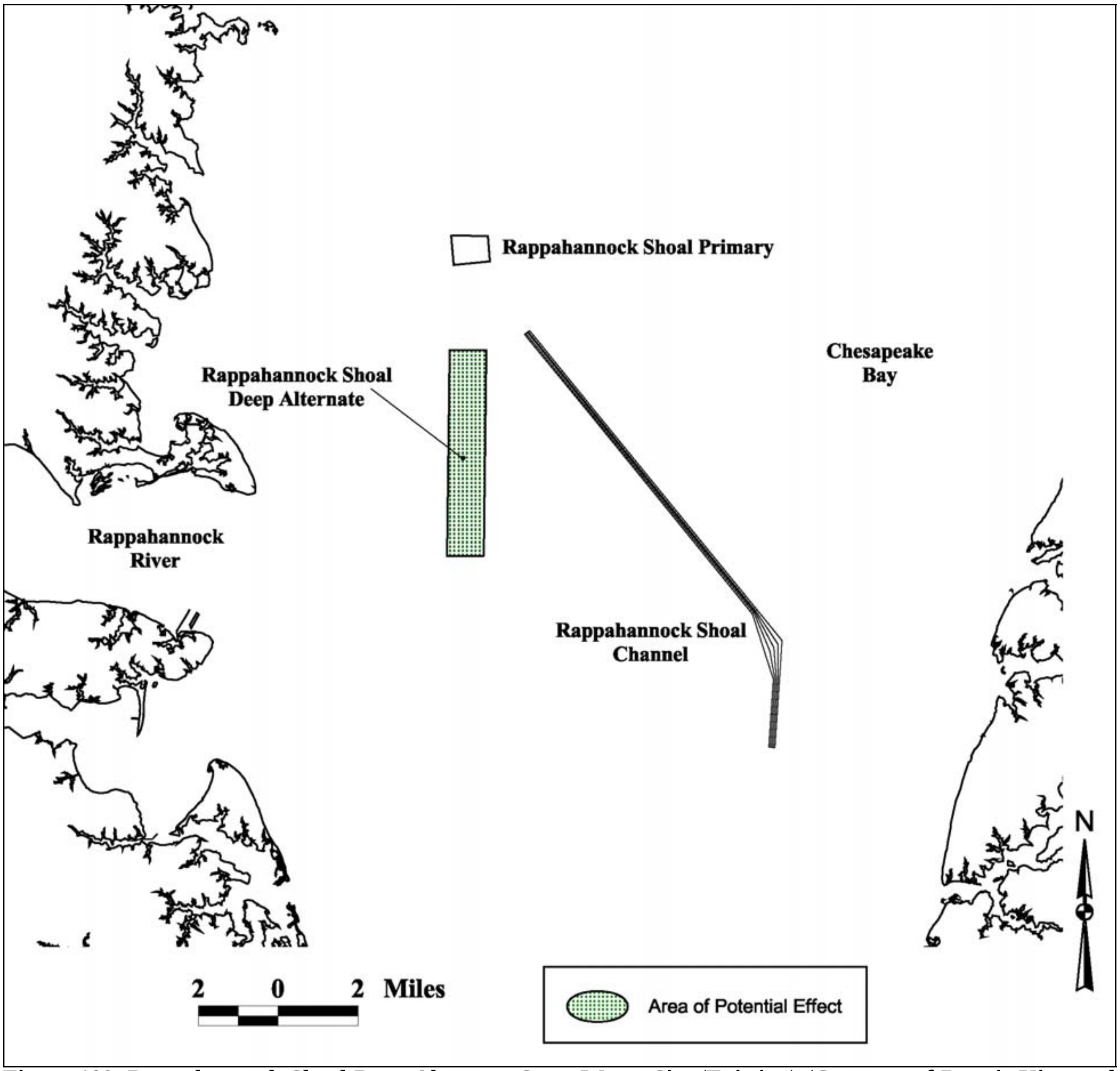

Figure 109. Rappahannock Shoal Deep Alternate Open Water Site (Existing) (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

Review of previous investigations have identified a number of historic vessel losses within the general area of Rappahannock Shoal (Table 58). No additional cultural resources have been identified within the APE.

Table 58. Vessels lost in the vicinity of Rappahannock Shoal.

Vessel Name	Type	Year Lost
Unidentified	Schooner	1745
Hawke	English Merchantman	1766
Tennessee	Schooner	1877
Ney	Schooner	1889
Frank Butler	Schooner	1906
Manaway	Schooner	1918
J.W. Chelton	Schooner	1923
James A. Lewis	Motor Vessel	1936
Fannie Insley	Schooner	1940
Lorraine	Motor Vessel	1950

(as presented in Koski-Karell 1979b:51).

Potential for Cultural Resources

In an effort to determine the potential for additional cultural resources within the Rappahannock Shoal Deep Alternate Open Water Site, a search of the AWOIS files was undertaken. Results of the database search identified 18 unknown objects, 13 obstructions, and four vessels within the general area of the Rappahannock Shoal Deep Alternate Open Water Site (Appendix A). Results of this record search indicates the potential for submerged cultural resources (in the form of shipwrecks) within the APE.

While the potential exists for additional cultural resources within the area, results of previous remote-sensing surveys and diver investigations suggest no significant properties remain in the Rappahannock Shoal Deep Alternate Open Water Site:

> Anomalies found within the Rappahannock Shoals Alternate and the Wolf Trap Alternate overboard disposal sites may be briefly summarized as follows. Of the 19 magnetic anomalies identified during the 1983 Phase I Reconnaissance, UAJV was able to reverify all but five through remote sensing (i.e. magnetometer) operations…The majority of the targets consisted of iron masses of various shapes and sizes – often pipes, slabs, or sheets – apparently discarded or inadvertantly lost from passing vessels. In only one case (Target 14) did the objects discovered appear to be part of a more integrated cultural resource. Owing to the depth of sediment overlying most of this target, however, UAJV does not believe that the proposed spoil dumping operation will negatively impact the site. Consequently, it is the opinion of UAJV that no further mitigative or investigative procedures need to be undertaken on Target #14 or any of the other anomalies prior to the initiation of the proposed spoil disposal activities (Underwater Archaeological Joint Ventures 1985:vi-vii).

The potential does exist for additional cultural resources within the area in the form of shipwrecks. However, if the area has already been surveyed no additional work is recommended in this APE.

WOLF TRAP ALTERNATE OPEN WATER PLACEMENT (EXISTING)

Project Area Environment

The existing Wolf Trap Alternate Open Water Placement Site (Figure 110) is located in the Lower Chesapeake Bay "approximately 13 miles northwest of Cape Charles (on Virginia's Eastern Shore), 5 miles due west of New Point Comfort Lighthouse, and 4.5 miles south of Wolf Trap Light" (Underwater Archaeological Joint Ventures 1985:3).

Figure 110. Wolf Trap Alternate Open Water Placement (Existing) (Courtesy of Dennis King and Associates and Weston Solutions, Inc.).

Known Cultural Resources

Review of State Site Files at the MHT identified no known cultural resources within the existing Wolf Trap Alternate Open Water Placement site. This includes prehistoric sites, historic sites, buildings, districts, and/or shipwrecks. Records, however, indicate a number of historic vessels have been lost in the general area of the Wolf Trap Deep Alternate Open Water Placement Site (Table 59**).**

Table 59. Vessels lost in the vicinity of Wolf Trap Alternate Open Water Placement Site.

Vessel Name	Type	Year Lost
Edward	Barge	1905
Tillie	Barge	1917
A.W. Embrey	Barge	1917
Cherubim	Schooner	1918
Sedonia Curley	Schooner	1919
Effie M. Laird	Schooner	1924
Bertie	Barge	1956

(as presented in Koski-Karell 1979b:50).

Potential for Cultural Resources

In an effort to determine the potential for additional cultural resources within the Wolf Trap Alternate Open Water Placement Site, a search of the AWOIS files was undertaken. Results of the database search identified six obstructions, and two unknown objects within the general area of the Wolf Trap Open Water Placement Site (Appendix A).

Results of previous remote-sensing surveys and diver investigations suggest no significant properties remain in the Wolf Trap Alternate Open Water Placement site:

> The results of the Phase II cultural resources reconnaissance investigation of anomalies found within the Rappahannock Shoals Alternate and the Wolf Trap Alternate overboard disposal sites may be briefly summarized as follows. Of the 19 magnetic anomalies identified during the 1983 Phase I Reconnaissance, UAJV was able to reverify all but five through remote sensing (i.e. magnetometer) operations…The majority of the targets consisted of iron masses of various shapes and sizes – often pipes, slabs, or sheets – apparently discarded or inadvertantly lost from passing vessels. In only one case (Target 14) did the objects discovered appear to be part of a more integrated cultural resource. Owing to the depth of sediment overlying most of this target, however, UAJV does not believe that the proposed spoil dumping operation will negatively impact the site. Consequently, it is the opinion of UAJV that no further mitigative or investigative procedures need to be undertaken on Target #14 or any of the other anomalies prior to the initiation of the proposed spoil disposal activities (Underwater Archaeological Joint Ventures 1985:vi-vii).

While no cultural resources have been found to date within the Wolf Trap Alternate Open Water Placement site, the potential exists for shipwrecks within the APE. However, since this APE has already been surveyed and unless the boundaries are expanded, no additional work is recommended within this site.

6. CONCLUSIONS

The purpose of this reconnaissance-level cultural resource survey has been to identify known cultural resources within existing and proposed dredged material placement sites located within and near the Chesapeake Bay, located in both the State of Maryland and the Commonwealth of Virginia. Cultural resources include buildings, archaeological sites, structures, objects, or districts. Based on the prehistory, history, and topography of each site a determination of the potential for additional cultural resources has also been proposed. The potential for additional cultural resources within these areas was based primarily upon documented cultural resources within each area, archival research, previous investigations, predictive modeling, landform, and a variety of other sources (i.e. informants, local histories, internet research).

The results of each proposed and/or existing DMMP APE, including the potential for additional cultural resources, have been summarized below. Those categories listed below that have the potential for additional cultural resources will need to be addressed prior to any site-specific project activities with the appropriate State Historic Preservation Officer (SHPO). After consultation with the SHPO and a determination of effect (upon the property) is decided, a consultation discussing avoidance, minimizing, or mitigating adverse effects on the property follows. Once a suitable agreement is reached between all participating parties, a Memorandum of Agreement (a legal document which states the compliance to Section 106 requirements has been met and agreed upon) is drafted in a written document. The proposed project may then proceed.

AGRICULTURAL PLACEMENT - MARYLAND

Review of State Site Files as well as Architectural/NRHP properties within the proposed Agricultural Placement APE identified 18 archaeological sites, one NRHP nominated site (DO201), and one historic district (Vienna). In addition, review of documented vessel losses within Dorchester County identified eight historic vessels lost within the Nanticoke River. The presence of these known cultural resources suggest there may be additional, undocumented cultural resources within the proposed APE.

AGRICULTURAL PLACEMENT – VIRGINIA

Review of State Site Files as well as Architectural/NRHP properties within the proposed Agricultural Placement APE, Virginia identified 62 archaeological sites, 115 Architectural/NRHP sites, and one historic district (Smithfield), and one archaeological district (Basses Choice). The majority of archaeological sites are located along the various waterways within the APE whereas the majority of Architectural/NRHP sites are located within the Smithfield Historic District (2,000 acres, 55 buildings). The presence of these known cultural resources suggest there may be undocumented, potentially significant cultural resources within the APE.

ARTIFICIAL ISLAND CREATION - LOWER BAY, VIRGINIA

A total of nine archaeological sites, the Tangier Island Historic District (VDHR File No. 01-175), and the Tangier Sound Light (VDHR File No. 1-79) are located within the APE. The Tangier Island Historic District has been deemed potentially eligible for the NRHP. Previous investigations (Richards and Cooke 2003) suggest a moderate to high potential for additional sites (including historic shipwrecks) within the APE.

ARTIFICIAL ISLAND CREATION - UPPER BAY, MARYLAND

A review of known cultural resources within the proposed open water site (immediately west of Tolchester Channel) identified no known cultural resources (i.e., archaeological site, Architectural /NRHP sites) within the area. However, previous investigations in the general area (Koski-Karell 1979a, Koski Karell 1979b, Ocean Surveys, Inc. 1993, Goodwin & Associates Inc. 1995a, Pelletier et al. 1999) suggest the potential for significant cultural resources within the APE. Considered an "open-water" site, cultural resources within the APE may consist of inundated prehistoric sites and/or historic shipwrecks.

BEACH NOURISHMENT – VIRGINIA

The representative areas include three beach areas located within the Lower Chesapeake Bay including Buckroe Beach, Willoughby Spit/Ocean View, and Virginia Beach, Virginia**.**

BUCKROE BEACH

A total of five documented prehistoric archaeological sites were identified north of the proposed nourishment area, just outside of the APE. Review of the Architectural and NHRP property lists identified seven properties (114-05, 114-61, 114-5136, 114-5137. 114-5134, 114-5135, and 114-5138) within the Buckroe Beach vicinity. These properties are all located within the APE. Numerous Architectural and NRHP properties are located within the City of Hampton, Virginia. Immediately south of Buckroe Beach is the Fort Monroe Military Reservation (located just south of the APE).

Review of historic districts identified six properties within Hampton City, Virginia. These properties are all located outside the APE and will not be affected by proposed project activities.

No archaeological sites have been documented within the APE. While there are seven architectural and NHRP properties within the APE, project activities will likely not affect these properties. None of the historic districts within Hampton are located within the APE. However, with this said, the potential exists for additional cultural resources within the APE (i.e., inundated prehistoric sites, shipwrecks).

WILLOUGHBY SPIT/OCEAN VIEW

The Willoughby Spit/Ocean View beach nourishment area is located along the north-facing shoreline within the City of Norfolk, Virginia. All State Site Files were reviewed for known cultural resources relative to the Willoughby Spit/Ocean View Beach Nourishment option, within the APE. Two archaeological sites were identified along the proposed beach nourishment area including a German U-Boat (44NR15) and a prehistoric shell midden (44NR19)

A number of Architectural and NRHP properties have also been identified within and near Willoughby Spit. Review of the Norfolk North 7.5-min. quadrangle map identified 18 properties. Review of cultural resources within the Little Creek 7.5-min. quadrangle identified no recorded archaeological sites and eight Architectural/NRHP sites. A total of 13 historic districts have been identified within the City of Norfolk. None of these are located within the proposed APE and will therefore not be affected by project activities.

Since there are known archaeological sites, Architectural/NRHP properties, and shipwrecks within the proposed APE the potential for additional cultural resources within the APE exists.

VIRGINIA BEACH

The Virginia Beach nourishment site is located immediately outside the Chesapeake Bay proper, facing the Atlantic Ocean within the City of Virginia Beach County, Virginia.

No archaeological sites have been documented within the APE. However, numerous Architectural and NRHP properties (buildings, structures) are located within the APE. Within the North Virginia Beach area a total of 24 properties have been identified. Of these, 15 are located within close proximity to the beach. A total of 138 Architectural and NRHP properties have been recorded within the Virginia Beach area. All are located within the APE.

A number of historic vessel losses have been documented within the general area of Virginia Beach. Review of Shipwrecks of the Virginia Coast (Pouliot and Pouliot 1986) indicates that a large number of vessels received assistance from the United States Life Saving Service (USLSS) in distress off the Virginia Coast. Records from the USLSS identified approximately 580 vessels that were wrecked, beached or in need of rescue assistance.

Review of historic vessel losses as well as previous cultural resource investigations in the general area suggests the potential for additional cultural resources within the APE. Historic research (Koski-Karell 1979b, Pouliot and Pouliot 1986) has documented shipwreck losses in the general area and previous investigations (Watts 1987, 2000, Tuttle 2001) have identified the potential for additional cultural resources. Numerous Architectural and NRHP properties are also located within the APE.

C&D CANAL SITES EXPANSION, MARYLAND

Located in northeast Maryland along the Elk River, the Chesapeake and Delaware (C&D) Canal connects the Chesapeake Bay and the Delaware River, Cecil County, Maryland. The site considered for expansion is Pearce Creek Confined Disposal Facility. Review of previous investigations and historic use of the C&D Canal suggests the potential for additional cultural resources within the APE. Although Epperson and Coneybeer (1994) suggest the Canal itself lacks integrity, the potential exists for isolated cultural resources in the form of archaeological sites as well as shipwrecks.

No Architectural or NRHP properties were identified during the archival research phase of the current investigation. Review of historic districts within Cecil County, Maryland identified seven historic districts within the county; however, none are located within the proposed APE. Raising the dikes at the Pearce Creek CDF will not likely impact any cultural resources.

CAPPING - ELIZABETH RIVER, VIRGINIA

The potential capping site placement, located within the Elizabeth River, Portsmouth County, Virginia would assume a 3-foot cap (2 feet of dredged material and 1 foot of sand) placed over approximately 20 acres of contaminated sediment.

A review of known cultural resources identified 13 documented archaeological sites within or near the proposed APE. Since this APE was not clearly defined all archaeological sites are considered within the APE. Review of all Architectural, NRHP properties identified 21 properties and districts within the City of Portsmouth, Virginia. An additional 13 historic districts were identified within the City of Norfolk, Virginia.

The presence of both prehistoric and historic sites within the general area of the Elizabeth River suggests the potential for additional cultural resources within the area. NRHP properties and districts within the City of Portsmouth and the City of Norfolk may raise viewshed issues although work in the Elizabeth River would remain consistent with port activities. Therefore, the potential for viewshed disturbances and other aesthetic impacts is likely to be minimal.

CAPPING - PATAPSCO RIVER, MARYLAND

Located within the City of Baltimore, Baltimore County, and Anne Arundel County, the potential capping site would assume a 3-foot cap (2 feet of dredged material and 2 foot of sand) placed over approximately 250 acres of existing harbor sediments that will not be dredged. More specifically, the location of the proposed capping includes an area near Sollers Point, Maryland.

Archival research at the MHT identified seven known archaeological sites near the APE. All archaeological are located outside of the APE and will not be affected by proposed activities. Additional research identified a number of NRHP properties/districts within the Baltimore area. No adverse effect to these NRHP properties is anticipated relative to proposed capping within the Patapsco River.

With this said, the proposed capping site would be considered a low-potential area for submerged cultural resources. While the area may be considered a low-probability area, the potential does exist for submerged cultural resources (in the form of inundated prehistoric sites and shipwrecks) within the area(s) not previously surveyed.

CONFINED AQUATIC DISPOSAL AREA - PATAPSCO RIVER, MARYLAND

Located within the City of Baltimore, Baltimore County, and Anne Arundel County, the potential Confined Aquatic Disposal (CAD) site would assume a 3-foot cap (2 feet of dredged material and 1 foot of sand) placed over harbor material placed in a sand mining pit. More specifically the location of the proposed CAD includes Sollers Point, Maryland.

The results of the archival research mirror those above for the proposed Capping within the Patapsco River, Maryland. The CAD APE is considered a low-probability area for submerged cultural resources. However, the potential does exist for additional submerged cultural resources within the area(s) that have not been previously surveyed

CONFINED DISPOSAL FACILITY – LOWER BAY, VIRGINIA

The Federally-owned Craney Island Dredged Material Area is a 2,500 acre, man-made dredged material placement area located in Portsmouth, Virginia. This alternative proposes to expand the western berm of Craney Island. Legislation in place since 1946 currently precludes the placement of dredged material from outside Norfolk Harbor and the general vicinity.

All pertinent State Site Files and records were reviewed at the VDHR relative to the proposed expansion of the Craney Island Dredged Material Area. Results identified numerous archaeological sites within the APE. Review of all Architectural, NRHP and Historic District properties identified numerous properties and districts within the City of Portsmouth, Virginia.

Review of previous investigations suggests a high probability for additional submerged cultural resources within the proposed APE. While review of previous investigations identified a remote-sensing survey already completed within the APE, a magnetometer was not used during the survey. Considered the "tool of choice" by underwater archaeologists, it is recommended that a magnetometer survey be completed within the area prior to expansion of the Confined Disposal Facility at Craney Island. No terrestrial archaeological sites are expected at Craney Island since it is a man-made dredged material placement area.

CONFINED DISPOSAL FACILITY - PATAPSCO RIVER, MARYLAND

The proposed nearshore Confined Disposal Facility (CDF) is located within the Patapsco River, in the City of Baltimore, Baltimore County, and Anne Arundel County. Results of the archival research identified a total of 39 sites within the area. However only seven known archaeological sites are considered to be within the APE. While these archaeological sites are located within the APE they would likely not be affected by proposed project activities.

Additional research identified a number of NRHP properties and Historic Districts within the Baltimore area. No adverse effects to these NRHP properties is anticipated relative to proposed confined disposal facility within the Patapsco River, Maryland. Due to known archaeological sites, NRHP properties, Historic Districts, and shipwrecks within the APE the potential exists for additional cultural resources within the proposed APE.

COX CREEK EXPANSION, MARYLAND

The Cox Creek Expansion Site is located approximately 1 mile south of the Francis Scott Key Bridge, along the west bank of the Patapsco River, in Anne Arundel County, Maryland. A review of all known cultural resources in the vicinity of the Cox Creek Expansion Area was undertaken at the MHT. Results of the research identified a total of 39 archaeological sites within the area. However, only seven of these are within close proximity to the Cox Creek Expansion Site. The archaeological resources include prehistoric sites, a shell midden, and a variety of historic sites. Of the seven archaeological sites only three are located within close proximity to the proposed expansion site (18AN6, 18AN508, and 18AN509).

Only two NRHP properties are located within proximity to the Proposed Cox Creek Expansion Site. No historic districts have been identified in the area. Proposed project activities will not have any impact on these known properties.

Although there are known archaeological sites and NRHP properties within the proposed APE, the raising of dikes will likely not impact any cultural resources. The potential for viewshed disturbances (by raising the dike height 10 feet) and other aesthetic impacts remain a possibility.

HART-MILLER ISLAND EXPANSION, MARYLAND

Hart-Miller Island is located in the Upper Chesapeake Bay, just north of the mouth of the Patapsco River, Baltimore County, Maryland. Review of documented cultural resources at MHT identified five archaeological sites on Hart-Miller Island. The sites include prehistoric sites, shell midden, and a lithic scatter. A number of additional cultural resources in the form of historic properties and shipwrecks in vicinity of Hart-Miller Island Area were also identified.

The potential exists for additional cultural resources to be located within the Hart-Miller Island APE, most likely in the form of inundated prehistoric sites and shipwrecks. While the vertical expansion of dikes at this site will not affect additional cultural resources, the lateral expansion has potential to impact previously unrecorded archaeological sites.

LARGE ISLAND RESTORATION - LOWER BAY, VIRGINIA

The representative area includes New Point Comfort Island, located in Mathews County, Virginia. Proposed action would use dredged material to restore portions of New Point Comfort Island which have since eroded away.

Review of the State Site files at the VDHR identified 8 archaeological sites in the vicinity of New Point Comfort Island. All of these sites are located in close proximity to New Point Comfort Island. Additional cultural resources (i.e. buildings, structures, NRHP properties, etc.) within the proposed Large Island Restoration APE include the New Point Comfort Island Lighthouse. The New Point Comfort Lighthouse, completed in 1805, was put to work in 1806. Only one Historic District is located within Mathews County, Virginia. This is the Mathews County Courthouse Square, located in Mathews, Virginia. This district is located outside of the APE and will not be affected by proposed project activities.

The potential does exist for additional cultural resources to be located within the proposed APE. Prehistoric resources may exist in the APE due to the similarities in landform to those areas immediately north of the APE (which contain known archaeological sites).

Review of the New Point Comfort Lighthouse NRHP nomination form infers that the area posed a threat to mariners until the lighthouse was built in the early nineteenth century. This may suggest the potential for shipwrecks within the area. Review of the AWOIS files within the area identified five unknowns, four obstructions, and four vessels within the general area. The presence of unknown objects and obstructions may suggest the potential for significant submerged cultural resources within the proposed APE.

LARGE ISLAND RESTORATION - MID BAY, MARYLAND

The representative area is located within Dorchester County, Maryland. Located along the east shoreline of the Delmarva Peninsula the APE includes a large section of the eastern shoreline of Chesapeake Bay.

A State Site File check (conducted at MHT) of all cultural resources relative to the proposed APE identified numerous cultural resources within the APE; however, only those on or near the shoreline would likely be affected by proposed project activities.

A number of NRHP properties and Historic Districts have also been identified within Dorchester County, Maryland. A total of 25 properties and Districts are currently listed within the County. Of these 10 are located within the APE. While these properties are within the APE, it is likely that proposed project activities will have no impact on this resource.

The potential exists for additional cultural resources to exist within the proposed APE. Extensive shoreline erosion and the historic use of the region suggest additional sites may include shoreline sites, inundated prehistoric sites, and shipwrecks.

QUARRY PLACEMENT - CECIL COUNTY, MARYLAND

The representative area includes the Stancill Quarry located adjacent to Furnace Bay, within Cecil County, near Perryville, Maryland. Located near Furnace Bay, the Stancill Quarry is a 130-acre sand and gravel quarry located on Principo Creek, a tributary of Furnace Bay.

A review of the State Site Files at MHT identified numerous cultural resource sites near the proposed APE. The closest site to the APE is Principo Furnace, an NRHP property. Principo Furnace, established in 1715, was the first iron furnace in Maryland and was the largest producer of pig and bar iron in the United States during the eighteenth century.

Numerous known archaeological sites line Furnace Bay, Mill Creek, and Baker Cove. These sites include an Archaic base camp, a Late Archaic-Woodland base camp, an early 20th century munitions plant, Prehistoric base camp and Prehistoric lithic scatter. Since the APE was designated as Furnace Bay, only those sites within the bay proper are considered to be within the proposed APE. Other known cultural resources in the general area include the Havre de Grace Lighthouse, the Perry Point Mansion, and Rodgers Tavern. These are located outside of Furnace Bay and will not be impacted by proposed project activities.

Archival research also identified seven historic districts within Cecil County, Maryland. None of these districts are located within or near Furnace Bay and will therefore not be impacted by proposed project activities.

While the potential for additional cultural resources in the area does exist it is unlikely that proposed project activities would impact any potentially significant cultural resources. Since the proposed placement of dredged material entails filling an existing sand and gravel pit, impacts to any cultural resources within the APE have likely already occurred.

MINE PLACEMENT – WESTERN MARYLAND

The proposed mine placement site within Western Maryland has not been clearly defined. However, review of the site found the site to be suitable as a placement alternative. No known cultural resources, including archaeological sites, Architectural or NRHP properties have been identified at this time.

The potential for additional cultural resources within the APE remains unknown at this time. It anticipated that project activities will not impact any potentially significant cultural resources under this alternative. This mine placement alternative involves an existing site (i.e., mineshaft). Therefore, placement of dredged material within an existing mine shaft will likely have no effect on additional cultural resources within the APE. Unless the mine itself is considered a potentially significant cultural resource no impacts are anticipated.

NORFOLK OCEAN OPEN WATER PLACEMENT

This existing Norfolk Open Water Placement Site is located approximately 17 nautical miles (19.6 statute miles) east of the mouth of the Chesapeake Bay. The Norfolk Ocean Open Water Placement Site is circular in shape with a radius of 4 nautical miles.

No known cultural resources exist within the Norfolk Ocean Open Water Placement Site. Archival research identified no known cultural resource surveys within the Norfolk Ocean Open Water Placement Site.

The potential exists for submerged cultural resources (in the form of shipwrecks) within the Norfolk Ocean Open Water Placement Site. Depending on the actual impact and nature of the dredged material (e.g., silts, muds and clays versus concrete rubble and rock), additional sediment coverage on a shipwreck site should provide a certain degree of protection. The sediment overburden acts as a barrier to reduce environmental and cultural factors acting on the vessels' remains. Buried environments play "a fundamental role in determining what evidence survives, in what form, and in what position (Oxley 1990:340-341). When a ship sinks, "there is an initial period of rapid decay which continues until sand, silt, or marine life covers the wreck (Brown, Bump and Muncher 1988:143). Decay may continue for several years, depending on the extent of exposure, but natural protection eventually slows the rate of decomposition. Electrochemical and biological activities also tend to subside. Shipwrecks obviously have a better chance of structural survival the faster they settle into bottom sediments. The ship itself can create a sediment-filled depression, protecting the vessel's lower elements, i.e., keel, keelson, floors, ballast, and cargo. Sediment deposition shields the ship's elements from sand and water erosion. Wood below the mudline is also protected from the devastating effects of marine borers and crustaceans (Florian 1987:15, 65). Indeed, on most wrecks, buried elements are better preserved, maintaining their original measurements, while exposed components are badly degraded with no original surfaces.

However, while burial of historic vessels as a whole protect them from the eroding effects of current, marine life, and sport divers, it is unknown what the actual effects of burial will be. Because this may legally bind the agency to determining what the effects are from burial, avoidance is the obvious recommendation, and one that applies to all vessels. However, if avoidance is not possible, then mitigation of the adverse affects through further archaeological investigations is warranted.

If avoidance or burial by dredged material is not implemented, then further archaeological work in the form of a Phase II investigation is recommended. Based on an assessment of NRHP eligibility, the archaeological investigation should include an identification of vessel type and temporal period, as well as a determination of the site's spatial extent and integrity.

POOLES ISLAND OPEN WATER SITE EXPANSION, MARYLAND

Designated as a potential expansion site, Pooles Island Open Water Site is located within the Upper Chesapeake Bay in Harford County, Maryland. Expansion of the site may increase by 350 acres. Review of the State Site Files at the MHT identified two previously recorded archaeological sites on Pooles Island. These two sites consist of a prehistoric shell midden (18HA77) and an Archaic-Woodland shell midden (18HA246). Review of the NRHP properties confirms that the Pooles Island Lighthouse (HA-1846) was determined eligible on February 19, 1997. Hurry and Beards shipwreck inventory list (1987) identifies six vessels lost within Harford County, two of which are documented as lost at Pooles Island.

Although the Pooles Island Open Water Site already exists, expansion of the area may impact additional potentially significant submerged cultural resources. The presence of prehistoric sites on Pooles Island and documented vessel losses in the area suggest the potential for additional sites in the area.

POPLAR ISLAND EXPANSION, MARYLAND

Located in the Upper Chesapeake Bay, Poplar Island is near the confluence of Eastern Bay and Chesapeake Bay, in Talbot County, Maryland. This proposed modification would expand the newly created Poplar Island Environmental Restoration Project (PIERP) by raising the existing upland dikes to a height of +25’ MLLW, and enlarging the island by 600 acres, allowing for additional capacity.

A total of 10 archaeological sites are on file at MHT. Those sites located on the remnants of Poplar Island (i.e., North Point, Jefferson Island) are considered to be within the APE whereas outlying areas (i.e., Coaches Island) are not. A total of 10 sites are documented within the area; 8 of which are located within the APE. Results of archival research identified numerous NRHP properties and Historic Districts located within Talbot County, Maryland. However, none of these are located within or near the proposed APE and are therefore not pertinent to this reconnaissance-level survey.

A number of archaeological sites have been documented on and near Poplar Island, therefore, the potential exists for additional sites within the APE. In addition, a number of documented vessel losses have been reported in the Poplar Island area. Review of Hurry and Beard's shipwreck inventory identified five vessels reportedly lost near Poplar Island.

RAPPAHANNOCK SHOAL DEEP ALTERNTE OPEN WATER SITE EXPANSION, MARYLAND

The existing Rappahannock Shoal Deep Alternate Open Water Site lies approximately 15 miles north of Wolf Trap light, 4 1/2 miles due east of Windmill Point (in Lancaster County), and 12 miles east of the Delmarva Peninsula. Review of the State Site Files and previous investigations have identified no potentially significant submerged cultural resources within the existing Rappahannock Shoal Deep Alternate Open Water Site.

However, historic records indicate that 10 vessels have purportedly been lost at or near Rappahannock Shoal. With this said, if project activities seek to expand the boundaries of the existing site, additional remote-sensing surveys are recommended.

SHORELINE RESTORATION - LOWER BAY, VIRGINIA

The representative area is located along the eastern shoreline of the Chesapeake Bay along the lower Delmarva Peninsula, Northampton County, Virginia. The potential APE includes restoring a peninsula using dredged material approximately 1,500 feet by 3,200 feet in size.

Review of State Site Files at MHT has identified numerous archaeological sites within or near the proposed APE. Archival research has also identified 20 NRHP Properties and Historic Districts within Northampton County, Virginia. Of these, 8 are located within the APE. While these are located within the APE they will not likely be affected by proposed project activities.

The lower Delmarva Peninsula has been subjected to continual coastal submergence, a critical environmental characteristic affecting the past occupation of the area as well as the survival of cultural resources. The potential for additional cultural resources exists within the proposed shoreline restoration APE. Extensive shoreline erosion and the historic use of the region suggest additional sites may include shoreline sites, inundated prehistoric/historic sites, and shipwrecks.

SHORELINE RESTORATION - MID BAY, MARYLAND

The representative area is located within Northwest Dorchester County, Maryland and involves restoring a peninsula using dredged material approximately 1,500 feet by 5,100 feet in size. Review of the State Site Files identified numerous known archaeological sites within the proposed APE. It should be noted that numerous additional archaeological sites are located inshore of the proposed APE.

Review of shipwreck losses in the area identified numerous vessels reportedly lost within Dorchester County. Previous investigations (Hurry and Beard 1987) have identified 35 vessels lost within Dorchester County.

Shoreline erosion and the extensive historic use of the region suggest additional sites may include shoreline sites, inundated prehistoric sites, and shipwrecks. With this said, the potential for additional cultural resources within this proposed APE remains high.

SHORELINE RESTORATION - UPPER BAY, MARYLAND

The proposed APE is located west of Rock Hall in Kent County, Maryland. Proposed project activities would restore a peninsula using 4 feet of dredged material to create low marsh and high marsh habitat. Review of the State Site Files identified four archaeological sites within close proximity to Swan Point. All four sites are prehistoric shell middens.

Review of the Maryland Inventory of Historic Properties identified numerous historic properties and one NRHP property in the general area. None are located within the APE. However, since there are known archaeological sites within the proposed APE, the potential exists for additional cultural resources within the APE. Extensive shoreline erosion and the historic use of the region suggest additional sites may include shoreline sites, inundated prehistoric/historic sites, and shipwrecks.

SMALL ISLAND RESTORATION - MID BAY, MARYLAND

The representative area, located in Eastern Bay (south of Kent Narrows), includes Parsons Island, located within Queen Annes County, Maryland. Parsons Island is actively eroding at a rate of 2 to 13 feet per year along select points of the island.

This reconnaissance-level survey identified 51 archaeological sites within the proposed APE. Although there are numerous sites in the APE, none have been documented on Parsons Island itself.

The potential for additional cultural resources on or around Parsons Island itself remains minimal. Review of Hurry and Beard's shipwreck inventory (1987) for Queen Annes County identified 21 historic vessels lost in the area. None are reported lost at Parsons Island however two (the *Vineyard* and the *H.P. Barnes*) are listed as lost in Eastern Bay.

While the potential for additional cultural resources at Parsons Island remains minimal, the large number of sites within the APE suggests otherwise. The large size of the proposed APE and presence of known sites suggests the high potential for additional cultural resources within the area.

WETLANDS RESTORATION - DORCHESTER COUNTY, MARYLAND

The representative area is located within the Blackwater National Wildlife Refuge (Blackwater NWR), Dorchester County, Maryland. This proposed alternative involves the placing of 2 feet of dredged material over an existing wetland area. Within the Blackwater NWR some wetlands are being lost to subsidence as well as sea level rise.

A review of the State Site Files identified twelve documented archaeological sites, all are located within the proposed APE; whereas numerous NRHP and Architectural properties are located within Dorchester County, Maryland, none are located within the proposed APE.

Although there are approximately 40 reported historic shipwrecks within Dorchester County, none are reported within the proposed APE, except for 18DO187 (the Blackwater Canoe). Due to known archaeological sites within the area the potential exists for additional cultural resources within the APE.

Since this proposed APE includes the federally-owned Blackwater NWR coordination with the Refuge Manager and National Fish and Wildlife Service Regional Archaeologist is necessary prior to any proposed project activities. This also includes any additional cultural resources survey. Any proposed work within federally-owned property (i.e., Blackwater NWR) or Indian lands requires a Federal Permit:

> The Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-470mm) requires a permit for any excavation or removal of archeological resources located on federally-owned property or Indian lands. The Act also includes both civil and criminal penalties for any violations of permit requirements, as well as for unauthorized removal, damage, or vandalism of archeological resources located on public lands.
>
> The land manager for the federal agency which owns or manages the public land to be investigated is responsible for issuing permits, In order to qualify for a permit, the proposed investigations must comply with the following criteria:
>
> - The research must be conducted by a qualified professional.
> - The investigation must advance archeological knowledge in the public interest.
> - The resources removed will remain property of the United States. The recovered resources plus any associated records and data must be delivered promptly to a qualified repository for curation.
> - The research must not be inconsistent with any land management plan, policy, objectives, or requirements applicable to the property under consideration.
>
> Permit procedures may vary depending on the policies of the particular federal agency which owns or controls the property slated for investigation. Some agencies do not require a permit for investigations conducted to fulfill the agencies own responsibilities under Section 106 for a proposed undertaking. Project sponsors should contact the land manager of the appropriate federal agency to determine if a permit is required and initiate the application process, if necessary (Shaffer and Cole 1994:62).

Review of Millis et al. (1998) prior to any specific project activities may help determine the potential for additional cultural resources within the APE. Millis et al. developed a predictive model to identify areas of high and moderate potential for archaeological remains within the Blackwater NWR. Results of the predictive model determined that many of the shoreline, bay islands, peninsulas, and river mouths are considered high-probability areas for additional cultural resources.

DAM NECK OCEAN OPEN WATER PLACEMENT

The Dam Neck Ocean Open Water Placement Site is located in the Atlantic Ocean approximately 3.6 miles east of Virginia Beach, Virginia. In use since 1967, this existing placement site has accepted dredged material from the Thimble Shoal and Cape Henry Channels (as well as other locations on a limited basis).

Archival research has identified no known cultural resources within the Dam Neck Disposal Area. However, previous investigations have identified a number of vessels lost in the vicinity of the Dam Neck Disposal Area. Nine vessels have been purportedly lost within the general vicinity. Since several vessels have been reported lost in the area the potential does exist for additional cultural resources in the area. However, previous discussions between the U.S. Army Corps of Engineers, Norfolk District and the Virginia Historic Landmarks Commission's (VHLC) Research Center for Archaeology indicates that the disposal of dredged material would not likely adversely disturb or otherwise impact marine archaeological resources within the Dam Neck Disposal Area:

> The nearest known wreck is located about 1/4 n.m. east of the proposed eastern boundary and has been tentatively identified as a 500-ton vessel called *Kingston Celonite* which sank in June 1942. Another obstruction has been located about 3/4 n.m. north-northwest of the proposed northwest corner of the site and is listed as a wreck, name unknown (U.S. Army Corps of Engineers, Norfolk District 1985:I-69).

Since this area has already been determined absent of marine archaeological resources no additional work is recommended for this disposal site. However, if the boundaries of the existing site are expanded, additional cultural resource surveys would be sanctioned.

HART-MILLER ISLAND, MARYLAND (EXISTING)

Located within Baltimore County, Hart-Miller Island is comprised of two distinct islands located approximately 3,400 feet offshore between the Black and Middle Rivers, Maryland. Review of documented cultural resources within the APE identified five sites on Hart-Miller Island. The sites include prehistoric sites, three shell midden, and a lithic scatter.

In consideration of the existing Hart-Miller Island Disposal Site no additional impacts to the cultural resource base are anticipated. As stated by Rose (1998):

> These areas have already been disturbed by construction of the HMI facility, and the south cell placement area is now covered by about 5.5 meters (18 feet) of dredged material…The proposed project will have no effect on any historic properties listed on the NRHP or MRHP, and the proposed construction areas requires no further cultural resource action (Rose 1998:8-9).

Impacts to any cultural resources within the existing Disposal Site have already occurred and therefore no additional cultural resource action is recommended.

NEW OPEN WATER PLACEMENT - MID BAY (DEEP TROUGH), MARYLAND

This open water dredged material placement area is located in the mid-bay area of Chesapeake Bay, Queen Annes County, Maryland. No known cultural resources have been documented within the Deep Trough APE. Current research has identified no previous investigations (pertinent to submerged cultural resources) within the APE.

Since no previous investigations have been identified within the Deep Trough Open Water Placement Site at this time, the potential for significant cultural resources within the APE remains possible.

POOLES ISLAND OPEN WATER SITE (EXISTING), MARYLAND

Pooles Island is located within the Upper Chesapeake Bay within Harford County, Maryland. Review of the State Site Files at the MHT identified two previously recorded archaeological sites on Pooles Island. These two sites consist of a prehistoric shell midden (18HA77) and an Archaic-Woodland shell midden (18HA246). Review of the NRHP list confirms that the Pooles Island Lighthouse was placed on the list on February 19, 1997. Funds were authorized by Congress in 1824 and work was completed on the lighthouse in 1825.

The presence of prehistoric sites on Pooles Island and documented vessel losses in the area argues for the potential for additional sites in the area. However, any additional cultural resources within the existing dredged material placement area have likely already been impacted from project activities. No additional work is recommended for dredge material placement within the existing placement area.

RAPPAHANNOCK SHOAL DEEP ALTERNATE OPEN WATER SITE (EXISTING), MARYLAND

The existing Rappahannock Shoal Deep Alternate Open Water Site lies approximately 15 miles north of Wolf Trap light, 4 1/2 miles due east of Windmill Point (in Lancaster County), and 12 miles east of the Delmarva Peninsula.

Although the potential exists for significant cultural resources within the area, results of previous remote-sensing surveys and diver investigations within the area suggests no significant properties remain in the existing Rappahannock Shoal Deep Alternate Open Water Site (Underwater Archaeological Joint Ventures 1985:vi-vii). Therefore, no additional cultural resources action is recommended for the existing Rappahannock Shoal Deep Alternate Open Water Site.

WOLF TRAP ALTERNATE OPEN WATER PLACEMENT (EXISTING), MARYLAND

The existing Wolf Trap Alternate Open Water Placement Site is located in the Lower Chesapeake Bay "approximately 13 miles northwest of Cape Charles (on Virginia's Eastern Shore), five miles due west of New Point Comfort Lighthouse, and four and a half miles south of Wolf Trap Light" (Underwater Archaeological Joint Ventures 1985:3).

Archival research (Underwater Archaeological Joint Ventures 1985) identified no known cultural resources within the existing Wolf Trap Alternate Open Water Placement site. This includes prehistoric sites, historic sites, buildings, districts, and/or shipwrecks. Records, however, indicate a number of historic vessels have been lost in the general area of the Wolf Trap Alternate Open Water Placement Site (Koski-Karell 1979). With this said, if the existing Wolf Trap Alternate Open Water Placement Site has already been adequately surveyed no additional actions are recommended within this site.

It is advised that any of the potential and/or existing APE sites that contain known cultural resources (Table 60) be subject to a minimum of Phase I testing to determine the presence or absence of potentially significant cultural resources which may be impacted by proposed project activities. Following the collection and analysis of data acquired during any additional Phase I testing, recommendations can then be made regarding any potentially significant cultural resources. Recommendations include avoidance, additional testing of potentially significant sites in the form of Phase II testing (if avoidance is not an option), and Phase III data recovery if the site is determined to be eligible for the NRHP (and additional investigations are warranted). If any of the aforementioned placement options/existing sites have been determined to have the potential for additional cultural resources, the first step with regards to compliance scenarios involves coordination with the State Historic Preservation Officer (SHPO).

Table 60. Known and potential cultural resources within each of the proposed and existing DMMP areas.

Proposed and existing DMMP Sites	Known Cultural Resources within APE?	Potential for additional Cultural Resources within APE?
Agricultural Placement - Maryland	Yes	Yes
Agricultural Placement - Virginia	Yes	Yes
Artificial Island Creation - Lower Bay, Virginia	Yes	Yes
Artificial Island Creation - Upper Bay, Maryland	No	Yes
Beach Nourishment - Virginia	Yes	Yes
C&D Canal Sites Expansion, Maryland	Yes	Yes
Capping - Elizabeth River, Virginia	Yes	Yes
Capping - Patapsco River, Maryland	No	No
Confined Aquatic Disposal Area - Patapsco River, Maryland	No	No
Confined Disposal Facility - Lower Bay, Virginia	Yes	Yes
Confined Disposal Facility - Patapsco River, Maryland	No	Yes
Cox Creek Expansion, Maryland	Yes	Yes
Hart-Miller Island Expansion, Maryland	Yes	Yes
Large Island Restoration - Lower Bay, Virginia	Yes	Yes
Large Island Restoration - Mid Bay, Virginia	Yes	Yes

Table 60, continued

Proposed and existing DMMP Sites	Known Cultural Resources within APE?	Potential for additional Cultural Resources within APE?
Quarry Placement - Cecil County, Maryland	Yes	No
Mine Placement - Western Maryland	No	No
Norfolk Ocean Open Water Placement	No	Yes
Pooles Island Open Water Site Expansion, Maryland	Yes	Yes
Poplar Island Expansion, Maryland	Yes	Yes
Rappahannock Shoal Deep Alternate Open Water Site Expansion, Virginia	No	Yes
Shoreline Restoration - Mid Bay, Maryland	Yes	Yes
Shoreline Restoration - Upper Bay, Maryland	Yes	Yes
Shoreline Restoration - Lower Bay, Virginia	Yes	Yes
Small Island Restoration - Mid Bay, Maryland	Yes	Yes
Wetlands Restoration - Dorchester County, Maryland	Yes	Yes
Dam Neck Ocean Open Water Placement (existing)	No	No
Hart-Miller Island, Maryland (existing)	No	No
New Open Water Placement - Mid Bay (Deep Trough), Maryland (existing)	No	Yes
Pooles Island Open Water Site, Maryland (existing)	No	No
Rappahannock Shoal Deep Alternate Open Water Site, Maryland (existing)	No	No
Wolf Trap Alternate Open Water Placement, Maryland (existing)	No	No

Coordination with the State Historic Preservation Officer (SHPO) is one of the primary steps in addressing cultural resources within any proposed APE. This coordination may also include the Advisory Council on Historic Preservation (Council) if necessary. Coordination with the SHPO should take place as soon as site-specific feasibility studies are outlined:

> To provide adequate time to address all historic preservation concerns and to prevent avoidable delays, agency officials, or their officially designated project sponsor, should consult the SHPO as early in the project planning process as possible – when alternate project locations, configurations, and methods are still available; or when program discussions begin; etc.
>
> An agency official should initiate coordination with the Trust with the submission of a written request for assistance in identifying historic properties. To enable the Trust staff to respond in a timely and effective manner, the request should include: 1) a brief description of the proposed undertaking and the nature of federal or state agency involvement; 2) a clear delineation of the project's Area of Potential Effect marked on a section of a U.S. Geological Survey 7.5' quadrangle, or other 1" = 2,000' scale map (see below for clear understanding of the APE); 3) a summary of the agency's review of existing information on known and potential architectural and historic properties, including the Maryland Inventory of Historic Properties and surveys by Certified Local Governments that may be affected by the undertaking; 4) a detailed description of past land use on the subject property; and 5) labeled photographs of known and potential architectural properties (Maryland Historical Trust 2000:48-49)

Specific to this DMMP the two SHPOs involved include the State of Maryland SHPO and the Commonwealth of Virginia SHPO. The addresses for each are presented below:

Virginia SHPO:
Department of Historic Resources
Commonwealth of Virginia
221 Governor Street
Richmond, VA 23219
(804) 786-3143

Maryland SHPO:
Director of Historical and Cultural Programs
Department of Housing and Community Development
100 Community Place, Third Floor
Crownsville, MD 21032-2023
(410) 514-7600

In 1966, Congress sought to make the Federal Government an active participant in the Nation's preservation efforts by passing the (NHPA). Section 106 of the National Historic Preservation Act (NHPA) requires that Federal Agencies take into account the effects of their activities and programs on historic properties.
The Section 106 process involves the following participants:

- All Federal Agencies
- The State Historic Preservation Officer (SHPO)
- The Advisory Council on Historic Preservation (ACHP)
- Interested persons
  - local governments
  - land owners
  - the public
- Department of the Interior
  - The National Park Service (NPS)

The Section 106 process consists of 4 steps that lead to the implementation of a Memorandum of Agreement (MOA):

- Identify and evaluate Historic properties for National Register of Historic Places (NRHP) significance

- Assess Project effects
  - The responsible agency (i.e., Corps) must determine whether or not there will be an effect to historic properties. This includes "No Effect," "No Adverse Effect" and "Adverse Effect."

- Consultation
  - Parties whose interests are effected by the undertaking work together to reach a solution that accommodates all parties concerned, serves the public interest, and satisfies the requirements established under Section 106

Once the means of resolving adverse effects are agreed upon by all consulting parties, they are formalized in a Memorandum of Agreement (MOA). The 4 primary purposes of a MOA are:

- To specify the mitigation or alternatives agreed to by the consulting parties
- To identify who is responsible for carrying out the specified measures
- To render Council comment

- To serve as acknowledgment by the signatories that in their collective view, the agency has "taken into account" the effects of the undertaking on historic properties

The Council comment then concurs with either a "No Adverse Effect" or "Adverse Effect" scenario at which time consultation between the interested parties serves to avoid or mitigate any "Adverse Effects." Upon reaching an agreement regarding this consultation a MOA is developed and implemented. After this, the compliance scenario is considered complete and the proposed site-specific project may proceed.

Specific archaeological testing procedures (i.e., Phase I, II and III) need to be in compliance with either the State of Maryland or the Commonwealth of Virginia guidelines. These guidelines are available online and can be easily downloaded. For the State of Maryland the Standards and Guidelines Manual (Shaffer and Cole 1994) can be downloaded in a .pdf format at http://www.marylandhistoricaltrust.net. under the "Forms and Documents" section. All relative state permits and permitting requirements can also be found at this website.

For the Commonwealth of Virginia the guidelines for all phases of testing, permit requirements, and requisite forms (i.e. Site Inventory forms, Removal of Human Burials) can be downloaded from http://www.dhr.state.va.us/arch_DHR/archaeo_index.htm. This website provides a wealth of information relative to all aspects of archaeology within Virginia.

It must be stated that this reconnaissance-level cultural resources survey has served to identify known and potential cultural resources within the proposed and existing dredged material placement areas within and near the Chesapeake Bay. As defined in the Guidelines for Archaeological Investigations in Virginia "a reconnaissance level survey is not appropriate for projects submitted for review pursuant to Section 106 unless otherwise agreed upon by the DHR and the project sponsor" (Virginia Department of Historic Resources 2001:79). This basic standard applies to the State of Maryland as well. Therefore, this document serves as a general outline for known and potential cultural resources as specified by the U.S. Army Corps of Engineers, Baltimore District DMMP. Site-specific testing and assessment of project effects will need to be addressed on a site-by-site basis and adhere to both the State of Maryland and Commonwealth of Virginia's Standards and Guidelines for Cultural Resource Survey (Shaffer and Cole 1994; Virginia Department of Historic Resources 2001).

7. REFERENCES CITED

Bauer, K.J.

1988 *A Maritime History of the United States: The Role of America's Seas and Waterways*. University of South Carolina Press. Columbia, South Carolina.

Baker, W.A.

1962 *Colonial Vessels: Some Seventeenth Century Ship Designs*. Barre Publishing Company. Barre, Massachusetts.

1966 *Sloops and Shallops*. Barre Publishing Company. Barre, Massachusetts.

Balicki, J., C.D. Cheek, S. Fiedel and D.B. Heck

1999 *Phase I Archeological Investigations at Fort Monroe and Old Point Comfort (44HT27), Hampton, Virginia*. Prepared for Directorate of Engineering and Housing, Fort Monroe, Virginia. Submitted by John Milner and Associates, Inc., Alexandria, Virginia.

Ballweber, H.L.

1987 *Archaeological Reconnaissance of Maryland Route 16 Bridge over Slaughter Creek, Dorchester County, Maryland*. Maryland Geological Survey, Division of Archaeology, File Report No. 212. Submitted to the Maryland State Highway Administration, Baltimore, Maryland.

Baltimore Harbor Anchorages and Channels, Maryland and Virginia.

1997 *Integrated Feasibility Report and Environmental Impact Statement*. Prepared for the U.S. Army Corps of Engineers, Baltimore District and the Maryland Port Administration, Baltimore, Maryland. Manuscript on file at Panamerican Consultants, Inc., Memphis, Tennessee.

Berger, P.P.

2000 *Reconnaissance Level Survey Report*, Department of Historic Resource Form, DHR Identification No. 122-5048." Report on File at the Virginia department of Historic Resources, Richmond, Virginia.

Blanton, D.B. and S.G. Margolin

1994 *An Assessment of Virginia's Underwater Cultural Resources*. Virginia Department of Historic Resources Survey and Planning Report Series No. 3. Prepared for the National Oceanic and Atmospheric Administration. Prepared by the William and Mary Center for Archaeological Research, Williamsburg, Virginia.

Boyce, H.L.
1986 *Archeological Reconnaissance of the Maryland Route 335 Bridge Replacemetn over Balckwater River, Dorchester County, Maryland*. Prepared for the Maryland State Highway Administration. Submitted by the Department of Natural Resources, Maryland Geological Survey, Division of Archaeology.

Braynard, F.O.
1963 *S.S. Savannah: The Elegant Steam Ship*. University of Georgia Press. Athens, Georgia.

Brewington, M.V.
1954 *Chesapeake Bay: A Pictorial Maritime History*. Bonanza Books, New York.

Brown, R., H. Bump, and D.A. Muncher
1987 *An in situ Method For Determining Decomposition Rates of Shipwrecks*. *IJNA*, 17.2: 143-145.

Brouwer, N.
1996 Original unpublished notes from the Arthur Kill, New York. Ms. on file, South Street Seaport Museum, New York, New York.

Chapelle, H.I.
1935 *The History of American Sailing Ships*. Bonanza Books, New York.

1941 *Boatbuilding - A Complete Handbook of Wooden Boat Construction*. W.W. Norton & Company, Inc., New York.

1951 *American Small Sailing Craft - Their Design, Development, and Construction*. W.W. Norton & Company, Inc., New York.

1967 *The Search for Speed Under Sail, 1700-1855*. W.W. Norton, New York.

1988 *The Baltimore Clipper: Its Origin and Development*. Dover Publications, Inc. New York.

Chapman, F.H.
1768 *Architectura Navalis Mercatoria:* A Facsimile of the Classic Eighteenth Century Treatise on Shipbuilding. Praeger Publishers, New York, New York.

Coker, P.C. III
1987 *Charleston's Maritime Heritage 1670-1865*. Coker Craft Press, Charleston, South Carolina.

Cotterell, H., Jr.
1978 Double-Ender Diggings. *Steamboat Bill* 35(3):134.

Cox, L.
1999 *Phase I Remote Sensing Survey Hampton Roads Study XE 1438 Hampton-Norfolk, Virginia*. Prepared for Louis Berger & Associates, Inc., Richmond, Virginia. Submitted by Dolan Research, Inc., Philadelphia, Pennsylvania.

Cox, L., J. Lee, T.L. Struthers, and M. Parrington
1988 *Underwater Archaeological Survey and Evaluation for the Route 16 Bridge Replacement over Slaughter Creek, Dorchester County, Maryland*. Submitted to Maryland State Highway Administration, Baltimore, Maryland by John Milner Associates, Inc., West Chester, Pennsylvania.

Cox, L., J. Lee, and R. Hunter
1996 *A Phase I Submerged Cultural Resources Investigation Upper Chesapeake Bay, Maryland (G-East Disposal Site and Disposal Site #92)*. Prepared for U.S. Army Corps of Engineers, Philadelphia District. Prepared by Dolan Research, Inc., Philadelphia, Pennsylvania and Hunter Research, Inc., Trenton, New Jersey.

Cresthull, P.
1971 "Chance (18S05): A Major Early Archaic Site." In *Maryland Archeology* 7(2), pp.31-52.

Custer, J.F.
1983 "A Management Plan for the Archaeological Resources of the Upper Delmarva Region of Maryland." *Maryland Historical Trust Manuscript Series* No 31. Submitted by Center for Archaeological Research, Department of Anthropology, University of Delaware.

Davidson, T.E.
1982 *A Cultural Resource Management Plan for the Lower Delmarva Region of Maryland*. Maryland Historical Trust Manuscript Series No. 2. Crownsville, Maryland.

Dayton, F.E.
1939 *Steamboat Days*. Tudor Publishing Company, New York.

EA Engineering, Science & Technology Inc.
2003a *Reconnaissance Study of Baltimore Harbor Sites for Upland, Confined Placement of Harbor Dredged Material: Environmental Conditions*. Prepared for Maryland Environmental Service, Annapolis, Maryland. Submitted by EA Engineering, Science & Technology., Inc., Sparks, Maryland.

2003b *Final Parsons Island Beneficial Use of Dredged Material Consolidated Reconnaissance Report*. Prepared for Maryland Port Administration, Baltimore, Maryland under contract to Maryland Environmenatl Service, Annapolis, Maryland. Submitted by EA Engineering, Science & Technology, Inc., Sparks, Maryland.

Engle, E. and A.S. Lott
1975 *America's Maritime Heritage*. Naval Institute Press. Annapolis, Maryland.

Epperson, T.W., with A. Coneybeer
1994 *Evaluation of the Chesapeake and Delaware Canal*. Prepared for the U.S. Army Corps of Engineers, Philadelphia District. Submitted by Cultural Heritage Services, Inc., North Wales, Pennsylvania.

Florian, M.L.E.,
1987, The Underwater Environment. in: Pearson C., (Ed.) *Conservation of Marine Archaeological Objects* 1-20 (London).

Gardner, J.
1974 *Building Classic Small Craft. Camden, Maine*. International Marine Publishing Company.

Gardner, W.M. and R.M. Stewart
1977 *Cultural Resources Reconnaissance of Proposed Disposal Areas for Maintenance Dredging of the Barren Island Gap, Dorchester County, Maryland*. Submitted to the U.S. Army Corps of Engineers, Baltimore District by Thunderbird Research Corporation, Front Royal, Virginia.

Goodwin & Associates Inc.
1995a *Archaeological Investigations of the Proposed C&D Canal, Maryland and Deleware: Volume II-Cultural Resource Reconnaissance and Sensitivity Study; Volume III-Phase I Remote Sensing Cultural Resources Survey*. Prepared for the Maryland Port Administration. Submitted by R. Christopher Goodwin & Associates, Inc., Frederick, Maryland.

1995b *Phase I Marine and Terrestrial Archaeological Surveys for the Poplar Island Restoration Project, Talbot County, Maryland*. Executive Summary Report. Prepared for Gahagan & Bryant Associates (GBA) – Moffatt & Nichol, A Joint Venture.

Greenhill, B., (editor)
1993 *The Advent of Steam: The Merchant Steamship Before 1900*. Conaway Maritime Press Ltd. London.

Grumet, R.S.
2000 *Bay, Plain, and Piedmont: A Landscape History of the Chesapeake Heartland from 1.3 Billion Years Ago to 2000*. (The Chesapeake Bay Heritage Context Project, 183 p.) Annapolis, MD: U.S. Department of the Interior, National Park Service.

Hall, H.
1884 *Report on the Ship-Building Industry of the United States*. Government Printing Office, Washington, D.C.

Hallahan, J.M.
1986 *The Battle of Craney Island*. St. Michael's Press. Portsmouth, Virginia.

Hawkins, N.
1987 *New Catechism of the Steam Engine*. Lindsay Publications Inc., Bradley, Illinois.

Howarth, S.
1991 *To Shining Sea: A History of the United States Navy 1775-1991*. Random House, New York.

Hughes, R.B.
1980 "A Cultural and Environmental Overview of the Prehistory of Maryland's Lower Eastern Shore Based Upon a Study of Selected Artifact Collections." *Maryland Historical Trust Manuscript Series 26*.

Hunter, H.C.
1935 *How England Got Its Merchant Marine 1066-1776*. The Council of American Shipbuilders, New York.

Hurry, R. and D. Beard
1987 *Maryland Shipwrecks and Wharves Inventory List*. Prepared for the National Park Service. Report Manuscript on file at MHT, Crownsville, Maryland

Hutcheon, W.S. Jr.
1981 *Robert Fulton: Pioneer of Undersea Warfare*. Naval Institute Press. Annapolis, Maryland.

Irion, J.B. and L. Hirrel
1994 *Phase I Submerged Cultural Resources Survey, Baltimore Harbor and Anchorages Project, Baltimore, Maryland*. Prepared for the U.S. Army Corps of Engineers, Baltimore District, Baltimore, Maryland. Submitted by R. Christopher Goodwin & Associates, Inc., Frederick, Maryland.

Irion, J.B., G. Melhish, A. Segovia, and D.V. Beard
1995 *Archaeological Investigations of the Proposed C&D Canal, Maryland and Delaware*. Prepared for the Maryland Port Administration. Submitted by R. Christopher Goodwin & Associates, Inc., Frederick, Maryland.

James, S.R. Jr., T.S. Hannahs, J.J. Simmons, and J. Duff
1994 *Documentation of the Civil War Vessels CSS* Florida *and the USS* Cumberland *Hampton Roads, Virginia Department of Defense Resource Management Program Demonstration Project No. 348*. Prepared for the U.S. Army Corps of Engineers, Mobile District, on behalf of the U.S. Navy Atlantic Naval Facilities Engineering Command, Norfolk, Virginia. Prepared by Panamerican Consultants, Inc., Tuscaloosa, Alabama under contract to Law Environmental, Kennesaw, Alabama.

Kaltenbacher, T.
1997 "Pooles Island Lighthouse Stabilization Project Cultural Resource Management at Aberdeen Proving Ground." *Cultural Resource Management*, Volume 20, Number 8, 1997, pp. 12-14.

Kemp, P., (editor)
1993 *The Oxford Companion to Ships and the Sea*. Oxford University Press. Oxford, England.

Koski-Karell, D.
1979a *Baltimore Harbor and Channels 50-foot Project Study Cultural Resources Reconnaissance*. The Karell Institute. Arlington, Virginia. Prepared for the U.S. Army Corps of Engineers, Baltimore District, Baltimore, Maryland. Submitted by the Karell Institute, Arlington, Virginia.

1979b *Marine Cultural Resources for the Baltimore Harbor and Channels 42-foot Study*. The Karell Institute. Arlington, Virginia. Prepared for the U.S. Army Corps of Engineers, Baltimore District, Baltimore, Maryland. Submitted by the Karell Institute, Arlington, Virginia.

1980 *Report of an Underwater Archaeological Survey of a Dredging Project Area in the Patapsco River, Baltimore Harbor*. Prepared for Skyline Terminals, Inc., Baltimore, Maryland. Submitted by the Karell Institute, Arlington, Virginia.

1981 *Phase I Cultural Resources Reconnaissance for the Northeast River Federal Navigation Project Disposal Sites, Maryland*. Prepared for the U.S. Army Corps of Engineers, Baltimore District. Prepared by Karell Archaeological Services, Washington, D.C.

Knox, D.W.
1936 *A History of the United States Navy*. G.P. Putnam's Sons, New York.

Labaree, B.W., W.M. Fowler, Jr., J.B. Hattendorf, J.J. Safford, E.W. Sloan, and A.W. German
1999 *America and the Sea: A Maritime History*. Mystic Seaport Mystic, Connecticut.

Lacey, R.
1973 *Sir Walter Raleigh*. Atheneum, New York.

Leedecker and Associates
1981 *A Cultural Resources Reconnaissance of Four Federal Maintenance Dredging Projects in Dorchester County, Maryland*. Submitted to the U.S. Army Corps of Engineers, Baltimore District, Baltimore, Maryland.

Lowery, D.L.
1992a *The 1992 Archaeological Survey of Kent Island*. Manuscript on file at the Maryland Historical Trust, Crownsville, Maryland.

1992b "The Distribution and Function of Prehistoric Sites Within the Lower Bay Hundred District, Talbot County, Maryland." *Journal of Middle Atlantic Archaeology* 8:11-40.

1995a *A Supplementary Archaeological Survey of Interior Queen Anne's County, Maryland*. Manuscript on file at the Maryland Historical Trust, Crownsville, Maryland.

1995b *An Archaeological Survey of the Little Choptank River Watershed, Dorchester County, Maryland*. Submitted to the Maryland Historical Trust, Crownsville, Maryland by Darrin L. Lowery, Tilghman, Maryland.

Lydecker, A. and M.C. Tuttle
2000 *Phase I Archaeological Remote Sensing Survey East of Craney Island, Elizabeth River, Virginia*. Prepared for the U.S. Army Corps of Engineers, Wilmington District. Submitted by Panamerican Consultants, Inc., Memphis, Tennessee.

2004 *Underwater Archaeological Surveys in the Vicinity of James and Barren Islands in the Chesapeake Bay, Maryland*. Prepared for Maryland Environmental Service, Millersville, Maryland. Submitted by Panamerican Consultants, Inc., Memphis, Tennessee.

McNamara, J.M.
1977 *Archeological Assessment of Hart and Miller Islands, Baltimore County, Maryland*. Prepared for Land Planning Services, location unknown. Submitted by Department of Natural Resources, Maryland Geological Survey, Division of Archeology.

McSherry, P., M. McCartney, C. Hodges, and C. Lounsbury
1992 *Phase I Archaeological Survey Accawmacke Plantation, South Tract at Old Plantation Creek, North Tract at King's Creek, Cape Charles, Virginia*. Prepared by James River Institute for Archaeology, Inc., Williamsburg, Virginia.

Marestier, Jean Baptiste
1824 *Memoir on Steamboats of the United States*. Royal Press, Paris. Reprinted 1957.

Marshall, B.T. and J.A. Knight
1979 *A Report on an Archaeological Reconnaissance of Fort Holabird Baltimore City, Maryland*. Prepared for the Baltimore Economic Development Corporation, Baltimore Maryland. Submitted by Archaeological Services, Inc., Stevenson, Maryland.

Maryland Historical Trust (MHT)
2000 *Standards and Guidelines for Architectural and Historical Investigations in Maryland*. Maryland Historical Trust, Division of Historical and Cultural Programs, Department of Housing and Community Development, Crownsville, Maryland.

Mayre, W.B.
1938 "Shell-Heaps on the Chesapeake Bay." In *A Report of the Susquehanna River Expedition*, by Warren K. Moorehead and edited by A.C. Parker, pp.123-128, Andover Press, Massachusetts.

Millis, H., J. Gunn, and G.B. Pasternack
1998 *Archaeological and Geomorphological Reconnaissance at the Blackwater National Wildlife Refuge, Dorchester County, Maryland*. Prepared for U.S. Fish & Wildlife Service, Hadley, Massachusetts. Prepared by TRC Garrow Associates, Inc, Chapel Hill, NC.

Mintz, J.J., M. Williams, P.R. Jennings, and J. Woodard
1994 *Phase 1A Archaeological Investigations at Poplar Island, Talbot County, Maryland*. Submitted to the Maryland Environmental Service, Annapolis, Maryland.

Morison, S.E.
1971 *The European Discovery of America - The Northern Voyages A.D. 500-1600*. Oxford University Press, New York.

1972 The European Discovery of America: The Southern Voyages 1492-1616. Oxford University Press. New York.

Morris, J.D.
1995 *Phase II Submerged Cultural Resource Investigation, Chesapeake and Delaware Canal Deepening, Maryland and Delaware*. Prepared for the Maryland Port Administration, Baltimore, Maryland. Submitted by Tidewater Atlantic Research, Inc., Washington, North Carolina.

Morrison, J.H.
1958 *History of American Steam Navigation*. Stephen Daye, New York.

Morrison, P.H., S.R. James, and M. Pohuski
1991 *Phase II Archaeological Investigations of Three Shipwreck Sites in the Baltimore Harbor and Channels Federal Navigation 50 Ft. Project, Chesapeake Bay, Maryland and Virginia*. Prepared for the U.S. Army Corps of Engineers Baltimore District. Prepared by R. Christopher Goodwin & Associates, Inc. Frederick, Maryland.

Mueser, R., Wentworth and Johnston Consulting Engineers, and Ocean Seismic Survey, Inc.,
1978 *Baltimore Harbor and Channels 50 Ft. Project Geophysical Foundation Exploration Report*. Prepared for the U.S. Army Corps of Engineers, Baltimore District, Baltimore, Maryland.

Murphy, C.
2003 *Implementation of the Dredged Material Management Act of 2001-2003 Activities*. Prepared for The Executive Committee by The Management Committee, Maryland's Dredged Material Management Program.

National Register of Historic Places Detail Report
K-101 Hinchingham. Manuscript on file, Maryland Historical Trust, Crownsville, Maryland.

National Register of Historic Places Inventory – Nomination Form
1974 "Craney Island Fuel Facility, Naval Supply Center Norfolk" Manuscript (VDHR #124-44) on file at the Virginia Department of Historic Resources, Richmond, Virginia.

1993 *Baltimore*, *Harbor Inspection Tug* (Official Number 203700). Form prepared by Kevin J. Foster, Maritime Historian, National Park Service, Washington, D.C. Manuscript on file at the Maryland Historical Trust, Crownsville, Maryland.

National Park Service (NPS)
2003 *Draft Chesapeake Bay Special Resource Study and Environmental Impact Statement*. Produced by the National Park Service, U.S. Department of the Interior, Chesapeake Bay Program Office.

Naval Institute Press (NIP)
1981 *The Medley of Mast and Sail II*. Naval Institute Press, Annapolis, Maryland.

New York Times (NYT)
1858 Atlantic. 21 January.

Norfolk Harbor and Channels Long-Term Disposal (Inner Harbor)
1990 Norfolk Harbor and Channels Long-Term Disposal (Inner Harbor). Prepared for the U.S. Army Corps of Engineers, Norfolk District.

Oxley I.,
1990 *Factors Affecting the Preservation of Underwater Archaeological Sites*. *IJNA*, 19.4: 340-341. On file at Panamerican Consultants, Inc., Memphis, Tennessee.

Pelletier, J.B., D.W. Trubey, and M.R. Williams
1999 *Phase I Remote Sensing Marine Archaeological Survey for the DNR Shellfish Dredging Project, Upper Chesapeake Bay, Maryland*. Prepared for Maryland Department of Natural Resources, Annapolis, Maryland. Prepared by R. Christopher Goodwin & Associates, Inc., Frederick, Maryland.

Pouliot, R.A. and J.J. Pouliot
1986 *Shipwrecks on the Virginia Coast: and the Men of the United States Life-Saving Service*. Tidewater Publishers Centerville, Maryland.

Richards, L.A. and J.P. Cooke
2003 *An Assessment of Cultural Resource Potential Within "Uppards" and Goose Island, Tangier Island, Accomack County, Virginia*. Prepared for U.S Army Corps of Engineers, Norfolk District, Norfolk, Virginia. Prepared by Cultural Resources, Inc., Fredricksburg, Virginia.

Ringwald, D.C.
1965 *Hudson River Day Line: The Story of A Great American Steamboat Company*. Howell-North Books, Berkeley.

Robinson, D.S.
1995 *Inventory and Conservation Needs Assessment for the Artifacts from the Civil War Wrecks C.S.S. Florida and U.S.S. Cumberland*. Prepared for the Naval Facilities Engineering Command, Atlantic Division. Prepared by R. Christopher Goodwin & Associates, Inc., Frederick, Maryland.

Rose, J.J.
1998 *Phase IA Cultural Resource Background Research and Literature Review of the Proposed Hart-Miller Island Restoration Project, South Cell Baltimore County, Maryland*. Prepared for the U.S. Army Corps of Engineers, Baltimore District, Baltimore, Maryland. Submitted by Michael Baker Jr., Inc., Coraopolis, Pennsylvania.

Shaffer, G.D., and E.J. Cole
1994 *Standards and Guidelines For Archaeological Investigations in Maryland*. Maryland Historical trust Technical Report Number 2. Prepared for the Office of Archeology & Office of Preservation Services, Maryland Historical Trust, Department of Housing and Community Development, Crownsville, Maryland.

Shomette, D.G.
1982 *Shipwrecks on the Chesapeake; Maritime Disasters on Chesapeake Bay and Its Tributaries, 1608-1978*. Tidewater Publishers, Centerville, Maryland.

Singewald, J.T. Jr. and T.H. Slaughter
1949 "Shore erosion in tidewater Maryland." *Maryland Department of Geology, Mines and Water Resources*. Bulletin 6, 141 pp.

Spirek, J.D.
1993 *USS* Southfield: *An Historical and Archaeological Investigation of a Converted Gunboat*. Unpublished Master's thesis, Department of Maritime History and Nautical Archaeology, East Carolina University, Greenville, North Carolina.

Stevens, J. S., C.D. Cheek, and P.W. O'Bannon
1989 *A Phase I and Phase II Archeological Investigation of the Veterans Administration Medical Center at Perry Point, Maryland*. Prepared for the U.S. Veterans Administration, Historic Preservation Office, Washington, D.C. Submitted by John Milner Associates, West Chester, Pennsylvania

Surrey, N.M.M.
1916 *The Commerce of Louisiana During the French Regime, 1699-1763*. Columbia University Studies of History, Economics, and Public Law, 61(1). Columbia University, New York.

Thompson, B.F.

2000 *A Phase I Survey For Submerged Archaeological Resources Within Maryland's Susquehanna Drainage Basin and Easternshore Coastal Plain Province*. Prepared for the Maryland Historical Trust, Crownsville, Maryland. Submitted by the Office of Archaeology, Maryland Historical Trust, Crownsville, Maryland.

Tidewater Atlantic Research, Inc. (TAR)

1996 *Phase II Submerged Cultural Resources Investigation. Chesapeake and Delaware Canal Deepening, Maryland & Delaware*. Prepared for the Maryland Port Administration, Baltimore, Maryland. Submitted by Tidewater Atlantic Research, Inc., Washington, North Carolina.

Tully, T.G.

1999 *Maryland Historical Trust Determination of Eligibility Form, Vienna Historic District* (Inventory Number D-652). Manuscript on file at the Maryland Historical Trust, Crownsville, Maryland.

Tuttle, M.C.

2001 *Archaeological Services At The Norfolk 50-Foot Harbor Project, Virginia*. Prepared for the U.S. Army Corps of Engineers, Wilmington District. Submitted by Panamerican Consultants, Inc., Memphis, Tennessee.

Underwater Archaeological Joint Ventures (UAJV)

1985 *Phase II Cultural Resources Reconnaissance of Proposed Wolf Trap and Rappahannock Shoals Alternate Disposal Sites Chesapeake Bay, Virginia*. Prepared for U.S. Army Corps of Engineers, Baltimore District, Baltimore, Maryland. Prepared by Underwater Archaeological Joint Ventures, Yorktown, Virginia.

URS Corporation

2002 *Conceptual Hydrogeologic Interpretation Report of the Stancill Quarry Site, Cecil County, Maryland*. Prepared for the Maryland Environmental Service, Annapolis, Maryland. Submitted by URS Corporation, Gaithersburg, Maryland.

U.S. Army Corps of Engineers, Baltimore District

1974 *Final Environmental Statement. Permit Application for Diked Disposal Island Hart and Miller Islands, Baltimore County, Maryland*. Prepared by U.S. Army Corps of Engineers, Baltimore District. Manuscript on file at Panamerican Consultants, Inc., Memphis, Tennessee.

1984 *Phase I Cultural Resources Reconnaissance Alternate Disposal Areas: Baltimore Harbor and Channels*. Prepared by and for the U.S. Army Corps of Engineers, Baltimore District.

1992 *Baltimore Harbor Anchorages and Channels, An Archival Study of Baltimore Harbor*. Prepared for and by the U.S. Army Corps of Engineers, Baltimore District, Baltimore, Maryland.

2001 *Proposed New Work Dredging Baltimore Harbor and Channels, Maryland and Virginia Straightening of the Tolchester Channel S-Turn, Maryland. Environmental Assessment and Finding of No Significant Impact*. Manuscript on file, Panamerican Consultants, Inc., Memphis, Tennessee.

U.S. Army Corps of Engineers, Norfolk District

1985 *Final Supplement I to the Final Environmental Impact Statement and Appendix: Dam Neck Ocean Disposal Site Evaluation Study. Norfolk Harbor and Channels, Virginia Deepening and Disposal*. Prepared for the U.S. Army Corps of Engineers, Norfolk District. Manuscript on file at Weston Solutions, Inc., West Chester, Pennsylvania.

1986 *Underwater Remote Sensing Survey Craney Island Disposal Site Norfolk Harbor and Channels, Virginia*. Prepared for the U.S. Army Corps of Engineers, Norfolk District.

1994 *Cultural Resources Management Plan for Craney Island Dredged Material Placement Area, Virginia*. Prepared for and by the U.S. Army Corps of Engineers, Norfolk District, Nofolk, Virginia.

Virginia Department of Historic Resources (VDHR)

2001 "Guidelines For Conducting Cultural Resource Survey In Virginia" *Additional Guidance for the Implementation of the Federal Standards Entitled Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (48 FR 44742, September 29, 1983). Manuscript on file at the Virginia Department of Historic Resources, Richmond, Virginia.

Virginia Historic Landmarks Commission (VHLC)

1972 *National Register of Historic Places Inventory – Nomination Form*: "New Point Comfort Lighthouse." United State Department of the Interior, National Park Service. Manuscript on file at Panamerican Consultants, Inc., Memphis, Tennessee.

Watts, G.P.

1982 *A Submerged Cultural Resource Reconnaissance within the Elizabeth River in the Vicinity of Craney Island, West Norfolk, Virginia*. Prepared for Envirosphere Company, New York, New York. Submitted by Tidewater Atlantic Research, Washington, North Carolina.

1983 *A Marine Cultural Resources Reconnaissance Investigation, Lower Thorofare Wenona Harbor, Storm Protection Study, Somerset County, Maryland*. Submitted to the U.S. Army Corps of Engineers, Baltimore District, Baltimore, Maryland by Tidewater Atlantic Research, Inc., Washington, North Carolina.

1986 *A Marine Cultural Resources Reconnaissance and evaluation of Foggs and Muskrat Coves, St. Michaels Harbor, Talbot County, Maryland*. Submitted to the U.S. Army Corps of Engineers, Baltimore District, Baltimore, Maryland by Tidewater Atlantic Research, Inc., Washington, North Carolina.

1987 *A Remote Sensing Reconnaissance of the Remains of the USS Cumberland, CSS Florida and the Wreck Site of the CSS Virginia*. Tidewater Atlantic Research, Washington, North Carolina.

1999a *Phase I Archaeological Remote Survey of the Virginia Beach and Fort Story Hurricane Protection Borrow Areas, Virginia*. Prepared for the U.S. Army Corps of Engineers, Wilmington District. Prepared by Tidewater Atlantic Research, Washington, North Carolina.

1999b *An Historical and Archaeological Assessment of the Remains of Derelict Vessels Abandoned in Scott Creek and the Western Branch of the Elizabeth River in the City of Portsmouth, Virginia*. Prepared for James E. Wright, Jr., Department of Engineering, Portsmouth, Virginia. Submitted by Tidewater Atlantic Research, Inc., Washington, North Carolina.

2000 *Phase I Archaeological Remote Sensing Survey of the Virginia Beach and Fort Story Hurricane Protection Borrow Areas, Virginia*. Prepared for the U.S. Army Corps of Engineers, Wilmington District. Submitted by Tidewater Atlantic Research, Washington, North Carolina.

Wesler, K.W., G.J. Fine, D.J. Pogue, P.A. Sternheimer, A.F. Button, E.G. Furguson, and A.H. Luckenbach

1981 "The M/DOT Archaeological Resources Survey, Volume 1: Eastern Shore." *Maryland Historical Manuscript Series 5*. Manuscript on file at Panamerican Consultants Inc., Memphis, Tennessee.

Whittier, B.

1987 *Paddle Wheel Steamers and Their Giant Engines*. Seamaster, Inc., Duxbury, Massachusetts.

Wilke, Steve and Gail Thompson

1979 *Prehistoric Archeological Resources in the Maryland Coastal Zone: A Management Overview*. Submitted to and Funded by the Maryland Department of Natural Resources. Energy and Coastal Zone Administration under a Coastal Zone Management Program development Grant from the National Oceanic and Atmospheric Administration.

Wolman M.G.

1968 "The Chesapeake Bay: Geology and Geomorphology" in *Proceedings of the Governor's Conference on Chesapeake Bay*, pp II-7 to II-49.

APPENDIX A
AWOIS

ARTIFICIAL ISLAND CREATION – LOWER BAY
TANGIER ISLAND, VIRGINIA AWOIS FILES

Record #	Vessel Name	Chart #	Area	Cartocode	Depth	History
62	UNKNOWN	12200	D	0100	0	HISTORY CL21/84--USPS; SUBM. WRECK OF WOODEN SAILING VESSEL KNOWN LOCALLY AS "MIDDLE GRC LYING IN 90-100 FT. PARTLY INTACT. BOW 10-15 FT ABOVE BOTTOM. TRAWL NET HUNG ON SOME WRECKA SCALED FROM NOS CHART 12210 AFTER PLOTTING LORAN-C READINGS. LORAN POS. SUPPLIED BY CHAR CAPTIAN AND IS CONSIDERED PROPRIETARY INFO. WRECK DOVE ON BY DAVID A. POTTER JR. D-5 INDIAN BOX 142, MILLSBORO, DE 19966. TELEPHONE (302) 934-8463 DATE OF INVESTIGATION AUG. 21, 1983. SURVE REQUIREMENTS FULL--VERIFY OR DISPROVE BY 400% SIDE SCAN SONAR INVESTIGATION, ON HALF MILE F THE LISTED POS. LD REQUIRED. NOT ASSIGNED
1000	OLINDA	12200	D	0999	0	DESCRIPTION 24 NO.397; CARGO, 4053 GT; SUNK 2/18/42 BY SUBMARINE, IN 101 FMS, POSITION ACCURACY REPORTED THRU THE CG. 27 NO.256; CARGO, 2521 SUNK 2/18/42 IN 101 FMS. SURVEY REQUIREMENTS NO
1001	KENT	12230	E	0*99	0	01001 DESCRIPTION 24 NO.4778; CARGO, 365 GT; SUNK 9/14/44 BY MARINE CASUALTY; POSITION ACCURAC SURVEY REQUIREMENTS NOT ASSGINED
1002	UNKNOWN	12200	D	****	0	01002 DESCRIPTION 19 FISHING OBSTR. OLD LORAN A 3H4-2883.0, 3H5-3069.0=LORAN C,9960W-15752.8,9960 COMPUTED VALUE) NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY RE INFORMATION ASSIGNED; OPR-D103, ITEM 1002
1003	UNKNOWN	12200	D	****	0	01003 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52731.9,9930Z-70575.0=9960W-15756.2,9960Z-59 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS INFORMATION OPR-D103, ITEM 1003
1004	UNKNOWN	12200	D	****	0	01004 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52727.0,9930Z-70572.5=9960W-15755.8,9960Z-59 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS INFORMATION OPR-D103, ITEM 1004
1005	UNKNOWN	12200	D	****	0	01005 DESCRIPTION 19 FISHING OBSTR. OLD LORAN A 3H4-2882.0, 3H5-3081.0=LORAN C,9960W-15768.1,9960 COMPUTED VALUE) NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY RE INFORMATION ASSIGNED; OPR-D103, ITEM 1005
1006	DAVID ATWATER	12200	D	0100	39	HISTORY NM15/42--WRECK REPORTED APPROX. 1 MILE SOUTHWARD OF WINTER QUARTER SHOAL LIGHTE BUOY. CHARTED AS WD CLEAR TO 6.5 FM, SURVEY NOT DETERMINED DESCRIPTION 24 NO.393; CARGO, 24 3/42 BY SUBMARINE; POSITION ACCURACY WITHIN 1 MILE 27 NO.255; CARGO, 1468 NT, SUNK 4/2/42; BUOY APPROX. 30 FT EASTWARD. NAME: DAVID H. ATWATER SURVEY REQUIREMENTS INFORMATION ASSIGNED ITEM 1006
1007	UNKNOWN	12200	D		0	DESCRIPTION 18 UNKNOWN OBST. HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN C, RATES;9960X-26765.2,9960Y-42134.8MS(APPROX. 1979)
1008	BARNSTABLE	12200	D	0999	0	HISTORY NM19/34 DESCRIPTION 24 NO.419; BARGE SUNK BY MARINE CASUALTY; POSITION ACCURACY WI 37-58-04N, 75-08-28W; LOCATED BY CGS FIELD PARTY, WD CLEARED TO 14 FT IN 1939. 27 NO.603; BARGE; WWII; LOCATED BY C&GS; POS.37-58N, 75-08-40W. SURVEY REQUIREMENTS NOT DETERMINED
1009	UNKNOWN	12200	D	0999	0	01009 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52787.0,9930Z-70530.4=9960W-15803.5,9960Z-58 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERM
1010	CHINA ARROW	12200	D	0999	0	HISTORY NM6/42--WRECK REPORTED AT LAT.37-59-30N, LONG.75-11-30W. DESCRIPTION 24 NO.392; TANKER SUNK 2/5/42 BY SUBMARINE; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 39 FT POSSIBLY ON 8/ CONTAINED IN 5TH ND WRECK LIST, 8/1/42; SEE OTHER LISTING. 27 NO.254; 8403 GT, SUNK 2/5/42. SURVEY REQUIREMENTS NOT DETERMINED
1011	UNKNOWN	12200	D	0999	0	01011 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52653.8,9930Z-70563.8=9960W-15732.5,9960Z-59 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERM
2434	UNKNOWN	12210	D	0100	0	02434 HISTORY H5714/34--BOILER BARING 4 FT.(MLW) H10046/82--OPR-D103-MI-82; PSR ITEM 35; BOILER NOT ANY STAGE OF TIDE; NO SEARCH WAS CONDUCTED DUE TO ADVERSE SURF CONDITIONS; EVALUATOR RE RETAINING AS CHARTED WITH ADDITIONAL WORK AT A LATER DATE. (UPDATED MSM 11/86) SURVEY REQU ASSIGNED
2774	OAKDENE	12211	D	0999	0	SURVEY REQUIREMENTS NOT DETERMINED
2936	HERMOD	12211	D	0999	0	SURVEY REQUIREMENTS NOT DETERMINED
3339	UNKNOWN	12200	D	0102	0	03339 HISTORY CL21/84--USPS; WOODEN SAILING VESSEL, LOCALLY KNOWN AS MIDDLE GROUND WRECK 90-100FT DEPTHS WITH AN ESTIMATED MAX. HGT. OF 10-15FT ABOVE THE OCEAN BOTTOM. DIVERS HAVE I THAT OLD DETERIORATED TRAWLER NETS ARE HUNG ON THE WK. (ENTERED, 2/7/84, MJF). SURVEY REQU DETERMINED
3673	UNKNOWN	12233	E	0100	49	03673 HISTORY NM48/57--197 FOOT LSM TYPE VESSEL COVERED 45 FEET IN 63 FEET, 2.2 MILES 1 DEG FRC POINT LIGHT. MARKED BY TWO 5 GALLON CANS. WRECK IN APPROX. POS. LAT. 37-55-00N, LONG. 76-11-00 MAR, JUNE, 1978; OPR-E609-RU/HE-78; ITEM 4; WRECK LOCATED DURING RECON. HYDRO. AND SIDE SCAN SEARCH. HUNG AT 46 FT. CLEARED 44 FT (PREDICTED TIDES).DIVERS LD 48 FT. WRECK IS STEEL BARGE A LONG, WITH AN OPEN CENTER WELL, ON AN EVEN KEEL AND ORIENTED ENE. LAT. 37-55.19N, LONG. 76-11 RECOMMENDS CHARTING 44 FT. CLEARED DEPTH OVER WRECK. FE222/78WD--SEE CHART LETTER ABOVE FE AS OF 1/4/85. NM8/79--REVISE WRECK PUB. IN NM48/57 TO WRECK WITH SWEPT DEPTH OF 44 FT. IN PC 55.2N, LONG. 76-11.2W. MAR--11/85, OPR-E609-RU/HE-85; WK FOUND IN LAT 37-55-12.7N, LONG 76-11-11.94W DEPTH OF 48.9 FT, CORRECTED FOR PREDICTED TIDES; HYDROGRAPHER RECOMMENDS REVISING CHART ACCORDINGLY. (UPDATED MSM 3/86) FE275/85SS--(OPR-E609-RU/HE-85); WRECK LOCATED BY SIDE SCAN POSITION LAT. 37-55-12.48N, LONG. 76-11-11.74. DEPTH OVER WRECK BY PNEUMATIC DEPTH GAUGE IS 49 F POSITION IS 48 METERS EAST OF THAT GIVEN IN FE-222/78WD. EVALUATOR RECOMMENDS REVISING CHA TO A DANGEROUS WRECK, COVERED 49 FEET IN PRESENT SURVEY POSITION. DESCRIPTION **** TELECO (MOA2321) AND S. VERRY (N/CG241) 1/4/85; CLEARANCE DEPTH OF 44 FT UNVERIFIED. SHOULD BE CHARTE REPORTED CLEARANCE. FE222/78WD WILL NOT BE PROSESSED IN THE NEAR FUTURE. WRECK IS A BARG THE C.G. WILLIS CO. ITEM IS CONSIDERED COMPLETE AND FURTHER INVESTIGATION NOT RECOMMENDED SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE THROUGH 400% SIDE SCAN SONAR SEARCH OF WI INVESTIGATION, 250 METER MIN RADIUS. LD REQUIRED IF FOUND. NOT ASSIGNED

3674	UNKNOWN	12230	E	0100	0	03674 HISTORY LNM29/79--31 FOOT WOODEN HULLED YACHT SUNK IN APPROX. POS. LAT. 37-54-54N, LONG. 42 FEET. SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE BY 400% SIDE SCAN SONAR SEARCH OR V INVESTIGATION 1.5 NM MIN. RADIUS. DISPROVAL BY SALVAGE DOCUMENTATION ACCEPTABLE. ASSIGNED H-85
3675	UNKNOWN	12228	E	0100	59.2	HISTORY NM49/58--BUOY ESTABLISHED IN 58 FEET TO MARK WRECK OF 195 FOOT BARGE WHICH LIES SUI SOUTHEAST-NORTHWEST HEADING. BUOY IS APPROX. 50 YARDS, 120 DEG. FROM LAST REPORTED POSIT COVERED 41 FEET. APPROX. POS. OF BUOY IS LAT. 37-57-03N, LONG. 76-12-02W. NM12/59--BUOY POS. AME PT. WRECK LIGHTED BUOY WR13, BLACK, QK FL, LOCATED IN 50 FEET ABOUT 9170 YDS. 346 DEG. FROM S TO MARK WRECK OF 195 FT. BARGE SUNK ON A SE-NW HEADING. BUOY IS ABOUT 50 YDS. 300 DEG. FROI COVERED 37 FEET. APPROX. POS. OF BUOY LAT. 37-57-11N, LONG. 76-12-22W. BUOY MAINTAINED BY HAMF CARRIERS, INC. NORFOLK, VA. NM10/60--BUOY DISCONTINUED FROM APPROX. POS. LAT. 37-57-11N, LONG. DANGEROUS SUBMERGED WRECK, 37 FT. REP. SCALED FROM CHART 12230 (1:80,000) IN APPROX. POS. L/ LONG. 76-12-24W. FE308/87SS--OPR-E609-RU/HE-87; WK LOCATED IN LAT 37-56-52.22N; LONG 76-11-46.49W / DEPTH OF 59.2FT WAS FOUND BY DIVER PNEUMATIC DEPTH GAUGE. SUNKEN BARGE ONLY EXTENDS 6-10 ABOVE A SILT BOTTOM. EVALUATOR RECOMMENDS CHARTING AS 59FT WK WITH DANGER CURVE AND NC REPORTED 1987" BE CHARTED IN VICINITY OF WK. CHARTING DISPOSITION REEVALUATED AS WRECK DOE CONSTITUTE DANGER TO NAVIGATION. DELETE DANGER CURVE ALSO, CHART NOTE "SHOALING TO 60FT R 1987". LORAN-C RATES: 9960-CHAIN; 27354.4X, 41974.4Y (UPDATE 4/89 LQ)
3676	MARION	12228	E	0100	0	HISTORY NM4/50--F/V MARION SUNK IN 35 FEET, COVERED 20 FEET. 6.7 MILES, 2 DEG. FROM SMITH POINT TEMPORARILY MARKED BY RED MARKER BUOY. APPROX. POS. LAT. 37-59-27N, LONG. 76-10-48W. MARINEI EXERCISE CAUTION IN AREA. NM5/50--BUOY MISSING AND WILL NOT BE REPLACED. EXTENSIVE DRAGGINC TO LOCATE WRECK. (DRAGGING AGENCY OR METHODS UNKNOWN) DANGEROUS SUBMERGED WRECK (2(1950) SCALED FROM CHART 12230 (1:80,000) IN APPROX. POS. LAT. 37-59-31N, LONG. 76-10-46W. FE308/87SS RU/HE-87; WK NOT DISPROVED BY THIS SURVEY ONLY 50% OF ASSIGNED AREA COVERED AT 200% NOT 4 4/89 LQ) SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE BY 400% SIDE SCAN SONAR SEARCH OR W INVESTIGATION 1.0 NM MIN. RADIUS. LD REQUIRED, IF FOUND. SALVAGE DOCUMENTATION ACCEPTABLE F DISPROVAL. EASTERN PORTION OF SEARCH AREA CONSTRAINED BY DEPTH. (30 FT. CURVE.) ASSIGNED: (87
4498	UNKNOWN	12211	D	0100	0	04498 HISTORY T5200/36--VISIBLE WK CHARTED IN LAT 37-57-42N, LONG 75-17-36W. UNKNOWN SOURCE--WI SUBM BETWEEN 1948 AND 1950. H10046/82--OPR-D103-MI-82; WK NOT FOUND; FULL SEARCH NOT MADE DU SURF CONDITIONS; EVALUATOR RECOMMENDS RETAIN WK AS CHARTED. (ENTERED MSM 11/86) SURVEY F NOT ASSIGNED
7240	UNKNOWN	12228	E	0100	50.9	HISTORY FE308/87SS--OPR-E609-RU/HE-87; WK LOCATED IN LAT 37-57-44.88N, LONG 76-11-42.11W WITH A LI 50.9FT FOUND BY DIVER PNEUMATIC DEPTH GAUGE. EVALUATOR RECOMMENDS CHARTING AS 51FT WK W CURVE. CHARTING DISPOSTION REEVALUATED TO INCLUDE NOTE "SHOALING TO 52FT REP 1987". LORAN-C CHAIN; 27356.3X, 41984.7Y (ENTERED 4/89 LQ) DESCRIPTION **** FROM FE308/87SS--WOODEN VESSEL 120F STRUCTURAL RIBS AND SIDE PLANKS 4FT ABOVE SILT BOTTOM. PART OF THE WK WHERE 50.9FT LEAST D OBTAINED, EXTENDS ONLY 1FT ABOVE BOTTOM.
7241	COLUMBUS	12228	E	0100	42.3	HISTORY FE308/87SS-- OPR-E609-RU/HE-87; WRECKAGE LOCATED IN LAT. ì 37-57-49.56N, LONG. 76-11-54.61' 42.3 FEET (DIVERS ì PNEUMATIC DEPTH GAUGE). EVALUATOR RECOMMENDS CHARTING AS WRECKAGE ì \ FOOT DEPTH AND A DANGER CURVE. LORAN-C RATES (9960 ì CHAIN): X = 27347.6; Y = 41985.5. WRECKAGE AS A JUMBLED ì MASS OF LARGE DIAMETER PIPE, POSSIBLY SHIP'S MAST. WOODEN HULL, ì COPPER CLA LQ) DESCRIPTION **** CAPITOL NEWSPAPER, ANNAPOLIS, MD (SUNDAY, JAN. 2, 1994); R. GOODWIN & ASS(SALVAGED ENGINE OF STEAMSHIP "COLUMBUS" WHICH SANK IN 1850 AFTER CATCHING FIRE NEAR SMITH VIRGINIA. WILL DONATE THE "RESTORED" ENGINE TO THE MARYLAND HISTORICAL TRUST TO BE DISPLAYE CHRISTOPHER COLUMBUS CENTER, SCHEDULED TO OPEN IN BALTIMORE'S INNER HARBOR IN 1995. ALSO WERE THE STEAM CHEST, PADDLE WHEEL AND SHAFT OF THE ENGINE, BUILT IN 1829. **** "CONSTELLATI(MAGAZINE (HAROLD K. CLINGERMAN); ADDITIONAL DISCUSSION.
50026	ANNIE E. SMALE	18640	L	****	0	SURVEY REQUIREMENTS INFORMATION
50072	OBSTRUCTION	18645	L	****	0	50072 HISTORY CL664/85--SEE DESCRIPTION BELOW LNM31/85--SUBMERGED OBSTRUCTION RISING FROM 3 FATHOMS REPORTED OFF PT. REYES IN APPROX. POS. LAT. 37-58.8N, LONG. 123-03.5W, BEARING 240 DEG FROM PT. REYES LIGHT (LLNR-58). OBSTRUCTION REPORTED 400 METERS IN LATERAL EXTENT. (ENTERED, CL107/86--OPR-M539-DA-85, NOAA SHIP DAVIDSON INVESTIGATION USING BSSS OVER 1 NM RADIUS (1:20,0(20-3-85); RAYDIST R/R CONTROL. OBSTRUCTION DISPROVED; HYDRO. RECOMMENDS ITEM DISPROVED, N/C PROJECT MANAGER) CONCURS. N/CG221 WILL RECOMMEND A LNM BE ISSUED TO DOCUMENT DISPROVAL DELETE DEPTH 9 FATHOMS OBSTR. "REP (1985)" (ENTERED 4/1/86 MCR) DESCRIPTION **** MESSAGE (12183 FROM NOAA SHIP DAVIDSON TO 12 CGD ALAMEDA, CA. 9 FATHOM OBSTRUCTION IN 32 FATHOMS REP. BY COLLINS (FV WAPITI, WYR3851) AND MR. HANS KLINKE (FV CRYSTAL D). TROLLING POLES AND DAVITS RIP DECKS, LOCATED IN APPROX. LAT. 37-58-48.0N, LONG. 123-03-30.0W, BEARING 240 DEGS, 2NM FROM PT RE (LLNR 58). OBSTRUCTION REPORTEDLY 400 METERS IN LATERAL EXTENT. TWO HOURS OF RECON. LORAN- 7/9/85 AT REQUEST OF THESE FISHERMEN INCONCLUSIVE. DAVIDSON WILL CONDUCT MORE THOROUGH IN IN SEPT. 1985 IF REQUIRED AND NOS HEADQUATERS CONCURS. N/CG22 PURSUING THE POSSIBILITY THAT ENCOUNTERED SUBMERGED SUBMARINE. SURVEY REQUIREMENTS MISCELLANEOUS--DISPROVED.
50126	ITUNA	18640	L	0102	0	DESCRIPTION 24 NO.1086; 201 GT; POSITION ACCURACY 1-3 MILES; REPORTED THROUGH OLD COAST GUAI 27 NO.147; 201 GT, REPORTED THRU OCGR. SURVEY REQUIREMENTS INFORMATION
50227	SAMOA	18640	L	0102	0	DESCRIPTION 24 NO.1085; SUNK 1/28/13; POSITION ACCURACY 1-3 MILES; REPORTED THROUGH OLD COAS' RECORDS 27 NO.146; SUNK 1/28/13. SURVEY REQUIREMENTS INFORMATION
50350	UNKNOWN	18640	L	0999	0	50350 DESCRIPTION 24 NO.1238; REPORTED SCATTERED WRECKAGE; POSITION ACCURACY WITHIN 1 MILE THROUGH H.O. CHART RECORDS, DATED 1947 SURVEY REQUIREMENTS NOT DETERMINED
50447	HARTWOOD	18640	L	****	0	SURVEY REQUIREMENTS INFORMATION
50525	UNKNOWN	18654	L	0098	0	HISTORY CL967/76--CAS18649 (1976)-OPR-511-DA76, ITEM 9; WRECK, VISIBLE, POS. LATITUDE 37-57-58.3N, L(09.1W. MINIRANGER POS. TP00526(1977-78,79)--REVIEWED; WRECK, UNCOVERS 6 FT AT MLLW. POS.(SCAL LAT. 37-57-58.8N, LONG. 122-25-07.8W, SEXTANT H10080/83-OPR-L123-RA-83; VISIBLE WK, UNCOVERS 5FT AT LOCATED AT LAT. 37-57-59.1N, LONG. 122-25-07.1W. (UPDATED 2/85 RWD)
50526	UNKNOWN	18654	L	0098	0	HISTORY H7867/50--CS256; LIMIT LINE ANNOTATED "BREAKWATER OF GROUNDED HULLS". OFFSHORE LIMI' 1:10,000, LAT. 37-57-54.5N, LONG. 122-25-00.0N. CL967/76--CAS18649 (1976)-OPR-511-DA76, ITEM 8; WRECK, V LAT. 37-57-53.4N, LONG. 122-25-05.5W. MINIRANGER POSITION. H10080/83--OPR-L123-RA-83; RECOMMENDS (

						UNCOVERING AT MLLW. VISUALLY VERIFIED. RETAIN CHARTED WK.
50527	UNKNOWN	18654	L	0098	0	HISTORY H7867/50--CS256; LIMIT LINE ANNOTATED "BREAKWATER OF GROUNDED HULLS". OFFSHORE LIMI 1:10,000, LAT. 37-57-54.5N, LONG. 122-25-00.0N. CL967/76--CAS18654(1976)-OPR-511-DA76, ITEM 8; WRECK, VI LATITUDE 37-57-55.4N, LONGITUDE 122-24-59.2W. MINIRANGER POS. H10080/83--OPR-L123-RA-83; RECOMMEI PRESENT SURVEY DATA. (UPDATED 2/85 RWD)
50547	OBSTRUCTION	18654	L	0085	0	HISTORY TP00527 (1977-79)--REVIEWED; OBSTR. UNCOVERS 4 FT AT MLW. POSITION SCALED (1:20,000) IN 3 22-24.2W. H10080/83--OPR-L123-RA-83; OBSTR. DISPROVED. DELETE FROM CHART. (UPDATED 2/85 RWD)
50548	OBSTRUCTION	18654	L	0067	0	HISTORY H7867/50--CS256; IRON PIPE, BARES 4 FT AT MHW, LOCATED BY SEXTANT. POSITION SCALED (1:1(47.6N, 122-22-25.7W. H10080/83--OPR-L123-RA-83; IRON PIPE DISPROVED. DELETE FROM CHART. (UPDATED
50549	OBSTRUCTION	18654	L	0085	0	HISTORY H7867/50--CS256; IRON PIPE, BARES 4 FT AT MHW, LOCATED BY SEXTANT. POSITION (SCALED (1:1 34.0N, 122-22-32.6W. H10080/83--OPR-L123-RA-83; IRON PIPE (BARES 6FT AT MHW) 8 INCH. DIA. CONCRETE F LOCATED IN LAT. 37-59-33.62N, LONG. 122-22-32.68W. (UPDATED 2/85 RWD)
50736	UNKNOWN	18653	L	0370	74	HISTORY NM4/52--OIL BARGE SUNK IN LAT.37-57-32N, LONG.122-26-28W IN 85FT OF WATER. NM15/53--COE; 5 AREA (MLLW) IN LAT 37-57-32N, LONG.122-26-28W (PA). NOTHING FOUND. CL346/53--SAME AS NM15/53. H981 DA-79; WK NOT INVESTIGATED, NOT COVERED BY MAINSCHEME HYDROGRAPHY. (UPDATED 2/87 RWD). FE L123-PHP-87; WK NOT INVESTIGATED, PHP INDICATES DIVING TO DANGEROUS, RECOMMENDS SSS. (UPDA H10480/93--SUBM WRECK NOT LOCATED WITH ECHOSOUNDER INVESTIGATION AT 10M NS AND 12M EW LIN SSS WAS NOT USED. RECOMMEND RETAIN CHARTED 50FT CLEARANCE DEPTH. (UPDATED 3/95 RWD) F004 L430-NRB; THE WRECKED BARGE WAS CLEARLY VISIBLE ON THE SONARGRAM. THE CONTACTS WERE FU DEVELOPED; THE BARGE LIMITS WERE DEFINED AND THE LEAST DEPTH OF 74 FEET (22.5 METERS) WAS F ABOVE LOCATION (POS. NO. 17659). DELETE 50 FOOT SUBMERGED WRECK, CHART SUBMERGED WRECK ' DEPTH OF 74 FEET AT LATITUDE 37/57/28.915N, LONGITUDE 122/26/28.500W. UPDATED 9/03 MCR
50766	SNDG	18645	M		22	HISTORY CL949/84--CORDELL BANK EXPEDITIONS (1980-1981), LOCATED A 22 FATHOM DEPTH IN APPROX. P LONG.123-25-01W. LORAN C WAS USED FOR CONTROL, NO RATES GIVEN. ROBERT W. SCMIEDER, AUTHOR 422-2821). (ENTERED 8/6/84, MCR). B00016/85--OPR-M987-DA-85; A MINIMUM DEPTH OF 40.4 METERS (22 FA) DURING BATHY METERIC SWATH SURVEY WITH 100% COVERAGE. POSITION DETERMINED BY RANGE/RAN(POS. LAT. 37-59-26.34N, LONG. 123-25-08.88W. (UPDATED 3/89 PMC, MCR) SURVEY REQUIREMENTS LIMITED SPACING TO 50 METERS TO A RADIUS OF 500 METERS MIN. FROM GIVEN GP. ASSIGNED:OPR-M987-DA-84.
50767	SDNG	18645	M		21	HISTORY CL949/84--CORDELL BANK EXPEDITIONS (1980-1981), LOCATED A 21 FATHOM DEPTH IN APPROX. P 03N, LONG.123-25-24W. LORAN C WAS USED FOR CONTROL, NO RATES GIVEN. ROBERT W. SCMIEDER, AUT #415-422-2821). (ENTERED 8/6/84, MCR). B00016/85--OPR-DA-85; A MINIMUM DEPTH OF 41.2 METERS (22.5 FA DURING BATHY METRIC SWATH SURVEY. POSITION DETERMINED BY RANGE/RANGE CONTROL IN LAT. 37-5' 123-25-32W. (UPDATED 3/89 PMC, MCR) SURVEY REQUIREMENTS LIMITED--REDUCE LINE SPACING TO 50 MI RADIUS OF 500 METERS MIN. FROM GIVEN GP. ASSIGNED:OPR-M987-DA-84.
52503	OBSTRUCTION	18649	L	0067		
10480	CASCHALOT	12233	E	0100		
10481	UNKNOWN	12233	E	0100	13.7	HISTORY NM2/22-- SUNKEN WRECK AT 37-56.43N, 76-18.50. SINKING OF PILE DRIVER. (ENT 12/30/99, DAS) H(STRUCTURE WITH A DEPTH OF 13.7 FEET LOCATED IN LAT. 37-56.32N, LONG. 76-18.50W. (ENT 12/30/99, DAS
10483	UNKNOWN	12233	E	0100		
10674	OBSTRUCTION	12233	E	0067	42	HISTORY H10934/99-00-- OPR-E346-BH; UNCHARTED OBSTRUCTION LOCATED BY SIDE SCAN SONAR IN LAT. LONG. 76-19-20.01W WITH A SWMB LD OF 42 FEET (12.89 METERS). SIDE SCAN SONAR HEIGHT OF 0.8 METI EVALUATOR RECOMMENDS CHARTING A 42 OBSTN AS SURVEYED. (ENT 7/13/00, SJV)
10677	OBSTRUCTION	12233	E	0067	26	HISTORY H10934/99-00-- OPR-E346-BH; SIDE SCAN SONAR LOCATED AN UNCHARTED OBSTRUCTION IN LAT. LONG. 76/17/13.36W WITH A SWMB LD OF 26 FEET (8.1 METERS). SIDE SCAN SONAR HEIGHT OF 1.4 METER OYSTER MOUND. EVALUATOR RECOMMENDS CHARTING A 26 OBSTN AS SURVEYED. (ENT 7/13/00, SJV)
10678	OBSTRUCTION	12233	E	0067	25	HISTORY H10934/99-00-- OPR-E346-BH; UNCHARTED OBSTRUCTION LOCATED BY SIDE SCAN SONAR IN LAT. LONG. 76-16-49.07W WITH A SWMB LD OF 25 FEET (7.81 METERS). POSSIBLE OYSTER MOUND. EVALUATOF RECOMMENDS CHARTING A 25 OBSTN AS SURVEYED. (ENT 7/13/00, SJV)
10679	SNDNG	12233	E	0067	40	HISTORY H10934/99-00-- OPR-E346-BH; SWMB LD OF 40 FEET (12.23 METERS) LOCATED IN LAT. 37-58-37.85N 34.03W. SIDE SCAN SONAR HEGHT OF 1.1 METER. EVALUATOR RECOMMENDS CHARTING DEPTHS IN AREA SURVEYED. AREA NOT COMPLR\ETLY COVERED WITH SWMB. ADDITIONAL WORK RECOMMENDED. (ENT 7/
53089	UNKNOWN	18653	L	0100	22	F00477/01--OPR-L430-NRB; A WRECK WITH A LEAST DEPTH OF 22 FT WAS LOCATED IN POS.37 55 24.24N, 1: DIVE INVESTIGATION FOUND THE WRECK TO BE APPROX. 25 FT LONG ORIENTED IN A NW/SW DIRECTION. E MCR

23 [illegible]
8 obstructions
13 vessel

ARTIFICIAL ISLAND CREATION-UPPER BAY, MARYLAND
AWOIS FILES

Record #	Vessel Name	Chart #	Area	Cartocode	Depth	History
1279	OBSTRUCTION	12278	E	0067	0	HISTORY H9562/75– OPR-514-AHP-75; UNIDENTIFIED FEATURE PROJECTING ì ABOUT 2 FEET OFF THE BOTTC RECOMMEND CHARTING AS AN OBSTRUCTION. (UP 2/28/95, ì SJV)
1280	OBSTRUCTION	12260	E	0999	0	01280 HISTORY H9562/75–OPR-514-AHP-75, UNIDENTIFIED FEATURE PROTRUDING ABOUT 2 FT. OFF THIS BO SURVEY REQUIREMENTS FULL; 50-METER RADIUS MINIMUM SEARCH, DISPROVAL WILL REQUIRE USE OF E
1281	OBSTRUCTION	12260	E	0999	0	01281 HISTORY H9562/75–OPR-514-AHP-75; UNIDENTIFIED FEATURE PROTRUDING ABOUT 2 FT. OFF TH BOT REQUIREMENTS FULL; 50-METER RADIUS MINIMUM SEARCH, DISPROVAL WILL REQUIRE BOTTOM DRAG.
1282	UNKNOWN	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. 19 FISHING OBSTR. OLD LORAN A 3H4-374 (1980 COMPUTED VALUE) NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS.
1283	ISABEL B. WILEY	12300	C	0999	0	DESCRIPTION 24 NO.122; SCHOONER, 776 GT; SUNK 6/2/18 BY SUBMARINE; POSITION ACCURACY ì 1-3 MILE RICHARD TARACKA, GREENWICH, ì CT. POLICE DEPARTMENT, TEL NO 203-622-8020; 9960-X 26472.8, ì 42915.
1284	EDWARD H. COLE	12300	C	0999	0	DESCRIPTION 24 NO.380; SCHOONER, 1791 GT, SUNK 6/20/18; POSITION ACCURACY WITHIN 1 MILE REPORTI SCHOONER; 1791 GT. SUNK 1918 IN THE LISTED POSITION; REPORTED THROUGH 4TH NAVAL DISTRICT HEAI
1285	UNKNOWN	12260	E	****	0	01285 HISTORY NM45/32 H9562/75–OPR-514-AHP-75, ITEM 3; SEARCHED FOR BY ECHO SOUNDER AND BOTT DELETION FROM CHART. SURVEY REQUIREMENTS MISCELLANEOUS; PROBABLY NON-EXISTENT.
1286	PENISTONE	12300	C	0999	0	01286 DESCRIPTION 24 NO.3913; CARGO, 4139 GT; SUNK 8/11/18 BY SUBMARINE; POS. ACCURACY 1-3 MI. 6(
1287	WETHEA	12318	C	0999	0	***ITEM NOT CHARTED. ASSIGNED AS AN INFORMATION ITEM ONLY*** 24 NO.560; YACHT; 200 GT; SUNK 10/1 WITHIN 1 MILE; UNKNOWN SOURCE FAILED TO LOCATE, DATE UNKNOWN.
1288	OBSTRUCTION	12300	C	067	0	NM14/51–4/17/51,USN; A SUBMERGED OBSTRUCTION CONSTITUTING A MENACE TO NAVIGATION, HAS BEEN (UPDATED 1/02 BY PSH) 24 NO.381; POS. ACCURACY WITHIN 1 MILE; LOCATED 11/09/44 IN ORIGINAL LISTED U.S.C.G. GENTIAN (A DISTANCE OF APPROX. 1,800 METERS FROM THE CHARTED POSITION ORIGINATING FI FT. OF WATER; REPORTED THROUGH FOURTH NAVAL DISTRICT HEADQUARTERS SURVEY 1/10/45
1289	UNKNOWN	12278	E	0100	12	HISTORY NM49/68– A 22 TO 24-FOOT BOAT BURNED TO WATERLINE, LAT. ì 39-12-01.8N, LONG. 76-27–55.8W. BOTTOM DRAG, ì 12 FEET LD NOT IDENTIFIED. (UP 2/28/95, SJV)
1290	ALLIES OF GLASGOW	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. SEE THE PROPRIETARY FIELD FOR HISTO
1291	CARDIFF	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. SEE THE PROPRIETARY FIELD FOR HISTO
1292	COL JAMES PAGE	12318	C	0999	0	ITEM NOT CHARTED. ITEM PROVIDED AS AN INFORMATION ITEM. SEE THE PROPRIETARY FIELD FOR HISTO
1293	UNKNOWN	12278	E	0102	0	HISTORY T5421/33-- BARGE. H9562/75-- OPR-514-AHP-75; ITEM #2; VERIFIED. (UP 2/28/95, SJV)
1294	UNKNOWN	12278	E	0100	0	HISTORY CL680/69– COE INVESTIGATED WRECK, 22 FEET LONG, IN ABOUT 4.7 ì FEET OF WATER (MLW), BC MLW. REST OF WRECK BELOW SURFACE. NOT CONSIDERED AN UNREASONABLE ì HAZARD TO NAVIGATIC - OPR-514-AHP-75; ITEM #2; SEARCHED FOR BUTNOT ì LOCATED. WRECK FOUND AT LAT. 39-12-33.6N, LONG ITEM #1293). (UP 2/28/95, SJV)
1295	OBSTRUCTION	12278	E	0067	0	HISTORY NM33/70 H9562/75– OBSTRUCTION LOCATED COVERED 4 FEET AT MLW; BY WIRE ì DRAG. (UP 2/2ε
1296	C.F. PRICHARD	12318	C	0999		
2480	UNKNOWN	12300	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. 178 ANTHONY VRAIM, DIVERS; OBSERVEL 9960-Y-42939.30 (ASF CORRECTED) POS.39-13-28.5N, 74-17-17.25W.
2481	UNKNOWN	12300	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. THIS ITEM IS AT THE SOUTHERN LIMIT OF PART OF THE FISH HAVEN. 178 ANTHONY VRAIM, DIVER; OBSERVED LORAN-C 9960-X-26958.20. 9960-Y-4294 41.30W; WWI TANKER. 200 EDWARD E. SUAREZ, DIVER, REFERRED TO AS OFFSHORE OIL WK; OBSERVED
2482	UNKNOWN	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. 178 ANTHONY VRAIM, DIVER; OBSERVED ξ 42934.80 (ASF CORRECTED), POS.39-12-4929N, 74-14-4963W.
2719	UNKNOWN	12304	D	0100	34.7	NM38/62--F/V WAS REP. SUNK ABOUT 5270 YARDS 328 DEG. FROM ELBOW OF CROSS LEDGE LT IN APPRC CHARTED AS DANGEROUS SUBM. WK. PA (CHART 12304, 28TH ED). (REVISED, 1/25/84, MJF) H10255/87–OPR 12-56.61N, LONG 75-17-45.18W DESCRIBED BY DIVERS TO BE WOOD AND METAL DEBRIS ON A GENTLY SLC FOUND ON THE WRECKAGE. EVALUATOR RECOMMENDS CHARTING AS A 31 WK. (UPDATE 6/22/89 LQ) H11(57.41N, LONG 075/17/43.22W (NAD83) WITH A LEAST DEPTH OF 34.7 FEET MLLW. (UPDATED 3/04 BY MBH)
2720	UNKNOWN	12304	D	0100	0	NM45/55–A VESSEL WAS REP. SUNK ABOUT 3 MILES, 293 DEG FROM ELBOW OF CROSS LEDGE LT. THE W POS. LAT.39-12-07N, LONG.75-19-41W. (REVISED, 1/25/84, MJF). NM53/55–THE COE REP. THAT THE VESSEL ξ 41W COULD NOT BE LOCATED. PRESENTLY CHARTED AS A DANGEROUS SUBM WK PD (CHART 12304, 28TI HFP-86; WK NEITHER VERIFIED NOR DISPROVED (UPDATED 6/22/89 LQ) H11022/01–OPR-D307-KR; ONLY 75% THE WRECK WAS FOUND WITHIN THE AREA COVERED. RETAIN AS CHARTED. (UPDATED 3/04 BY MBH)
2721	UNKNOWN	12304	D	0100	12	LNM31/73–3RD CGD; A 16FT OUTBOARD BOAT WAS REP. SUNK IN 16FT DEPTHS IN APPROX. POS. LAT.39-1⁄ SUBM. DANGEROUS WK. PA (CHART 12304, 28TH ED) (REVISED, 1/25/84,MJF) H10255/87–OPR-D219-HFP-86; 22/89 LQ) H11022/01–OPR-D307-KR; ITEM FOUND IN LAT. 39/13/59.18N, LONG 075/14/38.92W (NAD83) WITH A I IDENTIFIED AS TWO WRECKS IN CLOSE PROXIMITY. (UPDATED 3/04 BY MBH)
						NM27/67–POS. OF WRECK THERESA I REMAINS DOUBTFUL PENDING INVEST. BY COE. THE ELBOW OF CR(DEPTHS, APPROX. 3900 YDS, 020 DEG. FROM ELBOW OF CROSS LEDGE LT TO MARK THE WRECKS OF THE (REVISED, 1/25/84, MJF) CL1167/67–COE SURVEY (6/3/67); WRECK THERESA I. IN 21FT DEPTHS COVERED B ELBOW OF CROSS LEDGE LT. THE WK BUOY FOR THE THERESA I. IS LOCATED 3900YDS AND 016DEG FRO

2723	THERESA I	12304	D	100	17.26	MJF) NM37/67--PUBLISHES RESULTS OF COE SURVEY ABOVE. GP ABOVE SCALED FROM CHART 12304. PR REP) ON CHART 12304 (28TH ED). (REVISED, 1/25/84, MJF). H10255/87--OPR-D219-HFP-86; SUBM WK LOCATEI BY DIVERS TO BE TWO(2) WRECKS SIDE BY SIDE (SEE AWOIS ITEM 2724) A LEAST DEPTH OF 15FT (15WKS 23/89 LQ) F00453/99--OPR-D392-WH; SIDE SCAN SONAR INVESTIGATION LOCATED CONTACT. LD OF 19 FEET 02.0W. HYDROGRAPHER RECOMMENDS CHARTING A 19 OBSTN AS SURVEYED. EVALUATOR DOES NOT CO INVESTIGATED BY THE FIELD UNIT. WRECK WAS BROUGHT FORWARD TO SOPPLEMENT PRESENT SURVE SEE ALSO AWOIS NO. 2724 "WALTER GRAZE". (UP 7/18/00, SJV) F00467/00-- OPR-D392-WH; 100% SWMB AC DURING F00453 OPS. CONTACT RESEMBLING A WRECK WAS FOUND WITH A LD OF 16 FEET IN LAT. 39-12-3 RECOMMENDS DELETING THE CHARTED 15 WKS AND CHARTING 16 WKS AS SURVEYED. (UP 2/25/02, SJV) CLOSE PROXIMITY. ONE IN LAT. 39/12/38.35N, LONG 075/15/14.71W (NAD83) WITH A LEAST DEPTH OF 17.36 F 075/15/13.57W (NAD83) WITH A LEAST DEPTH OF 17.26 FEET MLLW.THE LATTER WRECK, BEING THE SHOAL (UPDATED 3/04 BY MBH)
2724	WALTER GRAZE	12304	D	100	14	NM27/67--F/V WALTER GRAZE REP. SUNK IN 22FT DEPTHS 3700 YDS 021 DEG FROM ELBOW OF CROSS LEI FT OF MAST VISIBLE AT HIGH WATER. POS. OF THE WRECK THERESA I (SEE AWOIS NO.02723) REMAINS IN BUOY WR HAS BEEN REESTABLISHED IN 22FT DEPTHS APPROX. 3900 YDS.,020 DEG. FROM ELBOW OF CR BUOY IS APPROX 250. YDS., 002 DEG. FROM THE F/V WALTER GRAZE. (REVISED, 1/25/84, MJF) CL1167/67-- WALTER GRAZE LOCATED 3680 YDS., 020 DEG. FROM ELBOW OF CROSS LEDGE LIGHT. THE WRECK BUOY FROM ELBOW OF CROSS LEDGE LIGHT; NM37/67--PUBLISHES RESULTS OF COE SURVEY ABOVE. THE GP CHARTED AS DANGEROUS SUBM. WK. (CHART 12304, 28TH ED) (REVISED, 1/25/84, MJF) H10255/87--OPR-D2 LONG 75-15-16.42W DESCRIBED BY DIVERS TO BE TWO(2) WRECKS LYING SIDE BY SIDE. WOOD AND MET ITEM 2723) A LEAST DEPTH OF 15FT (15WKS) WAS RECOMMENDED FOR CHARTING (UPDATED 6/23/89 LQ) F A CONTACT IN LAT. 39-12-38.6N, LONG. 75-15-02.0W. ECHO SOUNDER LD OF 19 FEET (5.9 METERS). HYDRO DELETING WRECKS. EVALUATOR DOES NOT CONCUR. DOES NOT CONSIDER ITEM ADEQUATELY INVESTIG SURVEY. NO CHANGE IN CHARTING STATUS RECOMMENDED. SEE ALSO AWOIS NO. 2723, "THERESA I". (U WAS ACQUIRED OVER TWO CONTACT AREAS IDENTIFIED DURING F00453 OPS. CONTACT RESEMBLING A 39-12-53.40N, LONG. 75-15-17.04W. AWOIS ITEM NO. 2723 IS LOCATED APPROX. 475 METERS SUOTH OF AW 14 WK AS SURVEYED. (UP 2/25/02, SJV) H11022/01--OPR-D307-KR; WRECK FOUND IN LAT. 39/12/53.33N, LON FEET MLLW. (UPDATED 3/04 BY MBH)
2725	DARLENE	12304	D	0100	7	AWOIS ITEM 2725 SURVEY REQUIREMENTS COMMENT THIS ITEM IS COMPLETED. NO INVESTIGATION IS RE ONLY. HISTORY CL347/50--RESEARCH OF SHORELINE WAS CONDUCTED IN RESPONSE TO CONGRESSMAN THE OYSTER BOAT DARLENE AFTER STRIKING A PILE OF STONES. IT IS INDICATED THAT EGG ISLAND LT H PROTECTED BY STONE BREAKWATER. LTHSE WAS MOVED IN 1878 AND SHORELINE ERODED CAUSING ST MJF) NM22/50--THE OYSTER VESSEL DARLENE REPORTED STRIKING A STONE PILE AT APPROX. POS. LAT. FROM EGG ISLAND LT. PRESENTLY CHARTED AS AN OBSTR. (CHART 12304, 28TH ED) (REVISED, 1/25/84, M WITH NEGATIVE RESULTS; TIME PREEMPTED FURTHER INVESTIGATION.(LAT.39-10-36N,LONG.75-08-21W) RE WRECKAGE OF THE OYSTER VESSEL DARLENE AND SOME OF THE REMAINS OF EGG ISLAND LT. WERE L ECHOSOUNDER LD OF 7FT WAS OBTAINED. NO VERIFICATION BY DIVER WAS POSSIBLE DUE TO STRONG POSITION OF OLD LIGHTHOUSE IS LAT 39-10-34.61N, LONG 75-08-20.09W.
2727	OBSTRUCTION	12304	D	0067	0	AWOIS ITEM 2727 HISTORY CL70/53--THE AIRPLANE WRECKAGE FOUND ABOUT 2 MILES SOUTH OF DIVIDIN APPEARS TO BE A B-47 AIRCRAFT. LOCALS REPORTED THAT A NAVY PLANE CRASHED AROUND 1943. THE CHARTED AS OBSTR. PA (CHART 12304, 28TH ED). (REVISED, 1/25/84, MJF). H10167/84--OPR-D219-PE-84; NO TIME; INQUIRY MADE OF N.J. SHELLFISHERIES BUREAU; NO KNOWLEDGE OF WK BY MEN WHO SURVEY O RECOMMENDED RETAINING AS CHARTED; ADDITIONAL WORK RECOMMENDED (UPDATED MSM 8/86) FE290 INVESTIGATION CONDUCTED (90M LINE SPACING) IN VICINITY OF LAT 39-10-28N, LONG 75-06-52W. EVALUAT DESCRIPTION **** MR. JOE DOBARRO, N.J. SHELLFISHERIES BUREAU, BIVALVE, N.J., TEL NO. (609) 785-073
3246	OBSTRUCTION	12304	D	0067	0	AWOIS ITEM 3246 HISTORY LNM36/79--3RG CGD; A PILE STRUCTURE 3FT ABOVE MHW, WITH RED TRIANGU ESTABLISHED IN APPROX. POS. LAT.39-14-12N, LONG.75-11-06W. LIGHTING EQUIPMENT WAS TO BE INSTAL PRESENTLY CHARTED AS PILE PA(CHART 12304, 28TH ED) (ENTERED, 1/25/84, MJF) H10167/84--OPR-D219-P RESULTS; INQUIRY OF FORTESCUE HARBOR MASTER WHO STATED PILE WAS DESTROYED BY ICE; NO FU REVISING ITEM TO SUBM PILE PA; ADDITIONAL WORK RECOMMENDED. (UPDATED MSM 8/86) FE290/86-87-- INADEQUATE FOR DISPROVAL. FORTESQUE HARBOR MASTER DESCRIBES MARKER AS A SEASONAL 2-3 I REVISING TO SUBM PILE ED. BD INVESTIGATION REQUIRED. (UP 7/89 SRB)
3249	OBSTRUCTION	12304	D	0067	0	HISTORY CL438/81--COAST PILOT INSP. REP.; SHOALING TO 5FT WAS REP. ALONG A 10FT RIDGE IN APPRO CHARTED AS A SHL REP 1980 (CHART 12304, 28TH ED). (ENTERED, 1/25/84 MJF) H10255/87--OPR-D219-HFP-8 HAS MIGRATED 2000 METER SOUTHEAST. EVALUATOR RECOMMEND DELETION OF SHL REP, 1980 NOTATI
3250	OBSTRUCTION	12304	D	0067	0	HISTORY CL2016/75--USCG MARINE INSPECT. REP.; USCG REP. SHOALING IN PORT MAHON CHANNEL A NA IN APPROX. POS. LAT.39-11-00N, LONG.75-23-48W. POS. SCALED FROM CHART 12304. USCG REP. IN 1975 W PRESENTLY CHARTED AS SHL REP 1975. (CHART 12304, 28TH ED). (ENTERED, 1/25/84, MJF) H10255/87--OPR- SHOAL WAS FULLY DEVELOPED AND SHOAL EXISTS BETWEEN THE 3 AND 6FT CONTOURS. i EVALUATOR THAT AREA BE CHARTED AS SHOWN ON PRESENT SURVEY. (UPDATED 6/23/89 LQ)
3493	OBSTRUCTION	12304	D	0067	0	03493 HISTORY BP109946(TP00124)/1970-80--NOS CHART MAINT. PRINT(CLASS 111). (ENTERED,5/8/84,MJF). B UNCHARTED PIERS, CENTERED IN THE VIC. OF LAT. 39-12-51N, LONG. 075-09-43W., WERE NOT LOCATED O POS. LISTED ABOVE. THE POS. WAS SCALED FROM THE CLASS III SHORELINE MAP. DUE TO THE SCALE O CHART 12304.(ENTERED,5/8/84,MJF). H10167/84--OPR-D219-PE-84; AREA VISUALLY INSPECTED DURING SHO HYDROGRAPHER AND EVALUATOR RECOMMEND THAT NEITHER PIERS NOR RUINS BE CHARTED SINCE TH CHART SCALE. (UPDATED MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED
3494	OBSTRUCTION	12304	D	0067	0	03494 HISTORY BP122254(TP00125)/1970-83-83--TOPO REVISION PRINT; PRESENTLY CHARTED TOWER ORIG IN LAT.39-12-46N, LONG.75-03-36W. THE TOWER WAS NOT LOCATED ON SUBSEQUENT 1982 NOS AERIAL PH FROM THE CLASS III SHORELINE MAP. THE TOWER WILL BE REVISED TO SUBM. OBSTR. ON THE NEXT EDIT 10167(1985) REPORTED TOWER WAS VISUALLY VERIFIED. NO DETACHED POSITION WAS OBTAINED. (ENTE VERIFY WITH DETACHED POSITION OR DISPROVE BY BOTTOM DRAG INVEST. WITH A MIN. 250M SEARCH R REQUIRED IF FOUND. DISPROVAL MAY BE OBTAINED BY SALVAGE DOCUMENTATION. REASSIGNED OPR-D
3495	OBSTRUCTION	12304	D	0067	0	03495 HISTORY BP122254(TP00125)1970-83-83--TOPO REVISION PRINT; UNCHARTED TOWER WAS ORIGINALL 43N, LONG.75-06-23W. IT DID NOT APPEAR ON SUBSEQUENT 1982 NOS AERIAL PHOTO. AT THE POS. LISTE SHORELINE MAP. THE TOWER WILL BE APPLIED AS A SUBM. OBSTR. TO THE NEXT EDITION OF CHART 123 MR JOE DOBARRO, N.J. BUREAU OF SHELLFISHERIES, BIVALVE, N.J. TEL NO (609) 785-0730 REPORTS TOW POSITIONING SIGNAL AND CONSISTED OF A TELEPHONE POLE WITH 1X12 BOARDS AS COVERING MATERIA DESTROYED BY A STORM IN 1983. (UPDATED MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED
3496	OBSTRUCTION	12304	D	0067	0	03496 HISTORY BP122254(TP00125)1970-83-83--TOPO REVISION PRINT; UNCHARTED PIER WAS ORIGINALLY 44N. LONG.75-07-17W. IT DID NOT APPEAR ON SUBSEQUENT 1982 NOS AERIAL PHOTO. AT THE POS. LISTE SHORELINE MAP. DUE TO CHART SCALE, THE PIER WILL NOT BE DEPICTED AS RUINS ON THE NEXT EDITIO OPR-D219-PE-84; ITEM NOT ADDRESSED (UPDATED MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED

4525	OBSTRUCTION	12304	D	0067	6.3	AWOIS ITEM 4525 HISTORY H10167/84--OPR-D219-PE-84; SUBM OBSTR, COMPOSED OF 4 PILING STRUCTURI INVESTIGATION; BOATERS IN AREA REPORTED STRIKING LT; POSITION OF LT PROVIDED BY MR JOE DOBAI CENTERED ON REP POSITION OF OBSTR; HANG IN LAT 39-09-47.3N, LONG 75-08-53W; EVALUATOR RECOMM MSM 11/86)
7459	UNKNOWN	12304	D	0098	0	AWOIS ITEM 7459 HISTORY H10255/87--OPR-D219-HFP-86; VIS WK IN LAT 39-11-31.18N, LONG ì 75-23-59.72W E CHARTING AS ì VISIBLE WK (ENTERED 6/23/89 LQ)
7462	UNKNOWN	12304	D	0100	0	AWOIS ITEM 7462 HISTORY H10255/87--OPR-D219-HFP-86; SUBM DANG WK LOCATED IN LAT 39-11-17.18N, LC PROCESSING USING A SKETCH ON THE ECHOGRAM FOR DAY 260. EVALUATOR RECOMMENDS CHARTING ,
7464	OBSTRUCTION	12304	D	0067	0	AWOIS ITEM 7464 HISTORY FE290/86-87--OPR-D219-HFP-86/87; 6FT OBSTRUCTION, LOCATED IN LAT 39-10-46. FATHOMGRAMS DETECTED DURING OFFICE PROCESSING. (ENT SRB 7/89)
7467	OBSTRUCTION	12304	D	0067	0	AWOIS ITEM 7467 HISTORY H10167/84--OPR-D219-PE-84; 8FT DEPTH (OBSTR) LOCATED IN LAT 39-10-32.7N, L FE290/86-87--OPR-D219-HFP-86/87; STAR PATTERN ECHO SOUNDER DEVELOPMENT, INADEQUATE FOR DISI DRAG INVESTIGATION REQUIRED. (ENT 7/89 SRB)
7468	OBSTRUCTION	12304	D	0067	0	AWOIS ITEM 7468 HISTORY H10167/84--OPR-D219-PE-84; 4FT DEPTH (OBSTR), LOCATED IN LAT 39-11-20N, LC FE290/86-87--OPR-D219-HFP-86/87; INADEQUATE ECHOSOUNDER DEVELOPMENT CONDUCTED, 4FT OBSTRU INVESTIGATION REQUIRED. (ENT 7/89 SRB)
7469	OBSTRUCTION	12304	D	0067	0	AWOIS ITEM 7469 HISTORY H10167/84--OPR-D219-PE-84; 3FT DEPTH (OBSTR), LOCATED IN LAT 39-10-36N, LC FE290/86-87--OPR-D219-HFP-86/87; INADEQUATE ECHOSOUNDER DEVELOPMENT CONDUCTED, 3FT OBSTR (REQUIRED. (ENT 7/89 SRB)
7736	FIRST LADY	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. THE ITEM POSITION IS IN A FISH HAVEN (, OF THE AUTHORIZED MATERIALS FOR THE FISH HAVEN. 195 LORAN C RATES PROVIDED BY MR. RICHARD TEL. NO. 203-622-8020; IDENTIFIED AS FIRST LADY; 9960-X 26897.3, 9960-Y 42943.3; LAT. 39-13-42.82N, LONG. (ENTERED 5/90 MSM)
7737	PAULINE MARIE	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. THE ITEM POSITION IS IN A FISH HAVEN (, OF THE AUTHORIZED MATERIALS FOR THE FISH HAVEN. 195 LORAN C RATES PROVIDED BY MR. RICHARD TEL. NO. 203-622-8020; IDENTIFIED AS PAULINE MARIE; 9960-X 26895.4, 9960-Y 42944.0; LAT. 39-13-46.44N, LO (ENTERED 5/90 MSM)
7738	MARANA ABACO	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. THE ITEM POSITION IS IN A FISH HAVEN (, OF THE AUTHORIZED MATERIALS FOR THE FISH HAVEN. 195 LORAN C RATES PROVIDED BY MR. RICHARD TEL. NO. 203-622-8020; IDENTIFIED AS MARANA ABACO; 9960-X 26896.1, 9960-Y 42948.1; LAT. 39-14-09.43N, L((ENTERED 5/90 MSM)
8697	OBSTRUCTION	12272	E	0085	0	HISTORY CL1552/80--USCG AUX. TO NOS; REPORTS FIVE (VISIBLE) PILES ì (REPORTED BY LYNN PASS, DUN DEPTHS OF 3-5 FT. (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY VIS WERE FOUND IN 39/09/33.75N, ì 076/15/26.86W UNCOVERING FROM 0.7-2.0 METERS AT THE TIME OF THE ì IN (ENTERED 8/1/95 ì MBH)
8698	OBSTRUCTION	12272	E	0085	0	SURVEY REQUIREMENTS COMMENT SEARCH THE AREA TO 200 M. NW AND 200 M. SE FROM THE LISTED G OF SIX TALL PILES ì (REPORTED BY CALVIN C. YAEGER, USPS, ON 9/5/81). PRIOR SURVEY ì DEPTHS IN THE ì (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY VISUAL ì SEARCH. TH COVERED ì 0.3 METERS (MLLW) TO BEING UNCOVERED 5.0 METERS (MLLW). tHE ì AWOIS POSITION IS THE 48.13N, 076/15/11.65W (THE AWOIS POSITION) 39/09/48.67N, 076/15/12.69W 39/09/49.36N, 076/15/13.28W 39/09, 09/51.82N, 076/15/15.23W THE ITEM IS CONSIDERED COMPLETE. (ENTERED 8/1/95 MBH)
9519	UNKNOWN	12278	E	0098	0	HISTORY LNM26/80-- OPR-E346-AHP; 230-FOOT FUEL BARGE REPORTED AGROUND ì IN APPROX. POSITION
9727	OBSTRUCTION	12278	E	0067	0	HISTORY CL923/91-- USPS; SUBMERGED OBSTRUCTION HIT BY 34-FOOT SAIL BOAT ì DRAWING 5 FEET 7 INC POSITION LAT. 39-12-11N, LONG. 76-27-17W. (ENT 4/24/96, SJV)
9728	OBSTRUCTION	12278	E	0067	0	
9731	OBSTRUCTION	12278	E	0067	0	HISTORY CL1245/80-- CAPT, USN (RET), BURKE LUCAS TO DMA; LETTER DATED ì 8/1/80; SAIL BOAT STRUCK LONG GASH 4 FEET BELOW THE WATERLINE. OWNER AND BOAT YARD ì PERSONNEL BELIEVE OBSTRUCT BUOY OR BARGE. POSITION SCALED IN APPROX. LAT. 39-13-05N, ì LONG. 76-14-47W. (ENT 4/24/96, SJV) H10 SEARCH NEGATIVE. ONLY 120 METERS WAS CONDUCTED TO THE EAST DUE TO SHALLOW WATER. EVALU
9743	UNKNOWN	12278	E	0100	0	HISTORY LNM37/72-- CHESAPEAKE BAY - UPPER CHESAPEAKE CHANNEL - VESSEL ì SUNK; A 25-FOOT WC YDS. SOUTHWEST OF BREWERTON CHANNEL EAST EXTENSION LIGHT BUOY "7" ì (LLNR 2810) IN APPROX. F 96, SJV)
9746	OBSTRUCTION	12278	E	0085	0	HISTORY CL889/70-- USCGAUX; STAKE OR PILING APPROX. 10 INCHES IN DIA. ì JUST OUTSIDE CHANNEL. AT LAT. 39-12-52.5N, LONG. 76-14-55W. PILE ALSO VISIBLE ON AERIAL ì PHOTOGRAPHY. (ENT 4/24/96, SJV) H10 SEARCH NEGATIVE. ONLY 120 METERS CONDUCTED TO THE EAST DUE TO SHALLOW WATER. EVALUATOR
9747	UNKNOWN	12278	E	0100	0	HISTORY LNM32/72-- CHESAPEAKE BAY - UPPER PART - WRECK INFORMATION; A ì BARGE HAS SUNK IN 15 06N, LONG. 76-19-48W. MARKED WITH A WHITE LIGHT. (ENT ì 4/24/96, SJV)
9749	UNKNOWN	12278	E	0100	0	HISTORY NM45/48-- CHESAPEAKE BAY - BALTIMORE HARBOR APPROACHES - WRECK ì - BUOYS ESTABLIS QK ì FL R) ESTABLISHED 25 YDS., 201 DEG. FROM WRECK WHICH IS LOCATED ì 5,440 YDS., 137 DEG. FROM 11-18N, LONG. 76-23-40W). STERN AND PILOT HOUSE SHOW ì ABOVE WATER. POSITION OF WRECK SCALED LONG. 76-21-20W. 2. RHODE WRECK BUOY (SECOND ì CLASS NUN) R/B HOR. BANDS, ESTABLISHED 25 YDS WRECK LIGHTED BELL BUOY (RED, QK FL ì R) ESTABLISHED 33 YDS., 330 DEG. FROM WRECK WHICH IS LO CHANNEL RANGE FRONT LIGHT. ì MAST AND TOP OF WRECK SHOWS ABOVE WATER. THIS WRECK IS NO L
9751	OBSTRUCTION	12278	E	0067	0	HISTORY CL62/90-- LETTER, MARYLAND DNR TO NOS, DATED 9/19/89; FISH ì HAVEN CONSTRUCTED OF CLE, DEPOSITED IN INACTIVE FOSSIL OYSTER SHELL DREDGE CUTS. THIS ì MATERIAL WILL NOT EXTEND ABOVE OR WILL BE NO LESS THAN 15 FEET BELOW MLW. APPROX. ì CENTER OF FISH HAVEN LIMITS SCALED IN L/
10732	OBSTRUCTION	12304	D	067		
10734	UNKNOWN	12304	D	098		

10735	OBSTRUCTION	12304	D	067		
10737	OBSTRUCTION	12304	D	067	1	F00290/86-87--OPR-D219-HFP-86/87; FOUND THE SUBMERGED RUINS OF EGG ISLAND LIGHTHOUSE, 1882 IN A LEAST DEPTH OF 1.0 FEET MLLW. (ENTERED 10/00 BY MBH)
10745	OBSTRUCTION	12304	D	085		
10746	OBSTRUCTION	12304	D	085		
10747	OBSTRUCTION	12304	D	067	6	H10167/84--OPR-D219-PE-84; LOCATED A SUBMERGED STAKE WITH A LEAST DEPTH OF 6.0 FEET (MLLW) IN (ENTERED 10/00 BY MBH)
10748	OBSTRUCTION	12304	D	067	13	H10167/84--OPR-D219-PE-84; LOCATED A SUBMERGED STAKE WITH A LEAST DEPTH OF 13.0 FEET (MLLW) I (ENTERED 10/00 BY MBH)
11176	LINDA SNOW II	12318	C	100		
11293	OBSTRUCTION	12273	E	067	15	H10757/97-98--OPR-E346-AHP; AN UNCHARTED OBSTRUCTION IN LAT 39-10-47.93N, LONG 076-26-02.75W (NA WAS LOCATED BY SIDE SCAN SONAR IN THE PRESENT SURVEY. EVALUATOR RECOMMENDEDS THAT A D LEAST DEPTH OF 15 FEET BE CHARTED IN THE PRESENT SURVEY LOCATION. (ENTERED BY PSH, 02/02)
11294	OBSTRUCTION	12273	E	067	15	H10757/97-98--OPR-E346-AHP; AN UNCHARTED OBSTRUCTION IN LAT 39-10-02.70N, LONG 076-25-43.39W (NA WAS LOCATED BY SIDE SCAN SONAR IN THE PRESENT SURVEY. THIS OBSTRUCTION IS APPROXIMATELY THAT A DANGEROUS SUBMERGED OBSTRUCTION WITH A LEAST DEPTH OF 15 FEET BE CHARTED IN THE P
11295	OBSTRUCTION	12281	E	067		
11296	OBSTRUCTION	12281	E	085		
11297	OBSTRUCTION	12281	E	085		
11302	OBSTRUCTION	12281	E	085		
11303	OBSTRUCTION	12281	E	085		
11647	OBSTRUCTION	12318	C	067		
11648	SEWER OUTFALL	12318	C	067		
12277	OBSTRUCTION	12304	D	067	21.16	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/11/13.24N, LONG. 075/16/08.66W (NAD83 (ENTERED 3/04 BY MBH)
12278	OBSTRUCTION	12304	D	067	17.85	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/14/20.80N, LONG. 075/18/08.23W (NAD83 (ENTERED 3/04 BY MBH)
12279	OBSTRUCTION	12304	D	067	22.34	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/11/56.37N, LONG. 075/16/21.70W (NAD83 (ENTERED 3/04 BY MBH)
12280	OBSTRUCTION	12304	D	067	25	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/12/19.76N, LONG. 075/16/39.44W (NAD83 3/04 BY MBH)
12281	OBSTRUCTION	12304	D	067	17.32	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/14.07.63N, LONG. 075/16/34.48W (NAD83 (ENTERED 3/04 BY MBH)
12282	OBSTRUCTION	12304	D	067	14.31	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/13/23.42N, LONG. 075/16/18.58W (NAD83 (ENTERED 3/04 BY MBH)
12286	OBSTRUCTION	12304	D	067	17.65	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/09/15.13N, LONG. 075/17/09.07W (NAD83 (ENTERED 3/04 BY MBH)
12288	OBSTRUCTION	12304	D	067	21.2	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/11/49.26N, LONG. 075/18/50.00W (NAD83 3/04 BY MBH)
12289	OBSTRUCTION	12304	D	067	17.68	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/09/40.85N, LONG. 075/17/48.08W (NAD83 (ENTERED 3/04 BY MBH)
12290	OBSTRUCTION	12304	D	067	16.7	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/10/34.47N, LONG. 075/17/45.53W (NAD83 3/04 BY MBH)
12291	OBSTRUCTION	12304	D	067	25.07	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/11/31.43N, LONG. 075/18/04.91W (NAD83 OBSTRUCTION IS WITHIN A CHARTED FISH HAVEN WITH AN AUTHORIZED MINIMUM DEPTH OF 15 FEET MLL
12292	OBSTRUCTION	12304	D	067	16.31	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/11/01.94N, LONG. 075/18/03.85W (NAD83 OBSTRUCTION IS WITHIN A CHARTED FISH HAVEN WITH AN AUTHORIZED MINIMUM DEPTH OF 15 FEET MLL
12295	OBSTRUCTION	12304	D	067	20.8	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/14/12.96N, LONG. 075/19/21.65W (NAD83 3/04 BY MBH)
12299	OBSTRUCTION	12304	D	067	27	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/12/13.30N, LONG. 075/17/24.00W (NAD83 3/04 BY MBH)
12300	OBSTRUCTION	12304	D	067	33	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/12/20.00N, LONG. 075/17/24.80W (NAD83 3/04 BY MBH)
12301	OBSTRUCTION	12304	D	067	14	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/09/40.10N, LONG. 075/17/28.05W (NAD83 3/04 BY MBH)

12305	OBSTRUCTION	12304	D	067	31	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. N, LONG. W (NAD83) WITH A LEAST DEPTH
12306	OBSTRUCTION	12304	D	067	15	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/11/03.20N, LONG. 075/11/54.50W (NAD83 3/04 BY MBH)
12307	OBSTRUCTION	12304	D	067	22	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/10/47.20N, LONG. 075/15/55.90W (NAD83 3/04 BY MBH)
12308	OBSTRUCTION	12304	D	067	30	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/10/41.80N, LONG. 075/17/37.80W (NAD83 OBSTRUCTION IS WITHIN A CHARTED FISH HAVEN WITH AN AUTHORIZED MINIMUM DEPTH OF 15 FEET MLLW
12309	OBSTRUCTION	12304	D	067	27	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/11/18.80N, LONG. 075/16/54.00W (NAD83 3/04 BY MBH)
12310	OBSTRUCTION	12304	D	067	25	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/11/34.90N, LONG. 075/16/21.80W (NAD83 3/04 BY MBH)
12311	OBSTRUCTION	12304	D	067	27	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN APPROXIMATELY LAT. 39/11/31.45N, LONG. W (I OBSTRUCTION IS WITHIN A CHARTED FISH HAVEN WITH AN AUTHORIZED MINIMUM DEPTH OF 15 FEET MLLW
12312	OBSTRUCTION	12304	D	067	35	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/11/32.30N, LONG. 075/16/31.10W (NAD83 3/04 BY MBH)
12313	OBSTRUCTION	12304	D	067	36	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/11/46.60N, LONG. 075/16/39.70W (NAD83 3/04 BY MBH)
12314	OBSTRUCTION	12304	D	067	17	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/12/53.10N, LONG. 075/15/41.30W (NAD83 3/04 BY MBH)
12315	OBSTRUCTION	12304	D	067	39	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/12/22.50N, LONG. 075/17/22.70W (NAD83 3/04 BY MBH)
12316	OBSTRUCTION	12304	D	067	30	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/12/41.80N, LONG. 075/17/37.00W (NAD83 3/04 BY MBH)
12317	OBSTRUCTION	12304	D	067	15	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/12/51.20N, LONG. 075/18/20.60W (NAD83 3/04 BY MBH)
12318	OBSTRUCTION	12304	D	067	15	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/14/12.40N, LONG. 075/17/32.90W (NAD83 3/04 BY MBH)
12319	OBSTRUCTION	12304	D	067	40	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/14/00.80N, LONG. 075/18/01.70W (NAD83 3/04 BY MBH)
12340	OBSTRUCTION	12304	D	067	22	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN APPROXIMATELY LAT. 39/11/20.30N, LONG. 075/ MLLW. (ENTERED 3/04 BY MBH)

BEACH NOURISHMENT – BUCKROE BEACH, VIRGINIA
AWOIS FILES

Record #	Vessel Name	Chart #	Area	Cartocode	Depth	History
910	UNKNOWN	12208	E	999	0	HISTORY NM DATED 1/31/45 DESCRIPTION 24 NO.1307, REPORTED SCATTERED WRECKAGE; POSITION ACCURACY WITHIN 1 MILE; LOCATED 1944 (SOURCE UNK.)
911	OBSTRUCTION	12254	E	370	15	HISTORY CL433/82(MAR)--OPR-515-RU/HE 77;OBSTR (METAL DEBRIS) CLEARED BY 15FT,LOCATED IN LAT.37-01-03N,LONG.76-10-00W,WHILE INVESTIGATING ITEM 1E. FE234/77WD--0PR-515-RU/HE-77;OBSTR,CLEARED BY 15FT LOCATED IN LAT.37-01-04.3N,LONG.76-09-59W.HUNG AT 19FT,CLEARED BY 15FT,HANG NOT INVESTIGATED. H10116/83--OPR-D103-WH-83;19FT HANG CLEARED BY 15FT(19FT OBSTR) CARRIED FORWARD FROM FE234/77WD IN LAT.37-01-04.3N,LONG.76-09-59.0W.NOT INVESTIGATED. RETAINED AS CHARTED(OBSTR CLEARED BY 15FT).(ENT 4/89 SRB) FE413SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/14/96, SJV)
912	UNKNOWN	12248	E	0370	33	HISTORY CHARTED AS DANGEROUS SUBMERGED, ED, SOURCE NOT DETERMINED. FE 1 1967 HUNG AT 27 FT, CLEARED TO 33 FT, PORTION OF WK BROKEN OFF BY DRAG, DIVER LEAST DEPTH OF 39 FT ON LARGE OBJECT COVERED W/MARINE GROWTH IN 48 FT.
913	OBSTRUCTION	12208	D	100		
914	OBSTRUCTION	12254	E	370	16	HISTORY FE-205WD/67-- HUNG AT 16 FEET. CLEARED TO 16 FEET. NOT ì IDENTIFIED. (UP 3/2/94, SJV) FE413SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/14/96, SJV)
915	UNKNOWN	12222	E	370	15	HISTORY FE-205WD/67-- HUNG AT 17 FEET. CLEARED TO 15 FEET. DESCRIPTIVE ì REPORT STATES ITEM CONSISTS OF METAL SCRAP WRECKAGE. (UP 3/2/94, ì SJV) FE413SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/14/96, SJV)
916	UNKNOWN	12222	E	100	0	HISTORY LNM46/74--11/19/74 (5TH CG)--19FT CABIN CRUISER REP. SUNK IN 35FT DEPTHS IN APPROX. POS. LAT.37-02-00N, LONG.76-07-00W. PRESENTLY CHARTED AS SUBM. DANG. WK. PA (CHART 12222, 29TH ED.). ASSIGNED TO OPR-515-RU/HE-77; ITEM 1D; NOT INVEST. (ENTERED, 9/16/83, MJF) FE234(1977)WD--OPR-E609-RU/HE-81; ITEM 1; NOT INVEST. (ENTERED, 11/10/83, MJF) H10116/83--OPR-D103-WH-83; SUBM DANG WK PA, CHARTED IN LAT.37-02-00N, LONG.76-07-00W. 400% SIDE SCAN SONAR/ECHOSOUNDER INVESTIGATION CONDUCTED FOR 0.5 NM RADIUS. NO INDICATION OF WK FOUND. EVALUATOR RECOMMENDS RETENTION OF CHARTED WK AS SIDE SCAN SONAR RECORDS ARE OF POOR QUALITY.(UP 4/89 SRB) FE222WD/78--OPR-E609-RU/HE-78; MODIFIED EVALUATION REPORT; NOT ASSIGNED BUT IS COMMON TO PSR ITEM NO. 1 AREA OF INVESTIGATION. COVERED BY WIRE DRAG. MINIMUM CLEARANCE OVER CHARTED POSITION WAS 20 FEET. DISPROVAL REQUIREMENTS FROM BOTTOM WERE NOT MET. LARGE SAND WAVES IN AREA PRECLUDE DISPROVAL BY WIRE DRAG METHODS. EVALUATOR RECOMMENDS DANGEROUS SUNKEN WRECK BE RETAINED AS PRESENTLY CHARTED WITH "(CLEARED 20 FEET)". (UPDATED 11/15/88 SJV)
917	UNKNOWN	12222	E	100	0	HISTORY NM37/66--27 FT BOAT REP. SUNK IN 34FT DEPTHS IN APPROX. POS. LAT.37-02-00N, LONG.76-06-00W. PRESENTLY CHARTED AS SUBM. DANGEROUS WK. PA. (CHART 12222, 29TH ED.). ASSIGNED TO OPR-467-71; ITEM 58; NOT INVESTIGATED. FE234(1977)WD--OPR-515-RU/HE-77; ITEM 1B; NOT INVEST. (ENTERED, 11/10/83, MJF) ASSIGNED TO OPR E609-RU/HE-81; ITEM 2; NOT INVEST. (ENTERED, 11/10/83, MJF) H10116/83--0PR-D103-WH-83;SUBM DANG WK PA, CHARTED IN LAT.37-02-00N, LONG.76-06-00W. 400% SIDE SCAN SONAR/ ECHOSOUNDER INVESTIGATION CONDUCTED FOR 0.5 NM RADIUS. NO INDICATION OF WK FOUND, EVALUATOR RECOMMENDS RETENTION OF CHARTED WK AS SIDE SCAN SONAR RECORDS WERE OF POOR QUALITY.(UP 4/89 SRB) FE222WD/78--OPR-E609-RU/HE-78; MODIFIED EVALUATION REPORT; NOT ASSIGNED TO PRESENT SURVEY BUT LOCATION FALLS WITHIN AREA OF INVESTIGATION OF AWOIS ITEM NO. 923 (PSR ITEM NO. 1). NOT FOUND BUT CLEARED TO 19FT FOR 1/2 MILE RADIUS FROM CHARTED POSITION. EVALUATOR RECOMMENDS CHARTING A DANGEROUS SUNKEN WRECK (CLEARED 19 FEET) IN CHARTED POSITION. (UPDATED 9/10/88 SJV)
918	UNKNOWN	12222	E	0100	0	HISTORY CHARTED AS NON DANGEROUS SUBMERGED, SOURCE NOT DETERMINED FE 1 1967 NO HANG, CLEARED 2 DIRECTIONS TO 12 FT IN NORTH HALF OF 1/2 MILE CIRCLE ONLY
919	DRUID HILL	12221	E	0999	0	DESCRIPTION 24 NO.4777; CARGO; 1281 GT,SUNK 9/21/42 BY MARINE CASUALTY; POSITION ACCURACY 3-5 MILES 61
						HISTORY LNM49/70-12/1/70 (5TH CG)--21FT BOAT REP. SUNK IN 27FT DEPTHS IN APPROX. POS. LAT.37-02-18N, LONG.76-05-06W. PRESENTLY CHARTED AS DANGEROUS SUBM. WK PA (CHART 12222, 29TH ED). ASSIGNED TO OPR-467-71; ITEM 57; NOT INVESTIGATED. FE234/77WD--OPR-515-RU/HE-77; ITEM

920	UNKNOWN	12222	E	100	0	1A,INCOMPLETE AREA COVERAGE (LESS THAN 10%).RETAIN AS CHARTED. H10116/83--OPR-D103-WH-83;SUBM DANG WK ED,CHARTED IN LAT.37-02-18N, L0NG.76-05-06W.SIDE SCAN SONAR/DIVER INVESTIGATION CONDUCTED WITH NEGATIVE RESULTS.ONE UNINVESTIGATED SIDE SCAN SONAR CONTACT(29FT OBSTR,AWOIS NO 7289) WAS MADE IN LAT.37-02-09.75N,LONG.76-05-13.02W BUT WAS DETERMINED DURING OFFICE PROCESSING NOT TO BE THE WK.PA REVISED TO ED.(UP 4/89 SRB)
921	COLUMBIA	12208	D	100	0	HISTORY LNM40/71--DANGEROUS SUBMERGED WRECK PD, TUG COLUMBIA, 65 FEET LONG, BLACK AND WHITE, LOCATED IN LAT.37-02-21N, LONG.76-02-03W. BUOY TEMPORARILY EST. LNM14/73--COAST GUARD UNABLE TO LOCATE WRECK. TEMPORARY BUOY REMOVED. H9880/80--OPR-D103-PE-80, PSR ITEM 79; UNABLE TO LOCATE WRECK THROUGH ECHO SOUNDER INVESTIGATION, 45 METER LINE SPACING, 1000 METER RADIUS. ARGO CONTROL IN R/R MODE
922	UNKNOWN	12208	D	100	0	HISTORY ——ORIGINAL CHARTING SOURCE UNASCERTAINED H6438/39WD CLEARED TO 15 FT. BUT NEVER HUNG H9693/77 ASSIGNED AS PSR 49, OPR-516, 4/21/77; NO INDICATION OF WK. ON REGULAR SYSTEM OF SOUNDING LINES, RECOMMENDED REMAIN AS CHARTED. DESCRIPTION 24 NO.420; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 15 FT. (SOURCE UNK.); LOCATED 1939 BY CGS 27 WRECK SUNK BEFORE WWII. LOCATED BY U.S.C.G.S. IN 1939.
923	OBSTRUCTION	12222	E	067	0	HISTORY CL281/67--HELICOPTER COMBAT SUPPORT SQUAD. 4, NORFOLK NAVAL AIR STATION: ì MINESWEEPING GEAR SNAGGED SUBM. OBSTR. GEAR NORMALLY RUNS BETWEEN ì 13 AND 15 FT. BELOW SURFACE. 2000 POUNDS OF TENSION WAS APPLIED FOR 15 MIN. ì IN AN ATTEMPT TO DISLODGE GEAR. SUBSTANTIAL IMMOVABLE OBJECT INDICATED. ì PRESENTLY CHARTED AS SUBM. OBSTR. PA (13 FT REP.) IN LAT.37-02-33N, ì LONG.76-06-42W. NM12/67-3/25/67--INFO. SAME AS ABOVE. ASSIGNED TO OPR-467-71; ITEM 59; NOT INVESTIGATED. FE234(1977)WD--OPR-515-RU/HE-77; ITEM 1C; NOT INVEST. (ENTERED, 11/10/83, ì MJF) CL1960/78-OPR-E609-RU/HE-78, ITEM NO.1; WIRE DRAG, 1 MILE RADIUS. CLEARED ì LEAST DEPTH OF 21 FT. REVISED TO SUBM. OBSTR. PD. (CHART 12222, 29TH ED.). LNM7/79--PUBLISHES ABOVE INFO. FE222WD/78--OPR-E609-RU/ HE-78; ITEM NO. 1; (MODIFIED EVALUATION ì REPORT); NOT LOCATED BUT CLEARED IN ONE DIRECTION BY 21FT. AND ì OPPOSING DIRECTION BY 18FT. IN DEPTHS OF 29 TO 30FT. (H10116). ì ITEM IN AREA OF LARGE SHIFTING SAND WAVES. EVALUATOR SUSPECTS ì MINESWEEPER GEAR (CL281/67, ABOVE) "STUCK" ON A LARGE SAND WAVE ì RATHER THAN AN OBSTRUCTION. EVALUATOR CONSIDERS SIDE SCAN SONAR ì THE ONLY TOOL FOR POSITIVE DISPROVAL, IF DISPROVAL IS REQUIRED. ì RECOMMENDS CHARTING ITEM IN ITS REPORTED POSITION (ABOVE) AS A ì DANGEROUS SUBMERGED OBSTRUCTION (CLEARED 18 FEET). THIS ì RECOMMENDATION SUPERSEDES THE RECOMMENDATION BY THE EVALUATOR FOR ì SURVEY H10116/83 IN SECTION 7.A.5. (UPDATED 9/10/88 SJV) H10116/83--OPR-D103-WH-83;SUBM OBSTR PD,CHARTED IN LAT.37-02-33N,LONG. ì 76-06-42W,INVESTIGATED BY SCAN SONAR WITHIN O.5 NM RADIUS. NO INDICATION ì OF OBSTR FOUND. EVALUATOR RECOMMENDS DELETION OF OBSTR BASED ON RESULTS ì OF PRESENT SURVEY AND FE222WD/78.(UPDATED 4/89 SRB) NOTE: THIS ITEM POSSIBLY COMPLETED.
924	SAN DEMETRIO	12200	D	0999	0	HISTORY NM52/17-- SCHOONER OR BARGE ABOUT 50 FT. LONG WITH 20 FT. BEAMì SUNK IN LAT 37-03-03N, LONG 75-45-54W; REPORTED BEING 3 FT. ABOVE WATER. H4193/21-- H5987/35WD-- ITEM 7; CLEARED BY 33 FT. EFFECTIVE DEPTH. H9871/ 76WD-- AREA SWEPT TO 40 FT. BUT INSUFFICIENT OVERLAP; EVALUATOR RECOMMENDED RETAIN AS CHARTED. H9919/80-81--OPR-D103-MI/PE-80; PSR ITEM 73; LIMITED FATHOMETER SEARCH AT 90M SPACING FOR 1000M RADIUS; NEGATIVE RESULTS; EVALUATOR RECOMMENDS RETAINING AS CHARTED. (ENTERED MSM 8/87) DESCRIPTION 24 NO.1319; POSITION ACCURACY 1-3 MILES; LOCATED 1945 (UNKNOWN SOURCE); REPORTED THROUGH CGS SURVEY, DATED 1950 **** REFERENCE AWOIS ITEM 926 FOR POSSIBLE IDENTITY.
925	UNKNOWN	12221	D	100		
926	BRAZIL	12208	D	100	0	HISTORY CHARTED AS WD CLEARED TO 26 FT, SURVEY NOT DETERMINED POSSIBLY INVESTIGATED OPR-D103 DESCRIPTION 24 NO. 631; CARGO, 2388 GT,SUNK 4/9/42 BY MARINE CASUALTY; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 23 FT. IN 1947; REPORTED FROM HO CHART RECORDS.
927	FRANCIS O BOYLE	12208	D	370	24	HISTORY NM5/24--BUOY ESTABLISHED 1/19/24 IN APPROX. 4 1/2 FMS, 4.3 MILES, 154 DEG, 30 MIN. FROM CAPE CHARLES LIGHTHOUSE. APPROX. POS. LAT.37-03-30N, LONG.75-52W NM6/24--LOCATED IN 4 3/4 FATHOMS APPROX. 4.8 MILES 148 DEG FROM LIGHTHOUSE. MOORED APPROX. 265 YDS 151 DEG FROM WRECK. NM16/24--REPORTED DESTROYED LEAVING CLEAR DEPTH OF 24 FT. FE3/49--ITEM NO.16; REPORTED 1924, CLEARED DEPTH OF 24 FT. POSSIBLY INVESTIGATED OPR-D103 DESCRIPTION 24 NO.1231; SCH, SUNK 1924; POS. ACCUR. WITHIN 1 MILE; LD 24 FT.(SOURCE UNK) 185 ITEM NO.33, SAME INFO AS DOC. 20.
928	UNKNOWN	12220	E	100	0	HISTORY LNM49/72--A 50-FT CRAB BOAT HAS BEEN REPORTED SUNK IN 20 FT OF WATER, THE MAST IS VISIBLE ABOVE WATER AND THE WRECK MAY BE BREAKING UP, THE WRECK IS UNMARKED; POS. APPROX.

929	UNKNOWN	12220	E	0100	0	HISTORY LNM49/72
931	OBSTRUCTION	12208	E	067	43.5	HISTORY FE234(1977)WD--OPR-515-RU/HE-77; WHILE SEARCHING FOR ITEM 1A A HANG WAS ENCOUNTERED AT 46FT AND CLEARED TO 44FT. DIVER INVEST. FOUND MUSHROOM ANCHOR PROTRUDING 4FT OFF THE BOTTOM AND RECORDED A 43FT DEPTH BY A PNEUMATIC DEPTH GAUGE. POS. OBTAINED BY RADIST RANGE-RANGE CONTROL IN LAT.37-03-21.2N, LONG.76-04-58.2W. PRESENTLY CHARTED AS A 43FT OBSTR. (CHART 12222, 29TH ED). (ENTERED, 11/10/83, MJF) CL834/77-(WEEKLY ACTIVITY REP)--RUDE AND HECK FIRST REP MUSHROOM ANCHOR FOR NM IN LAT.37-03-20.4N, LONG.76-04-58.2W. NM28/77--INFO. SAME AS ABOVE CL433/82-(MONTHLY ACTIVITY REP)--INFO. SAME AS CL834/77 ABOVE. H10116/83--OPR-D103-WH-83; 46FT ECHOSOUNDER LD OBTAINED ON MUSHROOM ANCHOR IN LAT.37-03-20.82N,LONG.76-04-56.66W, DURING SIDE SCAN SONAR/DIVER INVESTIGATION. POOR VISIBILITY AND SWIFT CURRENTS PREVENTED LD DETERMINATION. EVALUATOR CARRIED FORWARD 43FT LD FROM FE234/77WD AND REVISED POSTION TO AGREE WITH PRESENT SURVEY. (UP 4/89 SRB) CL526/90--COE TO N/CG2211 (JIM DAILY), 5/9/90. 2-TON MUSHROOM ì ANCHOR IN YORK SPIT CHANNEL REMOVED IN JULY 1988 DURING CHANNEL'S ì DEEPENING TO 50 FEET. PULLED UP BY HOPPER DREDGE SHIP STUYVESANT. ì ANCHOR CONSIDERED TO BE OF SOME HISTORICAL VALUE AND WAS TRUCKED ì TO CRANEY ISLAND. (UP 5/18/90, SJV) DESCRIPTION **** TELECON (COE GEAN BATTY, NORFOLK DREDGE MAINT. BRANCH, FTS 827-3482). DIVER INVEST. WEEK OF 8/29/83 UNABLE TO LOCATE SUBM. OBSTR. AT LISTED POS. COE DESIRES SALVAGE REMOVAL. IF LOCATED CONTACT COE WITHOUT DELAY.
933	ANGLO AFRICAN	12208	D	100	0	HISTORY H6438/39WD--OBTAINED 14 FT. LD AT POS. 37-03-22N, 75-45W CLEARED TO 11 FT. H8218/54--14 FT CARRIED FWD AT POS.37-03-23.4N, 75-55-09W H9693/77--7.6 FT FATHO LEAST DEPTH AT ABOVE GP, INDICATIONS OF SCOUR ON FATHOGRAM, ASSIGNED AS PSR 50, OPR-516, RECOMMENDS THAT CHARTS SHOW 7 FT REP. DESCRIPTION 24 NO.632; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 11 FT. (SOURCE UNK.); LOCATED 1947 (SOURCE UNK.); REPORTED THROUGH H.O. CHART RECORDS
934	GEMINI	12208	D	100	0	HISTORY LNM41/38--SHRIMP TRAWLER, BURNED AND SUNK. H6438/39WD--OBTAINED 14 FT LD AT LAT.37-03-22.2, LONG.75-54-00, CLEARED TO 11 FT. H8218/54--NOT INVESTIGATED, 14 FT LD CARRIED FORWARD. H9693/77-OPR-516, PSR 50; 7.6 FT FATHO LD AT ABOVE GP, INDICATIONS OF SCOUR ON FATHOGRAM, RECOMMENDATION THAT CHARTS SHOW 7 FT REPORTED.
935	OCEAN VENTURE	12200	D	0100	0	DESCRIPTION 24 NO.397; CARGO, 7174 GT; SUNK 2/8/42 BY SUBMARINE; POSITION ACCURACY WITHIN 1 MILE; REPORTED THROUGH FIFTH NAVAL DISTRICT HEADQUARTERS 4/14/43 27 NO.266; CARGO, 4278 NT, SUNK 2/8/42; POS. ESTABLISHED BY NUTHATCH SURVEY REQUIREMENTS INFORMATION
936	ZERDA	12200	D	****	0	DESCRIPTION 18 IN 18 FATHOMS, HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN C, ì OBSERVED RATES: 9960X-27436.5MS,9960Y-41267.6MS(APPROX. 1979) ASSIGNED: OPR-D103, ITEM 936.
937	UNKNOWN	12220	E	0100	0	00937 HISTORY NM22/68--CORPS OF ENGINEERS ADVISES THAT THE 60 FT FISHING VESSEL KLONDIKE REPORTED SUNK IN 37-04-12N, LONG.76-16-33W REPORTEDLY BROKEN UP AND SECTIONS AWASH ON THE BEACH. SURVEY REQUIREMENTS NOT DETERMINED
938	UNKNOWN	12221	D	0122	0	00938 HISTORY H7823/49-50 APPEARS ON SHEET ONLY, MAY ORIGINATE W/T8314/42 SINCE HYDRO DID NOT INVESTIGATE LOW WATER LINE SURVEY REQUIREMENTS FULL; LOW PRIORITY
939	UNKNOWN	12200	D	****	0	00939 DESCRIPTION 18 IN 43 FATHOMS,HUNG BY TRAWL FISHERMAN, GP CONVERTED FROM LORAN C, OBSERVED RATES: 9960X-26954.7MS,9960Y-41478.1MS(APPROX. 1979) SURVEY REQUIREMENTS INFORMATION ASSIGNED: OPR-D103, ITEM 939
940	UNKNOWN	12220	E	0100	0	00940 HISTORY LNM15/75 SURVEY REQUIREMENTS NOT DETERMINED
941	THOMAS F. JUBB	12220	E	0100	0	00941 HISTORY ---------ORIGINATING SOURCE UNK, POSSIBLY LNM REPORTING BUOY LNM15/75 BUOY WR1 DISCONTINUED DUE TO FAILURE TO FIND 75 FT. F/V. MCD REVISED WK TO PD. SURVEY REQUIREMENTS FULL
942	UNKNOWN	12208	D	100	0	HISTORY NM31/69 123-FT STEEL BARGE SUNK IN 5 FT OF WATER 6000 YDS 217 DEG FROM CAPE CHARLES LIGHT H9693/77 PSR 48, OPR-516; 4 HOURS SKIFF SOUNDING W/FATHO. 20-METER SPACING, WATER VISIBILITY POOR, GENERAL DEPTHS 4-10 FT., NOTHING FOUND, RECOMMENDS POSITION DOUBTFUL BE CHARTED. H9961/81--OPR-D103-MI/PE-80; PSR ITEM 71; VISUAL INSPECTION AND ì FATHOMETER SEARCH WITH NEGATIVE RESULTS; CONSIDERING NATURE AND ì LOCATION OF ITEM, INVESTIGATION WAS TERMINATED WITH CONCURRENCE ì OF AMC PROCESSING CENTER; EVALUATOR RECOMMENDS RETAINING ON CHART ì WITH DESIGNATOR ED. (ENTERED MSM 8/87)
						HISTORY LNM24/72--A VEHICLE HAS FALLEN OFF THE CHESAPEAKE BAY BRIDGE

944	OBSTRUCTION	12224	D	067	0	TUNNEL IN 78 FT. ì OF WATER IN LAT 37-05-17N,LONG 75-59-23W; VEHICLE MARKED W/DRUM. LNM 25/72 --REVISED GP
945	UNKNOWN	12220	E	100	0	HISTORY LNM44/72--A 24-FT CABIN CRUISER HAS SUNK IN 4 FT, WRECK IS UNMARKED.
946	UNKNOWN	12220	E	0098	0	00946 HISTORY LNM2/72--A 55-FT CRAB BOAT IS REPORTED AGROUND AND AWASH IN APPROX. 5 FT, 171 DEG. TRUE, 400 YDS FROM VIRGINIA INSIDE PASSAGE LIGHT 268 (LL 2621/3599 SURVEY REQUIREMENTS FULL; 250-METER RADIUS MINIMUM INVESTIGATION.
2792	MARGARET	12221	E	0999	0	DESCRIPTION 195 LORAN C RATES PROVIDED BY MR. RICHARD TARACKA, GREENWICH, ì CT. POLICE DEPARTMENT, TEL NO 203-622-8020; 9960-X 26901.2, ì 9960-Y 43756.5. (ENTERED MSM 4/90)
2793	ATKINSON	12221	E	999	0	
2904	SNDG	12208	E	127	17	HISTORY H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; SEARCH FOR 14FT SNDG IN 21FT DEPTHS; FOUND 17FT LEAST DEPTH; EVALUATOR RECOMMENDED DELETING 14FT SNDG AND ADDING 17FT SNDG IN LAT.37-01-23.2N, LONG.75-56-08.9W. (ENTERED 10/12/84 MSM)
2905	SNDG	12208	D	127	0	HISTORY H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; SEARCH FOR 14FT SNDG IN 19FT DEPTHS; 14FT SNDG FOUND IN POS. LAT.37-01-34.1N, LONG.75-58-46W; NO SHOALER SNDGS MENTIONED IN DR BUT 12FT 13FT SNDGS ARE PLOTTED ON THE SMOOTH NEXT TO THE 14FT SNDG. (ENTERED 10/12/84 MSM)
2906	SNDG	12208	D	127	13	HISTORY H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; INVESTIGATED 12FT SNDG IN 19FT DEPTHS; LEAST DEPTH OF 13FT FOUND IN LAT.37-01-28N, LONG.75-59-02W; SEARCH FOR 14FT SNDG IN 19FT DEPTHS; SEVERAL 14FT SNDGS WERE FOUND. (ENTERED 10/12/84 MSM)
3093	OBSTRUCTION	12222	D	0067	0	03093 HISTORY UNKNOWN SOURCE--PILE FIRST APPEARED ON 1964 ED. OF CHART 12222. CL751/78--USPS; REVISED TO SUBM. PILE ON 1978 ED. OF CHART 12222. MAR--7/84,OPR-D103-PE-84(CL1206/84);400% SIDE SCAN COVERAGE FOR A 250M RADIUS CIRCLE NORTH OF CHESAPEAKE BAY BRIDGE TUNNEL WAS CONDUCTED AT LAT 37-05-10N, LONG 76-00-00W. HYDROGRAPHER RECOMMENDS DELETION OF SUBM PILE. DELETED FROM CHART 12221 ON 5/25/85 AND CHART 12222 ON 5/31/86. H10127/84-OPR-D103-PE-84; EVALUATOR RECOMMENDS TO RETAIN CHARTED SUBM PILE AS ED IN LAT 37-05-10N,LONG 76-00-00W (CHART 12222,6/11/83). RECOMMENDATION BASED ON POOR QUALITY SIDE SCAN SONARGRAMS. (UP 3/89 SRB) SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE BY BOTTOM DRAG INVESTIGATION, WITH A 250 METER MINIMUM RADIUS, OR 400% SIDE SCAN SONAR COVERAGE.
3095	SNDG	12254	E	127	0	HISTORY CL2237/77--12/9/77--USS EDENTON; OBSERVED SHOALING TO 16 FT (CORR. TIDE) IN LAT.37-01-05N, LONG.76-07-55W. PRESENTLY CHARTED AS SHL TO 16 FT REP. 1977 (CHART 12222, 29TH ED.). NM09/78-1/31/78--INFO. SAME AS ABOVE. H10116/83--0PR-D103-WH-83;0.5 NM RADIUS AREA CENTERED IN LAT.37-01-05N, LONG.76-07-55W,DEVELOPED BY 45M LINE SPACING.SHOALING REP DISPROVED. (UP 4/89 SRB) CL1132/91-- FROM CO, FLEET TRAINING UNIT, U.S. ATLANTIC FLEET ì TO DIRECTOR, C&GS, NOAA (N/CG22) DATED 11/19/91; US NAVY SALVAGE ì SHIP USS GRAPPLE (ARS 53) REPORTS MOMENTARY GROUNDING CAUSING THE ì SHIP'S SPEED TO DECREASE SLIGHTLY (APPROX. 1600 HRS 10/25/91). ì APPROX. POSITION LAT. 37-01-04N, LONG. 76-07-56W. SHIP'S DRAFT AT ì THAT TIME WAS 16.8 FEET. DUE TO SQUAT, DRAFT COULD HAVE BEEN ì SLIGHTLY MORE. CURRENT EDITION OF CHART HAS NO SHOAL INDICATION ì AT THIS POSITION BUT 1985 EDITION SHOWS "SHOAL TO 16 FEET REP ì 1977" AT THIS POSITION. IN LIGHT OF ABOVE HISTORY, A SHOAL IS ì BELIEVED TO EXIST AND SHOULD BE REFLECTED ON FUTURE CHART ì EDITIONS. "17 OBSTN REP 1991" CHARTED IN LAT. 37-01-04N, LONG. ì 76-07-56W. UP 11/20/96, SJV) NOTE: THIS ITEM POSSIBLY COMPLETE.
3096	OBSTRUCTION	12222	E	370	22	HISTORY CL1960/78--OPR-E609-RU/HE-78; WIRE DRAG INVESTIGATIONS LOCATED A SUBM. OBSTR. (MUSHROOM ANCHOR) IN LAT.37-01-39N, LONG.76-06-37W. IT WAS CLEARED TO 22 FT (CORR. TIDE). PRESENTLY CHARTED AS DANGEROUS SUBM. OBSTR. WITH 22 FT SDG AND BASKET (CHART 12222, 29TH ED.). H10116/83--0PR-D103-WH-83;OBSTR,CLEARED 22FT (MUSHROOM ANCHOR) IN LAT.37-01-39N,LONG.76-06-37W,WAS INVESTIGATED BY 400% SIDE SCAN SONAR COVERAGE WITHIN 0.5 NM RADIUS WITH NEGATIVE RESULTS. EVALUATOR RECOMMENDS REVISING CHART TO DANG OBSTR (REP CLEARED TO 22FT).(UP 4/89 SRB) FE222WD/78--OPR-E609-RU/HE-78; OBSTRUCTION HUNG AT 23 FEET IN LAT 37-01-42.2N, LONG 76-06-40.4W. CLEARED 22FT AND 20FT IN OPPOSING DIRECTION. IDENTIFIED AS A LARGE MUSHROOM ANCHOR EXTENDING 4.75FT OFF BOTTOM. EVALUATOR RECOMMENDS A DANGEROUS SUBMERGED OBSTRUCTION (CLEARED 20 FEET) BE CHARTED IN SURVEYED POSITION.

						ADDITIONAL FIELD WORK NOT RECOMMENDED.
3098	OBSTRUCTION	12222	E	370	15	HISTORY CL433/82(MAR)--OPR-515-RU/HE-77;OBSTR(METAL DEBRIS),CLEARED BY 15FT,LOCATED IN LAT.37-01-57.6N,LONG.76-11-33W. FE234/77WD--OPR-515-RU/HE-77;OBSTR,CLEARED BY 15FT,LOCATED IN LAT.37-00-58.0N, LONG.76-11-32.5W.DEBRIS EXTENDING 3FT OFF BOTTOM,HUNG AT 15FT AND CLEARED BY 15FT.NO LD OBTAINED. (SURVEYED PROCESSED 9-9-83)(UP 4/89 SRB) FE413SS/95-- OPR-E696-HE; NOT INVESTIGATED. EVALUATOR RECOMMENDS RETAINING AS CHARTED. (UP 2/14/96, SJV) NOTE: THIS ITEM MAY BE COMPLETED.
7289	OBSTRUCTION	12222	E	067	0	HISTORY H10116/83--OPR-D103-WH-83; 29FT OBSTR, LOCATED IN LAT 37-02-09.75N, LONG 76-05-13.02. NOTED AS CONTACT DURING SIDE SCAN SONAR INVESTIGATION OF AWOIS ITEM 920. COULD NOT BE LOCATED BY ECHO SOUNDER, NO DIVER INVESTIGATION CONDUCTED. (ENTERED 4/89 SRB)
7290	OBSTRUCTION	12254	E	370	15	HISTORY H7028/44-45WD AND AD WK/50--CS326-1950; 15 1/2 FOOT HANG, CLEARED BY 15FT LOCATED IN LAT 37-01-17N, LONG 76-10-17W. CHARTED AS OBSTR CLEARED BY 15FT. H10116/83--OPR-D103-WH-83; NOT INVESTIGATED, CARRIED FORWARD. (ENTERED 4/89 SRB) FE413SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP2/ 14/96, SJV)
7291	UNKNOWN	12208	E	100	24	HISTORY H10116/83--OPR-D103-WH-83; 24FT WK, LOCATED IN LAT 37-03-52.80N, LONG 76-03-25.95W. LEAD LINE LD 24FT. RUINS DESCRIBED AS WOODEN KEEL AND KEEL RIBS EXTENDING 4FT OFF THE BOTTOM AND MEASURING 30 X 40 FT. (ENTERED 4/89 SRB)
7292	OBSTRUCTION	12254	E	370	15	HISTORY H7028/44-45WD AND AD WK/50--CS-326-1950; 15FT HANG, CLEARED 14.5FT LOCATED IN LAT 37-01-06N, LONG 76-10-14.0W. CHARTED AS OBSTR CLEARED BY 14FT. FE234/77WD--OPR-515-RU/HE-77; ABOVE OBSTR CLEARED BY 15FT. CHART REVISED TO OBSTR CLEARED BY 15FT. H10116/83--OPR-D103-WH-83; 15FT OBSTR (15FT HANG FROM H-7028 WD, CLEARED BY 15FT FROM FE234WD), LOCATED IN LAT 37-01-06N, LONG 76-10-14W. 400% SIDE SCAN SONAR INVESTIGATION CONDUCTED NO INDICATION OF HANG FOUND. POOR QUALITY OF SIDE SCAN RECORDS PRECLUDES DISPROVAL. RETAIN CHARTED OBSTR CLEARED BY 15FT. (ENTERED 4/89 SRB) FE413SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 2/ 14/96, SJV)
8426	OBSTRUCTION	12222	E	067	0	HISTORY LNM48/92-- ADD AN OBSTRUCTION WITH CLEARANCE OF 49 FEET IN LAT. ì 37-04-27.8N, LONG. 76-05-51.7W. (ENT 2/26/93, SJV) FE415SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/196, SJV)
9428	OBSTRUCTION	12222	E	067	0	HISTORY LNM31/93-- 6-INCH DIAMETER PILE REPORTED PARTIALLY SUBMERGED IN ì APPROX. LAT. 37-02.8N, LONG. 76-09.5W. MARINERS ARE ADVISED TO ì EXERCISE EXTREME CAUTION WHEN TRANSITTING THE AREA. (ENT 5/9/95, ì SJV) FE413SS/95-- OPR-E696-HE; NOT INVESTIGATED. EVALUATOR ì RECOMMENDS RETAINING AS CHARTED. (UP 2/14/96, SJV) NOTE: THIS ITEM POSSIBLY COMPLETED.
9831	SNDNG	12208	E	067	10	HISTORY LNM27/96-- ADD 10-FOOT SHOAL REPORTED 1996 IN LAT. 37-03-31.2N, ì LONG. 75-57-27.0W. DESCRIPTION **** LTR., DANGER TO NAVIGATION REPORT; CHIEF, AHB TO CGD5 AND DMAHTC, DATED JUNE 13, 1996. 10-FOOT SOUNDING LOCATED BY NOAAS FERREL DURING OCEO OPS VICINITY NAUTILUS SHOAL IN LAT. 37-03-31.2N, LONG. 75-57-27.0W (UNVERIFIED REAL TIDES). CHARTED DEPTHS OF APPROX. 28 FEET. RECOMMENDS CHARTING A 10-FOOT DEPTH WITH DANGER CURVE AND NOTE "SHL REP 1996". (ENT 8/30/96, SJV)
9931	OBSTRUCTION	12208	E	067	0	HISTORY LNM48/96-- CHESAPEAKE BAY-NORTH CHANNEL ENTRANCE-HAZARD TO ì NAVIGATION; A YELLOW MOORING APPROX. 4 FEET IN DIAMETER IS ì REPORTED SUBMERGED 1-2 FEET BELOW THE SURFACE IN APPROX. POSITION ì LAT. 37-06-00N, LONG. 76-00-30W. NEAR THE HIGHRISE SECTION OF THE ì CHESAPEAKE BAY BRIDGE-TUNNEL. MARINERS ARE ADVISED TO TRANSIT THE ì AREA WITH EXTREME CAUTION. (ENT 4/25/97, SJV)
10597	OBSTRUCTION	12222	E	067	33	HISTORY F00450/99-- OPR-E350-RU; UNCHARTED OBSTRUCTION NOTED DURING OFFICE PROCESSING. LD OF 33.0 FEET (10.1 METERS) LOCATED IN LAT. 37-02-05.77N, LONG. 76-03-26.34W. EVALUATOR RECOMMENDS CHARTING A 33 OBSTN AS SURVEYED. (ENT 4/27/00, SJV)
10793	OBSTRUCTION	12208	E	067	50	HISTORY H10952/00-- OPR-E350-RU; AN UNCHARTED SUBMERGED OBSTRUCTION WAS LOCATED BY SIDE SCAN SONAR SEARCH. DIVER LD OF 50 FEET IN LAT. 37-01-02,9N, LONG. 76-02-46.2W. DIVERS DESCRIBE A LARGE METAL BOX, 30 FEET LONG AND 6 FEET WIDE, OPEN ON TOP WITH 3 EVENLY SPACED COMPARTMENTS. THE NORTH SIDE OF THE BOX WAS BURIED IN SAND AND THE SOUTH SIDE STOOD 3 FEET OFF THE SEA FLOOR. THE HYDROGRAPHER RECOMMENDED CHARTING A 50 OBSTN AS SURVEYED. THE EVALUATOR DID NOT CONCUR. THIS FEATURE WAS FOUND TO BE IN ERROR. DURING OFFICE

						PROCESSING AN OBSTRUCTION WITH A LD OF 55 FEET (16.8 METERS) WAS LOCATED IN LAT. 37-01-03.22N, LONG. 76-02-45.21 AND IS SHOWN ON THE SMOOTH SHEET. THE EVALUATOR CONSIDERS THIS ITEM INSIGNIFICANT SINCE IT IS LOCATED IN DEPTHS OF 54-55 FEET. EVALUATOR RECOMMENDS NOT CHARTING. N/CS31 (OPERATIONS BRANCH, HYDROGRAPHIC SURVEYS DIVISON) DOES NOT CONCUR WITH EVALUATOR'S RECOMMENDATION. N/CS31 RECOMMENDS CHARTING THE OBSTRUCTION AS FOUND DURING OFFICE PROCESSING AND AS SHOWN ON THE SMOOTH SHEET. (ENT 11/7/00, SJV)
10863	OBSTRUCTION	12222	E	067		
11305	UNKNOWN	12248	E	100		
11443	OBSTRUCTION	12208	D	067	37	HISTORY H09871/76--OPR-515-RU/HE; HANG IN LAT 37°02.52'N, LONG 75°46.21'W (NAD 27), EFFECTIVE HANG DEPTH 39 FEET, EXTENDS 2 FEET OFF BOTTOM, FALLS IN 42-44 FOOT DEPTHS ON H-9919(1980-81). SOME BOTTOM SCOURING HAS TAKEN PLACE BETWEEN 1976 & 1981. RECOMMENDED CHARTING AS 37 OBSTR (DEPTH REP 1976) H09919/80--OPR-D103-MI/PE; AN OBSTRUCTION HUNG AT AN EFFECTIVE DEPTH OF 39 FEET IN LATITUDE 37°02'32", LONGITUDE 75°46'12" (NAD 27), AND NOT CLEARED IS DESCRIBED AS AN OLD STYLE ANCHOR FLUKE. THE PRESENT SURVEY DEPTHS ARE FROM 43 TO 44 FEET IN THIS AREA. CURRENTLY CHARTED AS 37 OBSTN. (ENT 03/02, PSH)
11444	OBSTRUCTION	12208	D	067	37	HISTORY H09871/76--OPR-515-RU/HE; POSITION OF THIS HANG IN LAT 37°02.09'N, LONG 75°47.55'W (NAD 27), WITH AN ESTIMATED EFFECTIVE HANG DEPTH OF 42 FEET AND NOTED AS EXTENDING 31/2 FEET OFF THE BOTTOM, FALLS IN 41 FOOT DEPTHS ON H-9919(1980-81). RECOMMEND CHARTING AS 37 OBSTR (DEPTH REP 1981). H09919/80--OPR-D103-MI/PE; AN OBSTRUCTION HUNG AT AN EFFECTIVE DEPTH OF 42 FEET(ESTIMATED) IN LATITUDE 37°02'05", LONGITUDE 75°47'33" (NAD 27), AND NOT CLEARED IS DESCRIBED AS AN OLD STYLE ANCHOR FLUKE. THE PRESENT SURVEY DEPTHS ARE FROM 40 TO 42 FEET IN THIS AREA. CURRENTLY CHARTED AS 37 OBSTN. (ENT 03/02, PSH)
11445	OBSTRUCTION	12208	D	067	36	HISTORY H09871/76--OPR-515-RU/HE; HANG IN LAT 37°02.75'N, LONG 75°47.44'W (NAD 27), ESTIMATED EFFECTIVE HANG DEPTH 37 FEET, EXTENDS 1 FOOT OFF THE BOTTOM, FALLS IN 37 FOOT DEPTHS ON H-9919(1980-81). RECOMMEND CHARTING AS 36 OBSTR (DEPTH REP 1981). H09919/80--OPR-D103-MI/PE; AN OBSTRUCTION HUNG AT AN EFFECTIVE DEPTH OF 37 FEET(ESTIMATED) IN LATITUDE 37°02'45", LONGITUDE 75°47'26" (NAD 27), AND NOT CLEARED IS DESCRIBED AS AN OLD STYLE ANCHOR FLUKE. THE PRESENT SURVEY DEPTHS ARE FROM 37 TO 38 FEET IN THIS AREA. CURRENTLY CHARTED AS 36 OBSTN. (ENT 03/02, PSH)
11446	OBSTRUCTION	12208	D	067	33	HISTORY H09871/76--OPR-515-RU/HE; HANG IN LAT 37°03.11'N, LONG 75°47.20'W (NAD 27), ESTIMATED EFFECTIVE HANG DEPTH 35 FEET, EXTENDS 3 FEET OFF BOTTOM, FALLS IN H-9919(1980-81) DEPTHS OF 36-37 FEET. RECOMMEND CHARTING AS 33 OBSTR (DEPTH REP 1981). H09919/80--OPR-D103-MI/PE; AN OBSTRUCTION HUNG AT AN EFFECTIVE DEPTH OF 35 FEET(ESTIMATED) IN LATITUDE 37°03'07", LONGITUDE 75°47'12" (NAD 27), AND NOT CLEARED IS DESCRIBED AS AN OLD STYLE ANCHOR FLUKE. THE PRESENT SURVEY DEPTHS ARE FROM 36 TO 37 FEET IN THIS AREA. CURRENTLY CHARTED AS 33 OBSTN. (ENT 03/02, PSH)
12128	OBSTRUCTION	12222	E	067		

BEACH NOURISHMENT - WILLOUGHBY BEACH, VIRGINIA
AWOIS FILES

Record #	Vessel Name	Chart #	Area	Cartocode	Depth	History
814	UNKNOWN	12200	D	100	0	DESCRIPTION 24 NO.1328; POSITION ACCURACY WITHIN 1 MILE; REPORTED THROUGH CGS SURVEY, DATED 1914
815	FAYE	12200	D		0	DESCRIPTION 18 UNKNOWN OBST. HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN OBSERVED RATES: 9960X-27135.2MS,9960Y-41279.6MS(APPROX. 1979)
816	EIDSVOLD	12200	D	0102	0	DESCRIPTION 24 NO.3145, CARGO, 1570 GT, SUNK 4/6/18; POSITION ACCURACY 5-10 MILES 74
817	B.A.VAN BRUNT	12200	D	0102	0	DESCRIPTION 01 1926 24 NO.8833; SCHOONER, 1191 GT,SUNK 9/20/25 BY MARINE CASUALTY
818	UNKNOWN	12221	D	0999	0	DESCRIPTION 24 NO.1004; POSITION ACCURACY WITHIN 1 MILE; LOCATED 1945 (SOURCE UNK.); REPORT THROUGH H.O. CHART RECORDS, DATED 1954
819	VICKY	12200	D	****	0	DESCRIPTION 18 IN 32 FATHOMS, HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN C OBSERVED RATES: 9960X-26880.8MS,9960Y-41409.6MS(APPROX. 1979)
820	OBSTRUCTION	12208	D	0370	16	HISTORY NM DATED 5/23/50 H7028/50WD-- PBS-2150-WD; VISUAL CONTROL; OBSTRUCTION LOCATED ì IN LAT. 36-55-32.5N, LONG. 76-04-05W; HUNG AT 19 FEET; CLEARED BY ì 16 FEET; EVALUATOR RECOMMENDED CHARTING AN OBSTR WITH CLEARED ì DEPTH OF 16 FEET. H9255/71-- OPR-467-RH-71; 1:20,000-SCALE; RADIST (HYBERBOLIC, ì R/R); OBSTRUCTION NOT FOUND; CLEARED IN ONE DIRECTION 1 23 FEET ì BUT WITH INSUFFICIENT OVERLAP FOR A VALID CLEARANCE; EVALUATOR ì RECOMMENDED RETAIN AS CHARTED. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE; ARGO (R/R), DELNORTE ì (R/A) CONTROL; ECHO SOUNDER; 45 METER LINE SPACING; OBSTRUCTION ì NOT FOUND; EVALUATOR RECOMMENDED RETAIN AS CHARTED IN LAT. ì 36-55-32.4N, LONG. 76-04-04.8W. (ENT 11/19/84, MSM) FE387SS/94-- OPR-E696-HE; 100 % SIDE SCAN SONAR COVERAGE ON 25% ì OF ITEM. TOO SHALLOW FO HECK. EVALUATOR RECOMMENDS RETAINING AS ì CHARTED AND REASSIGNING FOR ADDITIONAL WOR (UP 9/12/95, SJV) FE410SS-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
821	UNKNOWN	12221	E	0999	0	HISTORY NM DATED 8/1/16 DESCRIPTION 24 NO.1326; BARGE; SUNK 1916; POSITION ACCURACY WITHIN MILE
822	UNKNOWN	12254	D	370	16	HISTORY LNM1/72--A 36-FT. BARGE WITH PILE DRIVER ATTACHED HAS SUNK IN APPROX. 18 FT., IN THE VICINITY OF THE ENTRANCE TO LITTLE CREEK HARBOR; POS. DOUBTFUL. 1969 R/H INVESTIGATION 20-2- (UNPROCESSED); BOTTOM LITTERED WITH MISC. DEBRIS H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; DEL NORTE CONRTOL (R/R, R/A) ECHO SOURNDER W/50M LINE SPACING, DID NOT LOCATE WI H9255WD DID NOT LOCATE BUT CLEARED WK TO 16FT IN 19-21FT DEPTHS; RECOMMEND RETAIN SUBM DANG WK W/ED AND NOTE (CLEARED TO 16FT); NOT CONSIDERED DISPROVED BY THIS SURVEY. (ENTERED 10/15/84, MSM)
823	OBSTRUCTION	12221	D	0370	0	HISTORY CL702/47--SP. REPORT ON WIRE DRAG OF ITEM 4, WA/HI-CS 326; SEE ì H6976WD/45-47 BELOW H6976WD/45-47--CS-326-WA/HI; HUNG AT 34 FEET, CLEARED 32 FEET ì (PREDICTED TIDES), IN LAT. 36-55-1840(M)N, LONG. 75-54-440(M)W. ì CHARTED AS A 30-FOOT CLEARED DEPTH IN LAT. 36-56-00N, LONG. ì 75 54-18W. H10340/90-- OPR-D111-WH; NO SIDE SCAN SONAR CONTACTS FOUND IN ì THE AREA COMMON T THE PRESENT SURVEY AND THE AWOIS ITEM. ì OBSTRUCTION BROUGHT FOWARD TO THE PRESENT SURVEY. EVALUATOR ì RECOMMENDS THAT A CHARTING RECOMMENDATION BE DEFERRED UNTIL ì COMPLETION OF OFFICE PROCESSING OF JUNCTIONAL SURVEY H10356/90, ì AND A FINAL DISPOSITION THE INVESTIGATED ITEM HAS BEEN MADE. ì (UP 10/29/91, SJV) H10356/90--OPR-D111-HE; LOCATED OLD STYLE ANCHOR ENCRUSTED WITH ì MARINE GROWTH APPROX. 19 METERS SOUTHWEST OF CHARTED OBSTRUCTION. ì 15 FEET LONG PROJECTING 8 FEET OFF BOTTOM. SALVAGED BY USCGC ì COWSLIP ALONG WITH A SECOND ANCHOR. EVALUATOR RECOMMENDS THE ì SUBMERGED DANGEROUS OBSTRUCTION CLEARED 30 FEET BE DELETED FROM ì THE CHART. (UP 3/5/92, SJV)) DESCRIPTION 24 NO.625; POS. ACCURACY WITHIN 1 MILE; WD CLEARED TO 30 FT.(SOURCE UNK.) LOCATED 1947; REPORTED THROUGH H.O. CHART RECORDS
824	UNKNOWN	12221	D	370	0	HISTORY CL702/47--SP. REPORT ON WIRE DRAG OF ITEM 4, WA/HI-CS 326; SEE ì H6976WD/45-47 BELOW H6976WD/45-47--CS-326-WA-HI; HUNG AT 32 FEET, CLEARED AT 30 ì FEET (PREDICTED TIDES), IN LAT. 36-56-120(M)N, LONG. ì 75-53-1455(M)W. CHARTED AS A 30-FOOT CLEARED DEPTH IN LAT. ì 36-56-05N, LONG 75-54-00W. H10340/90-- OPR-D111-WH; NO SIDE SCAN SONAR CONTACTS FOUND IN ì THE AREA COMMON TO THE PRESENT SURVEY AND THE AWOIS ITEM. ì OBSTRUCTION BROUGHT FORWARD TO THE PRESEN SURVEY. EVALUATOR ì RECOMMNENDS THAT A CHARTING RECOMMENDATION BE DEFERRED UNTIL TH COMPLETION OF OFFICE PROCESSING OF JUNCTIONAL SURVEY H10356/90, ì AND A FINAL DISPOSITION OF THE ITEM HAS BEEN MADE. (UP 10/29/91, ì SJV) H10356/90-- OPR-D111-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 3/5/92, SJV) DESCRIPTIO 24 NO.626; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 30 FT. (SOURCE UNK.); LOCATED 1947 (SOURCE UNK.); REPORTED THROUGH H.O. CHART RECORDS
826	UNKNOWN	12221	E	0370	26.6	HISTORY NM DATED 8/29/22. H9255/71WD-- OPR-467-RH-71; ITEM NO. 14; 1:20,000-SCALE SURVEY; ì RAYD TYPE "T" HYPERBOLIC; COVERAGE WITHIN 3-5 FEET OF BOTTOM; ì WRECK NOT LOCATED; CRITERIA FO DISPROVAL NOT MET; EVALUATOR ì RECOMMENED CHARTING AS SUBM WK, ED WITH CLEARED DEPTH TO 26 FEET. H9814/80-- OPR-D103-PE-80; ITEM NO. 87; 1:10,000-SCALE SURVEY; ì AGGO (R/R), DELNORTE (R/A), ECHO SOUNDER; 45 METER LINE SPACING; ì WRECK NOT FOUND; EVALUATOR CONCURS WITH RECOMMENDATION IN SURVEY ì H9255WD. (ENT 11/13/84, MSM) FE387SS/94-- OPR-E696-HE; 11 CONTAC FOUND WITHIN AREA OF ì SEARCH. NONE FIT THE DESCRIPTION OF THIS ITEM. EVALUATOR ì RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV) DESCRIPTION 24 NO. 1322; POSITION ACCURA WITHIN ONE MILE. (8/29/22)
827	UNKNOWN	12221	E	0100	0	HISTORY NM43/63--BUOY DISCONTINUED AT LAT.36-56-55N LONG.76-25-31W. WRECK WAS SALVAGED AN IS NOW IN 9 FT APPROX. 1,400 YDS, 200 DEG FROM FORMER CHARTED POSITION
828	OBSTRUCTION	12221	D	370	0	SURVEY REQUIREMENTS COMMENTS IF ITEM IS FOUND TO BE A SHOAL AREA, REDUCE LINE SPACING ì NEEDED TO DEVELOP. SECOND 200% WOULD THEN NOT BE REQUIRED. HISTORY CL702/47--SP. REPOR ON WIRE DRAG OF ITEM 4, WA/HI-CS 326; ì SEE H6976WD/45-47 BELOW. H6976WD/45-47--CS-326-WA/HI; HUNG AT 34 FEET, CLEARED TO 32 ì FEET (PREDICTED TIDES), IN LAT. 36-56-705(M)N, LONG. ì 75-54-255(M)W. CHARTED AS A 32-FOOT CLEARED DEPTH IN LAT. ì 36-56-24N, LONG. 75-54-24W. THIS MAY BE A SHOAL SPOT AS THE WIRE ì SLIPPED OFF PREMATURELY. H10340/90-- OPR-D111-WH; NO SIDE SCAN SONAR CONTACTS FOUND IN ì THE AREA COMMON TO THE PRESENT SURVEY AND THE AWOIS ITEM. ì

						OBSTRUCTION BROUGHT FORWARD TO THE PRESENT SURVEY. EVALUATOR ì RECOMMENNDS THAT A CHARTING RECOMMENDATION BE DEFERRED UNTIL THE ì COMPLETION OF OFFICE PROCESSING OF JUNCTIONAL SURVEY H10356/90 ì AND A FINAL DISPOSITION OF THE ITEM HAS BEEN MADE. (UP 10/29/91 SJV) H10356/90-- OPR-D111-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMEN DELETING FROM CHART. (UP 3/5/90, SJV) DESCRIPTION 24 NO.627; POS. ACCURACY WITHIN 1 MILE; WD CLEARED TO 32 FT. LOCATED 1947 (SOURCE REPORTED THROUGH H.O. CHART RECORDS)
829	OBSTRUCTION	12222	E	0370	13	HISTORY UNKNOWN SOURCE, CHARTED AS SUNKEN WRECK FE 1 1967 HUNG AT 16 FT, CLEARED TO 13 FT(ACTUAL TIDE), NO IDENTIFICATION OF HANG RECOMMENDED DELETE FROM CHART; PSR ITEM 4.
830	OBSTRUCTION	12221	D	370	0	HISTORY CL702/47--SP. REPORT ON WIRE DRAG OF ITEM 4, WA/HI-CS 326; SEE ì H6976WD/45-47 BELOW H6976WD/45-47--CS-326-WA/HI; HUNG AT 32.5 FEET, CLEARED 31.5 ì FEET (PREDICTED TIDES), IN LAT. 36-56-1108(M), LONG. ì 75-53-791(M)W. CHARTED AS A 30-FOOT CLEARED DEPTH IN LAT. ì 36-56-34N LONG. 7 33-36W. H10356/90 --OPR-D111-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 3/5/90, SJV) DESCRIPTION 24 NO.628; POS. ACCURACY WITI 1 MILE; WD CLEARED TO 30 FT. LOCATED 1947; REPORTED THROUGH H.O. CHART RECORDS
831	UNKNOWN	12221	D		0	HISTORY UNKNOWN SOURCE-- POSSIBLY NM DATED 10/17/39 (FROM 1957 NAVY ì WRECK LIST). H6976/4 47WD-- CS-313 & 326 - WA/HI; LOCATION OF WRECK CLEARED ì TO 34 FEET. NOT HUNG. RETAIN AS CHARTED SINCE REQUIREMENT FOR ì BOTTOM CLEARANCE AND SEARCH RADIUS NOT SATISFIED. CL34 58-- REF. NAVY WRECK LIST. SEE DESCRIPTION, BELOW. H9905/80-- OPR-D103-PE; NOT LOCATED. ADDITIONAL FIELD WORK ì RECOMMENDED (WIRE DRAG). H10343/90-- OPR-D111-WH; NOT ASSIGNED. H10356/90-- OPR-D111-HE; NOT ASSIGNED. H10372/90-- OPR-D111-HE; NOT ASSIGNED. (UP 7/24/92, SJV) DESCRIPTION 24 UNKNOWN WRECK NO. 1310, FORMERLY CHARTED. NM DATED 10/17/39 (?). LAT. 36-56-45N, LONG. 75-55-00W. ACCURACY WITHIN ONE MILE.
832	UNKNOWN	12221	E	0999	0	HISTORY NM DATED 8/8/56 DESCRIPTION 24 NO.1300; SUNK 1950; LOCATED 2/21/50, POS. ACCURACY 1-3 MILES, SUBSEQUENTLY FAILED TO LOCATE
833	WESTMORELAND	12221	D	0370	50	HISTORY NM42/39-- (LIGHTHOUSE NOTICE TO MARINERS); WRECK OF BARGE ì WESTMORELAND LOCATI IN 86 FEET, ABOUT 5300 YARDS, 63 DEG. FROM ì CAPE HENRY LIGHTHOUSE; LD OF 49 FEET. CL725/45-- PROJECT CS-313, WRECK NO. 5; HILGARD & WAINWRIGHT ì HUNG WRECK AT 55 FEET. ECHO SOUNDING OF 55.5 FEET OBTAINED ON ì WRECK. POS. LAT. 36-56.75N, LONG. 75-57.60W. H10343/90-- OPR-D111-WH SIDE SCAN SONAR CONTACT IN LAT. ì 36-56-45.70N, LONG. 75-57-31.02W WITH CALCULATED HEIGHT OF 5 METERS IN 26.6 METERS. FATHOMETER DEPTH OF 22.7 METERS OBTAINED ì IN LAT. 36-56-45.83N, LONG 73-57-29.91W. EVALUATOR RECOMMENDS ì RETAINING AS CHARTED PENDING DISPOSITION OF ITEM ON 10372/90. ì (UP 1/3/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); WRECK LOCATED IN ì LAT. 3 56-45.35N, LONG. 75-57-29.96W. FATHOMETER DEPTH OF 68 ì FEET. EVALUATOR RECOMMENDS CHARTII AS SURVEYED. (UP 4/20/92, ì SJV) DESCRIPTION 24 NO.421; BARGE; SUNK BY MARINE CASUALTY; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 50 FT. (SOURCE UNK.); POS.36-56-48N, 75-57-36W NO.605; WRECK IS IN 86 FT OF WATER WITH A LEAST DEPTH OF 49 FT.
834	UNKNOWN	12254	D	100	0	HISTORY LNM22/80--A 15-FT OUTBOARD HAS SUNK IN APPROX. POS. ABOVE
835	UNKNOWN	12208	E	0100	56	SURVEY REQUIREMENT COMMENTS INVESTIGATION MAY BE CONSTRAINED BY VESSEL TRAFFIC. SURV AT ì COMMANDING OFFICER'S DISCRETION HISTORY NM31/44(2883)-- EXAMINATION VESSEL SUNK AT POSITION 36-57N, ì 76-01-20W. NM36/44(3376)-- WRECK DISPERSED TO A 45-FOOT DEPTH. H7028/45-50WD CS 326; CLEARED TO 49 FEET WITHOUT HANG, ì CONSIDERED DISPROVED. CL347/58-- NO. 1308, H.O. WRECK LIST; WRECK SUNK 1944 AT POS. ì 36-57N, 76-01-18W, SUBS. REPORTED SILTED OVER. H9901/80 OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO R/R ì CONTROL; ECHO SOUNDER; THREE SMALL SCOU ON FATHOGRAM WHICH MAY ì OR MAY NOT BE THE REMAINS OF WRECK. NOT DEFINITE ENOUGH TO SAFELY ì SAY FOR SURE. 62-65-FOOT SURVEY DEPTHS. H10343/90-- OPR-D111-WH; WRECK LOCATED B SIDE SCAN SONAR IN ì LAT. 36-56-58.97N, LONG. 76-01-20.87W APPROX. 25 METERS EAST OF ì NAVIGATI BUOY "ITS". DEPTH OF 16.8 METERS IN 19.2 METERS. RADIO ì MEMO TO 5CGD ON 6/6/90. HYDROGRAPH RECOMMENDS DIVER ì INVESTIGATION AND LD TO FULLY RESOLVE ITEM. H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); FATHOMETER DEPTH ì OF 17.2 METERS OBTAINED. WRECK BROUGHT FORWAR SINCE DEPTH FROM ì H-10343/90 IS SHOALER (16.8 METERS). EVALUATOR RECOMMENDS ì CHARTING WRECK WITH A DEPTH OF 16.8 METERS (55 FEET) AS SHOWN ON ì THE PRESENT SURVEY (UP 4/20/92, SJV) FE412SS/95-- OPR-E696-HE; WRECK LOCATED BY SIDE SCAN SONAR. ì DIVER LD OF 17.1 METERS (FEET) IN LAT. 36-56-58.755N, LONG. ì 76-01-20.203W. DIVERS DESCRIBE A PARTIALLY DECOMPOSED WRECK. ì EVALUATOR RECOMMENDS DELETING THE CHARTED WRECK AND CHARTING A 56 ì WK AS SURVEYED. (UP 2/15/95, SJV) DESCRIPTION 24 NO. 1308; SUNK 1944; REPORTED SILTED OVER; POSITIOI ACCURACY WITHIN ONE MILE.
837	UNKNOWN	12221	E	0999	0	HISTORY NM DATED 4/30/44 DESCRIPTION 24 NO.1309; SUNK 3/00/44; POSITION ACCURACY WITHIN 1 MIL SUBSEQUENTLY FAILED TO LOCATE
838	UNKNOWN	12254	D	0100	36	HISTORY NM33/70-- UNDESCRIBED WRECK IN LAT. 36-57-00N, LONG. 76-03-36W. H9255/71WD-- OPR-467-R 71; ITEM NO. 53; 1:20,000-SCALE SURVEY; ì RAYDIST TYPE "T" HYPERBOLIC COVERAGE WITHIN 3 FEET (BOTTOM; ì CRITERIA FOR DISPROVAL NOT MET; WRECK NOT LOCATED; EVALUATOR ì RECOMMENDED CHARTING SUBM WK WITH CLEARED DEPTH TO 36 FEET. H9814/80-- OPR-D103-PE-80; ITEM NO. 84; 1:10,000-SCALE SURVEY; ì ARGO (R/R); CONCURRED WITH RECOMMENDATION IN H9255WD. (ENT ì 11/9/8 MSM) FE387SS/94-- OPR-E696-HE; 6 CONTACTS FOUND WITHIN SEARCH AREA. ì NONE FIT THE DESCRIPTION OF THIS ITEM. EVALUATOR RECOMMENDS ì DELETING FROM CHART. (UP 9/12/94, SJV)
839	OBSTRUCTION	12220	D	0067	0	HISTORY NM42/50(6113)-- CHESAPEAKE ENTRANCE OBSTRUCTION LIGHTED GONG ì BUOY, R/B HOR. BANDS, INT QK FL ESTABLISHED 3950 YARDS, 28 DEG. ì FROM CAPE HENRY LIGHT TO MARK SUBMERG OBSTRUCTION WHICH LIES ì 200 FEET 300 DEG. FROM BUOY. NM30/52(3616)-- CHESAPEAKE ENTRANCE OBSTRUCTION LIGHTED GONG ì BUOY DISCONTINUED, THE OBSTRUCTION WHICH IT MARKED HAVING BEEN ì REMOVED. APPROX. POSITION LAT. 36-57-18N, LONG. 75-59-18W. ì SUPERSEDES NM42/50(6113). CL347/58-- REF. #1297 (H.O. WRECK LIST); OBSTRUCTION AT ì POSITION LAT. 36-57-18N, LONG. 75-59-18W CHART AS NON-DANGEROUS ì WRECK (LISTED AS AN OBSTRUCTION IN WRECK LIST, BELOW). NM INFO (ABOVE) STATES THAT THIS OBSTRUCTION HAS BEEN REMOVED. H9901/80-- OPR-D103-PE-80; ITEM 94; 1:10,000-SCALE SURVEY; ARGO ì R/R CONTROL; ECHO SOUNDER; 1000-METER RADIUS SEACH AT 45 METER ì LINE SPACING; NO INDICATION OF ITEM FOUND; QC REPORT STATES ì OBSTR. WAS REPORTEI REMOVED IN NM30/52; CONSIDERS REAPPLICATION ì TO CHART THRU CL347/58 TO BE IN ERROR; RECOMMENDED WRECK SYMBOL ì BE EXPUNGED FROM CHART. ALSO, 73-FOOT SOUNDING LOCATED I LAT. ì 36-57-24.80N, LONG. 75-59-33.87W DURING STAR PATTERN DEVELOPMENT ì 440 METERS NORTHWI OF CHARTED POSITION OF WRECK; REF. AWOIS ì ITEM #00892 (ENT 10/11/84 MSM). H10343/91-- OPR-D11 WH; NOT PRESENTLY CHARTED (12/30/91). ì EVALUATOR RECOMMENDS NO CHARTING ACTION BE TAKE THRU PRESENT ì SURVEY. SEVERAL SIGNIFICANT SONAR CONTACTS WILL BE ADDRESSED ON ì H-1037: 90. (UP 12/30/91, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); SEARCH NEGATIVE ì EXCEPT FO

						ITEM CORREPONDING TO AWOIS NO. 892. EVALUATOR ì RECOMMENDS NO CHARTING ACTION REQUIRE (UP 4/20/92, SJV) DESCRIPTION 24 NO.1297; OBSTRUCTION, PREVIOUSLY CHARTED; POSITION ACCURAC TO WITHIN ONE MILE. **** CHART 12221 IS A WRECK CHART. ACCORDING TO MARINE CHART BRANCH POLICY, UNLESS NM30/52 USED THE WORD "RAISED" IN THE REPORT OF THE OBSTRUCTION'S REMOVA THE ITEM SHOULD NOT BE DELETED FROM THE WRECK CHART.
841	OBSTRUCTION	12221	E	0999	0	HISTORY NM DATED 6/13/47 DESCRIPTION 24 NO.1303; POSITION ACCURACY WITHIN 1 MILE, UNKNOWN AUTHORITY REPORTED FAILURE TO LOCATE.
842	OBSTRUCTION	12221	E	0999	0	HISTORY H7176/47WD PROJECT CS-326, 9/30/46; HANG IN 25 FT WATER, DIVER INVESTIGATED, FOUND 3 PILES ABOUT 12 FT OFF BOTTOM; PART OF FISH TRAP EXTENDING TO SHORE.
843	UNKNOWN	12221	D	370	53	HISTORY H7028/45-50WD-- PBS-2150WD; 1:40,000-SCALE SURVEY, 53-FOOT ì CLEARED DEPTH IN APPRO. LAT. 36-57-11N, LONG. 76-00-45W. H9901/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO R/R ì CONTROL; ECHO SOUNDER; SURVEY DEPTHS IN AREA ARE 71-74 FEET; ì EVALUATOR RECOMMENDED RETAIN AS CHARTED. (ENT 10/18/84, MSM) LNM8/81-- DELETE CLEARED 53-FOOT DEPTH. DESCRPIPTION NO. 1331; WRECK IN LAT. 36-57-00N, LONG. 76-00-42W.
844	OBSTRUCTION	12221	E	0370	17	HISTORY H7176/47WD PROJECT CS-326, 9/30/46; HUNG AT 18 CLEARED AT 17; METALLIC OBJECT, GRAPPELED CL347/47 COPY OF PART OF ABOVE DR
845	UNKNOWN	12200	D	****	0	DESCRIPTION 18 BARGE; IN 27 FATHOMS, HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN C, OBSERVED RATES:9960X-26895.1MS,9960Y-41424.7MS(APPROX. 1979)
846	OBSTRUCTION	12254	D	067	14	HISTORY NM30/70--LEAST DEPTH OF 19FT AT MLW IN A RECTANGULAR SHAPED AREA 262YDS LONG AN 73 YDS WIDE ALONG EAST SIDE OF AND PARALLEL TO THE BRIDGE. H9814/80--OPR-D103-PE-80; ITEM #6 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); REP AS DEBRIS CONSISTING OF BRIDGE SECTIONS RESULTING FROM A COLLISION OF USS YANCEY W/TRESTLE AT LAT.36-57-30N, LONG.76-06-55.6W; SOUNDING SEARCH; IMPROVISED CHAIN DRAG; DIVER INVESTIGATION OBTAINING LEAST DEPTH 14FT IN LAT.36-57-32.57N, LONG.76-06-52.51W; EVALUATOR RECOMMENDS RETAINING AREA LIMITS AS CHARTED W/REVISED LEAST DEPTH OF 14FT. (ENTERED 11/8/84 MSM)
847	UNKNOWN	12248	D	0370	37	HISTORY NM13/47--WRECK OF A FISHING BOAT REPORTED SUNK AT APPROX. LAT.36-57-32N, LONG.76-2 23W. H7602/45-48WD WRECK OF OYSTER BOAT, SUNK IN COLLISION W/NEWPORT NEWS CAR FERRY SUBSEQUENTLY REMOVED BY COE, AREA CLEARED TO 37 FT. NM28/47--WRECK AT APPROX. LAT.36-57 37N, LONG.76-25-23W HAS BEEN REMOVED.
848	CARMINA	12222	D	0370	46	HISTORY SOURCE UNKNOWN-- REPORTED SUNK IN 1938. CL792/44-- ADVANCE SURVEY REPORT; OBSTRUCTION HUNG AT 39.5 ì FEET, CLEARED TO 37 FEET (PREDICTED) AT POS. LAT. 36-57-32.6N, ì LON 76-01-17.0W. NM9/45-- REPORTED DEMOLISHED, WD CLEARED TO 37 FEET (MLW) BY ì C&GS. H7028/45W ITEM 20; NAVY DIVERS IDENTIFY AS PILOT BOAT AND ì BLOW HOUSE OFF AFTER FIRST HANG, SUBSEQUENTLY HUNG AT 42 FEET, ì CLEAR TO 40 FEET (MLW) AT POS. LAT. 36-57-36N, LONG. 76-01-18V H9901/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO R/R ì CONTROL; ECHO SOUNDER; SURVEY DEPTHS OF 55-57 FEET IN AREA; ITEM ì NOT INVESTIGATED; EVALUATOR RECOMMENDED RETAIN AS CHARTED. (ENT ì 10/17/84, MSM) H10343/90-- OPR-D111-WH; WRECK LOCATED IN LAT. 36-57-34.63N, ì LON 76-01-16.53W, COVERED 15 METERS. EVALUATOR RECOMMENDS NO ì CHANGE IN CHARTING STATUS PENDING FINAL DISPOSITION ON ì H-10372/90. (UP 1/3/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); WRECK LOCATED IN ì LAT. 36-57-35.01N, LONG. 76-01-16.90W. DIVER LD OF 46 FEET. ì EVALUATC RECOMMENDS CHARTING AS SURVEYED. (UP 4/20/92, SJV) DESCRIPTION 24 NO.435; SUNK 7/24/44, REPORTED DEMOLISHED, WD CLEARED TO 37FT (MLW) BY CGS; POSITION ACCURACY 1 MILE. 27 NO.81 WD CLEAR TO DEPTH OF 37FT AT MLW. WK DEMOLISHED, BUOY DISC.
849	UNKNOWN	12221	E		0	HISTORY NM DATED 8/22/50 DESCRIPTION 24 NO.1185; POSITION ACCURACY WITHIN 1 MILE; REPORTED DEMOLISHED; LOCATED 1954 (SOURCE UNK.)
850	E H BLUM	12221	D	370	20	HISTORY NM19/42-- U.S.C. & G.S. LOCATED A WRECK IN 29 FEET OF WATER. FE34/42-- LOCATED AND IDENTIFIED VISIBLE WRECK OF E.H. BLUM. A ì STACK AND MAST WERE VISIBLE AT THE TIME OF THE SURVEY (MARCH 30, ì 1942). POSITION BY RANGE AND BEARING FROM CAPE HENRY LIGHTHOUSE. H69 45-47WD-- WAHI4245; 1:40,000-SCALE; VISUAL CONTROL; ITEM ì NO. 6;WRECK IN PA LAT. 36-57-36N, LON(75-57-10W. DISPERSED ì PRIOR TO 1947 SURVEY; CLEARED BY 20 FEET; HYDROGRAPHER CONSIDEREI ITEM DISPROVED. H9901/80-- OPR-D103-PE-80; 1:10,000-SCALE; ARGO (R/R) CONTROL; ì ECHO SOUNDER SURVEY DEPTHS IN AREA ARE 25-27 FEET; EVALUATOR ì RECOMMENDED RETAIN AS CHARTED. DESCRIPTION 24 NO. 1304; LOCATED 1942 (SOURCE UNKNOWN); POSITION ACCURACY WITHIN ONE MILE 36-57-33N, 75-57-21W; REPORTED THROUGH CGS SURVEY DATED 1945 27 NO. 273; NOT DESCRIBED; POSITION 36-57-33N, 75-57-21W.
851	OBSTRUCTION	12222	E	370	20	HISTORY H6976/45-47WD--WAHI4245; 1:40,000 SCALE SURVEY; VISUAL CONTROL; SUBM. OBSTR. HUNG / 21FT; CLEARED BY 20FT; DRAG INDICATED SMALL OBJECTS RATHER THE SHOAL; CLOSE TO WARTIME MINE FIELD; SUSPECTED THAT OBSTR. IS A MINE ANCHOR OR LISTENING DEVICE EMBEDDED IN BOTTO LAT.36-57-30N, LONG.75-58-07W. H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; OBSTR REP IN WK LIST (ITEM #622) 26-28FT DEPTHS IN AREA; EVALUATOR RECOMMENDED RETAIN AS CHARTED. DESCRIPTION 24 NO.622; POS. ACCURACY WITHIN 1 MILE; WD CLEARED TO 20 FT.(SOURCE UNK.) REPORTED THROUGH H.O. CHART RECORDS, DATED 1949. LAT.36-57 33N, LONG.75-58-08W.
853	OBSTRUCTION	12221	E	0370	31	HISTORY NM DATED 6/13/47 DESCRIPTION 24 NO.1302; POSITION ACCURACY WITHIN 1 MILE; WD CLEARE TO 31 FT. (SOURCE UNK.)
854	OBSTRUCTION	12245	E	0370	23	HISTORY H7602/48-- CS326; OBSTRUCTION HUNG AND CLEARED AT 23 FEET. ì ASSUMED TO BE BOTTOM LAT. 36-57-34N, LONG. 76-22-22W. (UP ì 3/1/94, SJV) FE394SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/6/95, SJV)
855	WILLIAM D. SANNER	12221	E	0370	42	HISTORY H7028/45-50WD-- PBS-2150WD; 1:40,000-SCALE SURVEY; 42-FOOT ì CLEARED DEPTH IN POS. L/ 36-57-36N, LONG. 76-00-30W. H9871/76WD-- SWEPT IN ONE DIRECTION TO 38 FEET. H9901/80-- OPR-D103-I 80; 1:10,000-SCALE SURVEY; ARGO R/R ì CONTROL; ECHO SOUNDER; SURVEY DEPTHS IN AREA ARE 61 FEET. ì EVALUATOR RECOMMENDED RETAIN AS CHARTED . (ENT 10/18/84, MSM) H10343/90--OPR-D111-V NOT PRESENTLY CHARTED (12/30/91). NO ì SIGNIFICANT SIDE SCAN SONAR CONTACTS NEAR THIS ITEM. EVALUATOR ì RECOMMENDS NO CHANGE IN CHARTING STATUS PENDING FINAL DISPOSITION ì ON H-103 90. (UP 1/3/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); LOCATION NOT ì INVESTIGATED. EVALUATOR RECOMMENDS RETAINING AS CHARTED. (UP ì 4/20/92, SJV) DESCRIPTION 01 DATED 1941 24 NO.8374; TRAWLER; 2 60 GT; SUNK 12/1/38 BY MARINE CASUALTY; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 37 FT. (SOURCE UNK.)

856	OBSTRUCTION	12254	E	0067	22	HISTORY LNM34/72--A DIESEL ENGINE HAS BEEN REPORTED LOST IN APPROX. POS. ABOVE H9910/80-- OPR-D103-MI-80; ITEM 135; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); ECHO SOUNDER W 50M LINE SPACING PLUS A STAR PATTER OVER POSITION OF OBSTR AS CHARTED IN LAT.36-57-37N, LONG.76-09-16W. NO OBSTR WAS FOUND, DURING WIRE DRAG INVESTIGATION A HANG WAS REPORTEI IN THE VICINITY; DIVERS REPORTED AN IRREGULAR SHAPED METAL OBJECT POSSIBLY THE DIESEL ENGINE, W/LEAST DEPTH OF 22FT; EVALUATOR RECOMMENDED DELETING THE CHARTED OBSTR REP AND CHART THE OBSTR IN LAT.36-57-37.16N LONG.76-09-27.28W. (ENTERED 10/16/84 MSM) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 9/96, SJV)
857	CHILORE	12254	D	100	46	HISTORY NM42/43-- AMENDED POSITION OF LIGHTED BELL BUOY APPROX. 300 YARDS, 231 DEG. FROM WRECK AT POS. LAT. 36-57-28N, LONG. 76-00-48W. NM48/44-- WD CLEAR DEPTH OF 30 FEET AT MLW. CL809/44-- ADVANCE REPORT OF A WD HANG AT 31.5 FEET CLEARED TO 30 FEET AT POSITION LAT. 36-5 38N, LONG. 76-00-39W. UNIDENTIFIED BUT THOUGHT TO BE WRECK OF THE CHILORE WHICH CHART LETTER ABOVE STATES IS CHARTED A LITTLE SOUTH. H7028/45WD-- WD CLEARED TO 37 FEET. CL540/54 CS-370, PRELIMINARY REPORT; EVIDENCE OF A WRECK WAS FOUND BY ECHO SOUNDER AT POS. LAT. 36-57-34.7N, LONG. 76-00-40.3 WITH A LD OF 43 FEET, SHORAN CONTROL. H8218/54-- WRECK INFO. FOR CL540/54 (ABOVE). NM27/54-- WRECK INFO.; PREVIOUSLY REPORTED WRECK CHARTED IN LAT. 36-57-32 LONG. 76-00-39W AND YELLOW BUOYS NO LONGER EXIST. WRECK OF THE CHILORE LOCATED AND CORRECTLY CHARTED IN LAT. 36-57-38N, LONG. 76-00-39W. CLEARED 37 FEET. H9901/80-- OPR-D103-PE-8 1:10,000-SCALE SURVEY; ARGO R/R CONTROL; ECHO SOUNDER; 51-FOOT PEAK IN 60 FEET INVESTIGATED; 43-FOOT LD OBTAINED IN LAT. 36-57-35N, LONG. 76-00-40W. EVALUATOR RECOMMENDEI RETAIN AS CHARTED. (ENT 10/11/84) H10343/90-- OPR-D111-WH; SIGNIFICANT SIDE SCAN SONAR CONTAC LOCATED IN LAT. 36-57-37.15N, LONG. 76-00-38.65W. CALCULATED HEIGHT OF 5 METERS ABOVE BOTTOM EVALUATOR RECOMMENDS NO CHANGE IN CHARTING STATUS PENDING FINAL DISPOSITION ON H-10372 90. (UP 1/3/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); DIVER LD OBTAINED. HOWEVER, N CONSIDERED VALID SINCE NEITHER A TIME NOR POSITION WERE PROVIDED. FATHOMETER DEPTH OF 47.6 FEET OBTAINED. SINCE THIS DEPTH IS DEEPER THAN THE HANG DEPTH FROM H-9871/76WD, ' EVALUATOR RECOMMENDS RETAINING AS CHARTED. FURTHER INVESTIGATION RECOMMENDED. (UP 4/ 20/92, SJV) FE412SS/95-- OPR-E696-HE; WRECK LOCATED BY SIDE SCAN SONAR. DIVER LD OF 13.8 METERS (45 FEET) IN LAT. 36-57-38.018N, LONG. 76-00-38.306W. EVALUATOR RECOMMENDS DELETING CHARTED WK CLEARED 37 FEET AND CHARTING 46 WK AS SURVEYED. (UP 2/15/96, SJV) DESCRIPTION : NO.398; CARGO; 8310 GT,SUNK 7/15/42 BY SUBMARINE; POSITION ACCURACY WITHIN 1 MILE; REPORTEI DEMOLISHED, WD CLEARED TO 30 FT THRU NM 48/44. 27 NO.272; CARGO, 4565 NT, SUNK 7/24/42; CLEAR DEPTH OF 30 FT AT MLW
858	OBSTRUCTION	12254	E	0370	35	HISTORY H7177/47WD-- PBS-WD-2248; 1:20,000-SCALE SURVEY; SEXTANT ì CONTROL; 35-FOOT SOUNDIN 38-FOOT DEPTHS IN LAT. 36-57-38.4N, ì LONG. 76-05-09W; HUNG AT 35.5 FEET; CLEARED BY 32 FEET; EVALUATOR ì RECOMMENDED CHARTING AS A SUBM OBSTR WITH 32-FOOT CLEARANCE ì DEPTH. CL57 71-- MAR; OPR-467; ITEM 13C; OBSTRUCTION REVISED TO ì CLEARED TO 34 FEET. OBSTRUCTION NOT FOUND BUT CLEARED BY 35 FEET; ì EVALUATOR RECOMMENDED CHARTING AS A SUBM OBSTR WITH WIRE DRAG ì CLEARANCE OF 35 FEET IN LAT. 36-57-38.6N, LONG. 76-05-09.1W. H9814/80-- OPR-D103-PE-8 1:10,000-SCALE SURVEY; ARGO (R/R); ì ECHO SOUNDER; 45 METER LINE SPACING; OBSTRUCTION NOT FOUND; ì EVALUATOR CONCURRED WITH RECOMMENDATION IN H9255. (ENT 11/19/84, ì MSM) FE387SS/9 OPR-E696-HE; SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
859	UNKNOWN	12220	E	0100	0	HISTORY LNM20/73--A 12-FT OUTBOARD BOAT HAS CAPSIZED AND SUNK IN 25 FT; THE WRECK IS UNLIGHTED AND MARKED WITH A SEAT CUSHION.
860	UNKNOWN	12220	E	0100	0	HISTORY NM5/67--A 22 FOOT BOAT REPORTED SUNK IN 4 FT OF WATER
861	OBSTRUCTION	12222	E	370	20	HISTORY H6976/45-47WD--WAHI4245; 1:40,000 SCALE SURVEY; VISUAL CONTROL; SUBM OBSTR IN LAT.36 57-42N, LONG.75-57-45W; HUNG AT 20FT; CLEARED BY 20FT; DRAG INDICATED SMALL OBJECTS RATHER THAN SHOAL; CLOSE TO WARTIME MINE FIELD; SUSPECTED THAT OBSTR IS A MINE ANCHOR OR LISTENING DEVICE EMBEDDED IN THE BOTTOM. H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; OBSTR REP IN 1957 WK LIST (ITEM #1317) FALLS APPROX. 160M EAST OF HANG DEPTH; 25-26FT SURVEY DEPTHS; SURVEY RUN ON DAY W/HIGH SEAS; IRREGULAR BOTTOM; EVALUATOR RECOMMENDED RETAIN AS CHARTED. (ENTERED 10/16/84 MSM). DESCRIPTION 2 NO.1317; POSITION ACCURACY 1-3 MILES; REPORTED THROUGH CGS SURVEY, DATED 1947 (REG. NO. N ASCERTAINED) LAT.36-57-42N, LONG.75-57-40W.
862	UNKNOWN	12248	E	0098	0	HISTORY T8055/ SHOWN AS 3 HULKS T8304/42 SHOWN AS A VISIBLE WK H6812/42-43 SHOWN AS VISIBLI WK, BASED ON NOTE IN SOUNDING VOLUME
863	OBSTRUCTION	12245	E	0067	0	HISTORY H7602/48WD-- CS326; HUNG AT 17 FEET IN LAT. 36-57-43.0N, LONG. ì 76-22-25.0W. CLEARED AT FEET. (UP 3/1/94, SJV) FE394SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/6/95, SJV)
864	UNKNOWN	12220	E	0999	0	HISTORY NM62/73
865	OBSTRUCTION	12222	E	0370	27	HISTORY H7602/45-48WD HANG LATER CLEARED TO 27 FT; OBSTR. ORIGINALLY HUNG THOUGHT TO HAV BEEN REMOVED BY DRAG.
866	OBSTRUCTION	12220	E	0122	0	HISTORY LNM13/72--CYLINDRICAL SHAPED OBJECT APPROX. 6 INCHES IN DIAM. MOORED TO BOTTOM
867	OBSTRUCTION	12221	D	0370	20	HISTORY NM18/42--REVIEW H6976/45-47 WD--AREA OF 20 FT SNDG CLEARED TO 20 FT (MLW): OBSTRUCTION REPORTED DISPERSED BY NAVY. DESCRIPTION 24 NO.1316; POSITION ACCURACY 1-3 MILES; REPORTED THROUGH CGS SURVEY, DATED 1947
868	OBSTRUCTION	12222	E	370	20	HISTORY H6976/45-47WD--WAHI4245; 1:40,000 SCALE SURVEY; VISUAL CONTROL; SUBM OBSTR IN LAT.36 57-52N, LONG.75-57-36W; HUNG AT 20FT; CLEARED BY 20FT; DRAG INDICATED SMALL OBJECTS RATHER THAN A SHOAL; CLOSE TO WARTIME MINE FIELD; SUSPECTED THAT OBSTR IS A MINE ANCHOR OR LISTENING DEVICE EMBEDDED IN THE BOTTOM. H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; OBSTR REP IN 1957 WK LIST (ITEM #629); 26-27FT SURVEY DEPTHS; SURVEY RUN ON A DAY W/HIGH SEAS; IRREGULAR BOTTOM; EVALUATOR RECOMMENDED RETAIN AS CHARTED. (ENTERED 10/16/84 MSM). DESCRIPTION 24 NO.629; POS. ACCURACY WITHIN 1 MIL WD CLEARED TO 20 FT.(SOURCE UNK.) LOCATED 1947 (SOURCE UNK); REPORTED THROUGH H.O. CHAR RECORDS. POS. LAT.36-57-54N, LONG.75-57-30W.
						HISTORY NM23/47-- JAMES RIVER-WRECK; WRECK OF AN OYSTER BOAT WITH 46 ì FEET OVER IT LOCAT

869	UNKNOWN	12245	E	0370	48	1,190 YARDS, 290 DEGREES FROM NEWPORT NEWS ì POINT PIER LIGHT. APPROX. POSITION LAT. 36-58-00N, LONG. ì 76-26-05W. FE205WD/67-- (OLD FE NO.1 1967); WRECK WAS FOUND IN LAT. ì 36-57-54N, LON 76-25-57.5W. HUNG AT 41 FEET. CLEARED AT 48 AND ì 47 FEET FROM OPPOSITE DIRECTIONS. 1/2 MILE RADIUS INVESTIGATED ì FROM THE CHARTED SYMBOL WITH NO OTHER MAJOR OBSTRUCTIONS LOCATE RECOMMEND CHARTING A WK CLEARED TO 48 FEET AS SURVEYED. (UP ì 1/24/95, SJV) FE408SS/95-- OF E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 3/12/96, SJV)
870	UNKNOWN	12245	E	0100	0	HISTORY NM29/70-- JAMES RIVER-WRECK REPORTED; WRECK REPORTED IN LAT. ì 36-57-55N, LONG. 76-40W. (UP 1/24/95, SJV)
871	OBSTRUCTION	12222	E	0370	30	HISTORY NM1/47--SMALL BOAT REPORTED SUNK AT APPROX. LAT.36-57-59N, LONG.76-21-39W. H7602/45-48WD CLEARED TO 30 FT; COE REPORTS WK TO BE SMALL BOAT AND HAS NO PLANS TO RAISE IT; SEE CL391/48 FOR ADVANCE SURVEY INFO.
872	OBSTRUCTION	12254	D	370	16	HISTORY SOURCE UNKNOWN H7176/47WD PROJECT CS-326, 9/30/46; SEARCH FOR WRECK WANDERER HANG AT 19 FT, CLEARED TO 16 FT(ACTUAL TIDES), DRAGGING DIFFICULT DUE TO FISH TRAPS. COE REQUESTED TO INVEST. W/DIVERS, REFUSED DUE TO LACK OF IMPORTANCE CL347/47 COPY OF PART ABOVE DR
873	UNKNOWN	12220	E	0098	0	HISTORY LNM25/74
874	UNKNOWN	12220	E	0100	0	HISTORY LNM38/73--A 14-FT OUTBOARD HAS BEEN REPORTED CAPSIZED IN APPROX. POS; IT IS MARKE WITH AN UNLIGHTED WHITE SMALL BOAT FENDER.
875	UNKNOWN	12245	E	0100	0	SURVEY REQUIREMENT COMMENTS A 200% SIDE SCAN SONAR INVESTIGATION IS REQUIRED WITHIN A X ì 800 METER RECTANGLE SURROUNDING THE CHARTED WRECK. THIS RECTANGLE ì IS ORIENTED WITH ITS LONG AXIS APPROX. NE-SW OR PARALLEL TO ì ENTRANCE REACH CHANNEL. HISTORY NM15/61--A 125FT BARGE IS REPORTED SUNK IN 22FT OF WATER ì APPROX. 900YDS 360 DEG T FROM NAVAL BASE BREAKWATER LIGHT (PLOTS ì TO APPROX. POS. LAT.36-58-16N, LONG.76-19-50W). THE BOW IS ì EXPOSE BY 2FT AT MLLW. (ENTERED 12/88 MCR) CL1484/64--CORRESPONDENCE FROM THE USS TACONIC STATE THAT ì FOLLOWING SEVERAL CLOSE OBSERVATIONS IT IS DETERMINED THAT THE ì STRANDED BARGE NO LONGER VISIBLE. LNM49/64--REPORTS WK. NOT FOUND AT CHARTED LOCATION. DESCRIPTION **** ITEM WILL BE REMOVED FROM AFFECTED CHARTS PENDING APPLICATION OF COE SURVEY OF 1991. (U 3/1/94, SJV)
876	OBSTRUCTION	12220	E	0067	0	HISTORY ———ORIGINATING SOURCE NOT DETER. CHARTED AS VIS. STAKES. CL1406/79-COOP. CHART REPORT. STAKES NOT VISIBLE, MCD REVISED TO SUBM.
877	OBSTRUCTION	12254	D	370	15	HISTORY FE 1 1953 HANG AT 18 FT, CLEARED TO 15 FT, AREA USED AS DUMPING GROUND, RUBBER HOSE, JUNK, SHORT PIECES OF WOOD PICKED UP W/DRAG.
878	OBSTRUCTION	12254	D	370	14	HISTORY FE 1 1953 HANG AT 18 FT, CLEARED TO 14 PT, AREA USED AS DUMPING GROUND, RUBBER HOSE, JUNK, SHORT PIECES OF WOOD PICKED UP W/DRAG.
879	OBSTRUCTION	12254	D	370	14	HISTORY FE 1 1953 HANG AT 21 FT, CLEARED TO 14 FT, AREA USED AS DUMPING GROUND, RUBBER HOSE, JUNK, SHORT PIECES OF WOOD PICKED UP W/DRAG.
880	LILLIAN LUCKENBACH	12200	D	0100	51	HISTORY CHARTED AS WD CLEAR TO 8.5 FM, SURVEY NOT DETERMINED DESCRIPTION 24 NO.415; CARG 6369 GT; SUNK 3/27/43 BY MARINE CASUALTY; POSITION ACCUR. 1 MILE; REPORTED DEMOLISHED THRU THE SALVAGE SECT, BUR OF SHIPS; WD CLEAR TO 51 FT ON 8/4/44 REPORTED THRU CGS. 27 NO.729; CARGO, 6389 GT SUNK 3/27/43; WD 8/4/44 AND HAS AN LD OF 44 FT.
881	OBSTRUCTION	12254	D	370	16	HISTORY H7176/47WD PROJECT CS-326, 9/30/46; HANG AT 19 FT, CLEARED TO 16 FT, OBJECT THOUGHT T BE BROKEN FISH STAKE.
882	OBSTRUCTION	12222	E	370	21	HISTORY H6976/45-47WD--WAHI4245; 1:40,000 SCALE SURVEY; VISUAL CONTROL; SUBM OBSTR IN LAT.36-58-41N, LONG.75-58-06W; HUNG AT 24FT; CLEARED BY 21FT; DRAG INDICATED SMALL OBJECTS RATHER THAN SHOAL; CLOSE TO WARTIME MINE FIELD; SUSPECTED THAT OBSTR IS A MINE ANCHOR OR LISTENING DEVICE EMBEDDED IN THE BOTTOM. H9901/80--OPR-D103-PE-81; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; OBSTR REP IN 1957 WK LIST AS ITEM #630; 30-31FT SURVEY DEPTHS IN AREA; SURVEY RUN ON DAY W/HIGH SEAS; IRREGULAR BOTTOM; EVALUATOR RECOMMENDED RETAIN AS CHARTED. (ENTERED 10/15/84 MSM). F00439/98-- S-E900-RU; 200% SIDE SCA SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 8/16/99, SJV) DESCRIPTION 24 NO.630; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 21 FT.(SOURCE UNK. LOCATED 1947 (SOURCE UNK); REPORTED THROUGH H.O. CHART RECORDS. POSITION LAT.36-58-42N, LONG.75-58-09W.
883	SEA ROAMER	12222	E	****	0	HISTORY H7602/45-48WD--TRAWLER, HUNG AT 30 FT, CG REPORTS LD OF 2 1/2 FT, CG PLANNED TO REMOVE WK. H7171/47--WK REMOVED, SEE ALSO CL53/47 FOR REMOVAL; AREA SUBSEQUENTLY DRAGGED TO 39 FT(NOT NOW CHARTED 12/80)
892	SNDG	12222	D	127	0	HISTORY H9901/80-- OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) ì CONTROL; ECHO SOUNDER 73-FOOT PEAK IN 82 FEET IN LAT. ì 36-57-24.80N, LONG. 75-59-33.87W; STAR PATTERN DEVELOPMENT; ì INVESTIGATION FOUND NO SHOALER SOUNDINGS; RECOMMENDED FOR FURTHER ì INVESTIGATION; ALS REF. AWOIS ITEM #839. 74 FOOT SOUNDING ì CHARTED. (ENT 10/18/84, MSM) H10343/90-- OPR-D111-WH; SIGNIFICANT CONTACT LOCATED IN LAT. ì 36-57-40.21N, LONG. 75-59-32.23W. ESTIMATED 3.7 METERS ABOVE ì BOTTOM. EVALUATOR RECOMMENDS NO CHANGE IN CHARTING STATUS PENDING ì FINAL DISPOSITION OF H-10372/90. (UP 1/28/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); FATHOMETER DEPTH ì OF 79 FEET OBTAINED ON AN OBSTRUCTION IN LAT. 36-57-26.31N, LONG. ì 75-59-32.75W BY PRESENT SURVEY. 73-FOOT SOUNDING OBTAINED ON ì PRIOR SURVEY H-10343/90, ABOVE. OBSTRUCTION LOCATED BY SIDE SCAN ì SONAR, ESTIMATED DEPTH OF 72 FEET ALSO FOUND BY PRIO SURVEY. ì EVALUATOR RECOMMENDS REVISING THE CHARTED 74-FOOT SOUNDING TO 73 ì FEET AS LOCATED ON H-10343/90. ALSO RECOMMENDS DIVER ì INVESTIGATION AND LD DETERMINATION AT OPPORTUNE TIME. (UP ì 4/20/92, SJV)
2552	OBSTRUCTION	12200	D	****	0	02552 DESCRIPTION 185 ITEM H; SIDE SCAN SONAR CONTACT, 40 X 100 FT OUTLINE IN SAND STRONGLY RESEMBLES SHIP, PROBABLY OF NATURAL ORIGIN, RAYDIST CONTROL. SURVEY REQUIREMENTS INFORMATION
2553	OBSTRUCTION	12200	D		0	DESCRIPTION 185 ITEM D; SIDE SCAN SONAR IMAGE, 35 FT L HARD CONTACT, 3 FT ABOVE BOTTOM, MA BE SMALL BOAT OR PIPE SECTION, TANK. RAYDIST HORIZONTAL CONTROL. NOTE: NOT PRESENTLY

						CHARTED.
2555	OBSTRUCTION	12208	D	067	0	HISTORY UNKNOWN SOURCE-- POSSIBLY NM DATED 5/16/40 (FROM 1957 NAVY ì WRECK LIST). H6976/45 47WD-- CS-313 & 326 - WA/HI; LOCATION OF OBSTRUCTION ì CLEARED TO 32 FEET. NOT HUNG. RETAIN A CHARTED SINCE REQUIREMENT ì FOR BOTTOM CLEARANCE AND SEARCH RADIUS NOT SATISFIED. CL34 58-- REF. NAVY WRECK LIST. SEE DESCRIPTION, BELOW. H9905/80-- OPR-D103-PE; NOT LOCATED. ADDITIONAL WORK ì RECOMMENDED (WIRE DRAG). H10340/90-- OPR-D111-WH; NOT ASSIGNED. FE353SS HE-- OPR-D111-HE; NOT ASSIGNED. FE412SS/HE-- OPR-E696-HE; 200% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV) DESCRIPTION 24 OBSTRUCTION NO. 1311, FORMERLY CHARTED. NM DATED 5/16/40 (?). LAT. 36-56-12N, LONG. 75-54-48W. ACCURACY WITHIN ONE MILE.
2561	CUMBERLAND	12245	D	****	0	DESCRIPTION **** UNKNOWN DOCUMENT; FRIGATE, UNION FORCES, SUNK 1862 BY MERRIMACK; PROTRUDES 2-3 FEET FROM MUD. NOT KNOWN IF ID VERIFIED OR ASSUMED. GP SCALED BASED ON SKETCH. WRECK IS NOT CHARTED. (UP 1/24/95, SJV)
2562	FLORIDA	12245	G	****	0	DESCRIPTION **** DOCUMENT UNKNOWN; CONFEDERATE RAIDER, SUNK 1864; PROTRUDES 2-3 FEET FROM MUD. NOT KNOWN IF ID VERIFIED ASSUMED. GP SCALED BASED ON SKETCH. WRECK IS NOT CHARTED. (UP 1/24/95, SJV)
2738	WILLIAM	12220	E	****	0	02738 HISTORY LNM5/72--TUG, SANK IN 23 FT OF WATER AT POS.36-57-18N, 76-21-22W CL1504/80--USCG; VESSEL REFLOATED ON 2/2/72 DESCRIPTION 01 TOWING VESSEL, 22 GT, 41.9 FT L, 12.4 FT W, 6.6 FT D OWNER: GREAT LAKES & DOCK CO., PO BOX 9489, NORFOLK,VA 27505 SURVEY REQUIREMENTS MISCELLANEOUS--SALVAGED
2796	CHARMER	12221	D		0	
2797	WANDERER	12221	E	0999	0	SURVEY REQUIREMENTS NOT DETERMINED
2798	MARY HOOPER	12221	E	0999	0	SURVEY REQUIREMENTS NOT DETERMINED
2800	UNKNOWN	12221	E	0999	0	SURVEY REQUIREMENTS NOT DETERMINED
2897	OBSTRUCTION	12222	E	370	20	HISTORY H6976/45-47WD--WAHI4245; 1:40,000 SCALE SURVEY; VISUAL CONTROL; SUBM OBSTR IN LAT.36 57-54N, LONG.75-57-27W; HUNG AT 20FT; CLEARED BY 20FT; DRAG INDICATED SMALL OBJECTS RATHER THAN A SHOAL; CLOSE TO WARTIME MINE FIELD; SUSPECTED THAT OBSTR IS A MINE ANCHOR OR LISTENING DEVICE EMBEDDED IN THE BOTTOM. H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; 25-28FT SURVEY DEPTHS; SURVEY RUN ON DAY W/HIGH SEAS IRREGULAR BOTTOM; EVALUATOR RECOMMENDED RETAIN AS CHARTED. (ENTERED 10/16/84 MSM)
2898	OBSTRUCTION	12222	D	370	20	HISTORY H6976/45-47WD--WAHT4245; 1:40,000 SCALE SURVEY; VISUAL CONTROL; SUBM OBSTR IN LAT.3 57-56N, LONG.75-57-31W; HUNG AT 22FT; CLEARED BY 20FT; DRAG INDICATED SMALL OBJECTS RATHER THAN A SHOAL; CLOSE TO WARTIME MINE FIELD; SUSPECTED THAT OBSTR IS A MINE ANCHOR OR LISTENING DEVICE EMBEDDED IN THE BOTTOM; H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; 26-26FT SURVEY DEPTHS; SURVEY RUN ON DAY W/HIGH SEAS IRREGULAR BOTTOM; NOT PRESENTLY CHARTED, POSSIBLY BECAUSE OF SPACE LIMITATIONS. EVALUATOR RECOMMENDED CHARTING IF SCALE PERMITS. (ENTERED 10/16/84 MSM)
2899	OBSTRUCTION	12222	E	370	20	HISTORY H6976/45-47WD--WAHI4245; 1:40,000 SCALE SURVEY; VISUAL CONTROL; SUBM OBSTR IN LAT.36 57-52N, LONG.75-58-08W; HUNG AT 21FT; CLEARED BY 20FT; DRAG INDICATED SMALL OBJECTS RATHER THAN SHOAL; CLOSE TO WARTIME MINE FIELD; SUSPECTED THAT OBSTR IS A MINE ANCHOR OR LISTENING DEVICE EMBEDDED IN THE BOTTOM. H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; 25-26FT DEPTHS; SURVEY RUN ON DAY W/HIGH SEAS; IRREGULAR BOTTOM; EVALUATOR RECOMMENDED RETAIN AS CHARTED. (ENTERED 10/15/84 MSM)
2902	OBSTRUCTION	12221	D	0067	0	HISTORY NM29/57--7/20/57; U.S. NAVY ADVISES A BUOY ESTABLISHED TO MARK ì A SUBMERGED STEEL HYDROGRAPHIC EXPERIMENTAL STRUCTURE WHICH ì EXTENDS 5 FEET ABOVE THE BOTTOM; IN 1966 NO EVIDENCE COULD BE ì FURNISHED CONCERNING THE STRUCTURE'S REMOVAL. H9901/80-- OPR-D103-PE 80; ITEM NO. 95; 1:10,000-SCALE SURVEY; ì ARGO (R/R) CONTROL; ECHO SOUNDER; 1000 METER RADIUS SEARCH AT 45 ì METER LINE SPACING; NO INDICATION OF OBSTRUCTION OR SHOALING; ì COULD NOT PERFORM A WIRE DRAG BECAUSE OF STRONG CURRENTS AND THE ì INABILITY OF LAUNCHES TO CONTROL A DRAG AT 90 FEET; EVALUATOR ì RECOMMENDED RETAIN AS CHARTED IN LAT. 36-57-21N, LONG. 75-58-12W ì AND ASSIGNING TO R/H FOR INVESTIGATION. (ENT 10/11/84, MSM) H10343/90-- OPR-D111-WH; AN OBSTRUCTION WITH AN ESTIMATED DEPTH ì OF 24.5 METERS LOCATED IN LAT. 36-57-23.99 LONG. 75-58-13.58W. ì EVALUATOR RECOMMENDS NO CHANGE IN CHARTING STATUS PENDING FINAL ì DISPOSITION OF SURVEY H-10372/90. (UP 1/28/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); EVALUATOR DOES NOT ì CONSIDER ITEM DISPROVED. HOWEVER, RECOMMENDS CHARTING THE ì FOLLOWING CONTACTS, CHART SCALE ALLOWING: OBSTRUCTION IN LAT. ì 36-57-18.93N, LONG. 75-58-26.06W, FATHOMETER DEPTH OF 28.9 ì METERS; OBSTRUCTION IN LAT. 36-57-24.07N, LONG. 75-58-13.38W FATHOMETER DEPTH OF 26.5 METERS. (UP 4/20/92, SJV)
3081	SNDG	12221	D	067	0	HISTORY CL310/40-- 30-FOOT SHOAL REPORTED BY USCG MENDOTA (LIGHTHOUSE TENDER). OBTAINED WITH LEAD LINE AND COMPASS BEARINGS, CHARTED ON CHART 12221. ì NOT TIDE CORRECTED. FE-77 (F.E. NO. 3 1949)-- NEITHER VERIFIED NOR DISPROVED. H9905/80-- OPR-D103-MI/PE-80; NOAA SHIP PEIRC NEITHER ì VERIFIED NOR DISPROVED. MAIN SCHEME HYDRO (100 METER SPACING). H10340/90-- OPR-D111-WH; SURVEY OPS. NEGATIVE. HOWEVER, CHARTED ì SHOAL FALLS BETWEEN LINES. EVALUATOR RECOMMENDS THAT DISCUSSION ì AND CHARTING RECOMMENDATION BE DEFERRED UNTIL THE COMPLETION OF ì OFFICE PROCESSING OF JUNCTIONAL SURVEY H-10356/90, AND A FINAL ì DISPOSITION OF ITEM HAS BEEN MADE. (UP 10/29/91, SJV) H10356/90-- OPR-D111-HE; SIDE SCAN SONAR SEARCH AND ECHOSOUNDER HYDROGRAPHY NEGATIVE. EVALUATOR RECOMMENDS DELETING ì FROM CHART. (UP 5/92, SJV)
3420	UNKNOWN	12200	D	100	54	HISTORY H9959/81--OPR-D103-MI/PE-81; ARGO R/R CONTROL; 55FT SHOAL SNDG. OBTAINED BY ECHO SOUNDER DURING ROUTINE MAINSCHEME HYDRO. FURTHER INVEST., CONDUCTED VIA 10M ECHO SOUNDER LINE SP. AND BY DIVERS, PROVIDED RESULTS THAT REVEALED A BARGE LYING ON ITS SIDE LAT.36-55-04.58N, LONG.75-43-42.50W. THE LD OBTAINED BY LEADLINE AND DIVERS DEPTH GAGE IS 54F EVALUATOR RECOMMENDS CHARTING A 54 WK AT THE POS. LISTED ABOVE. (ENTERED 10/84 MJF)
3685	OBSTRUCTION	12254	D	0370	15	03685 HISTORY FE233WD/69--DEBRIS W/150FT OF WIRE CABLE RECOVERED; HUNG AT 16FT; CLEARED A 15FT IN LAT.36-55-52.6N, LONG.76-09-35.6W. H9910/80--OPR-D103-MI-80; ITEM 132; 1:10,000 SCALE SURVEY DEL NORTE CONTROL (R/R, R/A); ECHO SOUNDER W/50M LINE SPACING; EVALUATOR RECOMMENDS

						COMBINING WITH CONCRETE CLUMP AND MUSHROOM ANCHOR FOUND WITHIN 130M OF HANG AND CHART AS ONE FEATURE: OBSTRS W/WIRE DRAG CLEARANCE OF 15FT IN LAT.36-55-53N, LONG.76-09-35W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS LIMITED NOT ASSIGNED
3686	OBSTRUCTION	12254	D	0370	15	03686 HISTORY H9255WD/71-72--MUSHROOM ANCHOR; HUNG AT 18FT WITH 18FT LEAST DEPTH; EXTEND 4FT OFF THE BOTTOM IN LAT.36-55-52.8N, LONG.76-09-34.6W. H9910/80--OPR-D103-MI-80; ITEM 132; 1:10,0(SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); ECHO SOUNDER W/50M LINE SPACING; EVALUATOR RECOMMENDS COMBINING W/DEBRIS (APPROX. 30M W) AND CONCRETE CLUMP (APPROX. 10M NE OF DEBRIS) AND CHART AS ONE FEATURE: OBSTRS W/WIRE DRAG CLEARANCE OF 15FT IN LAT.36-55-53N, LONG.76-09-35W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS LIMITED NOT ASSIGNED
3687	OBSTRUCTION	12254	D	0067	0	03687 HISTORY H7089/46--SUBM DOLPHIN; US ARMY TIDE GAGE IN LAT.36-55-40.5N, LONG.76-07-18W H99 80--OPR-D103-MI-80, 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); ECHO SOUNDER NORTH SOUTH W/20M LINE SPACING; NOT ON FATHOGRAMS; NOT SEEN BY LAUNCH PERSONNEL; EVALUATOR RECOMMENDS REVISING TO SUBM DOLPHIN ED ON CHART. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS LIMITED NOT ASSIGNED: INCOMPLETE
3689	OBSTRUCTION	12254	D	0370	15	03689 HISTORY H9910/80--OPR-D103-MI-80; ITEM 132: ; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R R/A); ECHO SOUNDER W/50M LINE SPACING; 3X3 FT CONCRETE BLOCK CHARTED THRU CL1028/70 IN LAT.36-55-48N, LONG.76-09-32.5W; CLEARED TO 15FT IN FE233WD/69; CONCRETE CLUMP (2X4X4 FT) HUN(DURING SURVEY H9255WD/71-72 IN LAT.36-55-52.9N, LONG.76-09-35.4W AND WAS CLEARED BY 15FT; H9910/80 RECOMMENDS DELETING FIRST ITEM AS CHARTED; COMBINE SECOND ITEM WITH DEBRIS ANI MUSHROOM ANCHOR LOCATED DURING THIS SURVEY AND CHART AS SINGLE FEATURE OBSTRS WITH CLEARED DEPTH OF 15FT IN LAT.36-55-53N, LONG.76-09-35W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS LIMITED NOT ASSIGNED
3690	OBSTRUCTION	12254	E	0067	20	HISTORY H9910/80--OPR-D103-MI-80; ITEM 135; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A) 250FT 3/16 IN WIRE SWEEP W/100M SPACING AND 65%-70% OVERLAP; HANG IN LAT.36-57-39.16N, LONG.76-08-56.16W REPORTED BY DIVERS TO BE 6X6 IN WOODEN BEAM; 2FT PROJECTION ABOVE BOTTOM; LEAST DEPTH OF 20FT; EVALUATOR RECOMMENDED CHARTING THIS ITEM AS SUBM. DANG. OBSTR. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATI EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
3691	UNKNOWN	12254	D	100	0	HISTORY LNM35/72 (9/8/72); 30FT SAILBOAT GROUNDED AND BROKEN UP ON FIRST ISLAND OF CHES BA BRIDGE-TUNNEL IN PA LAT.36-58-00N, LONG.76-06-48W. CL1679/80--CGAUX; NO WRECK VISIBLE, LOCALS SAY SMALL BOAT LESS THAN 20 FT L BROKE UP ON ROCKS 4-5 YEARS AGO. VIS. WK. REVISED TO SUI WK. ED AT SAME POS. ABOVE ON CHART 12221 (7/18/81 ED). H9910/80--OPR-D103-MI-80; ITEM 81; 1:10,00 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); SNDG LINES RUN ALONG W SIDE OF BRIDGE-TUNNEL NO EVIDENCE OF WK VISUALLY OR ON FATHOGRAM; NO LOCAL KNOWLEDGE OF WK; DID NOT PERFOI INTENSIFIED SNDG SEARCH OR WIRE DRAG TO VERIFY AS PRESCRIBED IN PSR; EVALUATOR REFERS RECOMMENDATION IN DR OF JUNCTION SURVEY H9814/80. (ENTERED 10/15/84 MSM) H9814/80--OPR-D10: PE-80; ITEM #81; 1:10,000 SCALE. ARGO (R/R), DELNORTE AROUND ISLAND OR RIPRAP; EVALUATOR FEELS WK MAY HAVE BEEN TAKEN BY CURRENTS FROM RIPRAP BUT CONSIDERS SEARCH INSUFFICIE TO DISPROVE SUNKEN WK; EVALUATOR RECOMMENDED DELETING VISIBLE WK AND ADDING SUBM DANG WK PD. (ENTERED 12/4/84 MSM).
3692	OBSTRUCTION	12254	D	370	21	HISTORY CL182/70, CL1028/70--AMC-SP-5-69; 10/69; PROCESSED UNDER SURVEY REGISTRY NO. FE-233WD; SUBM DANG OBSTR; CARGO LOST DURING TRANSFER BETWEEN NAVY SHIPS; PROJECT TWO FEET ABOVE BOTTOM; BUOYED BY FIELD PARTY AND NAVY NOTIFIED; NAVY COULD NOT LOCATE AND NO FURTHER ATTEMPTS TO LOCATE WERE MADE; TEMP HUNG AT 22FT; CLEARED TO 21FT IN LAT.36-56 31.2N, LONG.76-09-58.8W. H9910/80--OPR-D103-MI-80; ITEM 134; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); ECHO SOUNDER W/50M LINE SPACING; 3FT SPIKE ON FATHOGRAM; STAR PATTER INVESTIGATION OVER SPIKE W/NO FURTHER SIGN OF OBSTR; OBSTR WAS LEAST DEPTH OF 23FT; EVALUATOR RECOMMENDS AND OBSTR CLEARED BY 21FT BE CHARTED IN LAT.39-56-31N, LONG.76-09-59W (FROM FE233WD) AND A 23FT OBSTR BE CHARTED IN LAT.36-56-29N, LONG.76-09-50 (FROM H9910). (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; NOT INVESTIGATED DUE TIME CONSTRAINTS. EVALUATOR RECOMMENDS RETAINING AS CHARTED AND REASSIGNING IN FUTURE. (UP 2/9/96, SJV)
3693	OBSTRUCTION	12254	D	067	23	HISTORY H9910/80--OPR-D103-MI-80; ITEM 134; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A) INVESTIGATING AND OBSTR IN LAT.36-56-31N, LONG.76-09-59W ORIGINATED IN FE233WD; ECHO SOUNDE W/50M LINE SPACING; 3FT SPIKE ON FATHOGRAM; STAR PATTERN INVESTIGATION OVER AREA OF SPII W/NO FURTHER SIGN OF OBSTR; OBSTR HAS LEAST DEPTH OF 23FT; EVALUATOR RECOMMENDED CHARTING 23FT OBSTR IN LAT.36-56-29N, LONG.76-09-50W. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; NOT INVESTIGATED DUE TIME CONSTRAINTS. EVALUATOR RECOMMENDS RETAINING AS CHARTED AND REASSIGNING IN FUTURE. (UP 2/9/96, SJV)
3694	OBSTRUCTION	12254	D	0085	0	03694 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); EC SOUNDER; LINE OF 53 STAKES (APPROX. 4" IN DIAM. AND 15' APART) BEGINNING INSHORE AND RUNNIN NORTH; N END IS SERIES OF STAKES IN SPIRAL SHAPE; A NET CONNECTS ALL STAKES; SNDG LINE RU ON EITHER SIDE AND N LIMIT OF FISH TRAP NORTHERNMOST POS. IS LAT.36-52-42.3N, LONG.76-07-54.1V SOUTHER LIMIT IS LAT.36-55-32.7N, LONG.76-07-59.3W; POSITION ABOVE (LAT.36-55-37.6N, LONG.76-07-56.9W IS CENTRAL PT OF FISH TRAP SCALED FROM SMOOTH SHEET; PERMANENT FIXTURE; RECOMMENDED CHARTING. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3695	OBSTRUCTION	12254	D	370	21	HISTORY FE233WD/69--AMC-SP-5-69; GROUNDING OF DRAG AT EFFECTIVE DEPTH OF 22FT IN PA LAT.36-56-10N, LONG.76-09-54W; CLEARED DEPTH OF 21FT; EVALUATOR RECOMMENDED NOT CHARTING SINCE SUBSEQUENT SURVEY H9910/80 SHOWS EVIDENCE OF SHOAL; H9910/80--OPR-D103-MI-80; 1:10,000 SCA SURVEY; DEL NORTE CONTROL (R/R, R/A) ECHO SOUNDER; SHOWS 27FT DEPTH IN THE AREA OF PREVIOUS GROUNDING; H9255/71-72 DID NOT VERIFY OF DISPROVE GROUNDING; EVALUATOR DOES NC CONCUR WITH RECOMMENDATION IN FE233WD AS BOTTOM IS CLUTTERED IN THIS AREA; RECOMMEND CHARTING AND OBSTR W/CLEARED DEPTH OF 21FT AT POS. LISTED ABOVE. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; NOT INVESTIGATED DUE TIME CONSTRAINTS. EVALUATOR RECOMMENDS RETAINING AS CHARTED AND REASSIGNING IN FUTURE. (UP 2/9/96, SJV)
3696	OBSTRUCTION	12254	D	0370	14	03696 HISTORY UNKNOWN SOURCE--3FT X 3FT CONCRETE BLOCK REPORTED CHARTED AS AN OBST IN LAT 36-55-48N, LONG 76-09-33W. FE233WD/69--AMC-SP-5-69; 1:20,000 SCALE SURVEY; CONCRETE BLOCI NOT LOCATED HOWEVER INVESTIGATED HANG IS 95 M EAST OF CHARTED POSITION; MAY HAVE HUNG ON BOTTOM; HUNG AT 15FT IN PA LAT.36-55-49N, LONG.76-09-29W. CLEARED TO 14FT. EVAL. RECOMMENDS DELETING ORIGINAL OBSTR & CHARTING SUBM OBSTR CLEARED TO 14FT IN NEW POSITION. (ENTERED MSM 6/11/85) H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A) ECHO SOUNDER, DEPTHS TO 17FT IN AREA,CONCUR W/RECOMMENDATION IN FE233WD TO CHART AN OBSTR. CLEARED TO 14FT AT POS. LISTED ABOVE. (ENTERED 10/15/84 MSM)

						SURVEY REQUIREMENTS NOT ASSIGNED
3697	OBSTRUCTION	12254	D	370	18	HISTORY FE233WD/69--AMC-SP-5-69; 1:20,000 SCALE SURVEY; UNINVESTIGATED HANG AT 19FT IN PA LAT.36-55-51.6N, LONG.76-08-44.4W; CLEARED AT 18FT; RECOMMEND CHARTING AS SUBM DANG OBSTR W/18FT CLEARED DEPTH. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY, DEL NORTE CONTROL (R/ R/A) ECHO SOUNDER SHOWS DEPTHS TO 21FT IN AREA; EVALUATOR CONCURS WITH RECOMMENDATI(IN FE233WD TO CHART AN OBSTR CLEARED TO 18FT AT POS. LISTED ABOVE. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3698	OBSTRUCTION	12254	D	370	17	HISTORY FE233WD/69--AMC-SP-5-69; 1:20,000 SCALE SURVEY; OBSTR IDENTIFIED AS ROCK 4X6FT; 5.4FT ABOVE BOTTOM; HUNG AT 19FT AND CLEARED BY 19FT IN PA LAT.36-55-57N, LONG.76-09-04W; DIVER LEADLINE LEAST DEPTH OF 22FT; EVALUATOR RECOMMENDED CHARTING AS OBSTR W/CLEARED DEP OF 19FT. QUALITY REVIEWER RECOMMENDED CHARTING 22FT OBSTR; H9255WD/71-72--CONCRETE CLU EXTENDING 6FT OFF THE BOTTOM IN LAT.36-55-56.5N, LONG.76-09-03.5W. RECOMMENDED ITEM BE CHARTED AS OBSTR W/CLEARED DEPTH OF 17FT THRU H9255WD. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY, DEL NORTE CONTROL (R/R, R/A) ECHO SOUNDER 23FT DEPTHS IN AREA. (ENTERED 10. 15/84 MSM)
3699	OBSTRUCTION	12254	D	0085	0	03699 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE CHART; PIER OF GROIN; CHARTED, NOT LOCATED OF DISCUSSED BY FIELD UNIT; ORIGINAL SOURCE NOT ASCERTAINED; EVALUATOR RECOMMENDS RETAIN AS CHARTED IN LAT.36-55-48N, LONG.76-11-09W. (ENTERED 10/15/84 MSM) SURV REQUIREMENTS NOT ASSIGNED
3700	OBSTRUCTION	12254	D	0284	0	03700 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; THREE AREAS COVERING AT MLW; NOT LOCATED OR ADDRESSED BY HYDROGRAPHER. SOURCE UNASCERTAINABLE. RAN ONE LINE OF SNDGS INSIDE LIMITS PARALLEL TO REACH AND SEVERAL LINES OUTSIDE LIMITS COMING INTO BEACH EVALUATOR RECOMMENDS RETAIN AS CHARTED IN LAT.36-55-34N, LONG.76-09-48W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3701	OBSTRUCTION	12254	D	0085	0	03701 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY, PIER OR GROIN AND SHOAL AREA; NOT LOCATED OR ADDRESSED BY HYDROGRAPHER. SOURCE UNASCERTAINABLE AT TIME OF REPORT RECOMMEND ITEMS BE RETAINED AS CHARTED IN LAT.36-55-36N, LONG.76-09-36W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3702	OBSTRUCTION	12254	D	0085	0	03702 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; GRION, NOT LOCATED OR ADDRESSED BY HYDROGRAPHER; SOURCE NOTM ASCERTAINABLE AT TIME OF REPORT; RECOMMEND ITEM BY RETAINED AS CHARTED IN LAT.36-55-33.5N, LONG.76-09-27W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3703	OBSTRUCTION	12254	D	067	0	HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; UNEXPLODED DEPTH CHARGE APR. 1956. NOT LOCATED OR ADDRESSED BY HYDROGRAPHER, SOURCE NOT ASCERTAINABLE AT LONG.76-09-02.5W. (ENTERED 10/15/84 MSM)
3704	OBSTRUCTION	12254	D	0085	0	03704 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; GROIN, NOT LOCATED OR ADDRESSED BY HYDROGRAPHER; SOURCE NOT ASCERTAINABLE AT TIME OF THIS REPORT. RECOMMENDED ITEM BE RETAINED AS CHARTED IN LAT.36-55-24N, LONG.76-08-30W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3705	OBSTRUCTION	12254	D	0067	0	03705 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; GROIN OR RUINS, NOT LOCATED OR ADDRESSED BY HYDROGRAPHER; SOURCE NOT ASCERTAINABLE AT TIME OF REPORT. RECOMMENDE THAT THIS ITEM BE RETAINED AS CHARTED IN LAT.36-55-19N, LONG.76-08-12W. (ENTERED 10/15/84, MSM SURVEY REQUIREMENTS NOT ASSIGNED
3706	UNKNOWN	12254	D	0100	0	03706 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; SUNKEN DANG WK PA. SOURCE UNKNOWN. NOT INVESTIGATED OR ADDRESSED BY SURVEY. NOT CONSIDERED VERIFIED OR DISPROVED. RECOMMENDED RETAIN AS CHARTED IN LAT.36-56-54N, LONG.76-08-25W. (ENTERED 10/15/ MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3707	SNDG	12254	D	0127	23	03707 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); EC SOUNDER, 23FT SNDG FROM MISCELLANEOUS SOURCE IN LAT.36-57-53N, LONG.76-07-03W. PRESENT SURVEY DEPTHS OF 28-30FT. RECOMMENDED EVALUATE SOURCE FOR VALUE. SURVEY IS ADEQUATE SUPERSEDE A GENERAL BOTTOM SNDG AREA. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NO ASSIGNED
3708	SNDG	12254	D	0127	23	03708 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A) EC SOUNDER, 23FT SNDG FROM MISCELLANEOUS SOURCE IN LAT.36-58-03N, LONG.76-06-55.5W. PRESENT SURVEY DEPTHS OF 27-32FT; RECOMMENDED EVALUATE SOURCE FOR VALUE; PRESENT SURVEY CONSIDERED ADEQUATE TO SUPERSEDE GENERAL BOTTOM SOUNDING. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3709	OBSTRUCTION	12254	D	370	20	HISTORY H9255WD/71-72--OPR-467-RH-71,72; ITEM 47; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL; STEEL POST EXTENDING 1FT OFF BOTTOM; HUNG AT 20FT (ESTIMATEE CLEARED BY 20FT IN ONE DIRECTION. RECOMMENDED CHARTING AS SUBM OBSTR W/WIRE DRAG CLEARANCE OF 20FT IN LAT.36-57-05.6N, LONG.76-11-42.8W. SURVEY DEPTHS IN AREA FROM H9910/80 ARE 20-21FT. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3710	OBSTRUCTION	12254	E	0067	18	HISTORY H9255WD/71,72--OPR-467-RH-71,72; ITEM 39; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL; LEADLINE, SECTIONS OF RAILROAD TRACK EXTENDING 4 1/2FT OFF BOTTOM. HUNG AT 19FT. 18FT LEAST DEPTH. RECOMMENDED CHARTING SUBM OBSTR W/LEAST DEPTH OF 18FT IN LAT.36-57-17.7N, LONG.76-09-46.5 DEPTHS IN AREA FROM H9910/80 ARE 23 TO 24 FT (ENTERE 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
3711	OBSTRUCTION	12254	D	370	21	HISTORY H9255WD/71,72--OPR-467-R/H-71,72; ITEM 37; 1:20,000 SCALE SURVEY. RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL. ANCHOR EXTENDING 1 1/2FT OFF BOTTOM. HUNG AT 21FT; CLEARED B 21FT. DEPTHS IN AREA FROM H9910/80 ARE 26-27FT. RECOMMENDED CHARTING AS A SUBM OBSTR W/ WIRE DRAG CLEARANCE OF 21FT IN LAT.36-56-19.1N, LONG.76-09-38.3W. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; NOT INVESTIGATED DUE TIME CONSTRAINTS. EVALUATOR RECOMMENDS RETAINING AS CHARTED AND REASSIGNING IN FUTURE. (UP 2/9/96, SJV)
						HISTORY H9255WD/71,72--OPR-467-RH-71,72; ITEM 30; 1:20,000 SCALE SURVEY; RAYDIST CONTROL

3712	OBSTRUCTION	12254	D	370	15	(HYPERBOLIC, R/R) AND VISUAL. UNINVESTIGATED HAND AT 18FT. CLEARED BY 15FT. DEPTHS IN AREA FROM H9910/80 ARE 21-22FT; RECOMMENDED THAT A SUBM OBSTR CLEARED TO 15FT BE CHARTED IN LAT.36-55-52.5N, LONG.76-08-36.1W. (ENTERED 10/15/84 MSM)
3713	OBSTRUCTION	12254	D	370	17	HISTORY H9255WD/71,72--OPR-467-RH-71,72; ITEM 31; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL. SCRAP METAL EXTENDING 2FT OFF BOTTOM. HUNG AT 17FT. CLEAREC BY 17FT; DEPTHS IN AREA FROM H9910/80 ARE 20-22FT. ECOMMENDED CHARTING A SUBM OBSTR W/ WIRE DRAG CLEARANCE OF 17 FT IN LAT.36-55-55N, LONG.76-08-59.3W. (ENTERED 10/15/84 MSM)
3714	OBSTRUCTION	12254	D	370	12	HISTORY H9255WD/71,72--OPR-467-RH-71,72; ITEM 33; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL. TRACTOR TREAD EXTENDING 1FT OFF BOTTOM. HUNG AT 15FT; CLEAR BY 12FT. DEPTHS IN AREA FROM H9910/80 ARE 17-18FT; RECOMMENDED CHARTING A SUBM OBSTR W/ WIRE DRAG CLEARANCE OF 12FT IN LAT.36-55-49.8N, LONG.76-09-31.4W. (ENTERED 10/15/84 MSM)
3715	OBSTRUCTION	12254	E	0370	15	03715 HISTORY H9255W/71,72--OPR-467-RH-71,72; ITEM 38; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL; UNINVESTIGATED HANG AT 15FT (ESTIMATED) CLEARED BY 15FT; DEPTHS IN AREA FROM H9910/80 ARE 17-18FT. RECOMMENDED CHARTING AND OBSTR W/WIRE DRAG CLEARANCE OF 15FT IN LAT.36-55-51.8N, LONG.76-09-45.1W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3716	OBSTRUCTION	12254	D	067	19	HISTORY H9255WD/71,72--OPR-467-RH-71,72; ITEM 34; 1:20,000 SCALE SURVEY. RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL; MUSHROOM ANCHOR EXTENDING 3FT OFF BOTTOM. HUNG AT 19FT, CLEARED BY 18FT. LEAST DEPTH OF 19FT. DEPTHS IN AREA FROM H9910/80 ARE 22-23FT. RECOMMENC CHARTING OBSTR W/LEAST DEPTH OF 19FT. IN LAT.36-55-58.5N, LONG.76-09-33.3W. (ENTERED 10/15/84 MSM)
3717	OBSTRUCTION	12254	D	067	19	HISTORY H9255WD/71-- OPR-467-RH-71,72; ITEM NO. 44; 1:20,000-SCALE ì SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL. LEADLINE, 2 ì X 2 X 2-FOOT CONCRETE BLOCK, HUNG AT 19 FEET (ESTIMATED). CLEARED ì BY18 FEET; LEAST DEPTH BY LEAD LINE OF 19 FEET; DEPTHS IN AREA ì FROM H9910/80 ARE22 FEET. RECOMMENDED CHARTING OBSTR WITH A LEAST ì DEPTH OF 19 FEET IN LAT. 36-42.9N, LONG. 76-10-39.8W. (ENT ì 10/15/84, MSM) FE388SS/94-- OPR-E696-HE; 3 OBSTRUCTIONS LOCATEC SIDE SCAN ì SONAR. DIVERS DESCRIBE A 2 X 2 X 2-FOOT CONCRETE BLOCK MATCHING ì AWOIS DESCRIPTION IN LAT. 36-57-48.666N, LONG. 76-10-32.694. LD ì (PNEUMO GAUGE) OF 6.3 METERS (20 FEET THIS BLOCK WAS LOCATED ì WITHIN THE ASSIGNED SEARCH RADIUS. ALSO WITHIN THE RADIUS WERE OTHER CONCRETE BLOCKS, 10 METERS APART. DIVERS DECRIBE THE ì LARGEST MEASURING 5 X 5 FEI EXTENDING 3 FEET OFF THE BOTTOM AND ì WAS LOCATED IN LAT. 36-57-44.228N, LONG. 76-10-39.333W. (PNEUMO GAUGE) OF 5.9 METERS (19 FEET). EVALUATOR RECOMMENDS ì MOVING CHARTED 19-FOOT OBSTR TO SURVEY POSITION. LORAN-C RATES ì (9960 CHAIN) FOR THE LAST BLOCK MENTIONED ARE: \ 15961.0, ì X=27220.9, Y=41276.5, Z=58488.5. RATES FOR SMALLER BLOCK (2 X 2 X ì 2 FEET) ARE: W=1596C X=27220.5, Y=41277.6, Z=58490.4. (ENT ì 9/6/95, SJV)
3718	OBSTRUCTION	12254	D	370	14	HISTORY H9255WD/71,72--OPR-467-RU-71,72; ITEM 40; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL. UNINVESTIGATED HANG AT 15FT (ESTIMATED) CLEARED BY 14FT. DEPTHS IN AREA FROM H9910/80 ARE 16-18FT; RECOMMENDED AN OBSTR W/WIRE DRAG CLEARANCE 14FT BY CHARTED IN LAT.36-55-49.7N, LONG.76-09-51.5W. (ENTERED 10/15/84 MSM)
3721	OBSTRUCTION	12254	D	0370	15	03721 HISTORY H7177WD/48(AD. WK)--PBS-WD-2248; 1:20,000 SCALE SURVEY; VISUAL CONTROL, HUNG , 15 1/2FT, CLEARED BY 15FT, CHARTED AS OBSTR, DANGER CURVE, AND BASKET W/15FT CLEARANCE DEPTH IN LAT.36-57-20N, LONG.76-09-49W. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; NO INVESTIGATION OF ITEM BY FIELD UNIT; DEPTH IN AREA IS 22FT. RECOMMENDED RETAIN OBSTR AS CHARTED (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3722	OBSTRUCTION	12254	D	0370	11	HISTORY H7177WD/48(AD.WK)--PBS-WD-2248; 1:20,000 SCALE SURVEY; VISUAL CONTROL, HUNG AT 14F CLEARED BY 11FT, CHARTED AS OBSTR, DANGER CURVE, AND BASKET W/11FT CLEARED DEPTH IN LAT.36-57-23N, LONG.76-09-27W. (ENTERED 10/15/84 MSM) H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; NO INVESTIGATION OF ITEM BY FIELD UNIT; DEPTHS IN AREA ARE 22-23FT. RECOMMENDED RETAIN ITEM AS CHARTED. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SON/ SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
3723	OBSTRUCTION	12254	D	067	18	HISTORY H7177WD/48 (AD.WK)--PBS-WD-2248; 1:20,000 SCALE SURVEY; VISUAL CONTROL, HUNG AT 15 2FT, CLEARED BY 15FT, CHARTED AS OBSTR W/DANGER CURVE, AND BASKET W/15FT CLEARED DEPTH IN LAT.36-57-33N, LONG.76-09-02.5W.. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY, NO INVESTIGATION BY FIELD UNIT, DEPTHS IN AREA ARE 23FT. RECOMMENDED RETAIN ITEM AS CHARTED. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH LOCATED ì ITEM SOUGHT JUST OUTSIDE SEARCH AREA IN LAT. 36-57-26.500N, LONG. ì 76-09--00.487W. ECHO SOUNDER L OF 5.5 METERS (18 FEET). ì EVALUATOR RECOMMENDS REVISING CHARTED BASKET SOUNDING TO AN OBSTR AS SURVEYED. (UP 2/9/96, SJV)
3724	OBSTRUCTION	12254	E	0370	15	HISTORY H7177WD/48 (AD.WK.)--PBS-WD-2248; 1:20,000 SCALE SURVEY; VISUAL CONTROL, HUNG AT 17I CLEARED BY 15FT, CHARTED AS OBSTR W/DANGER CURVE, AND BASKET W/15FT CLEARED DEPTH IN LAT.36-57-43N, LONG.76-08-56W. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; NO INVESTIGATION BY FIELD UNIT, DEPTHS IN AREA ARE 24FT; RECOMMENDED RETAIN ITEM AS CHARTED. (ENTERED 10/1! 84 MSM) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
3725	OBSTRUCTION	12254	E	0370	13	HISTORY H7177WD/48(AD.WK.)--PBS-WD-2248; 1:20,000 SCALE SURVEY, VISUAL CONTROL; OBSTR HUNG AT 14FT, CLEARED BY 13FT, CHARTED AS OBSTR W/DANGER CURVE AND BASKET W/13FT CLEARED DEPTH IN LAT.36-57-46N, LONG.76-08-32W. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY, NO INVESTIGATION BY FIELD UNIT, DEPTHS IN AREA ARE 24-25FT RECOMMENDED RETAIN AS CHARTED. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
3726	OBSTRUCTION	12254	D	0067	0	HISTORY CL570/62 (5/11/62)--C&GS NORFOLK DISTRICT; VISIBLE PILE, MOVED FROM LAT.36-56-45N, LONG.76-07-06W TO SAME RELATIVE POSITION ON WEST SIDE OF TRESTLE IN PA LAT.36-56-48N, LONG.7 07-18W. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY, DEL NORTE CONTROL (R/R, R/A) ECHO SOUNDER W/20M LINE SPACING; NOT ON FATHOGRAM, NOT SEEN BY LAUNCH PERSONNEL. EVALUATC RECOMMENDED REVISING TO SUBM PILE. (ENTERED 10/15/84 MSM)
3746	UNKNOWN	12254	D	0100	0	03746 HISTORY LNM23/73--6/5/73; 5TH CGD; 12 FT BOAT REP SUNK IN LAT.36-54-50N, LONG.76-05-50W AR WAS SWEPT BUT WK WAS NOT LOCATED. H9814/80--OPR-D103-PE-80; ITEM #90; 1:10,000 SCALE SURVE ARGO (R/R), DELNORTE (R/A); ECHO SOUNDER; LIMITED FATHOMETER SEARCH WAS PERFORMED; WK WAS NOT FOUND; EVALUATOR RECOMMENDED THAT WK BE RETAINED AS CHARTED. SURVEY NOT

						CONSIDERED SUFFICIENTLY EXTENSIVE TO DISPROVE ITEM. (ENTERED 11/13/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED: NOT COMPLETE
3747	UNKNOWN	12254	D	0100	0	03747 HISTORY LNM30/74-- 7/23/74; 5TH CGD; 32 FT CABIN CRUISER PARTIALLY SUBMERGED W/ BOW OL OF WATER; LODGED IN FISH NETS AND STAKES; IN LAT.36-55-00N LONG.76-05-10W H9814/80--OPR-D103-PE-80; ITEM #89; 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); ECHO SOUNDER; FATHOMETEF AND DIVE SEARCH CONDUCTED; WK NOT FOUND; EVALUATOR STATED EXTENT OF SEARCH WAS INADEQUATE FOR DISPROVAL AND RECOMMENDED CHARTING AS SUBM WK PD. (ENTERED 11/13/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED: NOT COMPLETE
3748	UNKNOWN	12254	D	0100	27	AWOIS ITEM 3748 HISTORY LNM47/73-- 11/20/73; CGD5; 35-FOOT AMPHIBIOUS CRAFT SUNK IN 40 ì FEET II APPROX. POS. LAT. 36-56-00N, LONG. 76-02-30W. H9814/80-- OPR-D103-PE-80; ITEM NO. 88; 1:10,000-SCAL SURVEY; ì ARGO (R/R), DELNORTE (R/A); ECHO SOUNDER; 45 METER LINE SPACING; ì WRECK NOT LOCATED; EVALUATOR RECOMMENDED RETAINING AS CHARTED. ì (RNT 11/13/84, MSM) FE387SS/94-- OI E696-HE; ONE CONTACT, NOT CONSIDERED THIS ì ITEM, WAS FOUND WITHIN SEARCH AREA. A WRECK MATCHING THE AWOIS ì DESCRIPTION WAS LOCATED 100 METERS OUTSIDE THE ASSIGNED SEARCH ì RADIUS IN LAT. 36-55-46.556N, LONG. 76-03-11.609W. DIVER ì (PNEUMATIC DEPTH GAUGE) LD OF 8.4 METERS (27 FEET). WRECK IS ì APPROX. 30 FEET LONG, 10 FEET WIDE, AND EXTENDS 5 FEET OFF THE BOTTOM. ENCRUSTED WITH HEAVY MARINE GROWTH AS WELL AS BEING ì HEAVILY CORRODED. LORA C RATES (9960 CHAIN): W=15937.6, ì X=27187.3, Y=41267.6, Z=58511.9. EVALUATOR RECOMMENDS DELETING ì CHARTED SUBM DANGEROUS WRECK, PA AND CHARTING A WRECK WITH A LD ì OF 8.4 METERS AS SURVEYED. (UP 9/12/95, SJV)
3749	UNKNOWN	12254	D	0100	0	HISTORY LNM35/78-- 8/29/78; CGD5; WRECK OF A 27-FOOT PLEASURE CRAFT IN ì LAT. 36-55-48N, LONG. 05-24W. SUNK IN 26 FEET OF WATER. H9814/80--OPR-D103-PE-80; ITEM NO. 86; 1:10,000-SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); ECHO SOUNDER; 45 METER LINE SPACING; ì WRECK NOT FOUND; INVESTIGATION NOT EXTENSIVE OR CONCLUSIVE ENOUGH ì TO DISPROVE WRECK; EVALUATOR RECOMMENDED REVISING WRECK TO ED. ì (ENT 11/13/84, MSM) FE387SS/94-- OPR-E696-HE; INCOMPLE SIDE SCAN SONAR COVERAGE. ì ITEM WAS REASSIGNED TO FE410/95. ONE CONTACT FOUND WITHIN SEARCH ì AREA. EVALUATOR RECOMMENDS RETAINING AS CHARTED. (UP 9/12/94, ì SJV) FE410SS/95-- OPR-E696-HE; 200% SIDE SCAN SONAR SEARCH NEGATIVE. ì 5 CONTACTS CONSIDERED INSIGNIFICANT EVALUATOR RECOMMENDS ì DELETING WRECK. (UP 2/9/96, SJV)
3750	MINNIE V	12254	E	0370	36	HISTORY NM17/60-- F/V REPORTED SUNK IN APPROX. POS. LAT. 36-57-19N, ì LONG. 76-04-04W. FE233/69\ - AMC-SP-5-69; ITEM NOT LOCATED BUT CLEARANCE OF 36 ì FEET OBTAINED OVER CHARTED POSITION INVESTIGATION NOT COMPLETE; ì EVALUATOR RECOMMENDED RETAINING AS CHARTED. (ENT 6/11/85, MSM) H9255/71WD-- OPR-467-RH-71; 1:20,000-SCALE SURVEY; RAYDIST TYPE ì "T" HYPERBOLIC; .5 MILE RADIUS SEARCH; WRECK NOT LOCATED; ì HYDROGRAPHER RECOMMENDS ADDITIONAL WIRE DRAG WORK; COVERAGE ì WITHIN 2-4 FEET OF CHARTED BOTTOM; CRITERIA FOR DISPROVAL NOT ì MET; EVALUATOR RECOMMENDS CHARTING AS A SUNKEN WRECK, ED WITH A ì 36-FOOT WIRE DRAG CLEARANCE THRU FE233WD. H9814/80-- OPR-D103-PE-80; ITEM NO. 83; 1:10,000-SCALE SURVEY; ì ARGO R). DELNORTE (R/A); ECHO SOUNDER; 45 METER LINE SPACING; ì NO TRACE OF WRECK WAS FOUND; EVALUATOR RECOMMENDS CHARTING AS A ì SUBM WK, ED WITH CLEARED TO 36-FOOT NOTE THRU H9255WD. (ENT ì 11/9/84, MSM) FE387SS/94-- OPR-E696-HE; 5 CONTACTS FOUND WITHIN SEARCH AREA. NONE RELATED TO AWOIS ITEM. SIDE SCAN SONAR NEGATIVE FOR WRECK. ì EVALUATOR RECOMMEN DELETING FROM CHART. (UP 9/12/95, SJV)
3751	OBSTRUCTION	12254	D	0370	19	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 25; 1:20,000-SCALE SURVEY; ì RADIST (HYPERBOLIC, R CONTROL; PIPE, 1 FOOT IN DIAMETER, ì EXTENDING 4 INCHES OFF THE BOTTOM; HUNG AT 36 FEET IN L ì 36-57-03.7N, LONG. 76-05-38.9W; CLEARED IN ONE DIRECTION TO 19 ì FEET; EVALUATOR RECOMMENDE CHARTING AS A SUBM OBSTR WITH A ì CLEARANCE OF 19 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AS OBSTR THRU H9255WD. (ENT 11/20/84, MSM) FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR SEARCH NEGATIVE FOR ì ITEM. ONE CONTACT FOUND IN AREA OF SEARCH. EVALUATOR RECOMMENDS ì DELETING FROM CHART. (UP 9/12/95, SJV)
3752	UNKNOWN	12254	D	0100	0	HISTORY NM36/66--24FT BOAT SUNK IN 24FT WATER IN PA LAT.36-56-15N, LONG. 76-06-19N. H9255/71WD-- OPR-467-RH-71; ITEM #54; 1:20,000 SCALE SURVEY; RAYDIST TYPE T HYPERBOLIC; COVERAGE WITHIN 3 4FT OF BOTTOM; CRITERIA FOR DISPROVAL NOT MET; EVALUATOR RECOMMENDED CHARTING AS SUBI WK ED W/CLEARED TO 24FT; WK NOT LOCATED; POSSIBLY WK OF STEEL VESSEL HUNG IN LAT.36-55-50N, LONG.76-06-44.3W IS THIS ITEM. (REF. AWOIS #03753). H9814/80--OPR-D103-PE-80; ITEM #85; 1:10,00 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); ECHO SOUNDER; 45M LINE SPACING; WK NOT FOUND; EVALUATOR CONCURS W/ RECOMMENDATION IN H9255WD EVAL REP. (ENTERED 11/84 MSM) F00439/98- S-E900-RU; 200% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 8/16/99, SJV)
3753	OBSTRUCTION	12254	D	0067	18	HISTORY H9255/71WD--OPR-467-RH-71; ITEM #28; 1:20,000 SCALE; RAYDIST (HYPERBOLIC, R/R) CONTROL WK OF STEEL VESSEL HUNG AT ESTIMATED 20FT IN LAT.36-55-50N, LONG.76-06-44.3W; CLEARED IN ONE DIRECTION BY 18FT; EVALUATOR RECOMMENDED CHARTING A SUBM WK W/WIRE DRAG CLEARANCE C 18FT; THIS IS POSSIBLY THE VESSEL REP SUNK THRU NM36/66 IN LAT.36-56-15N, LONG.76-06-19W; THAT WK WAS NEITHER FOUND NOR DISPROVED BY SURVEY H9255. (REF AWOIS #03752). H9814/80--OPR-D10 PE-80; 1:10,000 SCALE; ARGO (R/R), DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING WK. (ENTERED 11/84 MSM) F00439/98-- S-E900-RU; 200% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 8/16/99, SJV)
3754	OBSTRUCTION	12254	D	0067	0	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 21; 1:20.000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC F CONTROL; OLD ANCHOR EXTENDING 2 FEET OFF ì THE BOTTOM HUNG AT 24 FEET IN LAT. 36-55-55.2N, LONG. ì 76-05-03.3W; NOT CLEARED; EVALUATOR RECOMMENDED CHARTING A SUBM ì OBSTR. H9814/8 OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A/) CONTROL; EVALUATOR CONCURRED WITH RECOMMENDATION ì IN H9255. (ENT 11/84, MSM) FE387SS/94-- OPR-E696-HE; NOT COMPLETED. EVALUATOR RECOMMENDS ì ASSIGNING TO FE410SS/95 FOR ADDITIONAL WORK. (UP 9/1 95, SJV) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì 1 CONTACT CONSIDERED INSIGNIFICANT. EVALUATOR RECOMMENDS ì DELETING. (UP 2/9/96, SJV)
3755	OBSTRUCTION	12254	D	0370	22	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 21; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC, R) CONTROL; TEMPORARY UNINVESTIGATED HANG ì IN LAT. 36-56-20.1N, LONG. 76-04-26.7W; HUNG AT 2 FEET; CLEARED ì BY 22 FEET; EVALUATOR RECOMMENDED CHARTING A SUBM OBSTR WITH A ì WIRE DRAG CLEARANCE OF 22 FEET. H9814/80-- OPR-D103-PE-80; 1:10,0000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) COMTROL; EVALUATOR RECOMMENDS CHARTING AN OBSTR. ì (ENT 11/84, MSM) FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)

3756	OBSTRUCTION	12254	D	0370	30	HISTORY H9255/72WD-- OPR-467-RH-72; ITEM NO. 11; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC, R) CONTROL; 8 X 8 X 7 FOOT ALUMINUM CLUMP ì EXTENDING 1 FOOT OFF THE BOTTOM HUNG IN LAT. 36-27.6N, LONG. ì 76-03-27.2W; DIVERS REPORT PART OF AN AIRPLANE WING; HUNG AT 33 ì FEET, CLEAREI BY 30 FEET; HYDROGRAPHER AND EVALUATOR RECOMMEND ì NOT CHARTING BECAUSE ITS LIGHT WEIGHT WOULD FACILITATE MOVEMENT ì WITH CURRENT. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING A SUBM ì OBSTR. (ENT 11/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOF RECOMMENDS DELETING.
3757	OBSTRUCTION	12254	D	0370	30	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 12; 1:20,000-SCALE; ì RAYDIST (HYPERBOLIC R/R) CONTROL; UNINVESTIGATED HANG IN LAT. ì 36-56-34.3N, LONG. 76-03-41.2W; HUNG AT 31 FEET CLEAREC BY 30 ì FEET; EVALUATOR RECOMMENDED CHARTING A SUBM OBSTR WITH WIRE DRAG ì CLEARANCE (30 FEET. H9814/80-- OPR-D103-PE-80; 1:10000-SCALE; ARGO (R/R), DELNORTE ì (R/A) CONTROL; EVALUAT RECOMMENDED CHARTING AN OBSTR. (ENT ì 11/27/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SC/ SONAR NEGATIVE. ì EVALUATUR RECOMMNEDS DELETING FROM CHART. (UP 9/12/94, SJV)
3758	OBSTRUCTION	12254	D	0067	42	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 9; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC, F CONTROL; UNINVESTIGATED HANG IN LAT. ì 36-56-34.3N, LONG. 76-03-19W; HUNG AT 34 FEET, CLEARED 34 ì FEET; EVALUATOR RECOMMENDED CHARTING A SUBM OBSTR WITH A WIRE ì DRAG CLEARANCE O 34 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AN OBSTR. ì (ENT11/27/84, MSM) FE367SS/94-- OPR-E696-HE; SIGNIFICANT CONTACT LOCATED IN LAT. ì 36-56-27.426N, LONG. 76-02-31.286W. DIVERS DESCRIBE METAI PLATES ì ON TOP OF A CONCRETE BLOCK WITH CHAIN. PNEUMO LD OF 12.9 METERS ì (42 FEET). EVALUATOR RECOMMENDS DELETING AWOIS ITEMS 3758, 3759, ì 3760, AND 3762 AND CHARTING AN OBSTRUCTION AS SURVEYED. (UP ì 9/12/95, SJV)
3759	OBSTRUCTION	12254	D	0370	34	HISTORY H9255WD/71-- OPR-467-RH-71; ITEM NO. 3; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC R/ CONTROL; UNINVESTIGATED HANG IN LAT. ì 36-56-41.8N, LONG. 76-03-12.8W; HUNG AT 34 FEET, CLEAREI BY 34 ì FEET; EVALUATOR RECOMMENDS CHARTING A SUBM OBSTR WITH A WIRE DRAG ì CLEARANCE 34 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AS AN ì OBSTR. (ENT 11/27/84, MSM) FE387SS/94-- OPR-E696-HI DISPROVED. SEE AWOIS NO. 3758. (UP ì 9/12/95, SJV)
3760	OBSTRUCTION	12254	D	0370	34	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 5; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC R/ CONTROL; SCRAP METAL EXTENDING .5 FOOT ì OFF BOTTOM IN LAT. 36-56-42.4N, LONG. 76-03-16.3W; HUNG AT 34 ì FEET, CLEARED BY 34 FEET; EVALUATOR RECOMMENDED CHARTING A SUBM ì OBSTR WI A WIRE DRAG CLEARANCE OF 34 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/I DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AN OBSTR. ì (ENT 11/27/84, MSM) FE387SS/94-- OPR-E696-HE; DISPROVED. SEE AWOIS ITEM 3758. (UP ì 9/12/95, SJV)
3761	OBSTRUCTION	12254	D	0370	37	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 2; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC, F CONTROL; CONCRETE CLUMP ANCHOR ì EXTENDING ONE FOOT OFF BOTTOM IN LAT. 36-56-43.7N, LONG. 76-03-11.4W; ESTIMATED HANG AT 38 FEET; CLEARED BY 37 FEET; ì EVALUATOR RECOMMENDEDCHARTING AS A SUBM OBSTR WITH A WIRE DRAG ì CLEARANCE OF 37 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AS AN ì OBSTR. (ENT 11/27/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 9/12/95, SJV)
3762	OBSTRUCTION	12254	D	0370	34	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 4; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC R/ CONTROL; SCRAP METAL EXTENDING 1.5 FEET ì OFF BOTTOM IN LAT. 36-56-44.8N, LONG. 76-03-12.2W; HUNG AT 37 ì FEET, CLEARED BY 34 FEET; EVALUATOR RECOMMENDED CHARTING AS A ì SUBM OBSTF WITH A WIRE DRAG CLEARANCE OF 34 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARG (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AS AN ì OBSTR. (ENT 11/2ε MSM) FE387SS/94-- OPR-E696-HE; DISPROVED. SEE AWOIS ITEM 3758. (UP ì 9/12/95, SJV)
3763	OBSTRUCTION	12254	D	0370	36	HISTORY H9255WD/71-- OPR-467-RH-71; ITEM NO. 10; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC (R) CONTROL; UNINVESTIGATED HANG AT 39 FEET ì IN LAT. 36-56-56.1N, LONG. 76-03-27.0W; CLEARED BY FEET; ì EVALUATOR RECOMMENDED CHARTING AS A SUBM OBSTR WITH A 36-FOOT ì CLEARANCE. H98 80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR CONCURRED WITH RECOMMENDATION ì IN H9255WD. ENT 11/20/84, MSM) FE387SS/94-- OPR-E3696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
3764	OBSTRUCTION	12254	D	0370	32	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 18; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC, R) CONTROL; UNINVESTIGATED HANG AT 35 FEET ì IN LAT. 36-57-09.8N, LONG. 76-04-37.2W; CLEARED BY FEET; ì EVALUATOR RECOMMENDED NOT CHARTING. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURV ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AN OBSTR ì THRU H9255WD. (ENT 11/20/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
3765	OBSTRUCTION	12254	D	0370	38	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 7; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC, F CONTROL; OLD ANCHOR EXTENDS 2 FEET OFF ì BOTTOM IN LAT. 36-57-09.8N, LONG. 76-03-18.5W; 43-FOC ESTIMATED ì HANG; CLEARED BY 36 FEET; EVALUATOR RECOMMENDED CHARTING IN ì CONJUNCTION WITH A TEMPORARY UNINVESTIGATED HANG (FROM ì FE233WD/69) IN LAT. 36-57-09.8N, LONG. 76-03-18.1W; THIS LATTER ì HANG WAS AT AN ESTIMATED 38 FEET, AND CLEARED BY 38 FEET; THESE ì ARE POSSIBLY THE SAME OBSTRUCTION; EVALUATOR RECOMMENDED CHARTING ì AS A SUBM OBSTR WITH WIRE DRAG CLEARANCE OF 38 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AS AN ì OBSTR WITH A DEPTH OF 4 FEET THRU H9255WD. (ENT 11/20/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATI FOR ì THIS ITEM. 3 SONAR CONTACTS WERE FOUND IN AREA OF SEARCH, ì HOWEVER. EVALUATOR RECOMMENDS DELETING ITEM FROM CHART. (UP ì 9/12/95, SJV)
3766	OBSTRUCTION	12254	D	0067	0	HISTORY H9255/71WD-- OPR-467-EH-71; ITEM NO. 24; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC F CONTROL; TEMPORARY, UNINVESTIGATED ì 32-FOOT HANG; GRAPNEL HOOK RECOVERED ON GROUND WIRE; NOT CLEARED; ì EVALUATOR RECOMMENDED CHARTING AS SUBM. OBSTR. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR CONCURRED WI RECOMMENDATION ì IN H9255. (ENT 11/20/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAF NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
						HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 19; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC F CONTROL; IRON PIPE, 1 FOOT IN DIA., ì EXTENDING 4 FEET OFF BOTTOM IN LAT. 36-57-47N, LONG. 76-04-41.5W; ì ESTIMATED 35-FOOT HANG; NOT CLEARED; EVALUATOR RECOMMENDED ì CHARTING AS SUBM

3767	OBSTRUCTION	12254	D	0067	0	OBSTR. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR CONCURRED WITH RECOMMENDATION ì IN H9255. (ENT 11/20/84, MSM) FE387SS/94-- OPR-E696-HE; 2 INSIGNIFICANT CONTACTS FOUND. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UI 12/95, SJV)
3768	OBSTRUCTION	12254	D	0370	38	03768 HISTORY FE233/69WD--AMC-SP-5-69; 1:20,000 SCALE; VISUAL CONTROL; HUNG AT 38 FT AND CLEARED BY 38 FT; PROTRUDES LESS THAN THREE FT ABOVE BOTTOM; EVALUATOR RECOMMENDED CHARTING SUBM OBSTR. H9814/80--OPR-D103-PE-80; 1:10,000 SCALE; ARGO (R/R), DELNORTE (R/A) CONTROL; ECHO SOUNDER; EVALUATOR RECOMMENDED CHARTING AS SUBM OBSTR. W/38FT CLEARANCE (ENTERED 11/19/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3769	OBSTRUCTION	12254	D	0067	0	HISTORY FE233/69WD-- AMC-SP-5-69; 1:20,000-SCALE SURVEY; VISUAL ì CONTROL; 34-FOOT HANG IN LA 36-57-44.4N, LONG. 76-05-18W; NOT ì CLEARED; NOT INVESTIGATED; EVALUATOR RECOMMENDED CHARTING AS ì SUBM. OBSTR. ACCORCING TO RESULTS OF SURVEY. H9814/80-- OPR-D103-PE-80; 1:10,0 SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; ECHO SOUNDER; EVALUATOR CONCURRED WITH ì RECOMMENDATION IN FE233WD. (ENT 11/19/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SC/ SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 9/12/95, SJV)
3770	OBSTRUCTION	12254	D	067	20	HISTORY H9814/80--OPR-D103-PE-80; 1:10,000 SCALE; ARGO (R/R), SEXTANT FIXES; ECHO SOUNDER; IRREGULAR SNDGS ON FATHOMETER, DEVELOPMENT INDICATED OBSTR; DIVER INVESTIGATION; WOODEN AND STEEL DEBRIS EXTENDING 85 FT IN AN E-W DIRECTION; LEAST DEPTH OF 20 FT; HYDROGRAPHER RECOMMENDED CHARTING SUBM OBSTR W/ LEAST DEPTH OF 20 FT. (ENTERED 11/19 MSM) EVALUATOR RECOMMENDS WD OR SSS FOR LD AND EXTENT.
3771	OBSTRUCTION	12254	D	0085	0	03771 HISTORY H9814/80--OPR-D103-PE-80; 1:10,000 SCALE; ARGO (R/R), DELNORTE (R/A) CONTROL; RO\ OF PILING W/MOST SEAWARD IN LAT 36-54-49.35N LONG 76-06-32.9W; HYDROGRAPHER RECOMMENDEL CHARTING ACCORDING TO PRESENT SURVEY (ENTERED MSM 11/19/84) SURVEY REQUIREMENTS NOT ASSIGNED
3773	OBSTRUCTION	12254	D	0067	36	HISTORY H9255/71WD-- OPR-467-RH-71; 1:20,000-SCALE SURVEY; RAYDIST ì (HYPERBOLIC, R/R) CONTRC X 4-FOOT METAL CLUMP EXTENDING 3 ì FEET OFF THE BOTTOM IN LAT. 36-57-17.6N, LONG. 76-03-48W.; HUNG ì AT 38 FEET; 36-FOOT LD BY DIVER LEADLINE; EVALUATOR RECOMMENDED ì CHARTING AS A SU OBSTR WITH A LEAST DEPTH OF 36 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R), ì DELNORTE (R/A) CONTROL; ECHO SOUNDER; 45 METER LINE SPACING; ITEM ì NOT FOUND; EVALUATOR CONCURRED WITH RECOMMENDATION IN H9255; (ENT ì 11/19/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (U 12/95, SJV)
3774	UNKNOWN	12254	D	0100	35	HISTORY H7177/47WD-- PBS-WD-2248; 1:20,000-SCALE SURVEY; SEXTANT ì CONTROL; 34-FOOT GROUNDI IN LAT. 36-57-32.8N, LONG. 76-04-32.0W ì IN 37-FOOT DEPTHS; IDENTIFIED AS AN OLD HULK; CLEARED BY 31 FEET; ì EVALUATOR RECOMMENDED CHARTING AS AN OBSTR. WITH A 31-FOOT ì CLEARANCE. (ENT ' 19/84, MSM) H9255/71WD-- OPR-467-RH-71; 1:20,000-SCALE SURVEY; RAYDIST ì (HYPERBOLIC R/R) CONTROL; ITEM NOT FOUND BUT CLEARED BY 35 FEET; ì EVALUATOR RECOMMENDED CHARTING THE SYMBOL WK WITH 35-FOOT ì CLEARANCE. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R), ì DELNORTE (R/A CONTROL; ECHO SOUNDER; 45 METER LINE SPACING; ITEM ì NOT FOUND; EVALUAT CONCURRED WITH RECOMENDATION IN H9255WD. ì (ENT 11/16/84, MSM) FE387SS/94-- OPR-E696-HE; 40C SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
3775	OBSTRUCTION	12254	D	0067	31	HISTORY H9255/71WD-- OPR-467-RH-71; HANG NO. 22; 1:20,000-SCALE SURVEY; ì RAYDIST TYPE "T" HYPERBOLIC CONTROL; IRON PIPE, 1-FOOT IN DIA., ì EXTENDING 8 FEET OFF THE BOTTOM IN LAT. 36-57-37.8N, LONG. ì 76-05-22W; HUNG AT 31 FEET; CLEARED BY 31 FEET; EVALUATOR ì RECOMMENDED CHARTING AS A SUBM OBSTR WITH A LEAST DEPTH OF 31 ì FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; ECHO SOUNDER; 45 METER LINE SPACING; N TRACE OF OBSTRUCTION FOUND; EVALUATOR CONCURRED WITH ì RECOMMENDATION IN H9255WD. (EN 11/16/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
3776	OBSTRUCTION	12254	D	0067	0	HISTORY ORIGINAL SOURCE UNKOWN; PILES PA IN LAT 36-55-45N LONG 76-00-30W. H9814/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); SEARCHED FOR BUT NOT FOUND AT CHARTED LOCATION; SUBM PILES LOCATED AT LAT 36-55-4371N LONG 76-00-2273W; EVALUATOR RECOMMENDED CHARTING SUBM PILES AS SHOWN ON SURVEY. (ENTERED 11/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED:ITEM COMPLETED
3778	SNDG	12254	D	127	0	HISTORY CL2005/77--8/27/77; USPS; SHL TO BARE AT LOW WATER REP IN PA LAT 36-54-48N, LONG 76-05-18W. H9814/80--OPR-D103-PE-80; ITEM #93; 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); ECHC SOUNDER; AREA UNDER CONSTANT CHANGE; SHOALING TO BARE CONFIRMED IN LAT 36-54-40.04N LON 76-05-33.08W (POSITION SCALED FROM HYDRO SMOOTH SHEET); EVALUATOR RECOMMENDED REMOVI CHARTED SHL NOTE, CHART PRESENT SURVEY DEPTHS AND ADD NOTE "SUBJECT TO FREQUENT CHANGE". (ENTERED 11/14/84 MSM)
4491	OBSTRUCTIONS	12255	D	0067	13	04491 HISTORY LNM47/73--5TH CGD; 11/20/73; RAILROAD CAR REP LOST OVERBOARD FROM PENN. RR TERMINAL WHARF IN PA LAT 36-54-50N, LONG 76-10-46W; CHARTED AS SUBM DANG WK PA. CL400/80--USPS; SUNKEN WK CONSISTING OF AT LEAST THREE RAILROAD CAPS LOCATED 418 FT OFF FACE OF RAILROAD LOADING PIER; LEAST DEPTH OF 12 FT; SOURCE OF INFO IS TUG CAPTAIN WHO SUPERVISEI DIVERS SENT DOWN TO PARTIALLY CLEAR THE OBSTRS; CHARTED AS SUBM DANG WK ED IN LAT 36-54 52.3N; LONG 76-10-43.3W. H9923/80--OPR-D103-MI/PE-80; PSR ITEMS 140 AND 141; DIVER INVESTIGATION FOUND 3 RAILROAD CARS, AND LEAST DEPTHS WERE OBTAINED FOR TWO OF THEM; 13 FT OBSTR LOCATED IN LAT 36-54-52.59N, LONG 76-10-43.17W (LEADLINE LEAST DEPTH); ECHO SOUNDER LEAST DEPTH OF 20 FT OBTAINED ON OBSTR IN LAT 36-54-53.28N, LONG 76-10-42.78W (AWOIS ITEM 4492); EVALUATOR RECOMMENDS CHARTING ACCORDING TO SURVEY AND DELETE CHARTED WKS. (ENTEREI MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED
4492	OBSTRUCTIONS	12255	D	0067	20	04492 HISTORY LNM47/73--5TH CGD; 11/20/73; RAILROAD CAR REP LOST OVERBOARD FROM PENN. RR TERMINAL WHARF IN PA LAT 36-54-50N, LONG 76-10-46W; CHARTED AS SUBM DANG WK PA. CL400/80--USPS; SUNKEN WK CONSISTING OF AT LEAST THREE RAILROAD CARS LOCATED 418 FT OFF FACE OF RAILROAD LOADING PIER; LEAST DEPTH OF 12 FT; SOURCE OF INFO IS TUG CAPTAIN WHO SUPERVISEI DIVERS SENT DOWN TO PARTIALLY CLEAR THE OBSTRS; CHARTED AS SUBM DANG WK ED. IN LAT 36-5 52.3N; LONG 76-10-43.3W. H9923/80-OPR-D103-MI/PE-80P; PSR ITEMS 140 AND 141; DIVER INVESTIGATION FOUND 3 RAILROAD CARS, AND LEAST DEPTHS WERE OBTAINED FOR TWO OF THEM; 13 FT OBSTR LOCATED IN LAT 36-54-52.59N, LONG 76-10-43.17W (LEADLINE LEAST DEPTH) (AWOIS ITEM 4491); ECHO SOUNDER LEAST DEPTH OF 20 FT OBTAINED ON OBSTR IN LAT 36-54-53.28N, LONG 76-10-42.78W; EVALUATOR RECOMMENDS CHARTING THESE O ACCORDING TO SURVEY AND DELETE CHARTED WKS.

						(ENTERED MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED
4493	OBSTRUCTION	12255	D	0067	21	04493 HISTORY H9923/80--OPR-D103-MI/PE-80; WHILE INVESTIGATING PSR ITEM 139, OBSTRUCTION WAS HUNG; DIVER INVESTIGATED; METAL MASS APPROX. 2X4 FT; LEADLINE LEAST DEPTH OF 21 FT IN LAT 36 55-17.41N, LONG 76-10-39.02W; EVALUATOR RECOMMENDS CHARTING 21 OBSTR. (ENTERED MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED
4494	CAPT NICKS DREAMBOAT	12255	D	0098	0	04494 HISTORY CL400/80--USPS; 235 FT VESSEL PERMANENTLY STRANDED HARD AGROUND IN LAT 36-5 21N, LONG 76-11-03W (POSITION OF STERN); CONVERTED TO SHORESIDE RESTAURANT, RENAMED CAP NICK'S DREAMBOAT, BUT NOW CLOSED; FORMERLY SEA BELLE; IN GENERAL DISREPAIR. H9923/80--OP D103-MI/PE-80; PSR ITEM 138 FERRY FOUND IN LAT 36-55-22.1N, LONG 76-11-02.8W; BURNED DURING PERIOD OF SURVEY AND IS NO LONGER IN USE; EXPECTED TO BE THERE PERMANENTLY; HYDROGRAPHER AND EVALUATOR RECOMMEND CHARTING FERRY LIMITS AS SHOWN ON SURVEY. (ENTERED MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED
7060	UNKNOWN	12245	E	0100	0	HISTORY LNM35/81-- 5TH CGD; 27 FOOT CABIN CRUISER SANK AUG. 21, 1981 IN ì 50 FEET IN ANCHORAGE 8. PA LAT. 36-57-25.0N, LONG. 76-20-42W. ì (ENT. 12/88, MCR) DESCRIPTION **** TELECON 5CGD AND N/ CG241, 10/22/90; NO ADDITIONAL INFORMATION ON WRECK; AS FAR AS THEY KNOW THE WRECK IS STII THERE. (UP. 10/90, MSD) **** ITEM WILL BE REMOVED FROM AFFECTED CHARTS PENDING APPLICATION COE SURVEY OF 1991. (UP 3/1/94, SJV)
7522	BEAUTY	12208	D	725	47	HISTORY NM8/31-- COAST GUARD REPORTS F/V BEAUTY SUNK 5.25 MILES, 100 ì DEGS. FROM CAPE HENRY LIGHT HOUSE IN LAT. 36-54-42N, LONG. ì 75-54-00W. H6976WD/45-47-- CS-326-WA/HI; CLEARED IN ONE DIRECTION BY 47 ì FEET WHILE INVESTIGATING ITEM 3 (AWOIS NO. 808). THIS WRECK WAS ì NOT CHARTED AT TIME OF SURVEY. CL347/58-- ITEM CHARTED VIA H.O. WRECK LIST AS A 47-FOOT ì CLEARE DEPTH. H9922/80-- OPR-D103-MI-80; NO WIRE DRAG SURVEY HAS FURTHER ì INVESTIGATED THIS ITEM. H10340/90-- OPR-D111-WH; TWO SIGNIFICANT CONTACTS FOUND WITHIN ì THE 2000-METER SEARCH RAD AND SEVERAL CONTACTS WERE FOUND ì OUTSIDE THE RADIUS (WITHIN 700 METERS). APPROX. 10% OI SEARCH ì RADIUS WAS NOT COVERED BY SIDE SCAN SONAR (NORTHEASTERN AREA). ì ADDITIONAL WORK WAS REQUESTED ON ALL SIGNIFICANT CONTACTS. ì EVALUATOR RECOMMENDS THAT THE ITEM BE RETAINED AS CHARTED AND ì THAT FURTHER DISCUSSION AND CHARTING RECOMMENDATION BE DEFERRED ì UNTIL THE COMPLETION OF OFFICE PROCESSING OF SURVEY FE-353SS/90, ì AND A FINAL DISPOSITION OF THE ITEM IS MADE. (UP 10/29/91, SJV) FE353SS/90-- OPR-D111-HE; ITEM NOT DISPROVE APPROXIMATELY 15% ì OF THE SEARCH RADIUS NOT COMPLETED. EVALUATOR RECOMMENDS ì RETAINING AS CHARTED. SEE AWOIS NOS. 8313, 8314, 8315, AND 8316 ì FOR ADDITIONAL INFO. REGARDING CONTACTS WITHIN SEARCH RADIUS FOR ì THIS ITEM. (UP 7/14/92, SJV) FE412SS/95-- OPR-E696-HE; 200% SIDE SCAN SONAR OVER REMAINING ì 15% SEARCH RADIUS NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP ì 2/15/96, SJV) DESCRIPTION 24 NO.1332; POSITION ACCURACY WITHIN 1 M
7538	SNDG	12221	D	127	0	HISTORY CL1137/87-- MESSAGE FROM M/V ACT 5 TO CGDFIVE, NOV. 23, 1987. ì VESSEL PASSING CLOSI NORTH OF "NCC" BUOY APPROACHING NORFOLK ì PILOT. SUSPECT VESSEL TOUCHED BOTTOM. DRAFT 30 FEET, 4 INCHES, ì FLAT CALM, NO SWELL. SMITH, MASTER. POSITION AT TIME OF TOUCHING ì LAT. 36 57.7N, LONG. 75-52.8W. NORFOLK AGENT ACT NORFOLK. CL1192/87-- ANM; SPOT SURVEYS IN NORTH INBOUND LANE TO ì CHESAPEAKE BAY ENTRANCE INDICATE SIGNIFICANT SHOALING VICINITY ì BUOY "NCC". 30-FOOT CONTOUR ENCROACHES 200-300 METERS INTO THE ì INBOUND LANE FROM THE NORTEI EDGE. CENTER LINE CONTROLLING DEPTH ì IS 30 FEET. MIN. DPETH NEAR NORTHERN EDGES OF THE INBOUND LANE IS ì 28 FEET. CHART LEGEND "SHOALING TO 30 FT REP 1987" CL374/88-- MEMO FROM CHIEF, N/CG24 TO CHIEF, N/CG2, RE. SPECIAL ì INVESTIGATION HE-20-5-87 (CONDUCTED IN CONJUNCTIO WITH HDAPS ì TESTING IN DEC., 1987). HECK'S INVESTIGATION CONFIRMS PIERCE WORK ì OF 1980 (H-99 AND H-9919). PIERCE WORK DETERMINED MIGRATION OF ì 30-FOOT CURVE SOUTHWARD INTO INBOUND TRAFFIC LANE NORTHWEST OF ì BUOY "NCC". FURTHER WORK TO MONITOR THIS MIGRATION MAY BE ì WARRANTED (NO CORRECTION NECESSARY FROM THIS CL; CORRECTED THRU ì CL1137/87 AND CL1192, ABOVE). NM1/88-- PUBLISHES ABOVE DATA. (ENT 1/3/90, SJV) H10356/90-- OPR-D111-HE; SHOAL LOCATE TO THE SOUTHWEST OF ì CHARTED NOTATION. EVALUATOR RECOMMENDS DELETING CHARTED NOTAT ì "SHOALING TO 30 FEET REP 1987" AND CHART AS SURVEYED. (UP 3/5/90, ì SJV) H11016/00-- OPR-D324-I 100% MULTIBEAM SONAR COVERAGE ACQUIRED. DEPTHS OF 30 AND 31 FEET IN VICINITY OF THIS ITEM POSITION. EVALUATOR RECOMMENDS CHARTING AREA AS SURVEYED. (UP 9/25/01, SJV)
7553	OBSTRUCTION	12254	D	370	40	HISTORY H7028/45-50WD (& AD. WK.)--CS313-WA/HI; OBSTRUCTION HUNG AT 42 ì FEET, CLEARED BY 40 FEET IN LAT. 36-57-40.0N, LONG. 76-00-47.0W. H9901/80--OPR-D103-PE-80; ECHO SOUNDER SEARCH NEGATIVE. DEPTHS ì 60 TO 62 FEET. REOMMENDATION TO RETAIN AS CHARTED. (ENT 1/26/90, ì SJV) H10343/90-- OPR-D111-WH; SEVERAL SIGNIFICANT CONTACTS LOCATED ì 105 METERS SOUTHEAST OF LISTED POSITION. EVALUATOR CONSIDERS ì AWOIS ITEM 7553 TO BE AN ERRONEOUS POSITION FOR AWOIS ITEM 857 ì AND RECOMMENDS DELETING AWOIS 7553 FROM THE CHART. (UP 1/28/92, ì SJV) H103 90-- OPR-D111-HE (FORMERLY FE-356SS); INVESTIGATION ì NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 4/20/92, ì SJV)
7554	UNKNOWN	12222	D	100	0	HISTORY CL540/54-- FROM C.O. USCGS SHIP BOWEN; WRECK NOT FOUND; 50-75 ì METER LINE SPACING RECOMMEND DELETING DANGEROUS WRECK. FOUR ì DISTINCT DEPTHS WERE RECORDED ON WRECK OF CHILORE, HOWEVER. (SEE ì AWOIS NO. 857) (ENT 1/26/90, SJV H10343/90-- OPR-D111-WH; ITEM NOT CHARTED. HYDROGRAPHER STATES ì THAT THERE WERE SIGNIFICANT CONTACTS WITHIN THE SEARCH RADIUS. ì ONE NEAREST THE AWOIS POSITION WITHIN 90 METERS. EVALUATOR ì RECOMMENDS NO CHANGE IN CHARTING STATUS AND CONSIDERS THIS ITEM ì DISPROVED BY THE PRESENT SURVEY. (UI 28/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); INVESTIGATION ì NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 4/20/92, ì SJV) DESCRIPTION **** 24 NO. 1185; DEMOLISHED FORMERLY BUOYED, 1 MILE ACCURACY. ì REPORTED THRU NOTICE TO MARINERS 8/22/50.
7556	OBSTRUCTION	12222	D	370	36	HISTORY H7028/45-50WD-- CS-313; 43-FOOT GROUNDING IN LAT. 36-56-42.5N, ì LONG. 76-02-04.8W, NOT CLEARED. UNCHARTED SOUNDING PLOTTED DURING ì VERIFICATION. 43.5 FEET IN CHARTED DEPTHS OI 49-54 FEET IN LAT. ì 36-56.7N, LONG. 76-02.08W. H9255/71-72WD-- OPR-467-RU/HE; NO HANGS OR GROUNDINGS IN ì VICINITY OF PRIOR GROUNDING. MAXIMUM CLEARANCE DEPTH OF 38 FEET ì OBTAINE EVALUATOR STATES "STRONG POSSIBILITY THAT A SLOPING ì WRECK OR OBSTRUCTION CAUSED GROUNDING ON PRIOR". RECOMMENDED THAT ì GROUNDING (43-FOOT DEPTH) BE RETAINED AS CHART H-7750 AND ì H-9814 SHOW NO INDICATION OF SHOALING IN VICINITY. FURTHER WORK ì RECOMMENDEC H9814/80--OPR-D103-PE-80; CLEARANCE DEPTH ABOVE BROUGHT ì FORWARD. 36 FOOT CLEARANCE DEPTH CHARTED IN 1985 FROM SURVEY ì H9814/80. (ENT 2/7/90, SJV) H10343/90-- OPR-D111-90; SIGNIFICANT CONTACT LOCATED IN LAT. ì 36-56-50.35N, LONG. 76-02-02.96W. ESTIMATED DEPTH OF 14 METERS. ì EVALUATOR RECOMMENDS NO CHANGE IN CHARTING STATUS PENDING FINAL ì DISPOSITION OF SURVEY H-10372/90. (UP 1/28/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); INVESTIGATI NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 4/20/92, ì SJV) DESCRIPTION **** TELCON., 2/19/90, S. VERRY (CG241) AND M. HICKSON (CG2441); H9255/71-72WD A&D SHEET NOTES MAX CLEARANCE OVER GROUNDING AS 36 FEET. DESCCRIPTIVE REPORT NOTES CLEARANCE AS 38 FEET.

						DISCREPANCY WILL BE INVESTIGATED BY HICKSON. 36-FOOT CLEARED DEPTH CHARTED DESPITE EVALUATOR'S RECOMMENDATION TO RETAIN 43-FOOT DEPTH AS CHARTED THROUGH H-7028.
7676	UNKNOWN	12221	D	100		
8013	OBSTRUCTION	12245	E	0067	0	HISTORY H9255WD/71-- OPR-467-RU/HE-71; CLEARANCE STRIP ENDED IN A HANG ì WHICH WAS NEITHER CLEARED NOR INVESTIGATED. HUNG AT 36 FEET IN ì LAT. 36-57-38.0N, LONG. 76-20-25.0W. CHARTED AS 36-FOOT ì OBSTRUCTION (NO PA). HYDROGRAPHER STATES THAT HANG OCURRED ON A ì MOORING CABLE LYING ON THE BOTTOM. EVALUATOR DOES NOT CONCUR ì SINCE HANG EXTENDED 6-7 FEET OFI THE BOTTOM. SINCE THE SURVEY ì RECORDS STATE THAT THIS HANG WAS NOT INVESTIGATED, IT IS UNCLEAR ì HOW THE HYDROGRAPHER OBTAINED INFORMATION REGARDING THE MOORING ì CABLE. (E 6/7/91, SJV) DESCRIPTION **** ITEM WILL BE REMOVED FROM AFFECTED CHARTS PENDING APPLICATIO OF COE SURVEYS OF 1991-93. (UP 3/1/94, SJV)
8225	OBSTRUCTION	12221	D	067	0	HISTORY NM17/14-- CHESAPEAKE BAY APPROACH - OBSTRUCTION REPORTED. THE ì COMMANDING OFFICER OF THE U.S.S. NEBRASKA REPORTED ON 4/1/14 THAT ì HIS VESSEL DRAWING 26 FEET 11 INCHES STRUCK A SUBMERGED ì OBSTRUCTION IN (APPROX.) LAT. 36-55-00N, LONG. 75-46-30W. VESSEL MAKING 14 KNOTS, SMOOTH SEA. INTERNAL INSPECTION SAW NO DAMAGE. ì REFERENCED BY NM25/1 (SEE AWOIS NO. 796). (ENT 4/3/92, SJV)
8250	OBSTRUCTION	12221	E	0067	0	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED BY H-10343/90 (WHITING) NOT DISPROVED. IN LAT. ì 36-57-42.86N, LONG. 76-01-02.11W. ESTIMATED DEPTH OF 14.6 METERS. ì RECOMMEND CHARTING AND ADDITIONAL WORK AT AN OPPORTUNE TIME. (ENT ì 4/20/92, SJ\ FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETIN((UP 2/15/96, SJV)
8251	OBSTRUCTION	12208	D	067	0	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED BY H-10343/90 (WHITING) NOT DISPROVED. IN LAT. ì 36-56-32.95N, LONG. 75-55-29.73W. ESTIMATED DEPTH OF 12 METEF ì RECOMMEND CHARTING AND ADDITIONAL WORK AT AN OPPORTUNE TIME. (ENT ì 4/20/92, SJV) FE412S 95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/1! 96, SJV)
8252	OBSTRUCTION	12221	D	067	0	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED BY H-10343/90 (WHITING) NOT DISPROVED. IN LAT. ì 36-57-12.90N, LONG. 75-58-15.82W. ESTIMATED DEPTH OF 25.2 METERS. ì RECOMMEND CHARTING AND ADDITIONAL WORK AT AN OPPORTUNE TIME. (ENT ì 4/20/92, SJ\
8253	OBSTRUCTION	12208	D	067	41	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED BY H-10343/90 (WHITING) NOT DISPROVED. IN LAT. ì 36-56-27.59N, LONG. 75-55-29.61W. ESTIMATED DEPTH OF 11.7 METERS. ì RECOMMEND CHARTING AND ADDITIONAL WORK AT AN OPPORTUNE TIME. ì (ENT 4/20/92, SJ\ FE412SS/95-- OPR-E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN ì SONAR. ECHO SOUNDER LD OF 12 METERS (41 FEET) IN LAT. ì 36-56-27.466N, LONG. 75-55-29.856W. EVALUATOR RECOMMENDS DELETING ì OBSTR REP AND CHARTING A 41 OBSTR AS SURVEYED. (UP 2/15/96, SJV)
8254	OBSTRUCTION	12221	D	0067	0	SURVEY REQUIREMENT COMMENTS SALVAGE OF THIS ITEM BY THE 5CGD IS LIKELY. CONTACT WITH 5CGD ì OR COE SHOULD BE MADE BEFORE ANY HYDROGRAPHIC INVESTIGATION IS ì INITIATED. HISTOR H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); UNCHARTED ì OBSTRUCTION LOCATED IN LAT. 36-56-06.39N, LONG. 75-57-17.86WI COVERED 54.1 FEET. EVALUATOR STATES THIS ITEM IS THE SAME AS THA DISCUSSED IN A COE REPORT TITLED "ENGINEERING ANALYSIS OF NINE ì SIDE SCAN SONAR TARGETS FROM THE THIMBLE SHOAL CHANNEL TO THE ì SOUTH ATLANTIC SEA LANE, CHESAPEAKE BAY ENTRANCE, VIRGINIA", ì FEB., 1985. THIS IS TARGET ATL #11 WHICH WAS DESCRIBED AS A STEEL ì CHANNEL BUOY LYING ON ITS SIDE IN AN E-W DIRECTION, UPPER 12 FEET ì OF STEEL-FRAMED TOWER BENT 90 DEGS. TO THE SOUTH. BASE OF BUOY 9 ì FEET IN DIA., 8 FEET TALL. SHORT LENGTH OF CHAIN ATTACHED TO WEST ì END OF BUOY. DENTED ON ONE SIDE, RIPPED OPEN ALONG THE BOTTOM, ì INDICATING IT WAS POSSIBLY HIT AND SUNK BY A SHIP. IN ABOUT 63 ì FEET. COAST GUARD WAS NOTIFIED BY COE AND SALVAGE ATTEMPTS WERE ì LIKELY.
8255	OBSTRUCTION	12221	D	067	59.7	HISTORY H10372/92-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-55-57.84I LONG. 75-57-33.89W. FATHOMETER ì DEPTH OF 18.2 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. ì (ENT 4/20/92, SJV)
8256	OBSTRUCTION	12221	D	067	66.6	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-56-25.67I LONG. 74-57-16.55W. FATHOMETER LD ì OF 20.3 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8257	OBSTRUCTION	12221	D	0067	0	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-57-18.38I LONG. 76-01-06.33W. FATHOMETER LD ì OF 18.4 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8258	OBSTRUCTION	12221	D	067	63.3	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-56-29.52I LONG. 75-58-04.45W. FATHOMETER LD ì OF 19.3 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8259	OBSTRUCTION	12221	D	0067	0	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-56-45.73I LONG. 76-01-16.46W. FATHOMETER LD ì OF 17.8 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8260	OBSTRUCTION	12221	D	067	44.3	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-55-32.1N LONG. 75-57-47.6W. ESTIMATED DEPTH ì FROM SONARGRAM OF 13.5 METERS. EVALUATOR RECOMMENDS CHARTING AN ì OBSTR (A) COVERED 13.5 METERS. (ENT 4/20/92, SJV)
8261	OBSTRUCTION	12221	D	067	80	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-56-47.75I LONG. 75-57-24.50W. FATHOMETER LD ì OF 24.4 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8262	UNKNOWN	12221	D	100	84.6	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-57-12.44I LONG. 75-57-57.71W. FATHOMETER LD ì OF 25.8 METERS. EVALUATOR RECOMMENDS CHARTING A WRECK AT SURVEYED ì POSITION. (ENT 4/20/92, SJV)
8263	OBSTRUCTION	12221	D	0067	0	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-56-38.30I LONG. 76-00-42.25W. FATHOMETER LD ì OF 17 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)

8264	OBSTRUCTION	12221	D	067	88.3	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-57-28.27I LONG. 75-58-26.95W. FATHOMETER LD ì OF 26.9 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8316	OBSTRUCTION	12208	D	067	0	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-54-58.05 LONG. 75-53-14.89W. LOCATED WHILE SEARCHING ì FOR AWOIS ITEM NO. 7522. ADDITIONAL WORK RECOMMENDED. FE353SS/90-- OPR-D111-HE; ITEM NO. 14. OBSTRUCTION LOCATED BY ì SIDE SCAN SONAR IN LAT. 36-54-58.12N, LONG. 75-53-15.56W. ì EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH AN ECHO SOUNDER ì DEPTH OF 9.2 METERS (30 FEET) AS SURVEYED. ADDITIONAL WORK ì RECOMMENDED AT AN OPPORTUNE TIME. (ENT 7/14/92, SJV) FE412SS/95-- OPR-E696-95; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
8319	OBSTRUCTION	12208	D	0067	55	HISTORY FE353SS/90-- OPR-D111-HE; ITEM NO. 19. OBSTRUCTION LOCATED BY ì SIDE SCAN SONAR IN L 36-54-51.46N, LONG. 75-55-31.86W. ASSUMED ì TO BE A BUOY ANCHOR SINCE SIDE SCAN SONAR IMAGE SIMILAR TO ì THAT OBTAINED ON ITEM NO. 17 (BUOY ANCHOR SALVAGED BY THE COAST ì GUARD). EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH AN ECHO ì SOUNDER DEPTH OF 16.9 METERS (55 FEET) AS SURVEYED. (ENT 7/15/92, ì SJV) FE412SS/95-- OPR-E696-HE; OBSTRUCTION LOCAT BY SIDE SCAN ì SONAR. ECHO SOUNDER LD OF 16.7 METERS (55 FEET) IN LAT. ì 36-54-52.595N, LONG. 7! 55-32.613W. EVALUATOR RECOMMENDS DELETING ì CHARTED OBSTR REP 1990 AND CHARTING A 55 OBSTR AS SURVEYED. (UP ì 2/15/96, SJV)
8320	OBSTRUCTION	12208	D	0067	52	HISTORY FE353SS/90-- OPR-D111-WH; ITEM NO. 20. OBSTRUCTION LOCATED BY ì SIDE SCAN SONAR IN L 36-54-43.98N, LONG. 75-55-31.28W. ì EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH AN ECHO SOUNDER ì DEPTH OF 16.8 METERS (55 FEET) AS SURVEYED. (ENT 7/17/92, SJV) FE412SS/95-- OP E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN ì SONAR. ECHO SOUNDER LD OF 16.0 METERS (52 FEE IN LAT. ì 36-54-45.097N, LONG. 75-55-32.467W. EVALUATOR RECOMMENDS DELETING ì OBSTR REP 1990 A CHARTING 52 OBSTR AS SURVEYED. (UP 2/15/96, ì SJV)
8321	OBSTRUCTION	12208	D	067	0	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-55-26.21 LONG. 75-55-23.44W WITH AN ESTIMATED DEPTH ì OF 19.7 METERS. ADDITIONAL WORK RECOMMENDEC FE353/90-- OPR-D111-HE; ITEM NO. 21. NOT INVESTIGATED BECAUSE ì ITEM WAS INCORRECTLY SCALEC ONTO THE FIELD SHEET. EVALUATOR ì RECOMMENDS CHARTING ACCORDING TO WHITINGS' FINDINGS, ABOVE. ì ADDITIONAL WORK RECOMMENDED. (ENT 7/15/92, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
8322	OBSTRUCTION	12221	D	067	0	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-56-06.27 LONG. 75-55-17.07W WITH AN ESTIMATED DEPTH ì OF 16.1 METERS. FE353SS/90-- OPR-D111-HE; ITEM NC 25. OBSTRUCTION LOCATED IN ì LAT. 36-56-06.36N, LONG. 75-55-16.22W. APPEARED ON FATHOGRAM ì ONLY. SONARGRAM QUALITY POOR. EVALUATOR RECOMMENDS CHARTING AN ì OBSTRUCTION WITH AI ECHO SOUNDER DEPTH OF 14.5 METERS (47 FEET) ì AS SURVEYED. ADDITIONAL WORK RECOMMENDE (ENT 7/15/92, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
8323	OBSTRUCTION	12208	D	0067	44	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-55-49.64 LONG. 75-54-50.73W WITH AN ESTIMATED DEPTH ì OF 14.4 METERS. ADDITIONAL WORK RECOMMENDEC FE353SS/90-- OPR-D111-HE; ITEM NO. 26. OBSTRUCTION LOCATED BY ì SIDE SCAN SONAR IN LAT. 36-55-49.12N, LONG. 75-54-50.55W. DIVERS ì DESCRIBE SUNKEN BUOY PARTIALLY BURIED. EVALUATOR RECOMMENDS ì CHARTING AN OBSTRUCTION WITH AN ECHO SOUNDER DEPTH OF 13.8 METERS ì (45 FEET) AS SURVEYED. (7/15/92, SJV) FE412SS/95-- OPR-E696-HE; LOCATED BY SIDE SCAN SONAR. ECHO SOUNDER LD OF 13.3 METERS (44 FEET) IN LAT. 36-55-49.234N, LONG. ì 75-54-50.327W. EVALUATOR RECOMMENDS CHARTING A 44 OBSTR AS ì SURVEYED. (UP 2/15/96, SJV) H11027/01-- OPR-D324-WH; LOCATED DURING MAINSCHEME HYDROGRAPHY. CALCULATED HEIGHT OF OBSTRUCTION APPROX. 0.7! METERS (2.6 FEET) IN SURROUNDING DEPTHS OF 47 FEET. THIS IS CONSISTENT WITH THE CHARTED 44-FOOT LD. DUE TO TIME CONSTRAINTS NO LD WAS DETERMINED. EVALUATOR RECOMMENDS RETAINIG CHARTED. (UP 2/25/02, SJV)
8324	OBSTRUCTION	12208	D	0067	42	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-55-58.55 LONG. 75-54-56.84W WITH AN ESTIMATED DEPTH ì OF 14.5 METERS. ADDITIONAL WORK RECOMMENDEC FE353SS/90-- OPR-D111-HE; ITEM NO. 28. OBSTRUCTION LOCATED IN ì LAT. 36-55-59.08N, LONG. 75-54-55.19W. DIVERS DESCRIBE AN OLD ì BUOY RISING 1.3 METERS OFF THE BOTTOM. EVALUATOR RECOMMENDS ì CHARTING AN OBSTRUCTION WITH AN ECHO SOUNDER DEPTH OF 12.5 METERS ì (41.0 FEET) AS SURVEYED. FE412SS/95-- OPR-E696-HE; LOCATED BY SIDE SCAN SONAR. EVALUATOR ì RECOMMENDS DELETING OBSTR REP 1990 AND CHARTING A 42 OBSTR (12.9 ì METERS) AS SURVEYED I LAT. 36-56-01.593N, LONG. 75-54-58.690W. ì (UP 2/15/96, SJV) H11027/01-- OPR-D324-WH; LOCATED DURINC MAINSCHEME SIDE SCAN OPS. CALCULATED HEIGHT APPROX. 0.94 METERS (3.1 FEET) IN SURROUNDIN DEPTHS OF 44 TO 46 FEET. THIS IS CONSISTENT WITH CHARTED 42-FOOT LD. DUE TO TIME CONSTRAINT NO LD WAS DETERMINED. EVALUATOR RECOMMENDS RETAINING AS CHARTED. (UP 2/25/02, SJV)
8862	UNKNOWN	12254	E	0100	17	HISTORY NM30/66-- CHESAPEAKE BAY-LYNNHAVEN ROADS-LITTLE CREEK APPROACH; ì DANGEROUS SUBMERGED WRECK OF A 22-FOOT CABIN CRUISER REPORTED ì BURNED TO THE WATERLINE AND SUI IN APPROX. POSITION LAT. ì 36-57.3N, LONG. 76-10.8W. H9910/80-- OPR-103-MI; WRECK LOCATED IN LAT. : 57-11.71N, LONG. ì 76-10-36.18W, 17.5 LD. DESCRIBED AS A METAL OBSTRUCTION, 3 X 8 ì FEET. CHARTEC WRECK (NM30/66 ABOVE) REVISED TO SURVEYED POSITION. LNM19/82-- PUBLISHES INFORMATION FRC H-9910. (ENT 2/23/94, ì SJV) FE388SS/94-- OPR-E696-HE; SIDE SCAN SONAR SEARCH NEGATIVE FOR ì WRECK AS DESCRIBED. HOWEVER, WHILE CONDUCTING A SIDE SCAN ì CONFIDENCE CHECK NEAR THI "LC" BUOY, 2 CONCRETE BLOCKS, 10 METERS ì APART WERE LOCATED. LARGER BLOCK WAS 5 X 5 FEE EXTENDING 3 FEET ì OFF THE BOTTOM. LOCATED IN LAT. 36-56-58.405N, LONG. ì 76-10-44.284W. EVALUATOR RECOMMENDS DELETING CHARTED WRECK AND ì CHARTING A DANGEROUS OBSTR, 18 FE AS SURVEYED (SEE AWOIS NO. ì 9559). LORAN-C RATES (9960 CHAIN): W=15960.1, X=27219.8, ì Y=41219. Z=58485.2. (UP 9/20/95, SJV)
8863	UNKNOWN	12245	E	0370	30	HISTORY NM1/47-- SMALL BOAT REPORTED SUNK 1300 YARDS, 155 DEG. FROM ì ANCHORAGE LIGHT F-1 APPROXIMATE POSITION LAT. 36-57-59N, LONG. ì 76-21-39W. H7602WD/48-- CS326; WRECK CLEARED TO : FEET. NOT HUNG. (ENT ì 3/1/94, SJV) FE394SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 9/6/94, SJV)
8864	OBSTRUCTION	12245	E	0370	27	HISTORY H7602/48WD-- CS326, POSSIBLE GROUNDING AT 30 FEET AND CLEARED ì AT 27 FEET IN LAT. 3€ 57-50N, LONG. 76-21-50W. (ENT 3/1/94, SJV) FE394SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/6/94, SJV)
						HISTORY NM12/62-- HAMPTON ROADS-SEWELLS POINT-EXPLOSIVES; THE U.S. NAVY ì ADVISES THAT

8865	OBSTRUCTION	12245	E	0067	0	EXPLOSIVES HAVE BEEN LOST OVERBOARD IN HAMPTON ì ROADS, 1750 YDS., 330 DEG. FROM THE NAVAL BASE BREAKWATER LIGHT. ì APPROX. POSITION SCALED FROM CHART 12245 IN LAT. 36-58-35N, LONG. ì 76-20-22W. EXHAUSTIVE SEARCH BY U.S. NAVY NEGATIVE. (ENT 3/1/94, ì SJV)
8866	OBSTRUCTION	12245	E	0067	19	SURVEY REQUIREMENT COMMENTS DEVELOP ALL INDICATIONS OF SHOALING, BOTH CHARTED AND ì DISCOVERED. HISTORY H7894/51-- 17-FOOT SHOAL LOCATED IN LAT. 36-56-48N, LONG. ì 76-20-30W. POSITION SCALED FROM CHART 12245. (ENT 3/1/94, SJV) FE394SS/94-- OPR-E696-HE; CHARTED SHOAL DISPROVED. HOWEVER, AN ì OLD DREDGE PIPEWAS LOCATED IN LAT. 36-56-46.590N, LONG. ì 76-20-33.164W. PNEUMO. LD OF 5.9 METERS (19 FEET). PIPE IS 2 FEET ì IN DIA., 25 METERS LONG. COVERED WITH HEAVY MARINE GROWTH. ì LORAN-C RATES: W=15987.4, X=27257.8, Y=41247.1, Z=58442.1. ì EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (UP 9/6/95, SJV)
8867	SNDNG	12245	E	0067	22	SURVEY REQUIREMENT COMMENTS FULLY DEVELOP ALL INDICATIONS OF SHOALING BOTH CHARTED A ì DISCOVERED. HISTORY LNM30/69-- SHOALING TO 22 FEET HAS BEEN REPORTED IN THE ì FOLLOWING POSITIONS: LAT. 36-56-55N, LONG. 76-21-37W; LAT. ì 36-57-06N, LONG. 76-21-37W. MARINERS ARE ADVISE TO EXERCISE ì CAUTION IN THE AREA. (ENT 3/1/94, SJV) FE394/94-- OPR-E696-HE; SHOAL DISPROVED. EVALUATOR RECOMMENDS ì CHARTING AS SURVEYED. (UP 9/6/95, SJV)
8868	SNDNG	12245	E	0067	22	SURVEY REQUIREMENT COMMENTS FULLY DEVELOP ANY INDICATIONS OF SHOALING, CHARTED OR ì DISCOVERED. HISTORY LNM30/69-- SHOALING TO 22 FEET HAS BEEN REPORTED IN THE ì FOLLOWING POSITIONS: LAT. 56-57-06N, LONG. 76-21-34W AND LAT. ì 36-56-55N, LONG. 76-21-37W. MARINERS ARE ADVISED TO EXERCISE ì CAUTION IN THE AREA. (ENT 3/1/94, SJV) FE394SS/94-- OPR-E696-HE; SHOAL DISPROVED. EVALUATOR RECOMMENDS ì CHARTING AS SURVEYED. (ENT 9/6/95, SJV)
8869	SNDNG	12245	E	0067	25	SURVEY REQUIREMENT COMMENTS FULLY DEVELOP ANY INDICATIONS OF SHOALING CHARTED OR ì DISCOVERED. HISTORY BP73637/68-- COE; CHARTED 35-FOOT SOUNDING REVISED TO 25 FEET. FE394S! 94-- OPR-E696-HE; SHOAL DISPROVED. EVALUATOR RECOMMENDS ì CHARTING AS SURVEYED. (UP 9/6/ SJV) DESCRIPTION **** OFFICE RESEARCH INDICATES THAT THE SOUNDING ON THE BLUEPRINT MAY HA BEEN MISREAD AS A 25 VICE A 35. HOWEVER, SINCE THIS DEPTH IS CLOSE TO AN IMPORTANT CHANNE WIDENER ITS INVESTIGATION IN THE FIELD IS JUSTIFIED. (ENT 3/2/94, SJV)
8872	SNDNG	12245	E	0067	46	SURVEY REQUIREMENT COMMENTS FULLY DEVELOP ANY INDICATIONS OF SHOALING, CHARTED OR ì DISCOVERED. HISTORY BP94753/76-- COE; SURVEY OF SEPT., 1975. 46-FOOT SOUNDING IN ì LAT. 36-58-34.0N, LONG. 76-19-57.0W. (ENT 3/2/94, SJV) FE394SS/94-- OPR-E696-HE; SHOALEST DEPTH 47.6 FEET (14 METERS). EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (UP 9/6/95, ì SJV)ì
8897	UNKNOWN	12254	E	0100	5	HISTORY H9255WD/71-- OPR-467-R/H-71; SUBMERGED WRECK LOCATED IN LAT. ì 36-54-49N, LONG. 76-05-24W. IDENTIFIED AS THE WRECK OF AN ARMED ì SAILING VESSEL, LL LD OF 5.0 FEET. THIS ITEM WAS ASSIGNED THROUGH ì THE ATLANTIC MARINE CENTER FROM THE ARMY CORPS OF ENGINEERS AFTER SEVERAL VESSELS HAD REPORTED STRIKING A SUBMERGED OBSTRUCTION IN ì THE CHANNEL ENTRANCE TO LYNNHAVEN, VIRGINIA. CL200/71-- RADIO MESSAGE, NOAAS HECK TO CGD5, INFO NOS, ATLANTIC ì MARINE CENTER, NORFOLK, VA., FEB. 22, 1971. UNDERWATER ì OBSTRUCTION LOCATED LA 36-54-48N, LONG. 76-05-25W. LEAST DEPTH ì 6 FEET MLW. (REPORTED TO BE OLD WARSHIP, SAILING TYPE, BETWEEN ì 100 AND 200 YEARS OLD PER WHEATLY WARD, C-351). LNM8/71-- UNDERWATER OBSTRUCTION REPORTED TO EXIST IN LAT. ì 36-54-48N, LONG. 76-05-25W. COVERED 6 FEET AT MLW. LN 71-- LYNNHAVEN INLET CHANNEL BUOY 3 (LLP 332) HAS BEEN ì RELOCATED IN POSITION LAT. 36-54-47N LONG. 76-05-25W TO MARK ì ROUTE OF BEST WATER (SEE PAGE 3 OF LNM 8/71, UNDERWATER ì OBSTRUCTION). (ENT 4/7/94, SJV) DESCRIPTION **** TELCON, 4/12/94, S. VERRY (NOS) AND CHRIS ROWL (COE, NORFOLK); DANGEROUS SUBMERGED WRECK LOCATED IN LAT. 36-54-48.7N, LONG. 76-05-23.9W (NAD27). LEAST OBSERVED ECHO SOUNDER DEPTH 6.7 FEET. (TEL. NO. 804-441-7018) DIVERS REPORT FINDING TIMBERS, COPPER PLATING AND A PILE OF BALLAST. **** VIRGINIA-PILOT, SAT., MARCH 20, 197 NEWSPAPER ITEM. SALVAGE WORK ON WRECK CARRIED OUT BY CHARLES V. SPENCER. SEVEN CANNON AND THREE SWIVEL GUNS BROUGHT UP. RU/HE SALVAGED ONE CANNON ON 2/22/71, THE DA THE WRECK WAS FOUND. ALL THAT REMAINS IS A PILE OF BALLAST STONE. GUNS DIFFER IN SIZE LEADING SPENCER TO SPECULATE THAT THE SHIP WAS EITHER A PRIVATEER OR A PIRATE VESSEL CIRCA 1770-1820. SPENCER TO TAKE ONE OF THE SMALL SWIVEL GUNS TO THE MARINERS MUSEUM (NEWPORT NEWS) TO HELP IDENTIFY AND DATE THE WRECK MORE PRECISELY. HE PLANS TO CLEAN AND SELL THE GUNS. THE GUNS FOR SALE WEIGH 1,800 LBS. EACH. (UP 4/13/94, SJV)
9344	OBSTRUCTION	12208	E	0067	0	HISTORY H10340/90-- OPR-D111-WH; SIDE SCAN SONAR CONTACT IDENTIFIED ì DURING OFFICE PROCESSING IN LAT. 36-54-57.39N, LONG. ì 75-55-46.96W. ESTIMATED DEPTH OF 14.4 METERS (47.0 FEET FE353SS/90-- OPR-D111-HE; DISPROVED. EVALUATOR RECOMMENDS NOT ì CHARTING. (UP 1/17/95, SJV)
9345	OBSTRUCTION	12208	E	067	0	HISTORY H10340/90-- OPR-D111-HE; SIDE SCAN SONAR CONTACT LOCATED IN ì LAT. 36-56-12N, LONG. 75-10.5W. CHARTED AS A 37-FOOT ì OBSTRUCTION REPORTED 1990. (ENT 1/18/95, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/1! 96, SJV)ì
9346	SNDNG	12245	E		0	HISTORY FE205WD/66-- (OLD FE NO. 1, 1967WD); OPR-467-WA/HI; PSR NO. 3; ì DRAG GROUNDED IN 25 FE IN LAT. 36-57-55N, LONG. 76-26-25W. ì SOUNDING OF 26 FEET AND CLEARED TO 24 FEET. CURRENT TOO STRONG ì FOR DIVE OPS. CHARTED AS A SHOAL (SHL) CLEARED TO 24 FEET. (ENT ì 1/24/95, SJV) FE408 95-- OPR-E696-HE; 200% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING SHOAL (FT) FROM THE CHART. (UP ì 3/12/96, SJV)
9347	OBSTRUCTION	12245	E		0	HISTORY FE205WD/66-- (OLD FE NO.1, 1967WD); OPR-467-WA/HI;PSR NO.3; DRAG ì GROUNDED IN 36 FEE IN LAT. 36-58-14.5N, LONG. 76-26-33.0W. ì SOUNDING OF 36 FEET AND CLEARED TO 32 FEET. CHARTED A AN ì OBSTRUCTION CLEARED TO 32 FEET AS SURVEYED. (ENT 1/24/95, SJV) FE408SS/95-- OPR-E696-HE; 200% SIDE SCAN SONAR NEGATIVE. ì HOWEVER, ONE CONTACT WAS NOTED WITHIN THE ASSIGNED RADIUS (SEE ì AWOIS NO. 9813). EVALUATOR RECOMMENDS DELETING. (UP 3.12.96, SJV)
9348	OBSTRUCTION	12245	E		0	HISTORY FE 205WD/66-- (OLD FE NO.1, 1967WD); OPR-467-WA/HI;PSR NO.3; ì DRAG GROUNDED IN 47 FEI IN LAT. 36-58-36N, LONG. 76-26-32W. ì CLEARED TO 41.0 FEET. HUNG ON OBSTRUCTION. CURRENT TOO STRONG FOR ì DIVE OPS. CHARTED AS AN OBSTRUCTION CLEARED 47 FEET. (ENT 1/24/95, ì SJV) FE408: 95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE FOR ì THIS ITEM. HOWEVER, THREE CONTACTS WERE NOTED WITHIN THE ASSIGNED ì SEARCH RADIUS (SEE AWOIS NOS. 9814, 9815, AND 9816). EVALUATOR ì RECOMMENDS DELETING FROM CHART. (UP 3/12/96, SJV)
						HISTORY FE408SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE FOR ì THIS ITEM. HOWEVER, (CONTACT WAS NOTED OUTSIDE THE ASSIGNED ì SEARCH RADIUS (SEE AWOIS NO. 9817). EVALUATOR RECOMMENDS NOT ì CHARTING. (UP 3/12/96, SJV) DESCRIPTION **** COE, NORFOLK; SIDE SCAN SONAR SURVEYS OF OCTOBER 1991 AND JULY 1992 NEGATIVE FOR AWOIS ITEM NO. 8013. HOWEVER, FOUR ADDITIONAL CONTACTS NOT CONSIDERED TO BE AWOIS 8013 WERE NOTED. THREE OF THESE CONTAC

9382	OBSTRUCTION	12245	E	0067	0	WERE IDENTIFIED BY CONTRACT DIVERS IN MAY AND JUNE 1993 WHILE THE FOURTH COULD NOT BE LOCATED. OF THE THREE CONTACTS LOCATED, ONE WAS CONSIDERED WORTH REINVESTIGATING. OBJECT LOCATED IN LAT. 36-57-45.16N, LONG. 76-20-14.40W (NAD27). 6 FEET LONG, 2 FEET WIDE CONCRETE SLAB WITH A 5-FOOT, 18 INCH DIA. WOODEN PILE PROTRUDING OUT OF THE CENTER. 5-FOC RELIEF. LD OF 49.5 FEET AT MLLW. (ENT 3/28/95, SJV)
9425	OBSTRUCTION	12254	E	0067	0	HISTORY H7177WD/48-- (AD. WK.); PBS-WD-2248; 1:20,000-SCALE; VISUAL ì CONTROL; HANG DEPTH UNKNOWN, CLEARED TO 15 FEET IN LAT. ì 36-57-20.0N, LONG. 76-09-47.0W (SCALED FROM CHART 12254 (ENT ì 4/26/95, SJV) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
9542	OBSTRUCTION	12254	K	0067	46	HISTORY FE387SS/94-- OPR-E696-HE; INDICATION OF AN OBSTRUCTION ON ì FATHOGRAM 3 TIMES IN VICINITY OF CHARTED BUOY WHICH WAS REPORTED ì MISSING BY COAST GUARD. NEW BUOY ANCHOF WAS DROPPED IN CLOSE ì PROXIMITY. EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION SINCE ì DOCUMENTATION EXISTS OF REMOVAL OF OLD ANCHOR. FATHO. LD OF 13.7 ì METERS (45 FEET) LOCATED IN LAT. 36-57-50.61N, LONG. ì 76-04-41.01W. (ENT 9/12/95, SJV) F00439/98-- S-E900-RU; ITEM LOCATED IN LAT, 36-57-50.73N, LONG. 76-04-41.18W WITH A MULTIBEAM LD OF 46.0 FEET. ITEM BELIEVEI TO BE AN OLD BUOY ANCHOR. EVALUATOR RECOMMENNDS DELETING CHARTED OBSTN 45 FT AND CHARTING AN OBSTN 46 FT AS SURVEYED. (UP 8/16/99, SJV)
9543	OBSTRUCTION	12254	E	0067	48	HISTORY FE387SS/94-- OPR-E696-HE; TWO OBSTRUCTIONS LOCATED IN CLOSE ì PROXIMITY OF EACH OTHER. ONE IN LAT. 36-56-09.98N, LONG. ì 76-02-32.08W WITH A FATHOMETER LD OF 14.6 METERS (48 FEET) AND ì THE OTHER IN LAT. 36-56-07.95N, LONG. 76-02-34.88W. EVALUATOR ì RECOMMENDS ENCLOSING BOTH OBSTRUCTIONS WITH A DANGER CURVE WITH ì LABEL 48-FOOT OBSTR. (ENT 9/12/95, SJV)
9544	UNKNOWN	12254	E	0100	33	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OF 0.9 METER 12.1 METERS.DIVERS DESCRIBE A STEEL ì HULLED VESSEL MOSTLY BURIED WITH A WOODEN MAST AI BEAMS. ALSO ì SCATTERED WRECKAGE. PNEUMO LD OF 10.1 METERS (33 FEET) IN LAT. ì 36-55-56.868N LONG. 76-03-17.065W. EVALUATOR RECOMMENDS CHARTING ì AS SURVEYED. LORAN-C RATES (9960 CHAIN): W=15937.4, X=27187.7, ì Y=41269.4, Z=58512.5. VISIBILITY WAS 4 FEET. (ENT 9/12/95, SJV)
9545	UNKNOWN	12254	E	0100	32	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OF 1.3 METER 11.7 METERS. DIVERS DESCRIBE A STEEL ì HULLED VESSEL WITH A WOODEN MAST IN LAT. 36-56-02.7N LONG. ì 76-03-19.6W. PNEUMO. LD OF 9.8 METERS (32 FEET). MAST IS 15 FEET ì LONG. VISIBILITY 4 FEET EVALUATOR RECOMMENDS CHARTING AS ì SURVEYED. LORAN-C RATES (9960 CHAIN): W=15939.8, X= 27108.4, ì Y=41270.4, Z=58512.4. (ENT 9/12/95, SJV)
9546	OBSTRUCTION	12254	E	0067	38	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OFF BOTTOM METERS IN 13.6 METERS. VISIBILITY 5-6 FEET. ì DIVERS DESCRIBE BADLY CORRODED METAL CONTAINERS. PNEUMO. LD OF 40 ì FEET IN LAT. 36-57-07.421N, LONG. 76-03-23.419W. LORAN-C RATES ì (9960 CHAIN): W=15939.1, X=27190.5, Y=41282.8, Z=58516.4. ì EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH A FATHOMETER LD ì OF 11.6 METERS (38 FEET) IN LAT. 36-57-05.73N, LONG. ì 76-03-24.68W. SEVERAL SIDE SCAN SONAR CONTACTS LIE IN CLOSE ì PROXIMITY. DIVERS DESCRIBE 2 AREA OF SCATTERED DEBRIS WHICH ì APPEAR TO BE STEEL CONTAINERS. PNEUMO. LD OF 12.2 METERS (40 FEET) IN LAT. 36-57-07.032N, LONG. 76-03-24.878W. LORAN-C RATES ì (9960 CHAIN): W=15939.1, X=27190.6 Y=41282.6, Z=58516.2. WOODEN ì TIMBERS ALSO LYING ON BOTTOM. EVALUATOR DOES NOT RECOMMEND ì CHARTING THESE ITEMS DUE TO THE 38-FOOT FATHOMETER DEPTH (ABOVE). ì (ENT 9/1 95,SJV)
9547	OBSTRUCTION	12254	E	0067	39.8	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SONAR CONTACT. COMPUTED HEIGHT ì OFF BOTTOM OF 0.9 METERS IN 12.9 METERS. DIVERS DESCRIBE A ì CYLINDRICAL PIPE 8 FEET 9 INCHES LONG AND 3 FEET DIA. PNEUMO. ì LD OF 12.1 METERS (39 FEET) IN LAT. 36-57-10.545N, LONG. ì 76-03-27.170W. EVALUATOR RECOMMENDS CHARTING A 12.1 METER OBSTR ì AS SURVEYED. LORAN-C RATES (9960 CHAIN): W-15939.2, X=27191.0, ì Y=41283.3, Z=58516.4. VISIBILITY 6-10 FEET. PIPE IS HEAVILY ì ENCRUSTED WITH MARINE GROWTH AND BADLY RUSTED. (ENT 9/12/95, SJV)
9548	OBSTRUCTION	12254	E	0067	34	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. DIVERS ì DESCRIBE A 8 X 15-FOOT METAL CONTAINER ENCRUSTED WITH MARINE ì GROWTH WITH A LENGTH OF CHAIN ON THE TOP. PNEUMO. LD OF 10.6 ì METERS (34 FEET) IN LAT. 36-56-37.009N, LONG. 76-03-10.589W. ì FALLS WITHIN AWOIS CIRCLE FOR NOS. 3758, 3759, 3760, AND 3762. ì EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH A LD OF 10.6 ì METERS AS SURVEYED. LORAN-C RATES (9960 CHAIN): W=15938.2, ì 27188.8, Y=41277.3, Z=58515.4. (ENT 9/12/95, SJV)
9549	OBSTRUCTION	12254	E	0067	42	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. DIVERS ì DESCRIBE METAL PLATES TOP OF A CONCRETE BLOCK TIED TOGETHER ì WITH CHAINS. PNEUMO LD OF 12.9 METERS (42 FEET) IN LAT. ì 36-56-27.426N, LONG. 76-02-31.286W. EVALUATOR RECOMMENDS CHARTING ì AS SURVEYED. ITEM EXTENDS 1.4 METERS ABOVE BOTTOM IN 14.8 METERS. ì LORAN-C RATES (9960 CHAIN): W=15936.1, X= 27185.8, Y=41276.8, ì Z=58517.5. ROUND BUOY BLOCK WITH CHAIN ALSO LOCATED IN CLOSE ì PROXIMIT LD 13.2 METERS (43 FEET) IN LAT. 36-56-27.095, LONG. ì 76-02-31.561W. EVALUATOR DOES NOT RECOMMEND CHARTING THIS BLOCK. ì (ENT 9/12/95, SJV)
9550	OBSTRUCTION	12254	E	0067	23	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. DIVERS DESCRIBE DERELICT NET HUNG ON SMALL UNIDENTIFIABLE OBSTRUCTION. ì EXTENDS 1.4 METERS OFF THE BOTTOM. PNEUMO L OF 7.8 METERS (23 ì FEET) IN 9.2 METERS IN LAT. 36-57-03.525N, LONG. 76-05-32.844W. ì EVALUATOR RECOMMENDS CHARTING AN OBSTR AS SURVEYED. LORAN-C RATES ì (9960 CHAIN): W=15945.4, X= 27199.8, Y=41278.1, Z=58507.2. (ENT ì 9/12/95, SJV)
9551	OBSTRUCTION	12254	E	0067	23	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OFF BOTTOM 1.1 METERS IN 8.3 METERS OF WATER. DIVERS ì DESCRIBE DERELICT NET HUNG ON UNIDENTIFIABLE OBSTRUCTION 3 FEET ì OFF THE BOTTOM. PNEUMO. LD OF 7.5 METERS (23 FEET) IN LAT. ì 36-56-47.832N LONG. 76-05-37.241W. EVALUATOR RECOMMENDS CHARTING ì AN OBSTRUCTION AS SURVEYED. LORAN RATES (9960 CHAIN): ì W=15943.2, X=27199.0, Y=41274.8, Z=58505.9. (ENT 9/12/95, SJV)
9552	OBSTRUCTION	12254	E	0067	27	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT 0.9 METERS IN METERS. DIVERS DESCRIBE WHAT APPEARED TO ì BE THE BOTTOM SECTION OF A BUOY EXTENDING 3 FEET OFF THE BOTTOM. ì PNEUMO LD OF 8.2 METERS (27 FEET) IN LAT. 36-56-39.11N, LONG. ì 76-04-19.618W. EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION AS ì SURVEYED. LORAN-C RATES (9 CHAIN): W=15941.6, X=27193.5, ì Y-47275.6, Z=58510.8. VISIBILITY 3 FEET. A SHACKLE WAS IN ONE ì END. (ENT 9/12/95, SJV)

9553	OBSTRUCTION	12254	E	0067	33	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OF 1.9 METERS 12.1 METERS. DIVERS DESCRIBE A BUOY BLOCK ì WITH CHAIN ATTACHED EXTENDING 5 FEET OFF THE BOTTOM. PNEUMO LD OF ì 10.3 METERS (33 FEET) IN LAT. 36-56-15.379N, LONG. 76-03-02.631W. ì VISIBILIT 3 FEET. LORAN-C RATES (9960 CHAIN): W=15937.4, ì X=27187.6, Y=41273.4, Z=58514.5. (ENT 9/12/95, SJV)
9554	OBSTRUCTION	12254	E	0067	37	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OF 0.7 METERS 12.8 METERS. DIVERS DESCRIBE 25-FOOT LONG ì PIPE WITH WITH A CEMENT OR METAL BLOCK AT ONE END. PNEUMO. LD OF ì 11.5 METERS (37 FEET) IN LAT. 36-55-53.368N, LONG. 76-03-03.406W. ì VISIBILITY 1 FOOT. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. ì LORAN-C RATES (9960 CHAIN): W=15937. X=27187.0, Y=41269.2, ì Z=58513.1. LD OBTAINED ON BLOCK. (ENT 9/12/95, SJV)
9555	OBSTRUCTION	12254	E	0067	42	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OF 1.3 METERS 12.7 METERS. DIVERS DESCRIBE A SMALL ì BARGE OR PONTOON FLOAT LYING UPSIDE DOWN ON BOTTOM WITH A HEIGHT ì OF 5 FEET OFF BOTTOM. DIVERS PNEUMO. LD OF 12.9 METERS (42 FEET). ì FATHOMETER DEPTH OF 12.3 METERS (40 FEET) IN SAME LOCATION. ì EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH THE FATHOMETER ì DEPTH AS SURVEYED IN LAT. 36-56-48.231N, LON 76-02-55.683W. ì VISIBILITY 6-10 FEET. ENCRUSTED WITH MARINE GROWTH. LORAN-C RATES ì (9960 CHA W=15937.4, X=27188.1, Y=41279.9, Z=58517.1. ì DIMENSIONS OF ITEM ARE 22 X 12 FEET. (ENT 9/12/95, SJV
9556	OBSTRUCTION	12254	E	0067	41	HISTORY FE367SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. FATHOMETER DEPTH OF 12.5 METE (41 FEET) FOUND IN LAT. 36-57-59.22N, LONG. 76-05-19.07W. EVALUATOR CONSIDERS THIS DEPTH IS ON THE ANCHOR THAT WAS DIVED ON BY FIELD UNIT PERSONNEL AND IS THE SHOALEST DEPTH ON THE ANCHOR (SEE AWOIS NO. 9557). EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION AS SURVEYE (ENT 9/12/95, SJV) F00450/99-- OPR-E350-RU; 2 SIDE SCAN SONAR CONTACTS WERE INVESTIGATED WITH SWMB. NO SIGNIFICANT CONTACTS FOUND. EVALUATOR RECOMMENDS DELETING CHARTED "OBSTN 4 FT" AND LABEL "OBSTNS". (UP 4/27/00, SJV)
9557	OBSTRUCTION	12254	E	0067	42	HISTORY FE387SS/94-- OPR-E696-HE; UNCHARTED OBSTRUCTION LOCATED IN LAT. 36-57-58.48N, LONG. 05-14.64W. DIVERS DESCRIBE A BUOY ANCHOR. DEPTH OF 13 METERS (42 FEET) DETERMINED FROM SURROUNDING DEPTHS AND HEIGHT ABOVE BOTTOM REPORTED BY DIVERS. EVALUATOR RECOMMEN CHARTING AWOIS ITEM 9556 INSTEAD OF THIS ITEM DUE TO LESSER LD AND CLOSE PROXIMITY TO EAC OTHER. DIVER LD DESIRED ON THIS ITEM AT A LATER DATE. (ENT 9/12/95, SJV) F00450/99-- OPR-E350-RU SIDE SCAN SONAR CONTACT INVESTIGATED WITH SWMB. NO SIGNIFICANT CONTACTS WERE FOUND. EVALUATOR RECOMMENDS DELETING CHARTED "OBSTN 42 FT" AND LABEL "OBSTNS" & CHART SURVE DEPTHS. (UP 4/27/00, SJV)
9558	OBSTRUCTION	12254	E	0067	18	HISTORY FE394SS/94-- OPR-E696-HE; WHILE INVESTIGATING A 17-FOOT SHOAL ì (AWOIS NO. 8866), 2 UNCHARTED OBSTRUCTIONS WITH DEPTHS OF 18 FEET ì (5.5 & 5.6 METERS) WERE NOTED DURING OFFICE PROCESSING IN LAT. ì 36-56-40.24, LONG. 76-20-26.37W & LAT. 36-56-42.67N, LONG. ì 76-20-26.71V RESPECTIVELY. EVALUATOR RECOMMENDS REMOVING CHARTED ì 17-FOOT SOUNDING AND CHARTING OBSTRUCTIONS AS SURVEYED. (ENT ì 9/6/95, SJV)
9559	OBSTRUCTION	12254	D	067	18	HISTORY FE388SS/94-- OPR-E696-HE; WHILE SEARCHING FOR AWOIS ITEM 8862, ì 2 CONCRETE BLOCKS WERE DISCOVERED DURING A ROUTINE SIDE SCAN ì CONFIDENCE CHECK IN THE VICINITY OF THE "LC" BUOY. DIVERS ì DESCRIBE 2 CONCRETE BLOCKS, 10 METERS APART. THE LARGER BLOCK ì MEASUREI X 5 FEET AND EXTENDED 3 FEET OFF THE BOTTOM. PNEUMO LD ì OF 18 FEET IN LAT. 36-56-58.405N, LON 76-10-44.284W. EVALUATOR ì RECOMMENDS DELETING CHARTED WRECK (AWOIS 8862) AND CHARTING DANGEROUS SUBM OBSTR 18 FEET AS SURVEYED. LORAN-C RATES (9960 ì CHAIN): W=15960.1, X=2721 Y=41219.8, Z=58485.2. (ENT 9/6/95, ì SJV)
9813	OBSTRUCTION	12245	E	0067	16.2	HISTORY FE408SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT NOTED WITHIN ì THE SEARCH RADIU FOR AWOIS ITEM 9347 (NOT CONSIDERED TO BE THAT ì ITEM). DEVELOPED WITH ECHO SOUNDER. EVALUATOR RECOMMENDS DELETING ì "OBSTR (32 FT)" AND CHARTING "SHOAL 53 FT" (16.2 METERS) IN LAT. ì 36-58-20.518N, LONG. 76-26-24.287W. (ENT 7/9/96, SJV)
9814	OBSTRUCTION	12245	E	0067	15.6	HISTORY FE408SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT NOTED WITHIN ì SEARCH RADIUS FO AWOIS NO. 9348 (NOT CONSIDERED TO BE THAT ì ITEM). A SHOAL DEVELOPED BY ECHO SOUNDER EXTENDS SW-NE FOR 40 ì METERS. BOTTOM SAMPLES SUGGESTED A COAL PILE. ECHO SOUNDER LD 15.6 METERS (51 FEET) IN LAT. 36-58-35.911N, LONG. 76-26-30.107W. ì EVALUATOR RECOMMENDS CHARTING A SHOAL, LD 15.6 METERS AS ì SURVEYED. (ENT 7/9/96, SJV)
9815	OBSTRUCTION	12245	E	0067	16.2	HISTORY FE408SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT NOTED WITHIN ì THE SEARCH RADIU FOR 9348 (NOT CONSIDERED TO BE THAT ITEM). ì DEVELOPED BY ECHO SOUNDER. SHOAL EXTENDING LESS THAN 10 METERS. ì ECHO SOUNDER LD OF 16.2 METERS (53 FEET) IN LAT. 36-58-36.995N, ì LONG. 7 26-29.066W. EVALUATOR RECOMMENDS CHARTING A SOUNDING OF ì 53 FEET (16.2 METERS) AS SURVEYED. (ENT 7/9/96, SJV)
9816	OBSTRUCTION	12245	E	0067	16.7	HISTORY FE408SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT NOTED WITHIN ì THE SEARCH RADIU FOR AWOIS ITEM 9348 (NOT CONSIDERED TO BE THAT ì ITEM). DEVELOPED BY ECHO SOUNDER. SHOAL EXTENDS LESS THAN 10 ì METERTS. ECHO SOUNDER LD OF 16.7 METERS (55 FEET) IN LAT. ì 36-58-35.82 LONG. 76-26-34.336W. EVALUATOR RECOMMENDS CHARTING ì A 55 OBSTR AS SURVEYED. (ENT 7/9/96, SJV)
9817	OBSTRUCTION	12245	E	0067	52	HISTORY FE408SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT NOTED WITHIN ì SEARCH RADIUS OF AWOIS ITEM 9382 (NOT CONSIDERED TO BE THAT ì ITEM). ECHO SOUNDER DEVELOPMENT DESCRIBED BOTTOM FEATURE 100 ì METERS LONG LYING WITHIN THE NORFOLK REACH CHANNEL. USACE (CHRIS ì ROWLEY, TEL. 804-441-7482) STATED FEATURE MAY BE THE REMAINS OF ì AN OLD DEGAUSSING INSTALLATION. EVALUATOR RECOMMENDS CHARTING A ì 52 OBSTR IN LAT. 36-57-50.89N, LONG. 76-20-05.16W. (ENT 7/9/96, ì SJV)
9825	OBSTRUCTION	12254	D	067	19	HISTORY FE410SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. ECHO SOUNDER ì LD OF 6 METERS FEET) IN 6-8 METERS IN LAT. 36-57-16.627N, ì LONG. 76-09-35.608W. EVALUATOR RECOMMENDS CHARTIN A 19 OBSTR AS ì SURVEYRD. (ENT 7/12/96, SJV)
9826	OBSTRUCTION	12254	D	067	19	HISTORY FE410SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. ECHO SOUNDER ì LD OF 5.8 METER (19 FEET). IN 7.2 METERS IN LAT. 36-57-31.041N, ì LONG. 76-09-16.181W. EVALUATOR RECOMMENDS CHARTING A 19 OBSTR AS ì SURVEYED. (ENT 7/12/96, SJV)
9827	OBSTRUCTION	12254	D	067	20	HISTORY FE410SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. ECHO SOUNDER ì LD OF 6.2 METER (20 FEET) IN 7.3 METERS IN LAT. 36-57-32.793N, ì LONG. 76-08-50.147W. EVALUATOR RECOMMENDS CHARTING A 20 OBSTR AS ì SURVEYED. (ENT 7/12/96, SJV)

9828	OBSTRUCTION	12254	E	0067	18	HISTORY FE410SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. ECHO SOUNDER Ì LD OF 5.5 METER: (18 FEET) IN 7.2 METERS IN LAT. 36-57-26.500N, Ì LONG. 76-09-00.487W. EVALUATOR RECOMMENDS CHARTING AN 18 OBSTR AS Ì SURVEYED. (ENT 7/12/96, SJV)
9837	OBSTRUCTION	12254	E	0067	0	HISTORY LNM47/94-- ADD DANGEROUS SUBM OBSTN IN APPROX. LAT. 36-57-26.20N, LONG. 76-03-05.70W (ENT 11/20/96, SJV) F00439/98-- S-E900-RU; 200% SIDE SCAN SONAR SEARCH NEGATIVE, EVALUATOR RECOMENDS DELETING. (UP 8/16/99, SJV)
50005	ACTIVE	0	M	0999	0	SURVEY REQUIREMENTS INFORMATION
10595	OBSTRUCTION	12254	E	067	39	HISTORY F00450/99-- OPR-E350-RU; UNCHARTED OBSTRUCTION NOTED DURING OFFICE PROCESSING. L OF 39 FEET (11.9 METERS) IN LAT. 36-58-13.56N, LONG. 76-06-26.76W. EVALUATOR RECOMMENDS CHARTING A 39 OBSTN AS SURVEYED. (ENT 4/27/00, SJV)
10596	OBSTRUCTION	12254	E	067	39	HISTORY F00450/99-- OPR-E350-RU; UNCHARTED OBSTRUCTION LOCATED DURING OFFICE PROCESSING LD DEPTH OF 39 FEET (11.9 METERS) LOCATED IN LAT. 36-58-10.74N, LONG. 76-06-17.35W. EVALUATOR RECOMMENDS CHARTING A 39 OBSTN AS SURVEYED. (ENT 4/27/00, SJV)
10791	OBSTRUCTION	12208	D			
10794	UNKNOWN	12208	D	0100	37	HISTORY H10952/00-- OPR-E350-RU; UNCHARTED SUBMERGED WRECK FOUND BY SIDE SCAN SONAR. DIVERS OBTAINED A LD OF 37 FEET IN LAT. 36-58-52.4N, LONG. 75-59-37.7W. DESRIBED AS A 30-35-METE WOODEN WRECK WITH THE FRAME AND TWO RAILS COVERED WITH SOFT CORALS. THESE FEATURES STAND 1-2 FEET ABOVE A SANDY BOTTOM. THE EVALUATOR RECOMMENDS CAHRTING A 37WK AS SURVEYED. (ENT 11/7/00, SJV)
11285	UNKNOWN	12222	E	100	37	HISTORY H10952/00--OPR-E350-RU; DANGEROUS SUBMERGED WRECK LOCATED BY SIDE SCAN SONAR LD (PNEUMATIC DEPTH GAUGE) OF 37 FEET OBTAINED IN LAT. 36-58-52.40N, LONG. 75-59-37.70W. DIVER: DESCRIBE A 30-35 METER WOODEN WRECK. FRAME AND TWO RAILS COVERED WITH SOFT CORALS STAND 1-2 FEET ABOVE THE SANDY BOTTOM. EVALUATOR RECOMMENDS CHARTING A 37WK AS SURVEYED. (ENT 02/02, PSH)
11396	OBSTRUCTION	12208	D	067	34	HISTORY H11027/02-- OPR-D324-WH; CONTACT IDENTIFIED DURING MAINSCHEME SIDE SCAN OPS AND DEVELOPED BY SWMB. LD OF 10.35 METERS (34 FEET) IN LAT. 36-55-31.58N, LONG. 75-50-09.44W. SURROUNDING DEPTHS OF APPROX. 11.3 METERS (37 FEET). EVALUATOR RECOMMENDS CHARTING A : OBSTN AS SURVEYED. (ENT 2/25/02, SJV)
11397	OBSTRUCTION	12222	E	067		
11398	OBSTRUCTION	12222	E	067		
12260	OBSTRUCTION	12208	D	370	37	HISTORY H09293/72WD-- OPR-467-RU/HE; TEMPORARY HANG IN LAT. 36-54-46N, LONG. 75-57-43W. EFFECTIVE CLEARED DEPTH OF 23 FEET. NOT INVESTIGATED. H09905/80-- OPR-D103-MI/PE; 24-FOOT DEPTH OBTAINED AT ABOVE LOCATION. 23-FOOT CLEARED DEPTH BROUGHT FORWARD TO PRESENT SURVEY. CL25/84-- MEMO DATED JANUARY 10 1984 FROM DAVE PETERSON (N/CG24X5) TO JEANETTE O'CONNOR (MARINE CHART DIVISION) RE. CHARTING OF ABOVE INFORMATION. RECOMMENDS CHARTIN AN OBSTN, (23 REP 1972) AS FOUND ON H09293WD. (NOTE: REVISED TO A 37-FOOT CLEARED DEPTH IN 1990. SOURCE OF THIS REVISION NOT READILY ASCERTAINABLE). (ENT 2/25/04, SJV)
12363	OBSTRUCTION	12254	D	067	20	HISTORY F00388/94-- OPR-E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN SONAR. LD (PNEUMO) OF 6.3METERS (20 FEET) IN LAT. 36-57-48.666N, LONG. 76-10-32.694W. DIVERS DESCRIBE A 2X2X2 FOOT CONCRETE BLOCK. EVALUATOR RECOMMENDS CHARTING A 20 OBSTN AS SURVEYED. (ENT 3/24/04, SJ
12364	OBSTRUCTION	12254	D	067	22	HISTORY F00387--OPR-E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN SONAR. LD.(PNEUMO) OF 7.1 METERS (23 FEET) LOCATED IN LAT. 36-57-03.525N, LONG. 76-05-32.844W. DIVERS DESCRIBE WHAT APPEARED TO BE AN OLD DERELICT FISHING NET HUNG ON A SMALL UNIDENTIFIED OBSTRUCTION EXTENDING 3 FEET OFF THE BOTTOM. EVALUATOR RECOMMENDS CHARTING A 23 OBSTN AS SURVEYE (ENT 3/24/04, SJV)
12394	OBSTRUCTION	12222	D	067	59	HISTORY NO REGISTRY NUMBER ASSIGNED; S-E604-RU-02' HLS PROJECT REPORT; SIDE SCAN SONAR CONTACT. SWMB LD OF 59 FEET IN LAT. 36-56-10.04N, LONG. 75-57-45.36W. EVALUATOR RECOMMENDS CHARTING A 59 OBSTN AS SURVEYED. (ENT 4/2/04, SJV)
12395	OBSTRUCTION	12222	D	067	43	HISTORY NO REGISTRY NUMBER ASSIGNED; S-E604-RU-02; HLS PROJECT REPORT; SIDE SCAN SONAR CONTACT; SWMB LD OF 43 FEET IN LAT. 36-55-10.48N, LONG. 75-57-31.25W. EVALUATOR RECOMMENDS CHARTING A 43 OBSTN AS SURVEYED. (ENT 4/2/04, SJV)
12367	OBSTRUCTION	12254	D	067		
12368	OBSTRUCTION	12254	D	067		
12369	OBSTRUCTION	12254	D	067		
12370	OBSTRUCTION	12254	D	085		
12371	OBSTRUCTION	12254	D	067		
12365	OBSTRUCTION	12254	D	067	23	HISTORY F00387-- OPR-E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN SONAR. LD (PNEUMO) OF 7.0 METERS (23 FEET) LOCATED IN LAT. 36-56-47.832N, LONG. 76-05-37.241W. DIVERS DESCRIBE AN OLD DERELICT FISHING NET HUNG ON AN UNIDENTIFIED OBSTRUCTION EXTENDING 3 FEET OFF THE BOTTOM EVALUATOR RECOMMENDS CHARTING A 23 OBSTN AS SURVEYED. (ENT 3/24/04, SJV)
12366	OBSTRUCTION	12254	D	067		
12389	OBSTRUCTION	12222	D	067	44	HISTORY NO REGISTRY NUMBER ASSIGNED-- S-E604-RU-02; HLS PROJECT REPORT; SIDE SCAN SONAR CONTACT. SWMB LD OF 44 FEET IN LAT. 36-58-33.881N, LONG. 76-06-44.550W. SONAR IMAGERY DESCRIBES A BUOY AND BLOCK. EVALUATOR RECOMMENDS CHARTING A 44 OBSTN AS SURVEYED. (E 4/3/04, SJV)

BEACH NOURISHMENT – VIRGINIA BEACH, VIRGINIA
AWOIS FILES

Record #	Vessel Name	Chart #	Area	Cartocode	Depth	History
745	OBSTRUCTION	12200	D	067	41	HISTORY CL584/25--DOC. REP. OF ACCIDENT TO VESSEL; REP. SUGGESTS THAT ITS DOUBTFUL IF VESS STRUCK SUBSTANTIAL OBJECT BUT RATHER RECENT GALE STORMS MAY HAVE SHIFTED SAND INTO 50 KNOLLS AT LAST REP. POS. OF VESSEL IN LAT.36-52-00N, LONG.75-55-00W. (ENTERED, 2/2/84, MJF) H987 76WD--THE AREA WAS CLEARED TO 41FT AND DID NOT HANG ON THE WK. PER DESCRIPTIVE REP. H992 (ENTERED, 2/2/84, MJF). H9922/80--OPR-D103-MI-80; ITEM 100; A LIMITED INVEST. WAS PERFORMED ON T NON-DANGEROUS SUBM. WK. IN LAT.36-52-00N, LONG.75-55-00W WITH 100M LIINE SPACING RUN PARALLEL TO MAIN SCHEME HYDRO. NO INDICATION OF THE WK. WAS NOTED ON ECHO SOUNDER. QC INSP. RECOMMENDS DELETING NON-DANGEROUS SUBM. WK. ON CHART 12221. (ENTERED, 2/2/84, MJF) DESCRIPTION 24 GROUNDING REP. IN 1925; REF. CL584/25
779	UNKNOWN	12200	D	102		
788	UNKNOWN	12221	D	370	56	HISTORY NM21/42-- VIRGINIA BEACH, WRECK REPORTED EASTWARD IN LAT. ì 36-51-45N, LONG. 75-46-00 CHART AS WRECK WITH CURVE (NOS AID ì PROOF NO. 17, 9/18/42). LNM21/42-- ADD WK. AND DANGER CURVE (5/29/42). H.O. WRECK LIST-- DELETE WRECK AND CURVE (9/21/42). CL347/58-- ADD NON-DANGEROUS WRECK. CL864/76-- RUDE/HECK MAR (MARCH-APRIL 1976); WK. WAS ì INVESTIGATED WITH ONE MILE SEARCH RADIUS. NO INDICATION OF 1942 ì WRECKAGE (ENT 10/84, MJF). H9871/76WD-- WK. INVESTIGATED AND CLEARED TO 56 FEET IN LAT. ì 36-51-43N, LONG. 75-46-02W. (ENT 10/84, MJF) H9959/8 OPR-D103-MI/PE-81; ITEM 107; ARGO R/R CONTROL; ì DEVELOPED ON PRESENT SURVEY IN AREA OF WRECK SHOWS DEPTH TO 60 ì FEET. EVALUATOR RECOMMENDS RETAINING NON-DANGEROUS WRECK AS ì CHARTED. (ENT 10/84, MJF) D-10/83-- OPR-D670-R/H-83; 200% SSS (SEABED TEXTURE TRACE). TWO ì CONTACTS MADE IN VICINITY OF GIVEN POSITION. RECOMMENDATION IS TO ì RETAIN NON-DANGEROUS WRECK SYMBOL. THESE CONTACTS NOT CONSIDERED ì SIGNIFICANT ENOUGH TO WARRANT INVESTIGATION. (UP 1/9/90, SJV) H10341/90-- OPR-D111--WH; MAIN SCHEME HYDRO. NEGATIVE. EVALUATOR ì RECOMMENDS NO CHARTING ACTION BE TAKEN, IE. THE UNCHARTED ì NON-DANGEROUS WRECK SYMBOL SHOULD REMAIN UNCHARTED. (UP 12/24/91, ì SJV) F00355/90-- OPR-D11-HE; FOUR CONTACTS IN THE VICINITY OF THIS ITEM WERE RECOMMENDED FOR ADDITIONAL WORK IN H10341/90. TWO OF THE ITEMS WERE INVESTIGATED BY THE PRESENT SURVEY AND DEEMED INSIGNIFICANT. TWO UNCHARTED DANGEROUS SUBMERGED OBSTRUCTIONS WERE LOCATED BY THE PRESENT SURVEY. 1 METERS (60 FEET) OBTAINED IN LAT. LAT. 36-51-51.90N, LONG. 75-45-30.24W AND 18.4 METERS (60 FEET LAT. 36-51-49.17N, LONG. 75-45-30.00W. EVALUATOR RECOMMENDS NO CHANGE IN CHARTING STATUS FOR AWOIS 788. ALSO RECOMMENDS THAT THE DANGEROUS SUBMERGED OBSTRUCTIONS BE CHART AS SURVEYED. (UP 3/5/03, SJV) DESCRIPTION 24 NO.1313; LOCATED 1942; POS. ACCURACY 1-3 MILES; BROKEN-UP AND SCATTERED WRECKAGE.
796	UNKNOWN	12208	D	370	54	HISTORY NM25/14 (6/20/14) -- CHESAPEAKE BAY APPROACH - DEPTH. MASTER OF DUTCH ì STEAMER "WESTERDIJK" REPORTED HIS VESSEL DRAWING 31 FEET 8 INCHES ì TOUCHED BOTTOM IN (APPROX.) LAT. 36-53-05N, LONG. 75-47-00W. ì REFERENCE TO NM17/14 (SEE AWOIS NO. 8225). (UP 4/3/92, SJV) H98 76WD-- REP. POS. WAS CLEARED TO A DEPTH OF 54 FEET IN ì LAT. 36-53-04N, LONG. 75-47-00W. (ENT 10 84, MJF) H9959/81-- OPR-D103-MI/PE-81; PSR ITEM 106; NON-DANGEROUS SUNKEN WRECK CHARTED IN LAT. 36-53-04N, LONG. 75-47-00W DESCRIBED AS AN UNKNOWN OBSTRUCTION ORIGINATING WITH THE 1957 WRECK LIST, NUMBER 1329. ARGO R/R CONTROL; NO INDICATION ì OF WRECK. DEPTHS RECORDE ARE FROM 55-56 FEET. EVALUATOR ì RECOMMENDS RETAINING THE CHARTED NON-DANGEROUS SUBM WK. H10341/90-- OPR-D111-WH; INVESTIGATION NEGATIVE WITHIN ì INCOMPLETED SEARCH AREA. FINAL DISPOSITION WILL BE MADE IN ì DESCRIPTIVE REPORT OR THE EVALUATOR'S REPORT FOR FE-355SS(9 (UP 12/24/91, SJV) F00355/90-- OPR-D111-HE; H10341/90 RECOMMENDED TWO ITEMS FOR INVESTIGATION THESE TWO ITEMS WERE INVESTIGATED AND DEEMED INSIGNIFICANT BY THE EVALUATOR ON THE PRESENT SURVEY. HOWEVER, THE SEARCH RADIUS WAS NOT COMPLETED AND THE EVALUATOR RECOMMENDS NO CHANGE IN CHARTING STATUS. (UP3/5/03, SJV) FE412SS/95-- OPR-E696-HE; COMPLETION OF 200% SIDE SCAN SONAR OF ì NORTHERN 50% OF SEARCH RADIUS NEGATIVE. EVALUATOR RECOMMENDS ì DELETING. (UP 2/15/96, SJV) DESCRIPTION 24 NO.1329; POS. ACCURACY O MILE
800	UNKNOWN	12220	E	0098	0	HISTORY CL1406/79-SOURCE NOT REVIEWED. (MULTIPLE WRECKS POSSIBLE) SURVEY REQUIREMENTS FULL; 50-METER MINIMUM RADIUS DEVELOPMENT, DESCRIPTION OF WRECKS REQUIRED, BOTTOM DRA MAY BE DIFFICULT DUE TO CLUTTER BUT SHOULD BE USED IF POSSIBLE. AND WKS. NOT VISIBLE AT CHART DATUM.
801	UNKNOWN	12220	E	0098	0	HISTORY ———ORIGINATING SOURCE NOT DETERMINED. CL1469/75--USPS REPORTS PART OF A WK, BOILER, VISIBLE. OTHER CHARTED WRECKS IN AREA NOT VISIBLE.
802	OBSTRUCTION	12220	E	0067	0	HISTORY ———ORIGINATING SOURCE NOT DETERMINED. CHARTED AS VISIBLE PILING. CL1406/79-COOF CHARTING REPORT. PILING NOT VISIBLE, MCD REVISED TO SUBM.
803	SANTORE	12208	D	100	44	HISTORY NM25/42-- WRECK, LIGHTED BUOY ESTABLISHED; LIGHTED BUOY, R/B ì HORIZONTAL BANDS, F R, ESTABLISHED 8,390 YARDS, 58 DEG. FROM ì CHESAPEAKE BAY ENTRANCE LIGHTED WHISTLE BUOY 2CB TO MARK WRECK. ì BUOY MOORED 150 YDS., 55 DEG. FROM WRECK. APPROX. POSITION OF ì BUO 36-54-00N, 75-46-30W. NM28/42-- ON JULY 8, 1942, CHESAPEAKE WRECK LIGHTED BUOY ì REPLACED BY LIGHTED BELL BUOY, NO OTHER CHANGE. NM41/43-- BUOY DISCONTINUED; LD OF 40 FEET OVER WREC FE77/49WD (FE NO. 3, 1949)-- HUNG WRECK AT 39 FEET, CLEARED AT ì 37 FEET. CL1579/48-- TO DIRECTO USC&GS, FROM C.O., PARKER, BOWEN, AND ì STIRNI; RE. WRECK SANTORE; LOCATED IN LAT. 36-53.85N LONG. ì 75-46.92W. GOOD SONAR CONTACT MADE ON WRECK. HUNG AT 40 FEET, ì CLEARED AT 38 FEE (PREDICTED TIDES). LETTER FROM DIRECTOR, ì USC&GS, TO C.O. PARKER, BOWEN, AND STIRNI, NOTES LATEST POSITION ì .5 NM DIFFERENT FROM PREVIOUSLY REPORTED GP. WRECK REPORTED ì CLEARE BY WIRE DRAG SET TO 42 FEET IN SEPT., 1943 BY USCGC ì GENTIAN. H9871WD/76-- OPR-515-RU/HE; WRECK OF THE SANTORE CLEARED TO 41 ì FEET IN ONE DIRECTION; DID NOT HANG. Q.C. REPORT RECOMMENDS ì CHARTING A 41 FOOT CLEARED DEPTH AT WRECK'S CHARTED POSITION. ì FURTHER WORK CONSIDERED IMPRACTICAL BY Q.C. REPORT. (UP 7/20/92, ì SJV) FE412SS/95-- OPR-E696-HE; WRE LOCATED BY SIDE SCAN SONAR. ì DIVER LD OF 13.4 METERS (44 FEET) IN LAT. 36-53-53.177N, LONG. ì 75 46-51.071W. EVALUATOR RECOMMENDS DELETING CHARTED WRECK AND ì CHARTING A 44 WK AS SURVEYED. (UP 2/15/96, SJV) DESCRIPTION 24 NO. 399; CARGO, 7117 GT; SUNK 6/17/42 BY NAVY MINE, CLEARED TO 38 FEET, POSITION ACCURACY ONE MILE. 27 NO. 274; CARGO, 4498 NT, SUNK 6/17/42. BUC DICCONTINUED. LD OF 40 FEET.
						HISTORY NM44/20-- CHESAPEAKE BAY APPROACHES-WRECK-LIGHT BUOY ESTABLISHED- ON OCTOBEF 15, 1920 A LIGHT BUOY, HORIZONTALLY STRIPED, WAS ESTABLISHED ABOUT 2.5 MILES, 129 DEGS. FRO CAPE HENRY LIGHTHOUSE IN 4 FATHOMS OF WATER TO MARK THE WRECK OF THE SUNKEN SCHOONE

804	THOMAS F. POLLARD	12221	D		0	"T.F. POLLARD. THE LIGHT BUOY WHICH IS CONICAL WITH A SKELETON SUPERSTRUCTURE SHOWING A OCCULTING RED LIGHT EVERY 10 SEC - LIGHT 5 SEC, ECLIPSE 5 SEC - OF 5 CANDLE POWER 11 FEET ABOVE THE WATER, IS MOORED ON THE BEARINGS: VIRGINIA BEACH, TANK 196 DEG. 30 MIN.; CAPE HENRY LIGHTHOUSE 309 DEG. THE WRECK LIES 100 YARDS, 241 DEG. FROM THE LIGHT BUOY WITH 5 FEET OF WATER OVER IT AT LOW TIDE. (REF. NM43 (1370) BUREAU OF LIGHTHOUSES, 1920). NM1/21-- CHESAPEAKE BAY APPROACHES-WRECK NO LONGER A MENACE-LIGHT BUOY WITHDRAWN- ON DECEMBER 11, 1920, THE LIGHT BUOY MOORED TO MARK THE WRECK OF THE SCHOONER "THOMAS F. POLLARD" WAS WITHDRAWN, THE WRECK BEING NO LONGER A MENACE TO NAVIGATION. CL347/58-- FROM CHIEF, USC&GS CHART DIVISION TO "ALL CARTOGRAPHERS"; SUBJECT: NONDANGEROUS WRECKS, CHARTING OF; DATED MAY,8 1958; CHART ALL KNOWN WRECKS (DANGEROUS AS WELL AS THOSE CONSIDERED NON-DANGEROUS) OUT TO THE 300-FATHOM CURVE. (NOTE: THESE WRECKS ORIGINATED WITH THE NAVY WRECK LIST (24) BELOW). H09293WD/72-- OPR-467-RH-72; ITEM #16. ("T.F. POLLARD") WIRE DRAG INVESTIGATION NEGATIVE FOR WRECK. HOWEVER, A "METAL CLUMP" WAS HUNG IN LAT. 36-54-22N, LONG. 75-57-47W. COVERED WITH TRAWLER NETS (NOTE ON "A&D PLOT). THE EVALUATOR RECOMMENDS DELETING THE NON-DANGEROUS WRECK ("TF POLLARD") AND CHARTING A DANGEROUS OBSTRUCTION, CLEARED TO 24 FEET AS SURVEYED. CL24/84-- "MINUTE MEMO" DATED JANUARY 10, 1984; FROM DAVE PETERSON (N/CG24X5) TO JEANETTE O'CONNOR ("AREA 2" MCD) RE. FINDINGS OF WIRE DRAG SURVEY H9293; RECOMMENDS CHARTING "ITEM 16", ABOVE AS CLEARED TO FEET VICE 24 FEET. OF THE TWO CLEARANCE STRIPS, 20 FEET WAS THE LEAST EFFECTIVE CLEARED DEPTH. (SEE AWOIS NO. 12259 FOR NEW POSITION OF OBSTRUCTION). DESCRIPTION 24 NO.1324; SCHOONER; LAT. 36-54-00N, LONG. 55-58-00W. SUNK 1920; POSITION ACCURACY WITHIN 1 MILE. (NOTE: SPELLING IS "TF POLLAND" IN THIS SOURCE). (UP 2/19/04, SJV)
805	DR CARTER	12222	D	0999	0	HISTORY NM12/18 BARGE, LOADED W/PILING SANK IN 12 FT, 1/2 MI 343 DEG FROM CRANEY I LTHS. H76(45-48WD INVESTIGATION BY SOUNDING IN AREA W/NO SUCCESS; LOCAL COE HAS NO KNOWLEDGE OF WK, HAS DREDGED AREA; A GROUNDED DRAG WIRE WAS TOWED OVER SITE W/NO HANG, WK DELETI RECOMMENDED.
806	OBSTRUCTION	12200	D	102	0	HISTORY H9922/80--OPR-D103-MI-80; ITEM 102; A LIMITED INVEST. WAS PERFORMED ON THE NON-DANGEROUS SUBM. WK. IN LAT.36-54-09N, LONG.75-51-30W. WITH 100M LINE SP. PARALLEL TO MAIN SCHEME HYDRO. NO INDICATION OF OBSTR. WAS NOTED ON ECHO SOUNDER. QC INSP. RECOMMENDS RETAINING NON-DANGEROUS SUBM. WK. ON CHART 12221. NOTE. PRESENTLY CHARTED AS A DANGEROUS SUBMERGED WRECK (NO PA, PD). SEE AWOIS 7549. (ENTERED, 2/2/84, MJF). DESCRIPTIO 24 NO.1330; POSITION ACCURACY WITHIN 1 MILE; REPORTED THROUGH CGS SURVEY, DATED 1947 (REG NO. NOT ASCERTAINED)
807	OBSTRUCTION	12220	E	0085	0	HISTORY ———ORIGINATING SOURCE NOT DETERMINED, CHARTED AS DOLPHIN. CL1406/79-COOP. CHARTING REPORT. INVESTIGATED 9/8/79 DOL NOT VISIBLE, MCD REVISED TO SUBM. DOLPHIN
808	UNKNOWN	12200	D	100	46.3	HISTORY NM37/47-- OBSTRUCTION REPORTED, 5.7 MILES, 103 DEG. 30 MINS. ì FROM CAPE HENRY LIGHT H6976/45-47WD-- CS-326-WA/HI; ITEM NO. 3; HUNG AT 41 AND 43 ì FEET, CLEARED AT 40 FEET IN TWO DIRECTIONS IN LAT. 36-54-440(M)N, ì LONG. 75-53-760(M)W. H9922/80-- OPR-D103-MI-80; OBSTRUCTION BROUGHT FOWARD. H10340/90-- OPR-D111-WH; DANGEROUS SUNKEN WRECK LOCATED IN LAT. ì 36-54-14.31N, LONG. 75-53-28.90W. DIVER LD OF 14.1 METERS (46 ì FEET). WRECK DISPERSED OVER A 17.1 METER AREA. EVALUATOR ì RECOMMENDS CHARTING A DANGEROUS SUNKEN WRECK WITH LD OF 14. METERS (14.1 WK) WITH DANGER CURVE AS SURVEYED. DELETE CHARTED ì DANGEROUS SUBMERGEI OBSTRUCTION CLEARED 40 FEET. (UP 10/29/91, ì SJV) DESCRIPTION 24 NO. 624; WD CLEAR TO 40 FEET (SOURCE UNKNOWN); LOCATED 1931 (SOURCE UNKNOWN), REPORTED DEMOLISHED (SOURCE UNKNOWN). 177 HONM 37/47; CHARTED AS OBSTRUCTION - WD BY USC&GS, LD 40 FEET; 5.7 MILES, 103 DEG. 30 MINS. FROM CAPE HENRY LIGHT.
809	UNKNOWN	12220	E	0100	0	HISTORY ———ORIGINATING SOURCE NOT DETER. CHARTED AS VISIBLE WK. CL1400/79-COOP. CHARTII REPORT. WK. NOT VISIBLE, MCD REVISED TO SUBM.
810	UNKNOWN	12222	D	0370	5.5	HISTORY H7602/45-48WD ASSIGNED AS PSR 23, PROJ. CS-313, 9/12/44; UNIDENTIFIED HANG AT ABOVE G AT 5.5 FT, CLEARED TO 5.5 FT(ACTUAL TIDES), NO LEAST DEPTH.
811	OBSTRUCTION	12220	E	0067	0	HISTORY CL1433/67--PILING
812	OBSTRUCTION	12221	D	067		
814	UNKNOWN	12200	D	100	0	DESCRIPTION 24 NO.1328; POSITION ACCURACY WITHIN 1 MILE; REPORTED THROUGH CGS SURVEY, DATED 1914
815	FAYE	12200	D		0	DESCRIPTION 18 UNKNOWN OBST. HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN OBSERVED RATES: 9960X-27135.2MS,9960Y-41279.6MS(APPROX. 1979)
816	EIDSVOLD	12200	D	0102	0	DESCRIPTION 24 NO.3145, CARGO, 1570 GT, SUNK 4/6/18; POSITION ACCURACY 5-10 MILES 74
817	B.A.VAN BRUNT	12200	D	0102	0	DESCRIPTION 01 1926 24 NO.8833; SCHOONER, 1191 GT,SUNK 9/20/25 BY MARINE CASUALTY
818	UNKNOWN	12221	D	0999	0	DESCRIPTION 24 NO.1004; POSITION ACCURACY WITHIN 1 MILE; LOCATED 1945 (SOURCE UNK.); REPORT THROUGH H.O. CHART RECORDS, DATED 1954
819	VICKY	12200	D	****	0	DESCRIPTION 18 IN 32 FATHOMS, HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN C OBSERVED RATES: 9960X-26880.8MS,9960Y-41409.6MS(APPROX. 1979)
820	OBSTRUCTION	12208	D	0370	16	HISTORY NM DATED 5/23/50 H7028/50WD-- PBS-2150-WD; VISUAL CONTROL; OBSTRUCTION LOCATED ì IN LAT. 36-55-32.5N, LONG. 76-04-05W; HUNG AT 19 FEET; CLEARED BY ì 16 FEET; EVALUATOR RECOMMENDED CHARTING AN OBSTR WITH CLEARED ì DEPTH OF 16 FEET. H9255/71-- OPR-467-RH-71; 1:20,000-SCALE; RADIST (HYBERBOLIC, ì R/R); OBSTRUCTION NOT FOUND; CLEARED IN ONE DIRECTION 1 23 FEET ì BUT WITH INSUFFICIENT OVERLAP FOR A VALID CLEARANCE; EVALUATOR ì RECOMMENDED RETAIN AS CHARTED. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE; ARGO (R/R), DELNORTE ì (R/A) CONTROL; ECHO SOUNDER; 45 METER LINE SPACING; OBSTRUCTION ì NOT FOUND; EVALUATOR RECOMMENDED RETAIN AS CHARTED IN LAT. ì 36-55-32.4N, LONG. 76-04-04.8W. (ENT 11/19/84, MSM) FE387SS/94-- OPR-E696-HE; 100 % SIDE SCAN SONAR COVERAGE ON 25% ì OF ITEM. TOO SHALLOW FO HECK. EVALUATOR RECOMMENDS RETAINING AS ì CHARTED AND REASSIGNING FOR ADDITIONAL WOR (UP 9/12/95, SJV) FE410SS-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
821	UNKNOWN	12221	E	0999	0	HISTORY NM DATED 8/1/16 DESCRIPTION 24 NO.1326; BARGE; SUNK 1916; POSITION ACCURACY WITHIN

						MILE
822	UNKNOWN	12254	D	370	16	HISTORY LNM1/72--A 36-FT. BARGE WITH PILE DRIVER ATTACHED HAS SUNK IN APPROX. 18 FT., IN THE VICINITY OF THE ENTRANCE TO LITTLE CREEK HARBOR; POS. DOUBTFUL. 1969 R/H INVESTIGATION 20-2- (UNPROCESSED); BOTTOM LITTERED WITH MISC. DEBRIS H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; DEL NORTE CONRTOL (R/R, R/A) ECHO SOURNDER W/50M LINE SPACING, DID NOT LOCATE WI H9255WD DID NOT LOCATE BUT CLEARED WK TO 16FT IN 19-21FT DEPTHS; RECOMMEND RETAIN SUBM DANG WK W/ED AND NOTE (CLEARED TO 16FT); NOT CONSIDERED DISPROVED BY THIS SURVEY. (ENTERED 10/15/84, MSM)
823	OBSTRUCTION	12221	D	0370	0	HISTORY CL702/47--SP. REPORT ON WIRE DRAG OF ITEM 4, WA/HI-CS 326; SEE ì H6976WD/45-47 BELOW H6976WD/45-47--CS-326-WA/HI; HUNG AT 34 FEET, CLEARED 32 FEET ì (PREDICTED TIDES), IN LAT. 36-55-1840(M)N, LONG. 75-54-440(M)W. ì CHARTED AS A 30-FOOT CLEARED DEPTH IN LAT. 36-56-00N, LONG. ì 75 54-18W. H10340/90-- OPR-D111-WH; NO SIDE SCAN SONAR CONTACTS FOUND IN ì THE AREA COMMON TO THE PRESENT SURVEY AND THE AWOIS ITEM. ì OBSTRUCTION BROUGHT FOWARD TO THE PRESENT SURVEY. EVALUATOR ì RECOMMENDS THAT A CHARTING RECOMMENDATION BE DEFERRED UNTIL ì COMPLETION OF OFFICE PROCESSING OF JUNCTIONAL SURVEY H10356/90, ì AND A FINAL DISPOSITION THE INVESTIGATED ITEM HAS BEEN MADE. ì (UP 10/29/91, SJV) H10356/90--OPR-D111-HE; LOCATED OLD STYLE ANCHOR ENCRUSTED WITH ì MARINE GROWTH APPROX. 19 METERS SOUTHWEST OF CHARTED OBSTRUCTION. ì 15 FEET LONG PROJECTING 8 FEET OFF BOTTOM. SALVAGED BY USCGC ì COWSLIP ALONG WITH A SECOND ANCHOR. EVALUATOR RECOMMENDS THE ì SUBMERGED DANGEROUS OBSTRUCTION CLEARED 30 FEET BE DELETED FROM ì THE CHART. (UP 3/5/92, SJV)) DESCRIPTION 24 NO.625; POS. ACCURACY WITHIN 1 MILE; WD CLEARED TO 30 FT.(SOURCE UNK.) LOCATED 1947; REPORTED THROUGH H.O. CHART RECORDS
824	UNKNOWN	12221	D	370	0	HISTORY CL702/47--SP. REPORT ON WIRE DRAG OF ITEM 4, WA/HI-CS 326; SEE ì H6976WD/45-47 BELOW H6976WD/45-47--CS-326-WA-HI; HUNG AT 32 FEET, CLEARED AT 30 ì FEET (PREDICTED TIDES), IN LAT. 36-56-120(M)N, LONG. ì 75-53-1455(M)W. CHARTED AS A 30-FOOT CLEARED DEPTH IN LAT. ì 36-56-05N, LONG 75-54-00W. H10340/90-- OPR-D111-WH; NO SIDE SCAN SONAR CONTACTS FOUND IN ì THE AREA COMMON TO THE PRESENT SURVEY AND THE AWOIS ITEM. ì OBSTRUCTION BROUGHT FORWARD TO THE PRESEN SURVEY. EVALUATOR ì RECOMMNENDS THAT A CHARTING RECOMMENDATION BE DEFERRED UNTIL TH COMPLETION OF OFFICE PROCESSING OF JUNCTIONAL SURVEY H10356/90, ì AND A FINAL DISPOSITION OF THE ITEM HAS BEEN MADE. (UP 10/29/91, ì SJV) H10356/90-- OPR-D111-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 3/5/92, SJV) DESCRIPTIO 24 NO.626; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 30 FT. (SOURCE UNK.); LOCATED 1947 (SOURCE UNK.); REPORTED THROUGH H.O. CHART RECORDS
826	UNKNOWN	12221	E	0370	26.6	HISTORY NM DATED 8/29/22. H9255/71WD-- OPR-467-RH-71; ITEM NO. 14; 1:20,000-SCALE SURVEY; ì RAYD TYPE "T" HYPERBOLIC; COVERAGE WITHIN 3-5 FEET OF BOTTOM; ì WRECK NOT LOCATED; CRITERIA FO DISPROVAL NOT MET; EVALUATOR ì RECOMMENED CHARTING AS SUBM WK, ED WITH CLEARED DEPTH TO 26 FEET. H9814/80-- OPR-D103-PE-80; ITEM NO. 87; 1:10,000-SCALE SURVEY; ì AGGO (R/R), DELNORTE (R/A), ECHO SOUNDER; 45 METER LINE SPACING; ì WRECK NOT FOUND; EVALUATOR CONCURS WITH RECOMMENDATION IN SURVEY ì H9255WD. (ENT 11/13/84, MSM) FE387SS/94-- OPR-E696-HE; 11 CONTAC FOUND WITHIN AREA OF ì SEARCH. NONE FIT THE DESCRIPTION OF THIS ITEM. EVALUATOR ì RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV) DESCRIPTION 24 NO. 1322; POSITION ACCURA WITHIN ONE MILE. (8/29/22)
827	UNKNOWN	12221	E	0100	0	HISTORY NM43/63--BUOY DISCONTINUED AT LAT.36-56-55N LONG.76-25-31W. WRECK WAS SALVAGED AN IS NOW IN 9 FT APPROX. 1,400 YDS, 200 DEG FROM FORMER CHARTED POSITION
828	OBSTRUCTION	12221	D	370	0	SURVEY REQUIREMENTS COMMENTS IF ITEM IS FOUND TO BE A SHOAL AREA, REDUCE LINE SPACING ì NEEDED TO DEVELOP. SECOND 200% WOULD THEN NOT BE REQUIRED. HISTORY CL702/47--SP. REPOR ON WIRE DRAG OF ITEM 4, WA/HI-CS 326; ì SEE H6976WD/45-47 BELOW. H6976WD/45-47--CS-326-WA/HI; HUNG AT 34 FEET, CLEARED TO 32 ì FEET (PREDICTED TIDES), IN LAT. 36-56-705(M)N, LONG. ì 75-54-255(M)W. CHARTED AS A 32-FOOT CLEARED DEPTH IN LAT. ì 36-56-24N, LONG. 75-54-24W. THIS MAY BE A SHOAL SPOT AS THE WIRE ì SLIPPED OFF PREMATURELY. H10340/90-- OPR-D111-WH; NO SIDE SCAN SONAR CONTACTS FOUND IN ì THE AREA COMMON TO THE PRESENT SURVEY AND THE AWOIS ITEM. ì OBSTRUCTION BROUGHT FORWARD TO THE PRESENT SURVEY. EVALUATOR ì RECOMMENNDS THAT A CHARTING RECOMMENDATION BE DEFERRED UNTIL THE ì COMPLETION OF OFFICE PROCESSING OF JUNCTIONAL SURVEY H10356/90 ì AND A FINAL DISPOSITION OF THE ITEM HAS BEEN MADE. (UP 10/29/91 SJV) H10356/90-- OPR-D111-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMEN DELETING FROM CHART. (UP 3/5/90, SJV) DESCRIPTION 24 NO.627; POS. ACCURACY WITHIN 1 MILE; WD CLEARED TO 32 FT. LOCATED 1947 (SOURCE REPORTED THROUGH H.O. CHART RECORDS)
829	OBSTRUCTION	12222	E	0370	13	HISTORY UNKNOWN SOURCE, CHARTED AS SUNKEN WRECK FE 1 1967 HUNG AT 16 FT, CLEARED TO 13 FT(ACTUAL TIDE), NO IDENTIFICATION OF HANG RECOMMENDED DELETE FROM CHART; PSR ITEM 4.
830	OBSTRUCTION	12221	D	370	0	HISTORY CL702/47--SP. REPORT ON WIRE DRAG OF ITEM 4, WA/HI-CS 326; SEE ì H6976WD/45-47 BELOW H6976WD/45-47--CS-326-WA/HI; HUNG AT 32.5 FEET, CLEARED 31.5 ì FEET (PREDICTED TIDES), IN LAT. 36-56-1108(M), LONG. ì 75-53-791(M)W. CHARTED AS A 30-FOOT CLEARED DEPTH IN LAT. ì 36-56-34N LONG. 7 33-36W. H10356/90 --OPR-D111-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 3/5/90, SJV) DESCRIPTION 24 NO.628; POS. ACCURACY WITI 1 MILE; WD CLEARED TO 30 FT. LOCATED 1947; REPORTED THROUGH H.O. CHART RECORDS
831	UNKNOWN	12221	D		0	HISTORY UNKNOWN SOURCE-- POSSIBLY NM DATED 10/17/39 (FROM 1957 NAVY ì WRECK LIST). H6976/4 47WD-- CS-313 & 326 - WA/HI; LOCATION OF WRECK CLEARED ì TO 34 FEET. NOT HUNG. RETAIN AS CHARTED SINCE REQUIREMENT FOR ì BOTTOM CLEARANCE AND SEARCH RADIUS NOT SATISFIED. CL34 58-- REF. NAVY WRECK LIST. SEE DESCRIPTION, BELOW. H9905/80-- OPR-D103-PE; NOT LOCATED. ADDITIONAL FIELD WORK ì RECOMMENDED (WIRE DRAG). H10343/90-- OPR-D111-WH; NOT ASSIGNED. H10356/90-- OPR-D111-HE; NOT ASSIGNED. H10372/90-- OPR-D111-HE; NOT ASSIGNED. (UP 7/24/92, SJV) DESCRIPTION 24 UNKNOWN WRECK NO. 1310, FORMERLY CHARTED. NM DATED 10/17/39 (?). LAT. 36-56-45N, LONG. 75-55-00W. ACCURACY WITHIN ONE MILE.
832	UNKNOWN	12221	E	0999	0	HISTORY NM DATED 8/8/56 DESCRIPTION 24 NO.1300; SUNK 1950; LOCATED 2/21/50, POS. ACCURACY 1-3 MILES, SUBSEQUENTLY FAILED TO LOCATE
						HISTORY NM42/39-- (LIGHTHOUSE NOTICE TO MARINERS); WRECK OF BARGE ì WESTMORELAND LOCATI IN 86 FEET, ABOUT 5300 YARDS, 63 DEG. FROM ì CAPE HENRY LIGHTHOUSE; LD OF 49 FEET. CL725/45-- PROJECT CS-313, WRECK NO. 5; HILGARD & WAINWRIGHT ì HUNG WRECK AT 55 FEET. ECHO SOUNDING OF 55.5 FEET OBTAINED ON ì WRECK. POS. LAT. 36-56.75N, LONG. 75-57.60W. H10343/90-- OPR-D111-WH SIDE SCAN SONAR CONTACT IN LAT. ì 36-56-45.70N, LONG. 75-57-31.02W WITH CALCULATED HEIGHT OF 5 METERS IN 26.6 METERS. FATHOMETER DEPTH OF 22.7 METERS OBTAINED ì IN LAT. 36-56-45.83N, LONG

833	WESTMORELAND	12221	D	0370	50	73-57-29.91W. EVALUATOR RECOMMENDS ì RETAINING AS CHARTED PENDING DISPOSITION OF ITEM ON 10372/90. ì (UP 1/3/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); WRECK LOCATED IN ì LAT. 3 56-45.35N, LONG. 75-57-29.96W. FATHOMETER DEPTH OF 68 ì FEET. EVALUATOR RECOMMENDS CHARTII AS SURVEYED. (UP 4/20/92, ì SJV) DESCRIPTION 24 NO.421; BARGE; SUNK BY MARINE CASUALTY; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 50 FT. (SOURCE UNK.); POS.36-56-48N, 75-57-36W NO.605; WRECK IS IN 86 FT OF WATER WITH A LEAST DEPTH OF 49 FT.
834	UNKNOWN	12254	D	100	0	HISTORY LNM22/80--A 15-FT OUTBOARD HAS SUNK IN APPROX. POS. ABOVE
835	UNKNOWN	12208	E	0100	56	SURVEY REQUIREMENT COMMENTS INVESTIGATION MAY BE CONSTRAINED BY VESSEL TRAFFIC. SURV AT ì COMMANDING OFFICER'S DISCRETION HISTORY NM31/44(2883)-- EXAMINATION VESSEL SUNK AT POSITION 36-57N, ì 76-01-20W. NM36/44(3376)-- WRECK DISPERSED TO A 45-FOOT DEPTH. H7028/45-50WD CS 326; CLEARED TO 49 FEET WITHOUT HANG, ì CONSIDERED DISPROVED. CL347/58-- NO. 1308, H.O. WRECK LIST; WRECK SUNK 1944 AT POS. ì 36-57N, 76-01-18W, SUBS. REPORTED SILTED OVER. H9901/8(OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO R/R ì CONTROL; ECHO SOUNDER; THREE SMALL SCOU ON FATHOGRAM WHICH MAY ì OR MAY NOT BE THE REMAINS OF WRECK. NOT DEFINITE ENOUGH TO SAFELY ì SAY FOR SURE. 62-65-FOOT SURVEY DEPTHS. H10343/90-- OPR-D111-WH; WRECK LOCATED B SIDE SCAN SONAR IN ì LAT. 36-56-58.97N, LONG. 76-01-20.87W APPROX. 25 METERS EAST OF ì NAVIGATI(BUOY "ITS". DEPTH OF 16.8 METERS IN 19.2 METERS. RADIO ì MEMO TO 5CGD ON 6/6/90. HYDROGRAPH RECOMMENDS DIVER ì INVESTIGATION AND LD TO FULLY RESOLVE ITEM. H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); FATHOMETER DEPTH ì OF 17.2 METERS OBTAINED. WRECK BROUGHT FORWAR SINCE DEPTH FROM ì H-10343/90 IS SHOALER (16.8 METERS). EVALUATOR RECOMMENDS ì CHARTING WRECK WITH A DEPTH OF 16.8 METERS (55 FEET) AS SHOWN ON ì THE PRESENT SURVEY (UP 4/20/92, SJV) FE412SS/95-- OPR-E696-HE; WRECK LOCATED BY SIDE SCAN SONAR. ì DIVER LD OF 17.1 METERS (FEET) IN LAT. 36-56-58.755N, LONG. ì 76-01-20.203W. DIVERS DESCRIBE A PARTIALLY DECOMPOSED WRECK. ì EVALUATOR RECOMMENDS DELETING THE CHARTED WRECK AND CHARTING A 56 ì WK AS SURVEYED. (UP 2/15/95, SJV) DESCRIPTION 24 NO. 1308; SUNK 1944; REPORTED SILTED OVER; POSITIOI ACCURACY WITHIN ONE MILE.
837	UNKNOWN	12221	E	0999	0	HISTORY NM DATED 4/30/44 DESCRIPTION 24 NO.1309; SUNK 3/00/44; POSITION ACCURACY WITHIN 1 MIL SUBSEQUENTLY FAILED TO LOCATE
838	UNKNOWN	12254	D	0100	36	HISTORY NM33/70-- UNDESCRIBED WRECK IN LAT. 36-57-00N, LONG. 76-03-36W. H9255/71WD-- OPR-467-R 71; ITEM NO. 53; 1:20,000-SCALE SURVEY; ì RAYDIST TYPE "T" HYPERBOLIC COVERAGE WITHIN 3 FEET (BOTTOM; ì CRITERIA FOR DISPROVAL NOT MET; WRECK NOT LOCATED; EVALUATOR ì RECOMMENDED CHARTING SUBM WK WITH CLEARED DEPTH TO 36 FEET. H9814/80-- OPR-D103-PE-80; ITEM NO. 84; 1:10,000-SCALE SURVEY; ì ARGO (R/R); CONCURRED WITH RECOMMENDATION IN H9255WD. (ENT ì 11/9/8 MSM) FE387SS/94-- OPR-E696-HE; 6 CONTACTS FOUND WITHIN SEARCH AREA. ì NONE FIT THE DESCRIPTION OF THIS ITEM. EVALUATOR RECOMMENDS ì DELETING FROM CHART. (UP 9/12/94, SJV)
839	OBSTRUCTION	12220	D	0067	0	HISTORY NM42/50(6113)-- CHESAPEAKE ENTRANCE OBSTRUCTION LIGHTED GONG ì BUOY, R/B HOR. BANDS, INT QK FL ESTABLISHED 3950 YARDS, 28 DEG. ì FROM CAPE HENRY LIGHT TO MARK SUBMERG OBSTRUCTION WHICH LIES ì 200 FEET 300 DEG. FROM BUOY. NM30/52(3616)-- CHESAPEAKE ENTRANCE OBSTRUCTION LIGHTED GONG ì BUOY DISCONTINUED, THE OBSTRUCTION WHICH IT MARKED HAVING BEEN ì REMOVED. APPROX. POSITION LAT. 36-57-18N, LONG. 75-59-18W. ì SUPERSEDES NM42/50(6113). CL347/58-- REF. #1297 (H.O. WRECK LIST); OBSTRUCTION AT ì POSITION LAT. 36-57-18N, LONG. 75-59-18W CHART AS NON-DANGEROUS ì WRECK (LISTED AS AN OBSTRUCTION IN WRECK LIST, BELOW). NM INFO (ABOVE) STATES THAT THIS OBSTRUCTION HAS BEEN REMOVED. H9901/80-- OPR-D103-PE-80; ITEM 94; 1:10,000-SCALE SURVEY; ARGO ì R/R CONTROL; ECHO SOUNDER; 1000-METER RADIUS SEACH AT 45 METER ì LINE SPACING; NO INDICATION OF ITEM FOUND; QC REPORT STATES ì OBSTR. WAS REPORTEL REMOVED IN NM30/52; CONSIDERS REAPPLICATION ì TO CHART THRU CL347/58 TO BE IN ERROR; RECOMMENDED WRECK SYMBOL ì BE EXPUNGED FROM CHART. ALSO, 73-FOOT SOUNDING LOCATED I LAT. ì 36-57-24.80N, LONG. 75-59-33.87W DURING STAR PATTERN DEVELOPMENT ì 440 METERS NORTHWI OF CHARTED POSITION OF WRECK; REF. AWOIS ì ITEM #00892 (ENT 10/11/84 MSM). H10343/91-- OPR-D11 WH; NOT PRESENTLY CHARTED (12/30/91). ì EVALUATOR RECOMMENDS NO CHARTING ACTION BE TAKE THRU PRESENT ì SURVEY. SEVERAL SIGNIFICANT SONAR CONTACTS WILL BE ADDRESSED ON ì H-1037: 90. (UP 12/30/91, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); SEARCH NEGATIVE ì EXCEPT FO ITEM CORREPONDING TO AWOIS NO. 892. EVALUATOR ì RECOMMENDS NO CHARTING ACTION REQUIRE (UP 4/20/92, SJV) DESCRIPTION 24 NO.1297; OBSTRUCTION, PREVIOUSLY CHARTED; POSITION ACCURAC TO WITHIN ONE MILE. **** CHART 12221 IS A WRECK CHART. ACCORDING TO MARINE CHART BRANCH POLICY, UNLESS NM30/52 USED THE WORD "RAISED" IN THE REPORT OF THE OBSTRUCTION'S REMOVA THE ITEM SHOULD NOT BE DELETED FROM THE WRECK CHART.
841	OBSTRUCTION	12221	E	0999	0	HISTORY NM DATED 6/13/47 DESCRIPTION 24 NO.1303; POSITION ACCURACY WITHIN 1 MILE, UNKNOWN AUTHORITY REPORTED FAILURE TO LOCATE.
842	OBSTRUCTION	12221	E	0999	0	HISTORY H7176/47WD PROJECT CS-326, 9/30/46; HANG IN 25 FT WATER, DIVER INVESTIGATED, FOUND 3 PILES ABOUT 12 FT OFF BOTTOM; PART OF FISH TRAP EXTENDING TO SHORE.
843	UNKNOWN	12221	D	370	53	HISTORY H7028/45-50WD-- PBS-2150WD; 1:40,000-SCALE SURVEY, 53-FOOT ì CLEARED DEPTH IN APPRO. LAT. 36-57-11N, LONG. 76-00-45W. H9901/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO R/R ì CONTROL; ECHO SOUNDER; SURVEY DEPTHS IN AREA ARE 71-74 FEET; ì EVALUATOR RECOMMENDED RETAIN AS CHARTED. (ENT 10/18/84, MSM) LNM8/81-- DELETE CLEARED 53-FOOT DEPTH. DESCRPIPTION NO. 1331; WRECK IN LAT. 36-57-00N, LONG. 76-00-42W.
844	OBSTRUCTION	12221	E	0370	17	HISTORY H7176/47WD PROJECT CS-326, 9/30/46; HUNG AT 18 CLEARED AT 17; METALLIC OBJECT, GRAPPELED CL347/47 COPY OF PART OF ABOVE DR
845	UNKNOWN	12200	D	****	0	DESCRIPTION 18 BARGE; IN 27 FATHOMS, HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN C, OBSERVED RATES:9960X-26895.1MS,9960Y-41424.7MS(APPROX. 1979)
846	OBSTRUCTION	12254	D	067	14	HISTORY NM30/70--LEAST DEPTH OF 19FT AT MLW IN A RECTANGULAR SHAPED AREA 262YDS LONG AN 73 YDS WIDE ALONG EAST SIDE OF AND PARALLEL TO THE BRIDGE. H9814/80--OPR-D103-PE-80; ITEM #8 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); REP AS DEBRIS CONSISTING OF BRIDGE SECTIONS RESULTING FROM A COLLISION OF USS YANCEY W/TRESTLE AT LAT.36-57-30N, LONG.76-06-55.6W; SOUNDING SEARCH; IMPROVISED CHAIN DRAG; DIVER INVESTIGATION OBTAINING LEAST DEPTH 14FT IN LAT.36-57-32.57N, LONG.76-06-52.51W; EVALUATOR RECOMMENDS RETAINING AREA LIMITS AS CHARTED W/REVISED LEAST DEPTH OF 14FT. (ENTERED 11/8/84 MSM)
847	UNKNOWN	12248	D	0370	37	HISTORY NM13/47--WRECK OF A FISHING BOAT REPORTED SUNK AT APPROX. LAT.36-57-32N, LONG.76-2 23W. H7602/45-48WD WRECK OF OYSTER BOAT, SUNK IN COLLISION W/NEWPORT NEWS CAR FERRY

						SUBSEQUENTLY REMOVED BY COE, AREA CLEARED TO 37 FT. NM28/47--WRECK AT APPROX. LAT.36-57 37N, LONG.76-25-23W HAS BEEN REMOVED.
848	CARMINA	12222	D	0370	46	HISTORY SOURCE UNKNOWN-- REPORTED SUNK IN 1938. CL792/44-- ADVANCE SURVEY REPORT; OBSTRUCTION HUNG AT 39.5 ì FEET, CLEARED TO 37 FEET (PREDICTED) AT POS. LAT. 36-57-32.6N, ì LON 76-01-17.0W. NM9/45-- REPORTED DEMOLISHED, WD CLEARED TO 37 FEET (MLW) BY ì C&GS. H7028/45W ITEM 20; NAVY DIVERS IDENTIFY AS PILOT BOAT AND ì BLOW HOUSE OFF AFTER FIRST HANG, SUBSEQUENTLY HUNG AT 42 FEET, ì CLEAR TO 40 FEET (MLW) AT POS. LAT. 36-57-36N, LONG. 76-01-18V H9901/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO R/R ì CONTROL; ECHO SOUNDER; SURVEY DEPTHS OF 55-57 FEET IN AREA; ITEM ì NOT INVESTIGATED; EVALUATOR RECOMMENDED RETAIN AS CHARTED. (ENT ì 10/17/84, MSM) H10343/90-- OPR-D111-WH; WRECK LOCATED IN LAT. 36-57-34.63N, ì LON 76-01-16.53W, COVERED 15 METERS. EVALUATOR RECOMMENDS NO ì CHANGE IN CHARTING STATUS PENDING FINAL DISPOSITION ON ì H-10372/90. (UP 1/3/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); WRECK LOCATED IN ì LAT. 36-57-35.01N, LONG. 76-01-16.90W. DIVER LD OF 46 FEET. ì EVALUATC RECOMMENDS CHARTING AS SURVEYED. (UP 4/20/92, SJV) DESCRIPTION 24 NO.435; SUNK 7/24/44, REPORTED DEMOLISHED, WD CLEARED TO 37FT (MLW) BY CGS; POSITION ACCURACY 1 MILE. 27 NO.81 WD CLEAR TO DEPTH OF 37FT AT MLW. WK DEMOLISHED, BUOY DISC.
849	UNKNOWN	12221	E		0	HISTORY NM DATED 8/22/50 DESCRIPTION 24 NO.1185; POSITION ACCURACY WITHIN 1 MILE; REPORTED DEMOLISHED; LOCATED 1954 (SOURCE UNK.)
850	E H BLUM	12221	D	370	20	HISTORY NM19/42-- U.S.C. & G.S. LOCATED A WRECK IN 29 FEET OF WATER. FE34/42-- LOCATED AND IDENTIFIED VISIBLE WRECK OF E.H. BLUM. A ì STACK AND MAST WERE VISIBLE AT THE TIME OF THE SURVEY (MARCH 30, ì 1942). POSITION BY RANGE AND BEARING FROM CAPE HENRY LIGHTHOUSE. H69 45-47WD-- WAHI4245; 1:40,000-SCALE; VISUAL CONTROL; ITEM ì NO. 6;WRECK IN PA LAT. 36-57-36N, LON 75-57-10W. DISPERSED ì PRIOR TO 1947 SURVEY; CLEARED BY 20 FEET; HYDROGRAPHER CONSIDEREI ITEM DISPROVED. H9901/80-- OPR-D103-PE-80; 1:10,000-SCALE; ARGO (R/R) CONTROL; ì ECHO SOUNDER SURVEY DEPTHS IN AREA ARE 25-27 FEET; EVALUATOR ì RECOMMENDED RETAIN AS CHARTED. DESCRIPTION 24 NO. 1304; LOCATED 1942 (SOURCE UNKNOWN); POSITION ACCURACY WITHIN ONE MILE 36-57-33N, 75-57-21W; REPORTED THROUGH CGS SURVEY DATED 1945 27 NO. 273; NOT DESCRIBED; POSITION 36-57-33N, 75-57-21W.
851	OBSTRUCTION	12222	E	370	20	HISTORY H6976/45-47WD--WAHI4245; 1:40,000 SCALE SURVEY; VISUAL CONTROL; SUBM. OBSTR. HUNG 21FT; CLEARED BY 20FT; DRAG INDICATED SMALL OBJECTS RATHER THE SHOAL; CLOSE TO WARTIME MINE FIELD; SUSPECTED THAT OBSTR. IS A MINE ANCHOR OR LISTENING DEVICE EMBEDDED IN BOTTO LAT.36-57-30N, LONG.75-58-07W. H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; OBSTR REP IN WK LIST (ITEM #622) 26-28FT DEPTHS IN AREA; EVALUATOR RECOMMENDED RETAIN AS CHARTED. DESCRIPTION 24 NO.622; POS. ACCURACY WITHIN 1 MILE; WD CLEARED TO 20 FT.(SOURCE UNK.) REPORTED THROUGH H.O. CHART RECORDS, DATED 1949. LAT.36-57 33N, LONG.75-58-08W.
853	OBSTRUCTION	12221	E	0370	31	HISTORY NM DATED 6/13/47 DESCRIPTION 24 NO.1302; POSITION ACCURACY WITHIN 1 MILE; WD CLEARE TO 31 FT. (SOURCE UNK.)
854	OBSTRUCTION	12245	E	0370	23	HISTORY H7602/48-- CS326; OBSTRUCTION HUNG AND CLEARED AT 23 FEET. ì ASSUMED TO BE BOTTOM LAT. 36-57-34N, LONG. 76-22-22W. (UP ì 3/1/94, SJV) FE394SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/6/95, SJV)
855	WILLIAM D. SANNER	12221	E	0370	42	HISTORY H7028/45-50WD-- PBS-2150WD; 1:40,000-SCALE SURVEY; 42-FOOT ì CLEARED DEPTH IN POS. L 36-57-36N, LONG. 76-00-30W. H9871/76WD-- SWEPT IN ONE DIRECTION TO 38 FEET. H9901/80-- OPR-D103- 80; 1:10,000-SCALE SURVEY; ARGO R/R ì CONTROL; ECHO SOUNDER; SURVEY DEPTHS IN AREA ARE 61 FEET. ì EVALUATOR RECOMMENDED RETAIN AS CHARTED . (ENT 10/18/84, MSM) H10343/90--OPR-D111-V NOT PRESENTLY CHARTED (12/30/91). NO ì SIGNIFICANT SIDE SCAN SONAR CONTACTS NEAR THIS ITEM. EVALUATOR ì RECOMMENDS NO CHANGE IN CHARTING STATUS PENDING FINAL DISPOSITION ì ON H-10 90. (UP 1/3/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); LOCATION NOT ì INVESTIGATED. EVALUATOR RECOMMENDS RETAINING AS CHARTED. (UP ì 4/20/92, SJV) DESCRIPTION 01 DATED 1941 2 NO.8374; TRAWLER; 2 60 GT; SUNK 12/1/38 BY MARINE CASUALTY; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 37 FT. (SOURCE UNK.)
856	OBSTRUCTION	12254	E	0067	22	HISTORY LNM34/72--A DIESEL ENGINE HAS BEEN REPORTED LOST IN APPROX. POS. ABOVE H9910/80-- OPR-D103-MI-80; ITEM 135; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); ECHO SOUNDER V 50M LINE SPACING PLUS A STAR PATTER OVER POSITION OF OBSTR AS CHARTED IN LAT.36-57-37N, LONG.76-09-16W. NO OBSTR WAS FOUND, DURING WIRE DRAG INVESTIGATION A HANG WAS REPORTEI IN THE VICINITY; DIVERS REPORTED AN IRREGULAR SHAPED METAL OBJECT POSSIBLY THE DIESEL ENGINE, W/LEAST DEPTH OF 22FT; EVALUATOR RECOMMENDED DELETING THE CHARTED OBSTR REP AND CHART THE OBSTR IN LAT.36-57-37.16N LONG.76-09-27.28W. (ENTERED 10/16/84 MSM) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 9/96, SJV)
857	CHILORE	12254	D	100	46	HISTORY NM42/43-- AMENDED POSITION OF LIGHTED BELL BUOY APPROX. 300 YARDS, 231 DEG. FROM WRECK AT POS. LAT. 36-57-28N, LONG. 76-00-48W. NM48/44-- WD CLEAR DEPTH OF 30 FEET AT MLW. CL809/44-- ADVANCE REPORT OF A WD HANG AT 31.5 FEET CLEARED TO 30 FEET AT POSITION LAT. 36-5 38N, LONG. 76-00-39W. UNIDENTIFIED BUT THOUGHT TO BE WRECK OF THE CHILORE WHICH CHART LETTER ABOVE STATES IS CHARTED A LITTLE SOUTH. H7028/45WD-- WD CLEARED TO 37 FEET. CL540/5 CS-370, PRELIMINARY REPORT; EVIDENCE OF A WRECK WAS FOUND BY ECHO SOUNDER AT POS. LAT. 36-57-34.7N, LONG. 76-00-40.3 WITH A LD OF 43 FEET, SHORAN CONTROL. H8218/54-- WRECK INFO. FOR CL540/54 (ABOVE). NM27/54-- WRECK INFO.; PREVIOUSLY REPORTED WRECK CHARTED IN LAT. 36-57-32 LONG. 76-00-39W AND YELLOW BUOYS NO LONGER EXIST. WRECK OF THE CHILORE LOCATED AND CORRECTLY CHARTED IN LAT. 36-57-38N, LONG. 76-00-39W. CLEARED 37 FEET. H9901/80-- OPR-D103-PE- 1:10,000-SCALE SURVEY; ARGO R/R CONTROL; ECHO SOUNDER; 51-FOOT PEAK IN 60 FEET INVESTIGATED; 43-FOOT LD OBTAINED IN LAT. 36-57-35N, LONG. 76-00-40W. EVALUATOR RECOMMENDEI RETAIN AS CHARTED. (ENT 10/11/84) H10343/90-- OPR-D111-WH; SIGNIFICANT SIDE SCAN SONAR CONTA LOCATED IN LAT. 36-57-37.15N, LONG. 76-00-38.65W. CALCULATED HEIGHT OF 5 METERS ABOVE BOTTOI EVALUATOR RECOMMENDS NO CHANGE IN CHARTING STATUS PENDING FINAL DISPOSITION ON H-1037 90. (UP 1/3/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); DIVER LD OBTAINED. HOWEVER, N CONSIDERED VALID SINCE NEITHER A TIME NOR POSITION WERE PROVIDED. FATHOMETER DEPTH OF 47.6 FEET OBTAINED. SINCE THIS DEPTH IS DEEPER THAN THE HANG DEPTH FROM H-9871/76WD, EVALUATOR RECOMMENDS RETAINING AS CHARTED. FURTHER INVESTIGATION RECOMMENDED. (UP 4/ 20/92, SJV) FE412SS/95-- OPR-E696-HE; WRECK LOCATED BY SIDE SCAN SONAR. DIVER LD OF 13.8 METERS (45 FEET) IN LAT. 36-57-38.018N, LONG. 76-00-38.306W. EVALUATOR RECOMMENDS DELETING CHARTED WK CLEARED 37 FEET AND CHARTING 46 WK AS SURVEYED. (UP 2/15/96, SJV) DESCRIPTION NO.398; CARGO; 8310 GT,SUNK 7/15/42 BY SUBMARINE; POSITION ACCURACY WITHIN 1 MILE; REPORTEI

						DEMOLISHED, WD CLEARED TO 30 FT THRU NM 48/44. 27 NO.272; CARGO, 4565 NT, SUNK 7/24/42; CLEAR DEPTH OF 30 FT AT MLW
858	OBSTRUCTION	12254	E	0370	35	HISTORY H7177/47WD-- PBS-WD-2248; 1:20,000-SCALE SURVEY; SEXTANT ì CONTROL; 35-FOOT SOUNDIN 38-FOOT DEPTHS IN LAT. 36-57-38.4N, ì LONG. 76-05-09W; HUNG AT 35.5 FEET; CLEARED BY 32 FEET; EVALUATOR ì RECOMMENDED CHARTING AS A SUBM OBSTR WITH 32-FOOT CLEARANCE ì DEPTH. CL57 71-- MAR; OPR-467; ITEM 13C; OBSTRUCTION REVISED TO ì CLEARED TO 34 FEET. OBSTRUCTION NOT FOUND BUT CLEARED BY 35 FEET; ì EVALUATOR RECOMMENDED CHARTING AS A SUBM OBSTR WITH WIRE DRAG ì CLEARANCE OF 35 FEET IN LAT. 36-57-38.6N, LONG. 76-05-09.1W. H9814/80-- OPR-D103-PE-8 1:10,000-SCALE SURVEY; ARGO (R/R); ì ECHO SOUNDER; 45 METER LINE SPACING; OBSTRUCTION NOT FOUND; ì EVALUATOR CONCURRED WITH RECOMMENDATION IN H9255. (ENT 11/19/84, ì MSM) FE387SS/9 OPR-E696-HE; SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
859	UNKNOWN	12220	E	0100	0	HISTORY LNM20/73--A 12-FT OUTBOARD BOAT HAS CAPSIZED AND SUNK IN 25 FT; THE WRECK IS UNLIGHTED AND MARKED WITH A SEAT CUSHION.
860	UNKNOWN	12220	E	0100	0	HISTORY NM5/67--A 22 FOOT BOAT REPORTED SUNK IN 4 FT OF WATER
861	OBSTRUCTION	12222	E	370	20	HISTORY H6976/45-47WD--WAHI4245; 1:40,000 SCALE SURVEY; VISUAL CONTROL; SUBM OBSTR IN LAT.3(57-42N, LONG.75-57-45W; HUNG AT 20FT; CLEARED BY 20FT; DRAG INDICATED SMALL OBJECTS RATHER THAN SHOAL; CLOSE TO WARTIME MINE FIELD; SUSPECTED THAT OBSTR IS A MINE ANCHOR OR LISTENING DEVICE EMBEDDED IN THE BOTTOM. H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; OBSTR REP IN 1957 WK LIST (ITEM #1317) FALLS APPROX. 160M EAST OF HANG DEPTH; 25-26FT SURVEY DEPTHS; SURVEY RUN ON DAY W/HIGH SEAS; IRREGULAR BOTTOM; EVALUATOR RECOMMENDED RETAIN AS CHARTED. (ENTERED 10/16/84 MSM). DESCRIPTION 2 NO.1317; POSITION ACCURACY 1-3 MILES; REPORTED THROUGH CGS SURVEY, DATED 1947 (REG. NO. N ASCERTAINED) LAT.36-57-42N, LONG.75-57-40W.
862	UNKNOWN	12248	E	0098	0	HISTORY T8055/ SHOWN AS 3 HULKS T8304/42 SHOWN AS A VISIBLE WK H6812/42-43 SHOWN AS VISIBL WK, BASED ON NOTE IN SOUNDING VOLUME
863	OBSTRUCTION	12245	E	0067	0	HISTORY H7602/48WD-- CS326; HUNG AT 17 FEET IN LAT. 36-57-43.0N, LONG. ì 76-22-25.0W. CLEARED AT FEET. (UP 3/1/94, SJV) FE394SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/6/95, SJV)
864	UNKNOWN	12220	E	0999	0	HISTORY NM62/73
865	OBSTRUCTION	12222	E	0370	27	HISTORY H7602/45-48WD HANG LATER CLEARED TO 27 FT; OBSTR. ORIGINALLY HUNG THOUGHT TO HAV BEEN REMOVED BY DRAG.
866	OBSTRUCTION	12220	E	0122	0	HISTORY LNM13/72--CYLINDRICAL SHAPED OBJECT APPROX. 6 INCHES IN DIAM. MOORED TO BOTTOM
867	OBSTRUCTION	12221	D	0370	20	HISTORY NM18/42--REVIEW H6976/45-47 WD--AREA OF 20 FT SNDG CLEARED TO 20 FT (MLW): OBSTRUCTION REPORTED DISPERSED BY NAVY. DESCRIPTION 24 NO.1316; POSITION ACCURACY 1-3 MILES; REPORTED THROUGH CGS SURVEY, DATED 1947
868	OBSTRUCTION	12222	E	370	20	HISTORY H6976/45-47WD--WAHI4245; 1:40,000 SCALE SURVEY; VISUAL CONTROL; SUBM OBSTR IN LAT.3(57-52N, LONG.75-57-36W; HUNG AT 20FT; CLEARED BY 20FT; DRAG INDICATED SMALL OBJECTS RATHER THAN A SHOAL; CLOSE TO WARTIME MINE FIELD; SUSPECTED THAT OBSTR IS A MINE ANCHOR OR LISTENING DEVICE EMBEDDED IN THE BOTTOM. H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; OBSTR REP IN 1957 WK LIST (ITEM #629); 26-27FT SURVEY DEPTHS; SURVEY RUN ON A DAY W/HIGH SEAS; IRREGULAR BOTTOM; EVALUATOR RECOMMENDED RETAIN AS CHARTED. (ENTERED 10/16/84 MSM). DESCRIPTION 24 NO.629; POS. ACCURACY WITHIN 1 MIL WD CLEARED TO 20 FT.(SOURCE UNK.) LOCATED 1947 (SOURCE UNK); REPORTED THROUGH H.O. CHAR RECORDS. POS. LAT.36-57-54N, LONG.75-57-30W.
869	UNKNOWN	12245	E	0370	48	HISTORY NM23/47-- JAMES RIVER-WRECK; WRECK OF AN OYSTER BOAT WITH 46 ì FEET OVER IT LOCAT 1,190 YARDS, 290 DEGREES FROM NEWPORT NEWS ì POINT PIER LIGHT. APPROX. POSITION LAT. 36-58-00N, LONG. ì 76-26-05W. FE205WD/67-- (OLD FE NO.1 1967); WRECK WAS FOUND IN LAT. ì 36-57-54N, LON 76-25-57.5W. HUNG AT 41 FEET. CLEARED AT 48 AND ì 47 FEET FROM OPPOSITE DIRECTIONS. 1/2 MILE RADIUS INVESTIGATED ì FROM THE CHARTED SYMBOL WITH NO OTHER MAJOR OBSTRUCTIONS LOCATE RECOMMEND CHARTING A WK CLEARED TO 48 FEET AS SURVEYED. (UP ì 1/24/95, SJV) FE408SS/95-- OF E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 3/12/96, SJV)
870	UNKNOWN	12245	E	0100	0	HISTORY NM29/70-- JAMES RIVER-WRECK REPORTED; WRECK REPORTED IN LAT. ì 36-57-55N, LONG. 76-40W. (UP 1/24/95, SJV)
871	OBSTRUCTION	12222	E	0370	30	HISTORY NM1/47--SMALL BOAT REPORTED SUNK AT APPROX. LAT.36-57-59N, LONG.76-21-39W. H7602/45-48WD CLEARED TO 30 FT; COE REPORTS WK TO BE SMALL BOAT AND HAS NO PLANS TO RAISE IT; SEE CL391/48 FOR ADVANCE SURVEY INFO.
872	OBSTRUCTION	12254	D	370	16	HISTORY SOURCE UNKNOWN H7176/47WD PROJECT CS-326, 9/30/46; SEARCH FOR WRECK WANDERER HANG AT 19 FT, CLEARED TO 16 FT(ACTUAL TIDES), DRAGGING DIFFICULT DUE TO FISH TRAPS. COE REQUESTED TO INVEST. W/DIVERS, REFUSED DUE TO LACK OF IMPORTANCE CL347/47 COPY OF PART ABOVE DR
873	UNKNOWN	12220	E	0098	0	HISTORY LNM25/74
874	UNKNOWN	12220	E	0100	0	HISTORY LNM38/73--A 14-FT OUTBOARD HAS BEEN REPORTED CAPSIZED IN APPROX. POS; IT IS MARKE WITH AN UNLIGHTED WHITE SMALL BOAT FENDER.
875	UNKNOWN	12245	E	0100	0	SURVEY REQUIREMENT COMMENTS A 200% SIDE SCAN SONAR INVESTIGATION IS REQUIRED WITHIN A Xì 800 METER RECTANGLE SURROUNDING THE CHARTED WRECK. THIS RECTANGLE ì IS ORIENTED WITH ITS LONG AXIS APPROX. NE-SW OR PARALLEL TO ì ENTRANCE REACH CHANNEL. HISTORY NM15/61--A 125FT BARGE IS REPORTED SUNK IN 22FT OF WATER ì APPROX. 900YDS 360 DEG T FROM NAVAL BASE BREAKWATER LIGHT (PLOTS ì TO APPROX. POS. LAT.36-58-16N, LONG.76-19-50W). THE BOW IS ì EXPOSE BY 2FT AT MLLW. (ENTERED 12/88 MCR) CL1484/64--CORRESPONDENCE FROM THE USS TACONIC STATE THAT ì FOLLOWING SEVERAL CLOSE OBSERVATIONS IT IS DETERMINED THAT THE ì STRANDED BARGE NO LONGER VISIBLE. LNM49/64--REPORTS WK. NOT FOUND AT CHARTED LOCATION. DESCRIPTION **** ITEM WILL BE REMOVED FROM AFFECTED CHARTS PENDING APPLICATION OF COE SURVEY OF 1991. (I

						3/1/94, SJV)
892	SNDG	12222	D	127	0	HISTORY H9901/80-- OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) ì CONTROL; ECHO SOUNDER 73-FOOT PEAK IN 82 FEET IN LAT. ì 36-57-24.80N, LONG. 75-59-33.87W; STAR PATTERN DEVELOPMENT; ì INVESTIGATION FOUND NO SHOALER SOUNDINGS; RECOMMENDED FOR FURTHER ì INVESTIGATION; AL: REF. AWOIS ITEM #839. 74 FOOT SOUNDING ì CHARTED. (ENT 10/18/84, MSM) H10343/90-- OPR-D111-WH; SIGNIFICANT CONTACT LOCATED IN LAT. ì 36-57-40.21N, LONG. 75-59-32.23W. ESTIMATED 3.7 METERS ABOVE ì BOTTOM. EVALUATOR RECOMMENDS NO CHANGE IN CHARTING STATUS PENDING ì FINAL DISPOSITION OF H-10372/90. (UP 1/28/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); FATHOMETER DEPTH ì OF 79 FEET OBTAINED ON AN OBSTRUCTION IN LAT. 36-57-26.31N, LONG. ì 75-59-32.75W BY PRESENT SURVEY. 73-FOOT SOUNDING OBTAINED ON ì PRIOR SURVEY H-10343/90, ABOVE. OBSTRUCTION LOCATED BY SIDE SCAN ì SONAR, ESTIMATED DEPTH OF 72 FEET ALSO FOUND BY PRIO SURVEY. ì EVALUATOR RECOMMENDS REVISING THE CHARTED 74-FOOT SOUNDING TO 73 ì FEET AS LOCATED ON H-10343/90. ALSO RECOMMENDS DIVER ì INVESTIGATION AND LD DETERMINATION AT OPPORTUNE TIME. (UP ì 4/20/92, SJV)
1608	STORMY	12221	D	100	0	HISTORY CL864/76-- MAR (APRIL, RU/HE); F/V STORMY (APPROX. 40 FEET ì LONG) HUNG IN LAT. 36-51-42I LONG. 75-47-04W; CLEARED TO 55 ì FEET. LNM16/76-- OYSTER BOAT STORMY LOCATED IN LAT. 36-51.82I LONG. ì 75-47.04W. LD OF 55 FEET. CL634/84-- PRELIMINARY INFO. H-9871/76WD (OPR-515); HUNG AT 53 ì FEET, NOT CLEARED, LD OF 53 FEET (BRYSON GAGE) IN LAT. 36-51-48N, ì LONG. 75-47-04W. D-10/83-- OP D670-R/H-83; 200% SSS (SEABED TEXTURE TRACE) ì UNABLE TO LOCATE ITEM. COMMAND COULD NOT F ANY LOCAL AUTHORITY ì WHO HAD KNOWLEDGE AS TO THE POSSIBLE SALVAGE OF ITEM. A COMPLET DISPROVAL SURVEY IS RECOMMENDED. (ENT 6/8/87, MCR) H9871WD/76-- LD (BRYSON GAGE) 53 FEET II LAT. 36-51.8N, LONG. ì 75-47.03W. CHARTED AS 53 WK. H9922/80-- OPR-D103-MI-80; ITEM CARRIED FORWARD. H10341/90-- OPR-D111-WH; CONTACT APPROX. 40-50 METERS NORTH OF ì LISTED POSITION ESTIMATED RISING 0.6 METERS ABOVE BOTTOM IN 18 ì METERS. EVALUATOR RECOMMENDS FINAL DISPOSITION BE MADE IN ì DESCRIPTIVE REPORT OR EVALUATOR'S REPORT OF FE-355SS(90). (UP ì 12/: 91, SJV) F00355/90-- OPR-D111-HE; SIDE SCAN SONAR CONTACT WAS INVESTIGATION BY DIVERS NEGATIVE FOR WRECK. EVALUATOR RECOMMENDS DELETING FROM CHARTS. SEE ALSO AWOIS 1143: (UP 3/5/03,SJV)
2552	OBSTRUCTION	12200	D	****	0	02552 DESCRIPTION 185 ITEM H; SIDE SCAN SONAR CONTACT, 40 X 100 FT OUTLINE IN SAND STRONGLY RESEMBLES SHIP, PROBABLY OF NATURAL ORIGIN, RAYDIST CONTROL. SURVEY REQUIREMENTS INFORMATION
2553	OBSTRUCTION	12200	D		0	DESCRIPTION 185 ITEM D; SIDE SCAN SONAR IMAGE, 35 FT L HARD CONTACT, 3 FT ABOVE BOTTOM, MA BE SMALL BOAT OR PIPE SECTION, TANK. RAYDIST HORIZONTAL CONTROL. NOTE: NOT PRESENTLY CHARTED.
2555	OBSTRUCTION	12208	D	067	0	HISTORY UNKNOWN SOURCE-- POSSIBLY NM DATED 5/16/40 (FROM 1957 NAVY ì WRECK LIST). H6976/45 47WD-- CS-313 & 326 - WA/HI; LOCATION OF OBSTRUCTION ì CLEARED TO 32 FEET. NOT HUNG. RETAIN A CHARTED SINCE REQUIREMENT ì FOR BOTTOM CLEARANCE AND SEARCH RADIUS NOT SATISFIED. CL3‹ 58-- REF. NAVY WRECK LIST. SEE DESCRIPTION, BELOW. H9905/80-- OPR-D103-PE; NOT LOCATED. ADDITIONAL WORK ì RECOMMENDED (WIRE DRAG). H10340/90-- OPR-D111-WH; NOT ASSIGNED. FE353S HE-- OPR-D111-HE; NOT ASSIGNED. FE412SS/HE-- OPR-E696-HE; 200% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV) DESCRIPTION 24 OBSTRUCTION NO. 1311, FORMERLY CHARTED. NM DATED 5/16/40 (?). LAT. 36-56-12N, LONG. 75-54-48W. ACCURACY WITHIN ONE MILE.
2561	CUMBERLAND	12245	D	****	0	DESCRIPTION **** UNKNOWN DOCUMENT; FRIGATE, UNION FORCES, SUNK 1862 BY MERRIMACK; PROTRUDES 2-3 FEET FROM MUD. NOT KNOWN IF ID VERIFIED OR ASSUMED. GP SCALED BASED ON SKETCH. WRECK IS NOT CHARTED. (UP 1/24/95, SJV)
2562	FLORIDA	12245	G	****	0	DESCRIPTION **** DOCUMENT UNKNOWN; CONFEDERATE RAIDER, SUNK 1864; PROTRUDES 2-3 FEET FROM MUD. NOT KNOWN IF ID VERIFIED ASSUMED. GP SCALED BASED ON SKETCH. WRECK IS NOT CHARTED. (UP 1/24/95, SJV)
2738	WILLIAM	12220	E	****	0	02738 HISTORY LNM5/72--TUG, SANK IN 23 FT OF WATER AT POS.36-57-18N, 76-21-22W CL1504/80--USCG; VESSEL REFLOATED ON 2/2/72 DESCRIPTION 01 TOWING VESSEL, 22 GT, 41.9 FT L, 12.4 FT W, 6.6 FT D OWNER: GREAT LAKES & DOCK CO., PO BOX 9489, NORFOLK,VA 27505 SURVEY REQUIREMENTS MISCELLANEOUS--SALVAGED
2748	UNKNOWN	12220	E	0098	0	02748 HISTORY CL1679/80--CGAUX; WRECK 20 FT L, PART SUBM AT HW. LOCALS SAY IN EXISTENCE FOF YEARS SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE. DISPROVE BY EXAMINING AN AREA OF / LEAST 100 METER RADIUS. MAY BE POSSIBLE TO DO VISUALLY AT LW. IF SHOAL DOES NOT BARE FOR THIS EXTENT THAN BOTTOM DRAG SUBM. PORTION
2797	WANDERER	12221	E	0999	0	SURVEY REQUIREMENTS NOT DETERMINED
2798	MARY HOOPER	12221	E	0999	0	SURVEY REQUIREMENTS NOT DETERMINED
2800	UNKNOWN	12221	E	0999	0	SURVEY REQUIREMENTS NOT DETERMINED
2802	OCEAN BELLE	12221	D		0	
2803	JOANNA H. CANN	12221	D		0	
2897	OBSTRUCTION	12222	E	370	20	HISTORY H6976/45-47WD--WAHI4245; 1:40,000 SCALE SURVEY; VISUAL CONTROL; SUBM OBSTR IN LAT.3(57-54N, LONG.75-57-27W; HUNG AT 20FT; CLEARED BY 20FT; DRAG INDICATED SMALL OBJECTS RATHER THAN A SHOAL; CLOSE TO WARTIME MINE FIELD; SUSPECTED THAT OBSTR IS A MINE ANCHOR OR LISTENING DEVICE EMBEDDED IN THE BOTTOM. H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; 25-28FT SURVEY DEPTHS; SURVEY RUN ON DAY W/HIGH SEAS IRREGULAR BOTTOM; EVALUATOR RECOMMENDED RETAIN AS CHARTED. (ENTERED 10/16/84 MSM)
2898	OBSTRUCTION	12222	D	370	20	HISTORY H6976/45-47WD--WAHT4245; 1:40,000 SCALE SURVEY; VISUAL CONTROL; SUBM OBSTR IN LAT.3 57-56N, LONG.75-57-31W; HUNG AT 22FT; CLEARED BY 20FT; DRAG INDICATED SMALL OBJECTS RATHER THAN A SHOAL; CLOSE TO WARTIME MINE FIELD; SUSPECTED THAT OBSTR IS A MINE ANCHOR OR LISTENING DEVICE EMBEDDED IN THE BOTTOM; H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; 26-26FT SURVEY DEPTHS; SURVEY RUN ON DAY W/HIGH SEAS IRREGULAR BOTTOM; NOT PRESENTLY CHARTED, POSSIBLY BECAUSE OF SPACE LIMITATIONS. EVALUATOR RECOMMENDED CHARTING IF SCALE PERMITS. (ENTERED 10/16/84 MSM)

2899	OBSTRUCTION	12222	E	370	20	HISTORY H6976/45-47WD--WAHI4245; 1:40,000 SCALE SURVEY; VISUAL CONTROL; SUBM OBSTR IN LAT.36 57-52N, LONG.75-58-08W; HUNG AT 21FT; CLEARED BY 20FT; DRAG INDICATED SMALL OBJECTS RATHER THAN SHOAL; CLOSE TO WARTIME MINE FIELD; SUSPECTED THAT OBSTR IS A MINE ANCHOR OR LISTENING DEVICE EMBEDDED IN THE BOTTOM. H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; 25-26FT DEPTHS; SURVEY RUN ON DAY W/HIGH SEAS; IRREGULAR BOTTOM; EVALUATOR RECOMMENDED RETAIN AS CHARTED. (ENTERED 10/15/84 MSM)
2902	OBSTRUCTION	12221	D	0067	0	HISTORY NM29/57--7/20/57; U.S. NAVY ADVISES A BUOY ESTABLISHED TO MARK ì A SUBMERGED STEEL HYDROGRAPHIC EXPERIMENTAL STRUCTURE WHICH ì EXTENDS 5 FEET ABOVE THE BOTTOM; IN 1966 NO EVIDENCE COULD BE ì FURNISHED CONCERNING THE STRUCTURE'S REMOVAL. H9901/80-- OPR-D103-PE 80; ITEM NO. 95; 1:10,000-SCALE SURVEY; ì ARGO (R/R) CONTROL; ECHO SOUNDER; 1000 METER RADIUS SEARCH AT 45 ì METER LINE SPACING; NO INDICATION OF OBSTRUCTION OR SHOALING; ì COULD NOT PERFORM A WIRE DRAG BECAUSE OF STRONG CURRENTS AND THE ì INABILITY OF LAUNCHES TO CONTROL A DRAG AT 90 FEET; EVALUATOR ì RECOMMENDED RETAIN AS CHARTED IN LAT. 36-57-21N, LONG. 75-58-12W ì AND ASSIGNING TO R/H FOR INVESTIGATION. (ENT 10/11/84, MSM) H10343/90-- OPR-D111-WH; AN OBSTRUCTION WITH AN ESTIMATED DEPTH ì OF 24.5 METERS LOCATED IN LAT. 36-57-23.99 LONG. 75-58-13.58W. ì EVALUATOR RECOMMENDS NO CHANGE IN CHARTING STATUS PENDING FINAL ì DISPOSITION OF SURVEY H-10372/90. (UP 1/28/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); EVALUATOR DOES NOT ì CONSIDER ITEM DISPROVED. HOWEVER, RECOMMENDS CHARTING THE ì FOLLOWING CONTACTS, CHART SCALE ALLOWING: OBSTRUCTION IN LAT. ì 36-57-18.93N, LONG. 75-58-26.06W, FATHOMETER DEPTH OF 28.9 ì METERS; OBSTRUCTION IN LAT. 36-57-24.07N, LONG. 75-58-13.38W FATHOMETER DEPTH OF 26.5 METERS. (UP 4/20/92, SJV)
2940	OBSTRUCTION	12221	D	067	14.5	HISTORY NM7/44--SUNKEN OBSTRUCTION REPORTED IN APPROX. POS. LAT.36-51-18.0N, ì LONG.75-50-55.0W. APPROX. 1000 YDS, 170 DEG, FROM CHESAPEAKE BAY ENTRANCE ì LIGHTED WHISTLE BUOY 2 (H6976WD/44--CS-313; ITEM NO.1; CLEARED TO AN EFFECTIVE DEPTH OF 43.5FT., ì NOT HUNG. HYDROGRAPHER RECOMMENDS EXPUNGING OBSTRUCTION REPORTED FROM CHART. NM43/45--PUBLISHES RESULTS OF SURVEY ABOVE AND DELETES OBSTRUCTION REP. ì FROM CHART. CL347/58--NAVY WRECK LIST. ADDED 43 FT CLEARED SOUNDING IN APPROX. POS. ì LAT.36-51-18.0N, LONG.75-50-55.0W. PER CAPT. LEWEY'S MEMO OF 5/8/58. WRECK ì LIST NO.1305. NM37/66--CHART CORRECTION. AD CLEARED 43 FT DEPTH IN LAT.36-51.17N, ì LONG.75-50-55W. CLEARED SOUNDING INADVERTENTLY DELETED WHEN BUOY CB WAS ì MOVED. H9871WD/76--OPR-515-RU/HE-76; ITEM NO. 2 HUNG AT 45.5 FT. LAT. ì 36-51.33N, LONG.75-51.10W. CLEARED BY 44FT. DIVERS DESC. ITEM AS HALF ì A NAV. BUOY. H992 80--OPR-C103-MI-80; ITEM NOT INVESTIGATED. HYDROGRAPHER REFERS TO ì PRIOR SURVEY (H9871WD 76) FOR CHARTING DISPOSITION. FE248/83WD--OPR-D670-RU/HE-83; DANG SUBM OBSTR IN LAT 36-51-18.7N, LONG ì 75-51-05.9 WAS NOT CLEARED, HOWEVER IT WAS HUNG IN TWO DIRECTIONS WITH A ì SHOALEST HANG DEPTH OF 45 FEET; EVALUATOR RECOMMENDS CHARTING IN ACCORDANCE WITH H9871WD BECAUSE OF THE SIGNIFICANT DISCREPANCY BETWEEN THE ì HANG DEPTH AND THE DIVERS LEAST DEPTH; ADDENDUM TO THE REPORT ì STATED THAT AFTER A REEVALUATION OF THE FIELD DAT A DECISION ì HAS BEEN MADE TO ACCEPT THE DIVER INVESTIGATION DATA AND CHART AN ì OBSTRUCTION WITH A DIVER OBTAINED LEAST DEPTH OF 47 FT. ì (UPDATED 4/85 RWD);(UPDATED 7/89 RWD) H10337/90-- OPR-D111-WH; SIDE SCAN SONAR CONTACT FOUND 56 METERS ì NORTHEAST IN LAT. 51-19.49N, LONG. 75-51-05.63W WITH AN ì ESTIMATED DEPTH OF 14.5 METERS (47 FEET). NO CHANGE IN CHARTING ì STATUS IS RECOMMENDED AT THIS TIME. CHARTING RECOMMENDATION ì DEFERRED UNTIL COMPLETION OF OFFICE PROCESSING OF SURVEY ì FE-354SS/90. (UP 11/1/91,SJV) FE354SS/90-- OPR-D111-HE; OBSTRUCTION LOCATED IN LAT. ì 36-51-19.8N, LONG. 75-51-06.0W. DIVER LL LD OF 14.5 METERS (47 ì FEET). EVALUATOR RECOMMENDS CHARTING A DANGEROUS SUBMERGED ì OBSTRUCTION WITH A DEPTH OF 14.5 METERS. DELETE WIRE DRAG CLEARED ì DEPTH OF 44 FEET. (UP 6/15/92, SJV) DESCRIPTION **** LTR.(2/17/83) FIFTH CG TO N/MO; USCGC MADRONA (TENDER) SALVAGED OLD ì BUOY WHILE INSPECTING MOORINGS OF BUOY CB (LL 156.05). SUSPECT CHARTED ì OBSTRUCTION AND SALVAGED BUOY ARE THE SAME. REQUESTS WIRE DRAG TO ì CONFIRM SUSPICION. 43 FT. CLEARED DEPTH REVISED TO 44 FT.CLEARED OBSTN IN 1985 THROUGH H-9871/76. FE-248/83WD DATA FOR THIS IT APPLIED WITH NO CORRECTION.
3080	UNKNOWN	12208	D	100	0	HISTORY LNM40/72-10/3/72 (5TH CG)--26 FT. DANGEROUS SUNKEN WRECK PA. (CHART 12221, 2ND ED.) REP. IN APPROX. POS. LAT.36-53-54N, LONG.75-58-48W. MAST POSSIBLY VISIBLE. H9905/80--OPR-D103-M PE-80; NOAA SHIP PEIRCE; LIMITED INVESTIGATION CONDUCTED 45 METER DEVELOPMENT, 1000 METER SEARCH RADIUS CENTERED ON APPROX. POS. LISTED ABOVE. SEARCH NEGATIVE. HYDROGRAPHER AND QC INSPECT. RECOMMENDED REVISION TO ED. ITEM 96.
3081	SNDG	12221	D	067	0	HISTORY CL310/40-- 30-FOOT SHOAL REPORTED BY USCG MENDOTA (LIGHTHOUSE TENDER). OBTAINED WITH LEAD LINE AND COMPASS BEARINGS, CHARTED ON CHART 12221. ì NOT TIDE CORRECTED. FE-77 (F.E. NO. 3 1949)-- NEITHER VERIFIED NOR DISPROVED. H9905/80-- OPR-D103-MI/PE-80; NOAA SHIP PEIRC NEITHER ì VERIFIED NOR DISPROVED. MAIN SCHEME HYDRO (100 METER SPACING). H10340/90-- OPR-D111-WH; SURVEY OPS. NEGATIVE. HOWEVER, CHARTED ì SHOAL FALLS BETWEEN LINES. EVALUATOR RECOMMENDS THAT DISCUSSION ì AND CHARTING RECOMMENDATION BE DEFERRED UNTIL THE COMPLETION OF ì OFFICE PROCESSING OF JUNCTIONAL SURVEY H-10356/90, AND A FINAL ì DISPOSITIO OF ITEM HAS BEEN MADE. (UP 10/29/91, SJV) H10356/90-- OPR-D111-HE; SIDE SCAN SONAR SEARCH AND ECHOSOUNDER HYDROGRAPHY NEGATIVE. EVALUATOR RECOMMENDS DELETING ì FROM CHART. (UP 5/92, SJV)
3328	UNKNOWN	12200	D	100	0	HISTORY H9922/80-OPR-D103-MI-80, ITEM 101; LAUNCH UNABLE TO INVEST. DANGEROUS SUBM. WK. IN LAT.36-50-12N, LONG.75-58-12W. WITH ECHO SOUNDER DUE TO A FISH TRAP AND SHALLOW WATER. NO INDICATION OF WK. BY LAUNCH PERSONNEL FROM VISUAL OBSERV. QC INSP. RECOMMENDS RETAININ WK. ON CHART 12221 AND REASSIGNING IT FOR FUTURE SURVEY WORK. (ENTERED, 2/2/84, MJF). DESCRIPTION 24 NO.1000; SUNK IN 1950; REP. IN 1954; POS. ACCURACY 1 MILE.
3329	UNKNOWN	12200	D	102	0	HISTORY H9871/76WD--THE AREA WAS CLEARED TO 48FT AND DID NOT HANG ON THE WK PER DESCRIPTIVE REP. H9922. (ENTERED, 2/2/84, MJF) H9922/80--OPR-D103-MI-80; ITEM 108; A LIMITED INVES WAS PERFORMED ON THE NON-DANGEROUS WK. IN LAT.36-50-24N, LONG.75-49-12W. WITH 100M LINE S PARALLEL TO MAIN SCHEME HYDRO. NO INDICATION OF THE WK. WAS NOTED ON ECHO SOUNDER. QC INSP. RECOMMENDS RETAINING NON-DANGEROUS SUBM. WK ON CHART 12221 AND ADDING "AREA CLEARED TO 48 FT" AS INDICATED ON H-9871/76WD. (UP 12/28/89, SJV) H10337/90-- OPR-D111-WH; 200% SIDE SCAN SONAR NEGATIVE WITHIN A ì 3000-METER RADIUS OF CHARTED POSITION OF ITEM. EVALUATOR ì RECOMMENDS DELETING FROM CHART. (UP 11/1/91, SJV) DESCRIPTION 24 NO.1312; UNKNOWN WK.; SUNK IN 1942; POS. ACCURACY OF 1-3 MILES
3330	OBSTRUCTION	12200	D	0067	0	HISTORY TP00691/1975-76--PIER RUINS APPEAR ON THIS SHORELINE MANUSCRIPT. (ENTERED, 2/2/84, MJF). H9922/80--OPR-D103-MI-80; 1980 SHORELINE MOVEMENT STUDY MAPS DO NOT INDICATE PIER RUI THEY WERE REVISED TO SUBM. AND CARRIED FWD. TO THIS STUDY FROM TP00691. (ENTERED, 2/2/84, MJF). SURVEY REQUIREMENTS NOT DETERMINED

3331	OBSTRUCTION	12200	D	0085	0	HISTORY TP00691/1975-77--PILE WAS LOCATED IN LAT.36-50-09N, LONG.75-58-14W. (ENTERED, 2/2/84, MJI H9922/80--OPR-D103-MI-80; THIS PILE DOES NOT APPEAR ON THE 1980 SHORELINE MOVEMENT MAPS AI WAS BROUGHT FWD. TO THIS SURVEY FROM TP00691. (ENTERED, 2/2/84, MJF). SURVEY REQUIREMENT NOT DETERMINED
3332	OBSTRUCTION	12200	D	067	0	HISTORY TP00691/1975-77--1977 FIELD EDIT REPORT; BREAKWATER IS A SUBM. SAND TRAP (ENTERED, 2/84, MJF) H9922/80--OPR-D103-MI-80; THIS FEATURE DOES NOT APPEAR ON THE 1980 SHORELINE MOVEMENT STUDY MAPS. QC INSP. RECOMMENDS CHARTING OBSTR. (ENTERED 2/2/84 MJF) SURVEY REQUIREMENTS NOT DETERMINED
3333	OBSTRUCTION	12200	D	0370	42	HISTORY H9871/76WD--A BUOY COUNTER WEIGHT HUNG AT 43FT AND WAS CLEARED BY 42FT IN LAT.36 51-39.24N, LONG.75-54-12.05W. (ENTERED, 2/2/84, MJF) H9922/80--OPR-D103-MI-80; THIS OBSTR. WAS BROUGHT FWD. FROM H9871WD TO THIS SURVEY. QC INSP. RECOMMENDS CHARTING A 42FT CLEAREI DEPTH. (ENTERED, 2/2/84 MJF).
3334	OBSTRUCTION	12200	D	370	29	HISTORY H9871/76WD--AN ANCHOR FLUKE HUNG AT 31FT AND WAS CLEARED BY 29FT IN LAT.36-52-40N, LONG.75-56-32W. (ENTERED, 2/2/84, MJF). H9922/80--OPR-D103-MI-80; THIS OBSTR. WAS CARRIED FWD. FROM H9871WD TO THIS SURVEY. QC INSP. RECOMMENDS CHARTING THIS OBST. AS A 29FT CLEARED DEPTH. (ENTERED, 2/2/84, MJF).
3335	OBSTRUCTION	12200	D	370	29	HISTORY H9871/76WD--AN ANCHOR FLUKE HUNG AT 32FT AND WAS CLEARED BY 29FT IN LAT.36-53-08N, LONG.75-56-39W. (ENTERED, 2/2/84, MJF) H9922/80--OPR-D103-MI-80; THIS OBSTR. WAS BROUGHT FWD. T THIS SURVEY FROM H9871WD. QC INSP. RECOMMENDS CHARTING OBSTR. AS A 29FT CLEARED DEPTH (ENTERED, 2/2/84, MJF)
3416	OBSTRUCTION	12221	D	067	0	HISTORY H9293WD/72--TEMPORARY HANG IN APPROX. POS. LAT. 36-53-48N, LONG. 75-56-26W. CLEAREI BY 31 FEET NOT INVESTIGATED (SEE AWOIS 03418) ITEM NO. 18. CL25/84--DAVE PETERSON (N/CG24X5) JEANNETTE O'CONNOR (N/CG221); RECOMMENDS DELETING ITEM 18 FROM ALL CHARTS. ITEM DELETEI AS DISPROVED. DESCRIPTION 24 NO. 1333; POS. ACCURACY 1 NM; REPORTED FROM AN UNIDENTIFIED USC&GS SURVEY IN 1947; FIRST CHARTED AS A NON-DANGEROUS SUBMERGED WRECK IN 1958.
3417	OBSTRUCTION	12221	D		0	HISTORY CL347/58-- FROM CHIEF, USC&GS CHART DIVISION TO ALL CARTOGRAPHERS DATED MAY 8, 19 CHART ALL KNOWN WRECKS (NONDANGEROUS AS WELL AS THOSE CONSIDERED DANGEROUS TO NAVIGATION) OUT TO THE 300 FATHOM CURVE. NOTE: THE SOURCE IS THE NAVY WRECK LIST, BELOW) NON-DANGEROUS WREK SYMBOL WAS SUBSEQUENTLY CHARTED IN LAT. 36-53-28N, LONG. 75-56-54W (NOTE: NAVY WRECK LIST REFERS TO THIS ITEM AS AN OBSTRUCTION). H9293WD/72-- OPR-467-RH-72; ITEM #17; TEMPORARY HANG IN APPROX. POS. LAT. 36-53-48N, LONG. 75-56-26W. CLEARED 31 FEET, NO INVESTIGATED (SEE AWOIS NO 03418). ITEM ON. 17 CL25/84--DAVE PETERSON (N/CG24X5) TO JEANNETT O'CONNOR (N/CG221); RECOMMENDS DELETING ITEM 17 FROM ALL CHARTS. ITEM DELETED AS DISPROVED. DESCRIPTION 24 NO. 1334; OBSTRUCTION, POS. ACCURACY 1 NM; REPORTED FROM UNIDENTIFIED USC&GS RECORDS (1947); FIRST CHARTED AS A NON-DANGGEROUS SUBMERGED WREC IN 1958.
3418	OBSTRUCTION	12221	D	067	0	HISTORY H9293/72--OPR-467-R/H-72; TEMPORARY HANG NOT INVESTIGATED IN APPROX. POSITION LAT. 3 53-48N, LONG. 75-56-26W. CHARTED AS OBSTR PA (31 FT REP 1972) CL25/84--DAVE PETERSON (SPECIAL ASSISTANT FOR FIELD OPERATIONS, N/CG24X5) TO JEANNETTE O'CONNOR (N/CG221); RECOMMENDS CHARTING TEMP. HANG AS OBSTR PA (31 FT REP 1972). (SEE AWOIS NO. 03416 AND 03417) DESCRIPTIO *** TELECON, 1/30/86, M. HICKSON (MOA2321) AND S. VERRY (N/CG241); RE. TEMPORARY HANG (ABOVE CHARTNG RECOMMENDATION; OBSTR PA (CLEARED 31 FT 1972).
3419	SALTY SEA II	12200	D	100	45	HISTORY LNM42/72--10/17/72; 105 FT CLAM BOAT, SALTY SEA, HAS SUNK IN 60 ì FT OF WATER APPROXIMATELY 4 MILES SSE OF CHESAPEAKE LIGHT AT LAT ì 36-50.5N, LONG 75-41W; MARKED BY 2 STROBE LIGHTS; ATTACHMENT, ì DATED 10/17/72, SPECIAL INVESTIGATION BY LAUNCH FROM AMC; ì POSITION CORRECTED TO LAT 36-49-45N, LONG 75-41-26W. LNM43/72--10/24/72; SALTESEA II (DIFFERENT SPELLING) LOCATED AT ì LAT 36-49-57N, LONG 75-41-24W, APPROXIMATELY 4.5 MILES, 166 ì DEGREES TRUE FROM CHESAPEAKE LIGHT; WRECKAGE PROJECTS AT LEAST15 ì FT ABOVE BOTTOM; MARKED B LIGHTED BUOY 100 YARDS SOUTH OF ì WRECK. LNM49/72--12/5/72; WRECK POSITION DETERMINED TO E 36-49-45.5N, ì LONG 75-41-25.9W; LEAST DEPTH OF 46 FT. LNM45/74--BUOY DISCONTINUED. (ENTERED MS 3/91) CL172/72--FERREL DIVERS REP. (10/26/72); WK BELIEVED TO BE F/V SALTY SEA II ì WAS LOCATED LAT.36-49-45N, LONG.75-41-26W. A LD OF 48FT WAS OBTAINED BY ì DIVERS USING LEADLINE. WK FOUNI LYING ON ITS SIDE WITH STERN SEC., CONTAINING ì PILOT HOUSE, BEING SHEARED OFF 15FT AFT OF MAIN MAST AND COULD NOT BE LOCATED ì (ENTERED 10/84 MJF). CL1729/72--LAUNCH 1257 SPEC. INVES WK BELIEVED TO BE SALTY SEA II WAS ì LOCATED IN 58FT DEPTHS IN LAT.36-49-45.5N LONG.75-41-25.9\ WRECKAGE PROJECTS ì 15FT ABOVE BOTTOM; REDUCED LEAST DEPTH OF 46 FT; CHARTED AS 46 WK. (ENTERED 10/84 MJF) CL209/75--RUDE/HECK INVEST. OF SALTY SEA II; FIRST DRAG HUNG WITH EFFECTI ì DEPTH OF 53FT IN LAT.36-49.70N, LONG.75-41.38W. OTHER TWO DRAGS RUN FROM ì OPPOSITE DIRECTION HUNG AT 47.5 AND 45.5 FT RESPECTIVELY IN LAT.36-49.75N, ì LONG.75-41.44W. HYDROGRAPHER STATES THESE LAST TWO DRAGS WERE ì UNRELIABLE DUE TO ROUGH SEAS; PRESENTLY CHARTED AS DANG. SUBM WK WITH LABEL ì (LESS THAN 45FT REP 1975). H9959/81--OPR-D103-MI/PE-81; ITEM 109; ARGO R/R CONTROL; PRESENT SURVEY ì LOCATED THIS WK. BY ECHO SOUNDER AND OBTAINED A DIVER LD OF 45FT IN ì LAT.36-49-44.7N, LONG.75-41-25.1W. ECHO SOUNDER AND DIVER INVEST. INDICATE ì WK. IS BROKEN-UP AND SCATTERED. (ENTERED 10/84 MJF) DESCRIPTIOI 01 REG. NO.260540; 117 GT; LENGTH 107FT; BEAM 18.2FT; DRAFT 9.1FT; WOOD ì CONSTR.; SUNK 10/15/7: LAST REC. OWNER-EAST COAST TRAWLING AND DOCK CO.; ì BOX 205, LEESBURG, N.J. 08327.
3420	UNKNOWN	12200	D	100	54	HISTORY H9959/81--OPR-D103-MI/PE-81; ARGO R/R CONTROL; 55FT SHOAL SNDG. OBTAINED BY ECHO SOUNDER DURING ROUTINE MAINSCHEME HYDRO. FURTHER INVEST., CONDUCTED VIA 10M ECHO SOUNDER LINE SP. AND BY DIVERS, PROVIDED RESULTS THAT REVEALED A BARGE LYING ON ITS SIDE LAT.36-55-04.58N, LONG.75-43-42.50W. THE LD OBTAINED BY LEADLINE AND DIVERS DEPTH GAGE IS 54F EVALUATOR RECOMMENDS CHARTING A 54 WK AT THE POS. LISTED ABOVE. (ENTERED 10/84 MJF)
3685	OBSTRUCTION	12254	D	0370	15	03685 HISTORY FE233WD/69--DEBRIS W/150FT OF WIRE CABLE RECOVERED; HUNG AT 16FT; CLEARED / 15FT IN LAT.36-55-52.6N, LONG.76-09-35.6W. H9910/80--OPR-D103-MI-80; ITEM 132; 1:10,000 SCALE SURVE DEL NORTE CONTROL (R/R, R/A); ECHO SOUNDER W/50M LINE SPACING; EVALUATOR RECOMMENDS COMBINING WITH CONCRETE CLUMP AND MUSHROOM ANCHOR FOUND WITHIN 130M OF HANG AND CHART AS ONE FEATURE: OBSTRS W/WIRE DRAG CLEARANCE OF 15FT IN LAT.36-55-53N, LONG.76-09-35W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS LIMITED NOT ASSIGNED
3686	OBSTRUCTION	12254	D	0370	15	03686 HISTORY H9255WD/71-72--MUSHROOM ANCHOR; HUNG AT 18FT WITH 18FT LEAST DEPTH; EXTEND 4FT OFF THE BOTTOM IN LAT.36-55-52.8N, LONG.76-09-34.6W. H9910/80--OPR-D103-MI-80; ITEM 132; 1:10,0(SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); ECHO SOUNDER W/50M LINE SPACING; EVALUATOR RECOMMENDS COMBINING W/DEBRIS (APPROX. 30M W) AND CONCRETE CLUMP (APPROX. 10M NE OF

						DEBRIS) AND CHART AS ONE FEATURE: OBSTRS W/WIRE DRAG CLEARANCE OF 15FT IN LAT.36-55-53N, LONG.76-09-35W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS LIMITED NOT ASSIGNED
3687	OBSTRUCTION	12254	D	0067	0	03687 HISTORY H7089/46--SUBM DOLPHIN; US ARMY TIDE GAGE IN LAT.36-55-40.5N, LONG.76-07-18W H99 80--OPR-D103-MI-80, 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); ECHO SOUNDER NORTH SOUTH W/20M LINE SPACING; NOT ON FATHOGRAMS; NOT SEEN BY LAUNCH PERSONNEL; EVALUATOR RECOMMENDS REVISING TO SUBM DOLPHIN ED ON CHART. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS LIMITED NOT ASSIGNED: INCOMPLETE
3689	OBSTRUCTION	12254	D	0370	15	03689 HISTORY H9910/80--OPR-D103-MI-80; ITEM 132: ; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R R/A); ECHO SOUNDER W/50M LINE SPACING; 3X3 FT CONCRETE BLOCK CHARTED THRU CL1028/70 IN LAT.36-55-48N, LONG.76-09-32.5W; CLEARED TO 15FT IN FE233WD/69; CONCRETE CLUMP (2X4X4 FT) HUN(DURING SURVEY H9255WD/71-72 IN LAT.36-55-52.9N, LONG.76-09-35.4W AND WAS CLEARED BY 15FT; H9910/80 RECOMMENDS DELETING FIRST ITEM AS CHARTED; COMBINE SECOND ITEM WITH DEBRIS ANI MUSHROOM ANCHOR LOCATED DURING THIS SURVEY AND CHART AS SINGLE FEATURE OBSTRS WITH CLEARED DEPTH OF 15FT IN LAT.36-55-53N, LONG.76-09-35W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS LIMITED NOT ASSIGNED
3690	OBSTRUCTION	12254	E	0067	20	HISTORY H9910/80--OPR-D103-MI-80; ITEM 135; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A) 250FT 3/16 IN WIRE SWEEP W/100M SPACING AND 65%-70% OVERLAP; HANG IN LAT.36-57-39.16N, LONG.76-08-56.16W REPORTED BY DIVERS TO BE 6X6 IN WOODEN BEAM; 2FT PROJECTION ABOVE BOTTOM; LEAST DEPTH OF 20FT; EVALUATOR RECOMMENDED CHARTING THIS ITEM AS SUBM. DANG. OBSTR. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATI EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
3691	UNKNOWN	12254	D	100	0	HISTORY LNM35/72 (9/8/72); 30FT SAILBOAT GROUNDED AND BROKEN UP ON FIRST ISLAND OF CHES BA BRIDGE-TUNNEL IN PA LAT.36-58-00N, LONG.76-06-48W. CL1679/80--CGAUX; NO WRECK VISIBLE, LOCALS SAY SMALL BOAT LESS THAN 20 FT L BROKE UP ON ROCKS 4-5 YEARS AGO. VIS. WK. REVISED TO SUI WK. ED AT SAME POS. ABOVE ON CHART 12221 (7/18/81 ED). H9910/80--OPR-D103-MI-80; ITEM 81; 1:10,00 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); SNDG LINES RUN ALONG W SIDE OF BRIDGE-TUNNEL NO EVIDENCE OF WK VISUALLY OR ON FATHOGRAM; NO LOCAL KNOWLEDGE OF WK; DID NOT PERFOI INTENSIFIED SNDG SEARCH OR WIRE DRAG TO VERIFY AS PRESCRIBED IN PSR; EVALUATOR REFERS RECOMMENDATION IN DR OF JUNCTION SURVEY H9814/80. (ENTERED 10/15/84 MSM) H9814/80--OPR-D10: PE-80; ITEM #81; 1:10,000 SCALE. ARGO (R/R), DELNORTE AROUND ISLAND OR RIPRAP; EVALUATOR FEELS WK MAY HAVE BEEN TAKEN BY CURRENTS FROM RIPRAP BUT CONSIDERS SEARCH INSUFFICIE TO DISPROVE SUNKEN WK; EVALUATOR RECOMMENDED DELETING VISIBLE WK AND ADDING SUBM DANG WK PD. (ENTERED 12/4/84 MSM).
3692	OBSTRUCTION	12254	D	370	21	HISTORY CL182/70, CL1028/70--AMC-SP-5-69; 10/69; PROCESSED UNDER SURVEY REGISTRY NO. FE-233WD; SUBM DANG OBSTR; CARGO LOST DURING TRANSFER BETWEEN NAVY SHIPS; PROJECT TWO FEET ABOVE BOTTOM; BUOYED BY FIELD PARTY AND NAVY NOTIFIED; NAVY COULD NOT LOCATE AND NO FURTHER ATTEMPTS TO LOCATE WERE MADE; TEMP HUNG AT 22FT; CLEARED TO 21FT IN LAT.36-56 31.2N, LONG.76-09-58.8W. H9910/80--OPR-D103-MI-80; ITEM 134; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); ECHO SOUNDER W/50M LINE SPACING; 3FT SPIKE ON FATHOGRAM; STAR PATTER INVESTIGATION OVER SPIKE W/NO FURTHER SIGN OF OBSTR; OBSTR WAS LEAST DEPTH OF 23FT; EVALUATOR RECOMMENDS AND OBSTR CLEARED BY 21FT BE CHARTED IN LAT.39-56-31N, LONG.76-09-59W (FROM FE233WD) AND A 23FT OBSTR BE CHARTED IN LAT.36-56-29N, LONG.76-09-50 (FROM H9910). (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; NOT INVESTIGATED DUE TIME CONSTRAINTS. EVALUATOR RECOMMENDS RETAINING AS CHARTED AND REASSIGNING IN FUTURE. (UP 2/9/96, SJV)
3693	OBSTRUCTION	12254	D	067	23	HISTORY H9910/80--OPR-D103-MI-80; ITEM 134; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A) INVESTIGATING AND OBSTR IN LAT.36-56-31N, LONG.76-09-59W ORIGINATED IN FE233WD; ECHO SOUNDE W/50M LINE SPACING; 3FT SPIKE ON FATHOGRAM; STAR PATTERN INVESTIGATION OVER AREA OF SPII W/NO FURTHER SIGN OF OBSTR; OBSTR HAS LEAST DEPTH OF 23FT; EVALUATOR RECOMMENDED CHARTING 23FT OBSTR IN LAT.36-56-29N, LONG.76-09-50W. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; NOT INVESTIGATED DUE TIME CONSTRAINTS. EVALUATOR RECOMMENDS RETAINING AS CHARTED AND REASSIGNING IN FUTURE. (UP 2/9/96, SJV)
3694	OBSTRUCTION	12254	D	0085	0	03694 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); EC SOUNDER; LINE OF 53 STAKES (APPROX. 4" IN DIAM. AND 15' APART) BEGINNING INSHORE AND RUNNIN NORTH; N END IS SERIES OF STAKES IN SPIRAL SHAPE; A NET CONNECTS ALL STAKES; SNDG LINE RU ON EITHER SIDE AND N LIMIT OF FISH TRAP NORTHERNMOST POS. IS LAT.36-52-42.3N, LONG.76-07-54.1V SOUTHER LIMIT IS LAT.36-55-32.7N, LONG.76-07-59.3W; POSITION ABOVE (LAT.36-55-37.6N, LONG.76-07-56.9W IS CENTRAL PT OF FISH TRAP SCALED FROM SMOOTH SHEET; PERMANENT FIXTURE; RECOMMENDED CHARTING. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3695	OBSTRUCTION	12254	D	370	21	HISTORY FE233WD/69--AMC-SP-5-69; GROUNDING OF DRAG AT EFFECTIVE DEPTH OF 22FT IN PA LAT.36-56-10N, LONG.76-09-54W; CLEARED DEPTH OF 21FT; EVALUATOR RECOMMENDED NOT CHARTING SINCE SUBSEQUENT SURVEY H9910/80 SHOWS EVIDENCE OF SHOAL; H9910/80--OPR-D103-MI-80; 1:10,000 SCA SURVEY; DEL NORTE CONTROL (R/R, R/A) ECHO SOUNDER; SHOWS 27FT DEPTH IN THE AREA OF PREVIOUS GROUNDING; H9255/71-72 DID NOT VERIFY OF DISPROVE GROUNDING; EVALUATOR DOES NC CONCUR WITH RECOMMENDATION IN FE233WD AS BOTTOM IS CLUTTERED IN THIS AREA; RECOMMEND CHARTING AND OBSTR W/CLEARED DEPTH OF 21FT AT POS. LISTED ABOVE. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; NOT INVESTIGATED DUE TIME CONSTRAINTS. EVALUATOR RECOMMENDS RETAINING AS CHARTED AND REASSIGNING IN FUTURE. (UP 2/9/96, SJV)
3696	OBSTRUCTION	12254	D	0370	14	03696 HISTORY UNKNOWN SOURCE--3FT X 3FT CONCRETE BLOCK REPORTED CHARTED AS AN OBST IN LAT 36-55-48N, LONG 76-09-33W. FE233WD/69--AMC-SP-5-69; 1:20,000 SCALE SURVEY; CONCRETE BLOCI NOT LOCATED HOWEVER INVESTIGATED HANG IS 95 M EAST OF CHARTED POSITION; MAY HAVE HUNG ON BOTTOM; HUNG AT 15FT IN PA LAT.36-55-49N, LONG.76-09-29W. CLEARED TO 14FT. EVAL. RECOMMENDS DELETING ORIGINAL OBSTR & CHARTING SUBM OBSTR CLEARED TO 14FT IN NEW POSITION. (ENTERED MSM 6/11/85) H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A) ECHO SOUNDER, DEPTHS TO 17FT IN AREA,CONCUR W/RECOMMENDATION IN FE233WD TO CHART AN OBSTR. CLEARED TO 14FT AT POS. LISTED ABOVE. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3697	OBSTRUCTION	12254	D	370	18	HISTORY FE233WD/69--AMC-SP-5-69; 1:20,000 SCALE SURVEY; UNINVESTIGATED HANG AT 19FT IN PA LAT.36-55-51.6N, LONG.76-08-44.4W; CLEARED AT 18FT; RECOMMEND CHARTING AS SUBM DANG OBSTR W/18FT CLEARED DEPTH. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY, DEL NORTE CONTROL (R/ R/A) ECHO SOUNDER SHOWS DEPTHS TO 21FT IN AREA; EVALUATOR CONCURS WITH RECOMMENDATI(IN FE233WD TO CHART AN OBSTR CLEARED TO 18FT AT POS. LISTED ABOVE. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED

3698	OBSTRUCTION	12254	D	370	17	HISTORY FE233WD/69--AMC-SP-5-69; 1:20,000 SCALE SURVEY; OBSTR IDENTIFIED AS ROCK 4X6FT; 5.4FT ABOVE BOTTOM; HUNG AT 19FT AND CLEARED BY 19FT IN PA LAT.36-55-57N, LONG.76-09-04W; DIVER LEADLINE LEAST DEPTH OF 22FT; EVALUATOR RECOMMENDED CHARTING AS OBSTR W/CLEARED DEPT OF 19FT. QUALITY REVIEWER RECOMMENDED CHARTING 22FT OBSTR; H9255WD/71-72--CONCRETE CLU EXTENDING 6FT OFF THE BOTTOM IN LAT.36-55-56.5N, LONG.76-09-03.5W. RECOMMENDED ITEM BE CHARTED AS OBSTR W/CLEARED DEPTH OF 17FT THRU H9255WD. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY, DEL NORTE CONTROL (R/R, R/A) ECHO SOUNDER 23FT DEPTHS IN AREA. (ENTERED 10/15/84 MSM)
3699	OBSTRUCTION	12254	D	0085	0	03699 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE CHART; PIER OF GROIN; CHARTED, NOT LOCATED OF DISCUSSED BY FIELD UNIT; ORIGINAL SOURCE NOT ASCERTAINED; EVALUATOR RECOMMENDS RETAIN AS CHARTED IN LAT.36-55-48N, LONG.76-11-09W. (ENTERED 10/15/84 MSM) SURV REQUIREMENTS NOT ASSIGNED
3700	OBSTRUCTION	12254	D	0284	0	03700 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; THREE AREAS COVERING AT MLW; NOT LOCATED OR ADDRESSED BY HYDROGRAPHER. SOURCE UNASCERTAINABLE. RAN ONE LINE OF SNDGS INSIDE LIMITS PARALLEL TO REACH AND SEVERAL LINES OUTSIDE LIMITS COMING INTO BEACH EVALUATOR RECOMMENDS RETAIN AS CHARTED IN LAT.36-55-34N, LONG.76-09-48W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3701	OBSTRUCTION	12254	D	0085	0	03701 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY, PIER OR GROIN AND SHOAL AREA; NOT LOCATED OR ADDRESSED BY HYDROGRAPHER. SOURCE UNASCERTAINABLE AT TIME OF REPORT RECOMMEND ITEMS BE RETAINED AS CHARTED IN LAT.36-55-36N, LONG.76-09-36W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3702	OBSTRUCTION	12254	D	0085	0	03702 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; GRION, NOT LOCATED OR ADDRESSED BY HYDROGRAPHER; SOURCE NOTM ASCERTAINABLE AT TIME OF REPORT; RECOMMENC ITEM BY RETAINED AS CHARTED IN LAT.36-55-33.5N, LONG.76-09-27W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3703	OBSTRUCTION	12254	D	067	0	HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; UNEXPLODED DEPTH CHARGE APR. 1956. NOT LOCATED OR ADDRESSED BY HYDROGRAPHER, SOURCE NOT ASCERTAINABLE AT LONG.76-09-02.5W. (ENTERED 10/15/84 MSM)
3704	OBSTRUCTION	12254	D	0085	0	03704 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; GROIN, NOT LOCATED OR ADDRESSED BY HYDROGRAPHER; SOURCE NOT ASCERTAINABLE AT TIME OF THIS REPORT. RECOMMENDED ITEM BE RETAINED AS CHARTED IN LAT.36-55-24N, LONG.76-08-30W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3705	OBSTRUCTION	12254	D	0067	0	03705 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; GROIN OR RUINS, NOT LOCATED OR ADDRESSED BY HYDROGRAPHER; SOURCE NOT ASCERTAINABLE AT TIME OF REPORT. RECOMMENDE THAT THIS ITEM BE RETAINED AS CHARTED IN LAT.36-55-19N, LONG.76-08-12W. (ENTERED 10/15/84, MSM SURVEY REQUIREMENTS NOT ASSIGNED
3706	UNKNOWN	12254	D	0100	0	03706 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; SUNKEN DANG WK PA. SOURCE UNKNOWN. NOT INVESTIGATED OR ADDRESSED BY SURVEY. NOT CONSIDERED VERIFIED OR DISPROVED. RECOMMENDED RETAIN AS CHARTED IN LAT.36-56-54N, LONG.76-08-25W. (ENTERED 10/15/I MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3707	SNDG	12254	D	0127	23	03707 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); EC SOUNDER, 23FT SNDG FROM MISCELLANEOUS SOURCE IN LAT.36-57-53N, LONG.76-07-03W. PRESENT SURVEY DEPTHS OF 28-30FT. RECOMMENDED EVALUATE SOURCE FOR VALUE. SURVEY IS ADEQUATE SUPERSEDE A GENERAL BOTTOM SNDG AREA. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3708	SNDG	12254	D	0127	23	03708 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A) ECI SOUNDER, 23FT SNDG FROM MISCELLANEOUS SOURCE IN LAT.36-58-03N, LONG.76-06-55.5W. PRESENT SURVEY DEPTHS OF 27-32FT; RECOMMENDED EVALUATE SOURCE FOR VALUE; PRESENT SURVEY CONSIDERED ADEQUATE TO SUPERSEDE GENERAL BOTTOM SOUNDING. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3709	OBSTRUCTION	12254	D	370	20	HISTORY H9255WD/71-72--OPR-467-RH-71,72; ITEM 47; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL; STEEL POST EXTENDING 1FT OFF BOTTOM; HUNG AT 20FT (ESTIMATEC CLEARED BY 20FT IN ONE DIRECTION. RECOMMENDED CHARTING AS SUBM OBSTR W/WIRE DRAG CLEARANCE OF 20FT IN LAT.36-57-05.6N, LONG.76-11-42.8W. SURVEY DEPTHS IN AREA FROM H9910/80 ARE 20-21FT. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3710	OBSTRUCTION	12254	E	0067	18	HISTORY H9255WD/71,72--OPR-467-RH-71,72; ITEM 39; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL; LEADLINE, SECTIONS OF RAILROAD TRACK EXTENDING 4 1/2FT OFF BOTTOM. HUNG AT 19FT. 18FT LEAST DEPTH. RECOMMENDED CHARTING SUBM OBSTR W/LEAST DEPTH OF 18FT IN LAT.36-57-17.7N, LONG.76-09-46.5 DEPTHS IN AREA FROM H9910/80 ARE 23 TO 24 FT (ENTERE 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
3711	OBSTRUCTION	12254	D	370	21	HISTORY H9255WD/71,72--OPR-467-R/H-71,72; ITEM 37; 1:20,000 SCALE SURVEY. RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL. ANCHOR EXTENDING 1 1/2FT OFF BOTTOM. HUNG AT 21FT; CLEARED B 21FT. DEPTHS IN AREA FROM H9910/80 ARE 26-27FT. RECOMMENDED CHARTING AS A SUBM OBSTR W/ WIRE DRAG CLEARANCE OF 21FT IN LAT.36-56-19.1N, LONG.76-09-38.3W. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; NOT INVESTIGATED DUE TIME CONSTRAINTS. EVALUATOR RECOMMENDS RETAINING AS CHARTED AND REASSIGNING IN FUTURE. (UP 2/9/96, SJV)
3712	OBSTRUCTION	12254	D	370	15	HISTORY H9255WD/71,72--OPR-467-RH-71,72; ITEM 30; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL. UNINVESTIGATED HAND AT 18FT. CLEARED BY 15FT. DEPTHS IN AREA FROM H9910/80 ARE 21-22FT; RECOMMENDED THAT A SUBM OBSTR CLEARED TO 15FT BE CHARTED IN LAT.36-55-52.5N, LONG.76-08-36.1W. (ENTERED 10/15/84 MSM)
3713	OBSTRUCTION	12254	D	370	17	HISTORY H9255WD/71,72--OPR-467-RH-71,72; ITEM 31; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL. SCRAP METAL EXTENDING 2FT OFF BOTTOM. HUNG AT 17FT. CLEAREC BY 17FT; DEPTHS IN AREA FROM H9910/80 ARE 20-22FT. ECOMMENDED CHARTING A SUBM OBSTR W/ WIRE DRAG CLEARANCE OF 17 FT IN LAT.36-55-55N, LONG.76-08-59.3W. (ENTERED 10/15/84 MSM)

3714	OBSTRUCTION	12254	D	370	12	HISTORY H9255WD/71,72--OPR-467-RH-71,72; ITEM 33; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL. TRACTOR TREAD EXTENDING 1FT OFF BOTTOM. HUNG AT 15FT; CLEAR BY 12FT. DEPTHS IN AREA FROM H9910/80 ARE 17-18FT; RECOMMENDED CHARTING A SUBM OBSTR W/ WIRE DRAG CLEARANCE OF 12FT IN LAT.36-55-49.8N, LONG.76-09-31.4W. (ENTERED 10/15/84 MSM)
3715	OBSTRUCTION	12254	E	0370	15	03715 HISTORY H9255W/71,72--OPR-467-RH-71,72; ITEM 38; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL; UNINVESTIGATED HANG AT 15FT (ESTIMATED) CLEARED BY 15FT; DEPTHS IN AREA FROM H9910/80 ARE 17-18FT. RECOMMENDED CHARTING AND OBSTR W/WIRE DRAG CLEARANCE OF 15FT IN LAT.36-55-51.8N, LONG.76-09-45.1W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3716	OBSTRUCTION	12254	D	067	19	HISTORY H9255WD/71,72--OPR-467-RH-71,72; ITEM 34; 1:20,000 SCALE SURVEY. RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL; MUSHROOM ANCHOR EXTENDING 3FT OFF BOTTOM. HUNG AT 19FT, CLEARED BY 18FT. LEAST DEPTH OF 19FT. DEPTHS IN AREA FROM H9910/80 ARE 22-23FT. RECOMMENC CHARTING OBSTR W/LEAST DEPTH OF 19FT. IN LAT.36-55-58.5N, LONG.76-09-33.3W. (ENTERED 10/15/84 MSM)
3717	OBSTRUCTION	12254	D	067	19	HISTORY H9255WD/71-- OPR-467-RH-71,72; ITEM NO. 44; 1:20,000-SCALE ì SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL. LEADLINE, 2 ì X 2 X 2-FOOT CONCRETE BLOCK, HUNG AT 19 FEET (ESTIMATED). CLEARED ì BY18 FEET; LEAST DEPTH BY LEAD LINE OF 19 FEET; DEPTHS IN AREA ì FROM H9910/80 ARE22 FEET. RECOMMENDED CHARTING OBSTR WITH A LEAST ì DEPTH OF 19 FEET IN LAT. 36-42.9N, LONG. 76-10-39.8W. (ENT ì 10/15/84, MSM) FE388SS/94-- OPR-E696-HE; 3 OBSTRUCTIONS LOCATEC SIDE SCAN ì SONAR. DIVERS DESCRIBE A 2 X 2 X 2-FOOT CONCRETE BLOCK MATCHING ì AWOIS DESCRIPTION IN LAT. 36-57-48.666N, LONG. 76-10-32.694. LD ì (PNEUMO GAUGE) OF 6.3 METERS (20 FEET THIS BLOCK WAS LOCATED ì WITHIN THE ASSIGNED SEARCH RADIUS. ALSO WITHIN THE RADIUS WERE OTHER CONCRETE BLOCKS, 10 METERS APART. DIVERS DECRIBE THE ì LARGEST MEASURING 5 X 5 FEI EXTENDING 3 FEET OFF THE BOTTOM AND ì WAS LOCATED IN LAT. 36-57-44.228N, LONG. 76-10-39.333W. (PNEUMO GAUGE) OF 5.9 METERS (19 FEET). EVALUATOR RECOMMENDS ì MOVING CHARTED 19-FOOT OBSTR TO SURVEY POSITION. LORAN-C RATES ì (9960 CHAIN) FOR THE LAST BLOCK MENTIONED ARE: \ 15961.0, ì X=27220.9, Y=41276.5, Z=58488.5. RATES FOR SMALLER BLOCK (2 X 2 X ì 2 FEET) ARE: W=1596C X=27220.5, Y=41277.6, Z=58490.4. (ENT ì 9/6/95, SJV)
3718	OBSTRUCTION	12254	D	370	14	HISTORY H9255WD/71,72--OPR-467-RU-71,72; ITEM 40; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL. UNINVESTIGATED HANG AT 15FT (ESTIMATED) CLEARED BY 14FT. DEPTHS IN AREA FROM H9910/80 ARE 16-18FT; RECOMMENDED AN OBSTR W/WIRE DRAG CLEARANCE 14FT BY CHARTED IN LAT.36-55-49.7N, LONG.76-09-51.5W. (ENTERED 10/15/84 MSM)
3721	OBSTRUCTION	12254	D	0370	15	03721 HISTORY H7177WD/48(AD. WK)--PBS-WD-2248; 1:20,000 SCALE SURVEY; VISUAL CONTROL, HUNG , 15 1/2FT, CLEARED BY 15FT, CHARTED AS OBSTR, DANGER CURVE, AND BASKET W/15FT CLEARANCE DEPTH IN LAT.36-57-20N, LONG.76-09-49W. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; NO INVESTIGATION OF ITEM BY FIELD UNIT; DEPTH IN AREA IS 22FT. RECOMMENDED RETAIN OBSTR AS CHARTED (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3722	OBSTRUCTION	12254	D	0370	11	HISTORY H7177WD/48(AD.WK)--PBS-WD-2248; 1:20,000 SCALE SURVEY; VISUAL CONTROL, HUNG AT 14F CLEARED BY 11FT, CHARTED AS OBSTR, DANGER CURVE, AND BASKET W/11FT CLEARED DEPTH IN LAT.36-57-23N, LONG.76-09-27W. (ENTERED 10/15/84 MSM) H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; NO INVESTIGATION OF ITEM BY FIELD UNIT; DEPTHS IN AREA ARE 22-23FT. RECOMMENDED RETAIN ITEM AS CHARTED. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SON/ SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
3723	OBSTRUCTION	12254	D	067	18	HISTORY H7177WD/48 (AD.WK)--PBS-WD-2248; 1:20,000 SCALE SURVEY; VISUAL CONTROL, HUNG AT 15 ' 2FT, CLEARED BY 15FT, CHARTED AS OBSTR W/DANGER CURVE, AND BASKET W/15FT CLEARED DEPTI IN LAT.36-57-33N, LONG.76-09-02.5W.. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY, NO INVESTIGATION BY FIELD UNIT, DEPTHS IN AREA ARE 23FT. RECOMMENDED RETAIN ITEM AS CHARTED. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH LOCATED ì ITEM SOUGHT JUST OUTSIDE SEARCH AREA IN LAT. 36-57-26.500N, LONG. ì 76-09--00.487W. ECHO SOUNDER L OF 5.5 METERS (18 FEET). ì EVALUATOR RECOMMENDS REVISING CHARTED BASKET SOUNDING TO AN OBSTR AS SURVEYED. (UP 2/9/96, SJV)
3724	OBSTRUCTION	12254	E	0370	15	HISTORY H7177WD/48 (AD.WK.)--PBS-WD-2248; 1:20,000 SCALE SURVEY; VISUAL CONTROL, HUNG AT 17I CLEARED BY 15FT, CHARTED AS OBSTR W/DANGER CURVE, AND BASKET W/15FT CLEARED DEPTH IN LAT.36-57-43N, LONG.76-08-56W. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; NO INVESTIGATION BY FIELD UNIT, DEPTHS IN AREA ARE 24FT; RECOMMENDED RETAIN ITEM AS CHARTED. (ENTERED 10/1! 84 MSM) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
3725	OBSTRUCTION	12254	E	0370	13	HISTORY H7177WD/48(AD.WK.)--PBS-WD-2248; 1:20,000 SCALE SURVEY, VISUAL CONTROL; OBSTR HUNG AT 14FT, CLEARED BY 13FT, CHARTED AS OBSTR W/DANGER CURVE AND BASKET W/13FT CLEARED DEPTH IN LAT.36-57-46N, LONG.76-08-32W. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY, NO INVESTIGATION BY FIELD UNIT, DEPTHS IN AREA ARE 24-25FT RECOMMENDED RETAIN AS CHARTED. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
3726	OBSTRUCTION	12254	D	0067	0	HISTORY CL570/62 (5/11/62)--C&GS NORFOLK DISTRICT; VISIBLE PILE, MOVED FROM LAT.36-56-45N, LONG.76-07-06W TO SAME RELATIVE POSITION ON WEST SIDE OF TRESTLE IN PA LAT.36-56-48N, LONG.7 07-18W. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY, DEL NORTE CONTROL (R/R, R/A) ECHO SOUNDER W/20M LINE SPACING; NOT ON FATHOGRAM, NOT SEEN BY LAUNCH PERSONNEL. EVALUATC RECOMMENDED REVISING TO SUBM PILE. (ENTERED 10/15/84 MSM)
3746	UNKNOWN	12254	D	0100	0	03746 HISTORY LNM23/73--6/5/73; 5TH CGD; 12 FT BOAT REP SUNK IN LAT.36-54-50N, LONG.76-05-50W AR WAS SWEPT BUT WK WAS NOT LOCATED. H9814/80--OPR-D103-PE-80; ITEM #90; 1:10,000 SCALE SURVE ARGO (R/R), DELNORTE (R/A); ECHO SOUNDER; LIMITED FATHOMETER SEARCH WAS PERFORMED; WK WAS NOT FOUND; EVALUATOR RECOMMENDED THAT WK BE RETAINED AS CHARTED. SURVEY NOT CONSIDERED SUFFICIENTLY EXTENSIVE TO DISPROVE ITEM. (ENTERED 11/13/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED: NOT COMPLETE
3747	UNKNOWN	12254	D	0100	0	03747 HISTORY LNM30/74-- 7/23/74; 5TH CGD; 32 FT CABIN CRUISER PARTIALLY SUBMERGED W/ BOW OL OF WATER; LODGED IN FISH NETS AND STAKES; IN LAT.36-55-00N LONG.76-05-10W H9814/80--OPR-D103-PE-80; ITEM #89; 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); ECHO SOUNDER; FATHOMETEF AND DIVE SEARCH CONDUCTED; WK NOT FOUND; EVALUATOR STATED EXTENT OF SEARCH WAS INADEQUATE FOR DISPROVAL AND RECOMMENDED CHARTING AS SUBM WK PD. (ENTERED 11/13/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED: NOT COMPLETE

3748	UNKNOWN	12254	D	0100	27	AWOIS ITEM 3748 HISTORY LNM47/73-- 11/20/73; CGD5; 35-FOOT AMPHIBIOUS CRAFT SUNK IN 40 ì FEET II APPROX. POS. LAT. 36-56-00N, LONG. 76-02-30W. H9814/80-- OPR-D103-PE-80; ITEM NO. 88; 1:10,000-SCAL SURVEY; ì ARGO (R/R), DELNORTE (R/A); ECHO SOUNDER; 45 METER LINE SPACING; ì WRECK NOT LOCATED; EVALUATOR RECOMMENDED RETAINING AS CHARTED. ì (RNT 11/13/84, MSM) FE387SS/94-- OI E696-HE; ONE CONTACT, NOT CONSIDERED THIS ì ITEM, WAS FOUND WITHIN SEARCH AREA. A WRECK MATCHING THE AWOIS ì DESCRIPTION WAS LOCATED 100 METERS OUTSIDE THE ASSIGNED SEARCH ì RADIUS IN LAT. 36-55-46.556N, LONG. 76-03-11.609W. DIVER ì (PNEUMATIC DEPTH GAUGE) LD OF 8.4 METERS (27 FEET). WRECK IS ì APPROX. 30 FEET LONG, 10 FEET WIDE, AND EXTENDS 5 FEET OFF THE BOTTOM. ENCRUSTED WITH HEAVY MARINE GROWTH AS WELL AS BEING ì HEAVILY CORRODED. LORA C RATES (9960 CHAIN): W=15937.6, ì X=27187.3, Y=41267.6, Z=58511.9. EVALUATOR RECOMMENDS DELETING ì CHARTED SUBM DANGEROUS WRECK, PA AND CHARTING A WRECK WITH A LD ì OF 8.4 METERS AS SURVEYED. (UP 9/12/95, SJV)
3749	UNKNOWN	12254	D	0100	0	HISTORY LNM35/78-- 8/29/78; CGD5; WRECK OF A 27-FOOT PLEASURE CRAFT IN ì LAT. 36-55-48N, LONG. 7 05-24W. SUNK IN 26 FEET OF WATER. H9814/80--OPR-D103-PE-80; ITEM NO. 86; 1:10,000-SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); ECHO SOUNDER; 45 METER LINE SPACING; ì WRECK NOT FOUND; INVESTIGATION NOT EXTENSIVE OR CONCLUSIVE ENOUGH ì TO DISPROVE WRECK; EVALUATOR RECOMMENDED REVISING WRECK TO ED. ì (ENT 11/13/84, MSM) FE387SS/94-- OPR-E696-HE; INCOMPLE SIDE SCAN SONAR COVERAGE. ì ITEM WAS REASSIGNED TO FE410/95. ONE CONTACT FOUND WITHIN SEARCH ì AREA. EVALUATOR RECOMMENDS RETAINING AS CHARTED. (UP 9/12/94, ì SJV) FE410SS/95-- OPR-E696-HE; 200% SIDE SCAN SONAR SEARCH NEGATIVE. ì 5 CONTACTS CONSIDERED INSIGNIFICANT EVALUATOR RECOMMENDS ì DELETING WRECK. (UP 2/9/96, SJV)
3750	MINNIE V	12254	E	0370	36	HISTORY NM17/60-- F/V REPORTED SUNK IN APPROX. POS. LAT. 36-57-19N, ì LONG. 76-04-04W. FE233/69V - AMC-SP-5-69; ITEM NOT LOCATED BUT CLEARANCE OF 36 ì FEET OBTAINED OVER CHARTED POSITION INVESTIGATION NOT COMPLETE; ì EVALUATOR RECOMMENDED RETAINING AS CHARTED. (ENT 6/11/85, MSM) H9255/71WD-- OPR-467-RH-71; 1:20,000-SCALE SURVEY; RAYDIST TYPE ì "T" HYPERBOLIC; .5 MILE RADIUS SEARCH; WRECK NOT LOCATED; ì HYDROGRAPHER RECOMMENDS ADDITIONAL WIRE DRAG WORK; COVERAGE ì WITHIN 2-4 FEET OF CHARTED BOTTOM; CRITERIA FOR DISPROVAL NOT ì MET; EVALUATOR RECOMMENDS CHARTING AS A SUNKEN WRECK, ED WITH A ì 36-FOOT WIRE DRAG CLEARANCE THRU FE233WD. H9814/80-- OPR-D103-PE-80; ITEM NO. 83; 1:10,000-SCALE SURVEY; ì ARGO R). DELNORTE (R/A); ECHO SOUNDER; 45 METER LINE SPACING; ì NO TRACE OF WRECK WAS FOUND; EVALUATOR RECOMMENDS CHARTING AS A ì SUBM WK, ED WITH CLEARED TO 36-FOOT NOTE THRU H9255WD. (ENT ì 11/9/84, MSM) FE387SS/94-- OPR-E696-HE; 5 CONTACTS FOUND WITHIN SEARCH AREA. NONE RELATED TO AWOIS ITEM. SIDE SCAN SONAR NEGATIVE FOR WRECK. ì EVALUATOR RECOMMEN DELETING FROM CHART. (UP 9/12/95, SJV)
3751	OBSTRUCTION	12254	D	0370	19	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 25; 1:20,000-SCALE SURVEY; ì RADIST (HYPERBOLIC, R CONTROL; PIPE, 1 FOOT IN DIAMETER, ì EXTENDING 4 INCHES OFF THE BOTTOM; HUNG AT 36 FEET IN LA ì 36-57-03.7N, LONG. 76-05-38.9W; CLEARED IN ONE DIRECTION TO 19 ì FEET; EVALUATOR RECOMMENDE CHARTING AS A SUBM OBSTR WITH A ì CLEARANCE OF 19 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AS A OBSTR THRU H9255WD. (ENT 11/20/84, MSM) FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR SEARCH NEGATIVE FOR ì ITEM. ONE CONTACT FOUND IN AREA OF SEARCH. EVALUATOR RECOMMENDS ì DELETING FROM CHART. (UP 9/12/95, SJV)
3752	UNKNOWN	12254	D	0100	0	HISTORY NM36/66--24FT BOAT SUNK IN 24FT WATER IN PA LAT.36-56-15N, LONG. 76-06-19N. H9255/71WD-- OPR-467-RH-71; ITEM #54; 1:20,000 SCALE SURVEY; RAYDIST TYPE T HYPERBOLIC; COVERAGE WITHIN 3 4FT OF BOTTOM; CRITERIA FOR DISPROVAL NOT MET; EVALUATOR RECOMMENDED CHARTING AS SUBI WK ED W/CLEARED TO 24FT; WK NOT LOCATED; POSSIBLY WK OF STEEL VESSEL HUNG IN LAT.36-55-50N, LONG.76-06-44.3W IS THIS ITEM. (REF. AWOIS #03753). H9814/80--OPR-D103-PE-80; ITEM #85; 1:10,00 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); ECHO SOUNDER; 45M LINE SPACING; WK NOT FOUND; EVALUATOR CONCURS W/ RECOMMENDATION IN H9255WD EVAL REP. (ENTERED 11/84 MSM) F00439/98- S-E900-RU; 200% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 8/16/99, SJV)
3753	OBSTRUCTION	12254	D	0067	18	HISTORY H9255/71WD--OPR-467-RH-71; ITEM #28; 1:20,000 SCALE; RAYDIST (HYPERBOLIC, R/R) CONTROL WK OF STEEL VESSEL HUNG AT ESTIMATED 20FT IN LAT.36-55-50N, LONG.76-06-44.3W; CLEARED IN ONE DIRECTION BY 18FT; EVALUATOR RECOMMENDED CHARTING A SUBM WK W/WIRE DRAG CLEARANCE C 18FT; THIS IS POSSIBLY THE VESSEL REP SUNK THRU NM36/66 IN LAT.36-56-15N, LONG.76-06-19W; THAT WK WAS NEITHER FOUND NOR DISPROVED BY SURVEY H9255. (REF AWOIS #03752). H9814/80--OPR-D10 PE-80; 1:10,000 SCALE; ARGO (R/R), DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING WK. (ENTERED 11/84 MSM) F00439/98-- S-E900-RU; 200% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 8/16/99, SJV)
3754	OBSTRUCTION	12254	D	0067	0	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 21; 1:20.000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC F CONTROL; OLD ANCHOR EXTENDING 2 FEET OFF ì THE BOTTOM HUNG AT 24 FEET IN LAT. 36-55-55.2N, LONG. ì 76-05-03.3W; NOT CLEARED; EVALUATOR RECOMMENDED CHARTING A SUBM ì OBSTR. H9814/80 OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A/) CONTROL; EVALUATOR CONCURRED WITH RECOMMENDATION ì IN H9255. (ENT 11/84, MSM) FE387SS/94-- OPR-E696-HE; NOT COMPLETED. EVALUATOR RECOMMENDS ì ASSIGNING TO FE410SS/95 FOR ADDITIONAL WORK. (UP 9/12 95, SJV) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì 1 CONTACT CONSIDERED INSIGNIFICANT. EVALUATOR RECOMMENDS ì DELETING. (UP 2/9/96, SJV)
3755	OBSTRUCTION	12254	D	0370	22	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 21; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC, R) CONTROL; TEMPORARY UNINVESTIGATED HANG ì IN LAT. 36-56-20.1N, LONG. 76-04-26.7W; HUNG AT 24 FEET; CLEARED ì BY 22 FEET; EVALUATOR RECOMMENDED CHARTING A SUBM OBSTR WITH A ì WIRE DRAG CLEARANCE OF 22 FEET. H9814/80-- OPR-D103-PE-80; 1:10,0000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) COMTROL; EVALUATOR RECOMMENDS CHARTING AN OBSTR. ì (ENT 11/84, MSM) FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
3756	OBSTRUCTION	12254	D	0370	30	HISTORY H9255/72WD-- OPR-467-RH-72; ITEM NO. 11; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC, R) CONTROL; 8 X 8 X 7 FOOT ALUMINUM CLUMP ì EXTENDING 1 FOOT OFF THE BOTTOM HUNG IN LAT. 36-27.6N, LONG. ì 76-03-27.2W; DIVERS REPORT PART OF AN AIRPLANE WING; HUNG AT 33 ì FEET, CLEAREI BY 30 FEET; HYDROGRAPHER AND EVALUATOR RECOMMEND ì NOT CHARTING BECAUSE ITS LIGHT WEIGHT WOULD FACILITATE MOVEMENT ì WITH CURRENT. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING A SUBM ì OBSTR. (ENT 11/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOF RECOMMENDS DELETING.

3757	OBSTRUCTION	12254	D	0370	30	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 12; 1:20,000-SCALE; ì RAYDIST (HYPERBOLIC R/R) CONTROL; UNINVESTIGATED HANG IN LAT. ì 36-56-34.3N, LONG. 76-03-41.2W; HUNG AT 31 FEET CLEAREC BY 30 ì FEET; EVALUATOR RECOMMENDED CHARTING A SUBM OBSTR WITH WIRE DRAG ì CLEARANCE (30 FEET. H9814/80-- OPR-D103-PE-80; 1:10000-SCALE; ARGO (R/R), DELNORTE ì (R/A) CONTROL; EVALUAT RECOMMENDED CHARTING AN OBSTR. (ENT ì 11/27/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SC/ SONAR NEGATIVE. ì EVALUATUR RECOMMNEDS DELETING FROM CHART. (UP 9/12/94, SJV)
3758	OBSTRUCTION	12254	D	0067	42	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 9; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC, R CONTROL; UNINVESTIGATED HANG IN LAT. ì 36-56-34.3N, LONG. 76-03-19W; HUNG AT 34 FEET, CLEARED 34 ì FEET; EVALUATOR RECOMMENDED CHARTING A SUBM OBSTR WITH A WIRE ì DRAG CLEARANCE O 34 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AN OBSTR. ì (ENT11/27/84, MSM) FE367SS/94-- OPR-E696-HE; SIGNIFICANT CONTACT LOCATED IN LAT. ì 36-56-27.426N, LONG. 76-02-31.286W. DIVERS DESCRIBE METAI PLATES ì ON TOP OF A CONCRETE BLOCK WITH CHAIN. PNEUMO LD OF 12.9 METERS ì (42 FEET). EVALUATOR RECOMMENDS DELETING AWOIS ITEMS 3758, 3759, ì 3760, AND 3762 AND CHARTING AN OBSTRUCTION AS SURVEYED. (UP ì 9/12/95, SJV)
3759	OBSTRUCTION	12254	D	0370	34	HISTORY H9255WD/71-- OPR-467-RH-71; ITEM NO. 3; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC R/ CONTROL; UNINVESTIGATED HANG IN LAT. ì 36-56-41.8N, LONG. 76-03-12.8W; HUNG AT 34 FEET, CLEAREI BY 34 ì FEET; EVALUATOR RECOMMENDS CHARTING A SUBM OBSTR WITH A WIRE DRAG ì CLEARANCE 34 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AS AN ì OBSTR. (ENT 11/27/84, MSM) FE387SS/94-- OPR-E696-HI DISPROVED. SEE AWOIS NO. 3758. (UP ì 9/12/95, SJV)
3760	OBSTRUCTION	12254	D	0370	34	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 5; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC R/ CONTROL; SCRAP METAL EXTENDING .5 FOOT ì OFF BOTTOM IN LAT. 36-56-42.4N, LONG. 76-03-16.3W; HUNG AT 34 ì FEET, CLEARED BY 34 FEET; EVALUATOR RECOMMENDED CHARTING A SUBM ì OBSTR WI A WIRE DRAG CLEARANCE OF 34 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/I DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AN OBSTR. ì (ENT 11/27/84, MSM) FE387SS/94-- OPR-E696-HE; DISPROVED. SEE AWOIS ITEM 3758. (UP ì 9/12/95, SJV)
3761	OBSTRUCTION	12254	D	0370	37	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 2; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC, R CONTROL; CONCRETE CLUMP ANCHOR ì EXTENDING ONE FOOT OFF BOTTOM IN LAT. 36-56-43.7N, LONG. 76-03-11.4W; ESTIMATED HANG AT 38 FEET; CLEARED BY 37 FEET; ì EVALUATOR RECOMMENDEDCHARTING AS A SUBM OBSTR WITH A WIRE DRAG ì CLEARANCE OF 37 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AS AN ì OBSTR. (ENT 11/27/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 9/12/95, SJV)
3762	OBSTRUCTION	12254	D	0370	34	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 4; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC R/ CONTROL; SCRAP METAL EXTENDING 1.5 FEET ì OFF BOTTOM IN LAT. 36-56-44.8N, LONG. 76-03-12.2W; HUNG AT 37 ì FEET, CLEARED BY 34 FEET; EVALUATOR RECOMMENDED CHARTING AS A ì SUBM OBSTF WITH A WIRE DRAG CLEARANCE OF 34 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARG (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AS AN ì OBSTR. (ENT 11/27/8 MSM) FE387SS/94-- OPR-E696-HE; DISPROVED. SEE AWOIS ITEM 3758. (UP ì 9/12/95, SJV)
3763	OBSTRUCTION	12254	D	0370	36	HISTORY H9255WD/71-- OPR-467-RH-71; ITEM NO. 10; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC (R) CONTROL; UNINVESTIGATED HANG AT 39 FEET ì IN LAT. 36-56-56.1N, LONG. 76-03-27.0W; CLEARED BY FEET; ì EVALUATOR RECOMMENDED CHARTING AS A SUBM OBSTR WITH A 36-FOOT ì CLEARANCE. H98 80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR CONCURRED WITH RECOMMENDATION ì IN H9255WD. ENT 11/20/84, MSM) FE387SS/94-- OPR-E3696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
3764	OBSTRUCTION	12254	D	0370	32	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 18; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC, R) CONTROL; UNINVESTIGATED HANG AT 35 FEET ì IN LAT. 36-57-09.8N, LONG. 76-04-37.2W; CLEARED BY FEET; ì EVALUATOR RECOMMENDED NOT CHARTING. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURV ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AN OBSTR ì THRU H9255WD. (ENT 11/20/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
3765	OBSTRUCTION	12254	D	0370	38	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 7; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC, R CONTROL; OLD ANCHOR EXTENDS 2 FEET OFF ì BOTTOM IN LAT. 36-57-09.8N, LONG. 76-03-18.5W; 43-FOC ESTIMATED ì HANG; CLEARED BY 36 FEET; EVALUATOR RECOMMENDED CHARTING IN ì CONJUNCTION WITH A TEMPORARY UNINVESTIGATED HANG (FROM ì FE233WD/69) IN LAT. 36-57-09.8N, LONG. 76-03-18.1W; THIS LATTER ì HANG WAS AT AN ESTIMATED 38 FEET, AND CLEARED BY 38 FEET; THESE ì ARE POSSIBLY THE SAME OBSTRUCTION; EVALUATOR RECOMMENDED CHARTING ì AS A SUBM OBSTR WITH WIRE DRAG CLEARANCE OF 38 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AS AN ì OBSTR WITH A DEPTH OF 4 FEET THRU H9255WD. (ENT 11/20/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATI FOR ì THIS ITEM. 3 SONAR CONTACTS WERE FOUND IN AREA OF SEARCH, ì HOWEVER. EVALUATOR RECOMMENDS DELETING ITEM FROM CHART. (UP ì 9/12/95, SJV)
3766	OBSTRUCTION	12254	D	0067	0	HISTORY H9255/71WD-- OPR-467-EH-71; ITEM NO. 24; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC F CONTROL; TEMPORARY, UNINVESTIGATED ì 32-FOOT HANG; GRAPNEL HOOK RECOVERED ON GROUND WIRE; NOT CLEARED; ì EVALUATOR RECOMMENDED CHARTING AS SUBM. OBSTR. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR CONCURRED WI RECOMMENDATION ì IN H9255. (ENT 11/20/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAF NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
3767	OBSTRUCTION	12254	D	0067	0	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 19; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC F CONTROL; IRON PIPE, 1 FOOT IN DIA., ì EXTENDING 4 FEET OFF BOTTOM IN LAT. 36-57-47N, LONG. 76-04-41.5W; ì ESTIMATED 35-FOOT HANG; NOT CLEARED; EVALUATOR RECOMMENDED ì CHARTING AS SUBM OBSTR. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR CONCURRED WITH RECOMMENDATION ì IN H9255. (ENT 11/20/84, MSM) FE387SS/94-- OPR-E696-HE; 2 INSIGNIFICANT CONTACTS FOUND. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UI 12/95, SJV)
3768	OBSTRUCTION	12254	D	0370	38	03768 HISTORY FE233/69WD--AMC-SP-5-69; 1:20,000 SCALE; VISUAL CONTROL; HUNG AT 38 FT AND CLEARED BY 38 FT; PROTRUDES LESS THAN THREE FT ABOVE BOTTOM; EVALUATOR RECOMMENDED CHARTING SUBM OBSTR. H9814/80--OPR-D103-PE-80; 1:10,000 SCALE; ARGO (R/R), DELNORTE (R/A) CONTROL; ECHO SOUNDER; EVALUATOR RECOMMENDED CHARTING AS SUBM OBSTR. W/38FT

						CLEARANCE (ENTERED 11/19/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3769	OBSTRUCTION	12254	D	0067	0	HISTORY FE233/69WD-- AMC-SP-5-69; 1:20,000-SCALE SURVEY; VISUAL ì CONTROL; 34-FOOT HANG IN LA 36-57-44.4N, LONG. 76-05-18W; NOT ì CLEARED; NOT INVESTIGATED; EVALUATOR RECOMMENDED CHARTING AS ì SUBM. OBSTR. ACCORCING TO RESULTS OF SURVEY. H9814/80-- OPR-D103-PE-80; 1:10,0 SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; ECHO SOUNDER; EVALUATOR CONCURRED WITH ì RECOMMENDATION IN FE233WD. (ENT 11/19/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SC/ SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 9/12/95, SJV)
3770	OBSTRUCTION	12254	D	067	20	HISTORY H9814/80--OPR-D103-PE-80; 1:10,000 SCALE; ARGO (R/R), SEXTANT FIXES; ECHO SOUNDER; IRREGULAR SNDGS ON FATHOMETER, DEVELOPMENT INDICATED OBSTR; DIVER INVESTIGATION; WOODEN AND STEEL DEBRIS EXTENDING 85 FT IN AN E-W DIRECTION; LEAST DEPTH OF 20 FT; HYDROGRAPHER RECOMMENDED CHARTING SUBM OBSTR W/ LEAST DEPTH OF 20 FT. (ENTERED 11/19 MSM) EVALUATOR RECOMMENDS WD OR SSS FOR LD AND EXTENT.
3771	OBSTRUCTION	12254	D	0085	0	03771 HISTORY H9814/80--OPR-D103-PE-80; 1:10,000 SCALE; ARGO (R/R), DELNORTE (R/A) CONTROL; RO\ OF PILING W/MOST SEAWARD IN LAT 36-54-49.35N LONG 76-06-32.9W; HYDROGRAPHER RECOMMENDEC CHARTING ACCORDING TO PRESENT SURVEY (ENTERED MSM 11/19/84) SURVEY REQUIREMENTS NOT ASSIGNED
3772	OBSTRUCTION	12254	D	0085	0	03772 HISTORY H918/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A) CONTR VISIBLE DOLS SEARCHED FOR IN LAT 36-54-38N LONG 76-05-40W; LOCATED IN LAT 36-54-36.2N LONG 76-(38.4W (POSITION OF MIDDLE OF 3 DOLS SCALED FROM SMOOTH SHEET); HYDROGRAPHER RECOMMENDED CHARTING AT NEW POSITION. (ENTERED MSM 11/27/84) SURVEY REQUIREMENTS NOT ASSIGNED
3773	OBSTRUCTION	12254	D	0067	36	HISTORY H9255/71WD-- OPR-467-RH-71; 1:20,000-SCALE SURVEY; RAYDIST ì (HYPERBOLIC, R/R) CONTRC X 4-FOOT METAL CLUMP EXTENDING 3 ì FEET OFF THE BOTTOM IN LAT. 36-57-17.6N, LONG. 76-03-48W.; HUNG ì AT 38 FEET; 36-FOOT LD BY DIVER LEADLINE; EVALUATOR RECOMMENDED ì CHARTING AS A SU OBSTR WITH A LEAST DEPTH OF 36 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R), ì DELNORTE (R/A) CONTROL; ECHO SOUNDER; 45 METER LINE SPACING; ITEM ì NOT FOUND; EVALUATOR CONCURRED WITH RECOMMENDATION IN H9255; (ENT ì 11/19/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (U 12/95, SJV)
3774	UNKNOWN	12254	D	0100	35	HISTORY H7177/47WD-- PBS-WD-2248; 1:20,000-SCALE SURVEY; SEXTANT ì CONTROL; 34-FOOT GROUNDI IN LAT. 36-57-32.8N, LONG. 76-04-32.0W ì IN 37-FOOT DEPTHS; IDENTIFIED AS AN OLD HULK; CLEARED BY 31 FEET; ì EVALUATOR RECOMMENDED CHARTING AS AN OBSTR. WITH A 31-FOOT ì CLEARANCE. (ENT ' 19/84, MSM) H9255/71WD-- OPR-467-RH-71; 1:20,000-SCALE SURVEY; RAYDIST ì (HYPERBOLIC R/R) CONTROL; ITEM NOT FOUND BUT CLEARED BY 35 FEET; ì EVALUATOR RECOMMENDED CHARTING THE SYMBOL WK WITH 35-FOOT ì CLEARANCE. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R), ì DELNORTE (R/A CONTROL; ECHO SOUNDER; 45 METER LINE SPACING; ITEM ì NOT FOUND; EVALUAT CONCURRED WITH RECOMENDATION IN H9255WD. ì (ENT 11/16/84, MSM) FE387SS/94-- OPR-E696-HE; 40C SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
3775	OBSTRUCTION	12254	D	0067	31	HISTORY H9255/71WD-- OPR-467-RH-71; HANG NO. 22; 1:20,000-SCALE SURVEY; ì RAYDIST TYPE "T" HYPERBOLIC CONTROL; IRON PIPE, 1-FOOT IN DIA., ì EXTENDING 8 FEET OFF THE BOTTOM IN LAT. 36-57- 37.8N, LONG. ì 76-05-22W; HUNG AT 31 FEET; CLEARED BY 31 FEET; EVALUATOR ì RECOMMENDED CHARTING AS A SUBM OBSTR WITH A LEAST DEPTH OF 31 ì FEET. H9814/80-- OPR-D103-PE-80; 1:10,000- SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; ECHO SOUNDER; 45 METER LINE SPACING; N TRACE OF OBSTRUCTION FOUND; EVALUATOR CONCURRED WITH ì RECOMMENDATION IN H9255WD. (EN 11/16/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
3776	OBSTRUCTION	12254	D	0067	0	HISTORY ORIGINAL SOURCE UNKOWN; PILES PA IN LAT 36-55-45N LONG 76-00-30W. H9814/80--OPR-D103- PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); SEARCHED FOR BUT NOT FOUND AT CHARTED LOCATION; SUBM PILES LOCATED AT LAT 36-55-4371N LONG 76-00-2273W; EVALUATOR RECOMMENDED CHARTING SUBM PILES AS SHOWN ON SURVEY. (ENTERED 11/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED:ITEM COMPLETED
3777	OBSTRUCTION	12221	D	370	0	HISTORY H9871/76WD--OPR-515; TEMPORARY, UNINVESTIGATED HANG OF 51 FEET ì IN APPROX. LAT. 36 52.99N, LONG. 75-48.19W. CLEARED IN ONE ì DIRECTION ONLY BY 51 FEET. EVALUATOR RECOMMENDS CHARTING A ì CLEARED 54 FOOT OBSTRUCTION. H9922/80--OPR-D103-MI-80; OBSTRUCTION ABOVE CARRIED FORWARD TO ì PRESENT SURVEY. EVALUATOR STATES THIS MAY BE A GROUNDING BETWEE SURROUNDING DEPTHS OF 52 AND 54 FEET. CHARTED AS A 51 FOOT ì CLEARED OBSTRUCTION. CHARTING ACTION IS IS LEFT TO CHART COMPILER. NOT PRESENTLY CHARTED. (ENT 12/29/89, SJV)
3778	SNDG	12254	D	127	0	HISTORY CL2005/77--8/27/77; USPS; SHL TO BARE AT LOW WATER REP IN PA LAT 36-54-48N, LONG 76-05- 18W. H9814/80--OPR-D103-PE-80; ITEM #93; 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); ECH(SOUNDER; AREA UNDER CONSTANT CHANGE; SHOALING TO BARE CONFIRMED IN LAT 36-54-40.04N LON 76-05-33.08W (POSITION SCALED FROM HYDRO SMOOTH SHEET); EVALUATOR RECOMMENDED REMOVI CHARTED SHL NOTE, CHART PRESENT SURVEY DEPTHS AND ADD NOTE "SUBJECT TO FREQUENT CHANGE". (ENTERED 11/14/84 MSM)
3779	OBSTRUCTION	12254	D	0067	0	03779 HISTORY LNM7/77--2/15/77; 5TH CGD; SUBM PIPE REP BY COE IN LAT 36-54-36N, LONG.76-05-42W. H9814/80--OPR-D103-PE-80; ITEM #92; 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); VISUAL SEARCH BY WALKING A 300M RADIUS AT MLW; DEPTHS AT LOW WATER FROM BARE TO APPROX 3FT; I TRACE OF PIPE FOUND; DUE TO CHANGEABLE NATURE OF BOTTOM, THE EVALUATOR RECOMMENDED RETAINING AS CHARTED. (ENTERED 11/14/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED: NOT COMPLETE
4491	OBSTRUCTIONS	12255	D	0067	13	04491 HISTORY LNM47/73--5TH CGD; 11/20/73; RAILROAD CAR REP LOST OVERBOARD FROM PENN. RR TERMINAL WHARF IN PA LAT 36-54-50N, LONG 76-10-46W; CHARTED AS SUBM DANG WK PA. CL400/80-- USPS; SUNKEN WK CONSISTING OF AT LEAST THREE RAILROAD CAPS LOCATED 418 FT OFF FACE OF RAILROAD LOADING PIER; LEAST DEPTH OF 12 FT; SOURCE OF INFO IS TUG CAPTAIN WHO SUPERVISEI DIVERS SENT DOWN TO PARTIALLY CLEAR THE OBSTRS; CHARTED AS SUBM DANG WK ED IN LAT 36-54 52.3N; LONG 76-10-43.3W. H9923/80--OPR-D103-MI/PE-80; PSR ITEMS 140 AND 141; DIVER INVESTIGATION FOUND 3 RAILROAD CARS, AND LEAST DEPTHS WERE OBTAINED FOR TWO OF THEM; 13 FT OBSTR LOCATED IN LAT 36-54-52.59N, LONG 76-10-43.17W (LEADLINE LEAST DEPTH); ECHO SOUNDER LEAST DEPTH OF 20 FT OBTAINED ON OBSTR IN LAT 36-54-53.28N, LONG 76-10-42.78W (AWOIS ITEM 4492); EVALUATOR RECOMMENDS CHARTING ACCORDING TO SURVEY AND DELETE CHARTED WKS. (ENTEREI MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED

4492	OBSTRUCTIONS	12255	D	0067	20	04492 HISTORY LNM47/73--5TH CGD; 11/20/73; RAILROAD CAR REP LOST OVERBOARD FROM PENN. RR TERMINAL WHARF IN PA LAT 36-54-50N, LONG 76-10-46W; CHARTED AS SUBM DANG WK PA. CL400/80--USPS; SUNKEN WK CONSISTING OF AT LEAST THREE RAILROAD CARS LOCATED 418 FT OFF FACE OF RAILROAD LOADING PIER; LEAST DEPTH OF 12 FT; SOURCE OF INFO IS TUG CAPTAIN WHO SUPERVISEI DIVERS SENT DOWN TO PARTIALLY CLEAR THE OBSTRS; CHARTED AS SUBM DANG WK ED. IN LAT 36-5 52.3N; LONG 76-10-43.3W. H9923/80-OPR-D103-MI/PE-80P; PSR ITEMS 140 AND 141; DIVER INVESTIGATION FOUND 3 RAILROAD CARS, AND LEAST DEPTHS WERE OBTAINED FOR TWO OF THEM; 13 FT OBSTR LOCATED IN LAT 36-54-52.59N, LONG 76-10-43.17W (LEADLINE LEAST DEPTH) (AWOIS ITEM 4491); ECHO SOUNDER LEAST DEPTH OF 20 FT OBTAINED ON OBSTR IN LAT 36-54-53.28N, LONG 76-10-42.78W; EVALUATOR RECOMMENDS CHARTING THESE O ACCORDING TO SURVEY AND DELETE CHARTED WKS. (ENTERED MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED
4493	OBSTRUCTION	12255	D	0067	21	04493 HISTORY H9923/80--OPR-D103-MI/PE-80; WHILE INVESTIGATING PSR ITEM 139, OBSTRUCTION WAS HUNG; DIVER INVESTIGATED; METAL MASS APPROX. 2X4 FT; LEADLINE LEAST DEPTH OF 21 FT IN LAT 36 55-17.41N, LONG 76-10-39.02W; EVALUATOR RECOMMENDS CHARTING 21 OBSTR. (ENTERED MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED
4494	CAPT NICKS DREAMBOAT	12255	D	0098	0	04494 HISTORY CL400/80--USPS; 235 FT VESSEL PERMANENTLY STRANDED HARD AGROUND IN LAT 36-5 21N, LONG 76-11-03W (POSITION OF STERN); CONVERTED TO SHORESIDE RESTAURANT, RENAMED CAP NICK'S DREAMBOAT, BUT NOW CLOSED; FORMERLY SEA BELLE; IN GENERAL DISREPAIR. H9923/80--OP D103-MI/PE-80; PSR ITEM 138 FERRY FOUND IN LAT 36-55-22.1N, LONG 76-11-02.8W; BURNED DURING PERIOD OF SURVEY AND IS NO LONGER IN USE; EXPECTED TO BE THERE PERMANENTLY; HYDROGRAPHER AND EVALUATOR RECOMMEND CHARTING FERRY LIMITS AS SHOWN ON SURVEY. (ENTERED MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED
7060	UNKNOWN	12245	E	0100	0	HISTORY LNM35/81-- 5TH CGD; 27 FOOT CABIN CRUISER SANK AUG. 21, 1981 IN ì 50 FEET IN ANCHORAGE 8. PA LAT. 36-57-25.0N, LONG. 76-20-42W. ì (ENT. 12/88, MCR) DESCRIPTION **** TELECON 5CGD AND N/ CG241, 10/22/90; NO ADDITIONAL INFORMATION ON WRECK; AS FAR AS THEY KNOW THE WRECK IS STIL THERE. (UP. 10/90, MSD) **** ITEM WILL BE REMOVED FROM AFFECTED CHARTS PENDING APPLICATION COE SURVEY OF 1991. (UP 3/1/94, SJV)
7522	BEAUTY	12208	D	725	47	HISTORY NM8/31-- COAST GUARD REPORTS F/V BEAUTY SUNK 5.25 MILES, 100 ì DEGS. FROM CAPE HENRY LIGHT HOUSE IN LAT. 36-54-42N, LONG. ì 75-54-00W. H6976WD/45-47-- CS-326-WA/HI; CLEARED IN ONE DIRECTION BY 47 ì FEET WHILE INVESTIGATING ITEM 3 (AWOIS NO. 808). THIS WRECK WAS ì NOT CHARTED AT TIME OF SURVEY. CL347/58-- ITEM CHARTED VIA H.O. WRECK LIST AS A 47-FOOT ì CLEARE DEPTH. H9922/80-- OPR-D103-MI-80; NO WIRE DRAG SURVEY HAS FURTHER ì INVESTIGATED THIS ITEM. H10340/90-- OPR-D111-WH; TWO SIGNIFICANT CONTACTS FOUND WITHIN ì THE 2000-METER SEARCH RAD AND SEVERAL CONTACTS WERE FOUND ì OUTSIDE THE RADIUS (WITHIN 700 METERS). APPROX. 10% OI SEARCH ì RADIUS WAS NOT COVERED BY SIDE SCAN SONAR (NORTHEASTERN AREA). ì ADDITIONAL WORK WAS REQUESTED ON ALL SIGNIFICANT CONTACTS. ì EVALUATOR RECOMMENDS THAT THE ITEM BE RETAINED AS CHARTED AND ì THAT FURTHER DISCUSSION AND CHARTING RECOMMENDATION BE DEFERRED ì UNTIL THE COMPLETION OF OFFICE PROCESSING OF SURVEY FE-353SS/90, ì AND A FINAL DISPOSITION OF THE ITEM IS MADE. (UP 10/29/91, SJV) FE353SS/90-- OPR-D111-HE; ITEM NOT DISPROVE APPROXIMATELY 15% ì OF THE SEARCH RADIUS NOT COMPLETED. EVALUATOR RECOMMENDS ì RETAINING AS CHARTED. SEE AWOIS NOS. 8313, 8314, 8315, AND 8316 ì FOR ADDITIONAL INFO. REGARDING CONTACTS WITHIN SEARCH RADIUS FOR ì THIS ITEM. (UP 7/14/92, SJV) FE412SS/95-- OPR-E696-HE; 200% SIDE SCAN SONAR OVER REMAINING ì 15% SEARCH RADIUS NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP ì 2/15/96, SJV) DESCRIPTION 24 NO.1332; POSITION ACCURACY WITHIN 1 M
7526	OBSTRUCTION	12221	D	370	0	HISTORY H9871/76WD--OPR-515; UNINVESTIGATED HANG AT AN ESTIMATED DEPTH ì OF 56 FEET IN APPROX. LAT. 36-51.80N, LONG. 75-48.03W. CLEARED BY ì 52 FEET. EVALUATOR RECOMMENDS CHARTII AN OBSTRUCTION CLEARED 52 ì FEET. CL634/84-- PRELIM. INFO. FROM H-9871/76WD. APPLIED THROUGH H-9922. H9922/80--OPR-D103-MI-80; CARRIED FORWARD. (ENT 12/29/89, SJV) H10337/90-- OPR-D111-WH; 2(SIDE SCAN SONAR NEGATIVE. ì EVALUATOR DOES NOT CONSIDER THE ITEM DISPROVED, HOWEVER, A ì RECOMMENDS FURTHER WORK. A HANG OF 17.1 METERS BROUGHT FORWARD. ì RETAIN AS CHARTEI (UP 11/1/91, SJV) FE354SS/90-- OPR-D111-HE; 200% SIDE SCAN SONAR INVESTIGATION ì NEGATIVE. EVALUATOR RECOMMENDS DELETING ITEM FROM CHART. (UP ì 6/15/92, SJV)
7527	UNKNOWN	12221	D	370	0	HISTORY NM4/44-- WRECK LIGHTED BUOY ESTABLISHED 8.63 MILES, 113 DEGS. ì FROM CAPE HENRY LIGHT HOUSE TO MARK WRECK. BUOY IS 200 FEET, 141 ì DEGS. FROM WRECK. 32 FEET REPORTED OV WRECK. NM5/44-- LIGHTED BUOY DISCONTINUED; WRECK DISPERSED. H6976/45-47WD-- CS-313-WA/HI; CLEARED TO 44 FEET. CL347/58-- ADDED AND REVISED WRECKS AND OBSTRUCTIONS IN ì ACCORDANCI WITH CAPT. LEWEY'S MEMO DATED 5/8/58. (FOR DATA, SEE ì DESCRIPTION). CHARTED IN LAT. 36-52-06N LONG. 75-50-36W AS A 44 ì FOOT CEARED DEPTH. (ENT 12/29/89, SJV) H10337/90-- OPR-D111-WH; SIDE SCAN SONAR NEGATIVE. EVALUATOR ì RECOMMENDS DELETING THE 44-FOOT CLEARED OBSTRUCTION LIGHT OF ì THE PRESENT INVESTIGATION AND PREVIOUS HISTORY OF DISPERSAL AND ì WIRE DRAG CLEARANCE. (UP 11/4/91, SJV) DESCRIPTION 24 NO.1141; REPORTS OF UNKNOWN WRECKS BY U. S. COAST GUARD DISTRICTS, 1950 (10/10/50); UNKNOWN, DEMOLISHED, FORMERLY BUOYED; ACCURACY 1 ONE MILE; U. S. ACTION REPORT; LAT. 36-52-06NN LONG. 75-50-36W; SUNK 12/6/44.
7528	OBSTRUCTION	12221	D	370	0	HISTORY H9871/76WD-- OPR-515; UNINVESTIGATED HANG AT EFFECTIVE DEPTH OF ì 59 FEET IN LAT. 36-52.46N, LONG. 75-45.36W. CLEARED BY 59 FEET. ì CHARTED AS AN OBSTRUCTION, CLEARED 59 FEET. CL1104/83--ADVANCE COPY OF ABOVE INFO. LNM4/84--PUBLISHES ABOVE INFO. NM3/84--PUBLISHES ABOVE INFO. (ENT 12/29/89, SJV) H10341/90-- OPR-D111-WH; 200-METER SEARCH RADIUS NEGATIVE. ì HOWEVER, 400% SSS COVERAGE NOT OBTAINED. FINAL DISPOSITION WILL ì BE MADE IN DESCRIPTIVE REPORT OR EVALUATOR'S REPORT FOR ì FE-355SS(90). (UP 12/24/91, SJV)
7529	OBSTRUCTION	12221	D	370	0	HISTORY H9871/76WD-- OPR-515; OLD NAVIGATION BUOY ANCHOR WEIGHT HUNG AT ì AN EFFECTIVE DEPTH OF 59 FEET AND CLEARED IN ONE DIRECTION ONLY ì BY 57 FEET. CHARTED AS AN OBSTRUCTIO CLEARED TO 57 FEET. (4 FT ì X 4 FT CONCRETE BLOCK, 2 FEET HIGH). CL1104/83--ADVANCE COPY OF IN ABOVE. NM3/84-- PUBLISHES ABOVE INFO. LNM4/84-- PUBLISHES ABOVE INFO. (ENT 12/29/89, SJV) H103 90- OPR-D111-WH; CONTACT LOCATED IN LAT. 36-51-57.31N, ì LONG. 75-44-59.54W. EVALUATOR RECOMMENDS FINAL DISPOSITION BE ì MADE IN DESCRIPTIVE REPORT OR EVALUATOR'S REPORT FOR FE-355SS(90) ON CONTACT. (UP 12/24/91, SJV) F00355/90-- OPR-D111-HE; DANGEROUS SUBMERGED OBSTRUCTION LOCATED. SIDE SCAN SONAR ESTIMATED LD OF 17.7 METERS (58 FEET). SONARGRAM IMAGE RESEMBLES A BUOY ANCHOR WITH CHAIN ATTACHED. EVALUATOR RECOMMENDS NO CHANGE CHARTING STATUS. SEE AWOIS 11434 FOR CHARTING RECOMMENDATION ON SECOND OBSTRUCTION. (3/5/03, SJV)
7530	UNKNOWN	12221	D	100	0	HISTORY CL347/58-- ADDED AND REVISED WRECKS AND OBSTRUCTIONS IN ì ACCORDANCE WITH CAPT. LEWEY'S MEMO DATED 5/8/58 (VIA NAVY WRECK ì LIST). NON-DANGEROUS SUBMERGED WRECK

						CHARTED IN LAT. 36-53-36N, ì LONG. 75-45-39W. (ENT 12/29/89, SJV) NOTE: IN THIS CASE A DANGEROUS SUBMERGED WRECK WAS CHARTED. (UP 3/19/02, SJV)
7538	SNDG	12221	D	127	0	HISTORY CL1137/87-- MESSAGE FROM M/V ACT 5 TO CGDFIVE, NOV. 23, 1987. ì VESSEL PASSING CLOSI NORTH OF "NCC" BUOY APPROACHING NORFOLK ì PILOT. SUSPECT VESSEL TOUCHED BOTTOM. DRAFT 30 FEET, 4 INCHES, ì FLAT CALM, NO SWELL. SMITH, MASTER. POSITION AT TIME OF TOUCHING ì LAT. 36 57.7N, LONG. 75-52.8W. NORFOLK AGENT ACT NORFOLK. CL1192/87-- ANM; SPOT SURVEYS IN NORTH INBOUND LANE TO ì CHESAPEAKE BAY ENTRANCE INDICATE SIGNIFICANT SHOALING VICINITY ì BUOY "NCC". 30-FOOT CONTOUR ENCROACHES 200-300 METERS INTO THE ì INBOUND LANE FROM THE NORTEI EDGE. CENTER LINE CONTROLLING DEPTH ì IS 30 FEET. MIN. DPETH NEAR NORTHERN EDGES OF THE INBOUND LANE IS ì 28 FEET. CHART LEGEND "SHOALING TO 30 FT REP 1987" CL374/88-- MEMO FROM CHIEF, N/CG24 TO CHIEF, N/CG2, RE. SPECIAL ì INVESTIGATION HE-20-5-87 (CONDUCTED IN CONJUNCTIO WITH HDAPS ì TESTING IN DEC., 1987). HECK'S INVESTIGATION CONFIRMS PIERCE WORK ì OF 1980 (H-99 AND H-9919). PIERCE WORK DETERMINED MIGRATION OF ì 30-FOOT CURVE SOUTHWARD INTO INBOUND TRAFFIC LANE NORTHWEST OF ì BUOY "NCC". FURTHER WORK TO MONITOR THIS MIGRATION MAY BE ì WARRANTED (NO CORRECTION NECESSARY FROM THIS CL; CORRECTED THRU ì CL1137/87 AND CL1192 ABOVE). NM1/88-- PUBLISHES ABOVE DATA. (ENT 1/3/90, SJV) H10356/90-- OPR-D111-HE; SHOAL LOCATE TO THE SOUTHWEST OF ì CHARTED NOTATION. EVALUATOR RECOMMENDS DELETING CHARTED NOTAT ì "SHOALING TO 30 FEET REP 1987" AND CHART AS SURVEYED. (UP 3/5/90, ì SJV) H11016/00-- OPR-D324-I 100% MULTIBEAM SONAR COVERAGE ACQUIRED. DEPTHS OF 30 AND 31 FEET IN VICINITY OF THIS ITEM POSITION. EVALUATOR RECOMMENDS CHARTING AREA AS SURVEYED. (UP 9/25/01, SJV)
7549	UNKNOWN	12221	D	102	0	HISTORY CL347/58--ADD NON-DANGEROUS WRECK THRU CAPT. LEWEY'S MEMO DATED ì 5/8/58 IN LAT. 3 54-09N, LONG. 75-51-30W. (ENT 1/17/90, SJV) H10340/90-- OPR-D111-WH; NO CONTACTS FOUND. EVALUATOR ì RECOMMENDS RETAINING AS CHARTED. NOTE: PRESENTLY CHARTED AS A DANGEROUS SUBMERGED WRECK (NOPA, PD). SEE AWOIS 806. (UP 10/30/91, SJV) DESCRIPTION 24 NO. 1330; REPORTED IN 1947 AS AN OBSTRUCTION; FORMERLY ì CHARTED; ACCURACY WITHIN ONE MILE.
7550	OBSTRUCTION	12221	D	370	0	HISTORY NM37/47-- OBSTRUCTION REPORTED WITH LD OF 30 FEET. 6.46 MILES, ì 99 DEGS. 30 MINS. FRC CAPE HENRY LIGHTHOUSE. LAT. 36-54-30.0N, ì LONG. 75-52-30.0W. H6976/47WD-- CS-313 & 326-WA/HI-45- WHILE SEARCHING FOR ITEM ì NO. 3, A SMALL OBSTRUCTION WAS FOUND JUST OUTSIDE THE ONE MILI RADIUS. HUNG AT 30 FEET, CLEARED AT 29 FEET (REAL TIDES). LOCATED ì IN LAT. 36-54-910(M)N, LONG. 75-52-710(M)W. H10340/90-- OPR-D111-WH; NO SIDE SCAN SONAR CONTACTS FOUND IN ì THE AREA COMMON TO THE PRESENT SURVEY AND THE AWOIS ITEM. ì OBSTRUCTION BROUGHT FORWARD TO TH PRESENT SURVEY. EVALUATOR ì RECOMMENDS RETAINING ITEM AS CHARTED AND THAT FURTHER DISCUSSION ì AND A CHARTING RECOMMENDATION BE DEFERRED UNTIL THE COMPLETION OF ì OFFICE PROCESSING OF FE-353SS/90, AND A FINAL DISPOSITION OF THE ì ITEM HAS BEEN MADE. NOTE: NOT ADDRESSED IN SUBSEQUENT SURVEYS. (UP 3/17/03, SJV)
7553	OBSTRUCTION	12254	D	370	40	HISTORY H7028/45-50WD (& AD. WK.)--CS313-WA/HI; OBSTRUCTION HUNG AT 42 ì FEET, CLEARED BY 40 FEET IN LAT. 36-57-40.0N, LONG. 76-00-47.0W. H9901/80--OPR-D103-PE-80; ECHO SOUNDER SEARCH NEGATIVE. DEPTHS ì 60 TO 62 FEET. REOMMENDATION TO RETAIN AS CHARTED. (ENT 1/26/90, ì SJV) H10343/90-- OPR-D111-WH; SEVERAL SIGNIFICANT CONTACTS LOCATED ì 105 METERS SOUTHEAST OF LISTED POSITION. EVALUATOR CONSIDERS ì AWOIS ITEM 7553 TO BE AN ERRONEOUS POSITION FOR AWOIS ITEM 857 ì AND RECOMMENDS DELETING AWOIS 7553 FROM THE CHART. (UP 1/28/92, ì SJV) H103 90-- OPR-D111-HE (FORMERLY FE-356SS); INVESTIGATION ì NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 4/20/92, ì SJV)
7554	UNKNOWN	12222	D	100	0	HISTORY CL540/54-- FROM C.O. USCGS SHIP BOWEN; WRECK NOT FOUND; 50-75 ì METER LINE SPACING RECOMMEND DELETING DANGEROUS WRECK. FOUR ì DISTINCT DEPTHS WERE RECORDED ON WRECK OF CHILORE, HOWEVER. (SEE ì AWOIS NO. 857) (ENT 1/26/90, SJV H10343/90-- OPR-D111-WH; ITEM NOT CHARTED. HYDROGRAPHER STATES ì THAT THERE WERE SIGNIFICANT CONTACTS WITHIN THE SEARCH RADIUS. ì ONE NEAREST THE AWOIS POSITION WITHIN 90 METERS. EVALUATOR ì RECOMMENDS NO CHANGE IN CHARTING STATUS AND CONSIDERS THIS ITEM ì DISPROVED BY THE PRESENT SURVEY. (UI 28/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); INVESTIGATION ì NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 4/20/92, ì SJV) DESCRIPTION **** 24 NO. 1185; DEMOLISHED FORMERLY BUOYED, 1 MILE ACCURACY. ì REPORTED THRU NOTICE TO MARINERS 8/22/50.
7556	OBSTRUCTION	12222	D	370	36	HISTORY H7028/45-50WD-- CS-313; 43-FOOT GROUNDING IN LAT. 36-56-42.5N, ì LONG. 76-02-04.8W, NOT CLEARED. UNCHARTED SOUNDING PLOTTED DURING ì VERIFICATION. 43.5 FEET IN CHARTED DEPTHS OI 49-54 FEET IN LAT. ì 36-56.7N, LONG. 76-02.08W. H9255/71-72WD-- OPR-467-RU/HE; NO HANGS OR GROUNDINGS IN ì VICINITY OF PRIOR GROUNDING. MAXIMUM CLEARANCE DEPTH OF 38 FEET ì OBTAINE EVALUATOR STATES "STRONG POSSIBILITY THAT A SLOPING ì WRECK OR OBSTRUCTION CAUSED GROUNDING ON PRIOR". RECOMMENDED THAT ì GROUNDING (43-FOOT DEPTH) BE RETAINED AS CHART H-7750 AND ì H-9814 SHOW NO INDICATION OF SHOALING IN VICINITY. FURTHER WORK ì RECOMMENDEC H9814/80--OPR-D103-PE-80; CLEARANCE DEPTH ABOVE BROUGHT ì FORWARD. 36 FOOT CLEARANCE DEPTH CHARTED IN 1985 FROM SURVEY ì H9814/80. (ENT 2/7/90, SJV) H10343/90-- OPR-D111-90; SIGNIFICANT CONTACT LOCATED IN LAT. ì 36-56-50.35N, LONG. 76-02-02.96W. ESTIMATED DEPTH OF 14 METERS. ì EVALUATOR RECOMMENDS NO CHANGE IN CHARTING STATUS PENDING FINAL ì DISPOSITION OF SURVEY H-10372/90. (UP 1/28/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); INVESTIGATI NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 4/20/92, ì SJV) DESCRIPTION **** TELCON., 2/19/90, S. VERRY (CG241) AND M. HICKSON (CG2441); H9255/71-72WD A&D SHEET NOTES MAX CLEARANCE OVER GROUNDING AS 36 FEET. DESCCRIPTIVE REPORT NOTES CLEARANCE AS 38 FEET. DISCREPANCY WILL BE INVESTIGATED BY HICKSON. 36-FOOT CLEARED DEPTH CHARTED DESPITE EVALUATOR'S RECOMMENDATION TO RETAIN 43-FOOT DEPTH AS CHARTED THROUGH H-7028.
7676	UNKNOWN	12221	D	100		
8013	OBSTRUCTION	12245	E	0067	0	HISTORY H9255WD/71-- OPR-467-RU/HE-71; CLEARANCE STRIP ENDED IN A HANG ì WHICH WAS NEITHER CLEARED NOR INVESTIGATED. HUNG AT 36 FEET IN ì LAT. 36-57-38.0N, LONG. 76-20-25.0W. CHARTED AS 36-FOOT ì OBSTRUCTION (NO PA). HYDROGRAPHER STATES THAT HANG OCURRED ON A ì MOORING CABLE LYING ON THE BOTTOM. EVALUATOR DOES NOT CONCUR ì SINCE HANG EXTENDED 6-7 FEET OFI THE BOTTOM. SINCE THE SURVEY ì RECORDS STATE THAT THIS HANG WAS NOT INVESTIGATED, IT IS UNCLEAR ì HOW THE HYDROGRAPHER OBTAINED INFORMATION REGARDING THE MOORING ì CABLE. (E 6/7/91, SJV) DESCRIPTION **** ITEM WILL BE REMOVED FROM AFFECTED CHARTS PENDING APPLICATIO OF COE SURVEYS OF 1991-93. (UP 3/1/94, SJV)
						HISTORY H10337/90-- OPR-D111-WH; UNCHARTED WRECK-LIKE FEATURE, ì ESTIMATED DEPTH OF 10.7 METERS LOCATED IN LAT. 36-51-51.24N, ì LONG. 75-50-53.05W. IN PRESENT SURVEY DEPTHS OF 15.4 - 1 ì METERS. FEATURE IS 655 METERS SOUTHWEST OF AWOIS ITEM 7527 BUT IS ì NOT CONSIDERED THAT ITEM SINCE THE ESTIMATED DEPTH IS LESS THAN ì THE PRIOR WIRE DRAG CLEARED DEPTH OF 44 FEE (13.4 METERS). ì EVALUATOR RECOMMENDS CHARTING A WRECK WITH AN ESTIMATED DEPTH OF ì 10.7

8152	UNKNOWN	12221	D	100	10.7	METERS AS SURVEYED UNTIL COMPLETION OF OFFICE PROCESSING OF ì FE-354SS (10.7 WK REP 1990 (UP 11/4/91, SJV) FE354SS/90– OPR-D111-HE; ITEM NO. 15 (WHITING); ITEM NO. 18 ì (HECK); DIVE INVESTIGATION FOUND SUNKEN NAVIGATION BUOY. USCGC ì COWSLIP, ASSISTED BY HECK, RECOVER BUOY HULL, SINKER, AND ì SEVERAL SHOTS OF CHAIN ON OCTOBER 22, 1990. EVALUATOR RECOMMENDS ì DELETING FROM CHART. (UP 6/15/92, SJV) FE395SS/94– OPR-E696-HE; SIDE SCAN SON/ NEGATIVE. EVALUATOR ì RECOMMENDS DELETING. (UP 9/6/95, SJV) DESCRIPTION **** TELCON, 3/25/94, CG241 (S. VERRY) AND N/CG244 (N. PERUGINI); DOUBT EXISTS CONCERNING THE SALVAGE OF THIS ITEI CONSIDERED PRUDENT TO CONDUCT SIDE SCAN SONAR DISPROVAL INVESTIGATION. (UP 3/28/94, SJV)
8225	OBSTRUCTION	12221	D	067	0	HISTORY NM17/14-- CHESAPEAKE BAY APPROACH - OBSTRUCTION REPORTED. THE ì COMMANDING OFFICER OF THE U.S.S. NEBRASKA REPORTED ON 4/1/14 THAT ì HIS VESSEL DRAWING 26 FEET 11 INCHES STRUCK A SUBMERGED ì OBSTRUCTION IN (APPROX.) LAT. 36-55-00N, LONG. 75-46-30W. VESSEL MAKING 14 KNOTS, SMOOTH SEA. INTERNAL INSPECTION SAW NO DAMAGE. ì REFERENCED BY NM25/1 (SEE AWOIS NO. 796). (ENT 4/3/92, SJV)
8250	OBSTRUCTION	12221	E	0067	0	HISTORY H10372/90– OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED BY H-10343/90 (WHITING) NOT DISPROVED. IN LAT. ì 36-57-42.86N, LONG. 76-01-02.11W. ESTIMATED DEPTH OF 14.6 METERS. ì RECOMMEND CHARTING AND ADDITIONAL WORK AT AN OPPORTUNE TIME. (ENT ì 4/20/92, SJ\ FE412SS/95– OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETIN((UP 2/15/96, SJV)
8251	OBSTRUCTION	12208	D	067	0	HISTORY H10372/90– OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED BY H-10343/90 (WHITING) NOT DISPROVED. IN LAT. ì 36-56-32.95N, LONG. 75-55-29.73W. ESTIMATED DEPTH OF 12 METEF ì RECOMMEND CHARTING AND ADDITIONAL WORK AT AN OPPORTUNE TIME. (ENT ì 4/20/92, SJV) FE412S 95– OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/1! 96, SJV)
8252	OBSTRUCTION	12221	D	067	0	HISTORY H10372/90– OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED BY H-10343/90 (WHITING) NOT DISPROVED. IN LAT. ì 36-57-12.90N, LONG. 75-58-15.82W. ESTIMATED DEPTH OF 25.2 METERS. ì RECOMMEND CHARTING AND ADDITIONAL WORK AT AN OPPORTUNE TIME. (ENT ì 4/20/92, SJ\
8253	OBSTRUCTION	12208	D	067	41	HISTORY H10372/90– OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED BY H-10343/90 (WHITING) NOT DISPROVED. IN LAT. ì 36-56-27.59N, LONG. 75-55-29.61W. ESTIMATED DEPTH OF 11.7 METERS. ì RECOMMEND CHARTING AND ADDITIONAL WORK AT AN OPPORTUNE TIME. ì (ENT 4/20/92, SJ\ FE412SS/95– OPR-E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN ì SONAR. ECHO SOUNDER LD OF 12 METERS (41 FEET) IN LAT. ì 36-56-27.466N, LONG. 75-55-29.856W. EVALUATOR RECOMMENDS DELETING ì OBSTR REP AND CHARTING A 41 OBSTR AS SURVEYED. (UP 2/15/96, SJV)
8254	OBSTRUCTION	12221	D	0067	0	SURVEY REQUIREMENT COMMENTS SALVAGE OF THIS ITEM BY THE 5CGD IS LIKELY. CONTACT WITH 5CGD ì OR COE SHOULD BE MADE BEFORE ANY HYDROGRAPHIC INVESTIGATION IS ì INITIATED. HISTOR H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); UNCHARTED ì OBSTRUCTION LOCATED IN LAT. 36-56-06.39N, LONG. 75-57-17.86Wì COVERED 54.1 FEET. EVALUATOR STATES THIS ITEM IS THE SAME AS THA DISCUSSED IN A COE REPORT TITLED "ENGINEERING ANALYSIS OF NINE ì SIDE SCAN SONAR TARGETS FROM THE THIMBLE SHOAL CHANNEL TO THE ì SOUTH ATLANTIC SEA LANE, CHESAPEAKE BAY ENTRANCE, VIRGINIA", ì FEB., 1985. THIS IS TARGET ATL #11 WHICH WAS DESCRIBED AS A STEEL ì CHANNEL BUOY LYING ON ITS SIDE IN AN E-W DIRECTION, UPPER 12 FEET ì OF STEEL-FRAMED TOWER BENT 90 DEGS. TO THE SOUTH. BASE OF BUOY 9 ì FEET IN DIA., 8 FEET TALL. SHORT LENGTH OF CHAIN ATTACHED TO WEST ì END OF BUOY. DENTED ON ONE SIDE, RIPPED OPEN ALONG THE BOTTOM, ì INDICATING IT WAS POSSIBLY HIT AND SUNK BY A SHIP. IN ABOUT 63 ì FEET. COAST GUARD WAS NOTIFIED BY COE AND SALVAGE ATTEMPTS WERE ì LIKELY.
8255	OBSTRUCTION	12221	D	067	59.7	HISTORY H10372/92– OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-55-57.84I LONG. 75-57-33.89W. FATHOMETER ì DEPTH OF 18.2 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. ì (ENT 4/20/92, SJV)
8256	OBSTRUCTION	12221	D	067	66.6	HISTORY H10372/90– OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-56-25.67I LONG. 74-57-16.55W. FATHOMETER LD ì OF 20.3 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8257	OBSTRUCTION	12221	D	0067	0	HISTORY H10372/90– OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-57-18.38I LONG. 76-01-06.33W. FATHOMETER LD ì OF 18.4 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8258	OBSTRUCTION	12221	D	067	63.3	HISTORY H10372/90– OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-56-29.52I LONG. 75-58-04.45W. FATHOMETER LD ì OF 19.3 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8259	OBSTRUCTION	12221	D	0067	0	HISTORY H10372/90– OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-56-45.73I LONG. 76-01-16.46W. FATHOMETER LD ì OF 17.8 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8260	OBSTRUCTION	12221	D	067	44.3	HISTORY H10372/90– OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-55-32.1N LONG. 75-57-47.6W. ESTIMATED DEPTH ì FROM SONARGRAM OF 13.5 METERS. EVALUATOR RECOMMENDS CHARTING AN ì OBSTR (A) COVERED 13.5 METERS. (ENT 4/20/92, SJV)
8261	OBSTRUCTION	12221	D	067	80	HISTORY H10372/90– OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-56-47.75I LONG. 75-57-24.50W. FATHOMETER LD ì OF 24.4 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8262	UNKNOWN	12221	D	100	84.6	HISTORY H10372/90– OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-57-12.44I LONG. 75-57-57.71W. FATHOMETER LD ì OF 25.8 METERS. EVALUATOR RECOMMENDS CHARTING A WRECK AT SURVEYED ì POSITION. (ENT 4/20/92, SJV)
8263	OBSTRUCTION	12221	D	0067	0	HISTORY H10372/90– OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-56-38.30I LONG. 76-00-42.25W. FATHOMETER LD ì OF 17 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8264	OBSTRUCTION	12221	D	067	88.3	HISTORY H10372/90– OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-57-28.27I LONG. 75-58-26.95W. FATHOMETER LD ì OF 26.9 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)

8277	OBSTRUCTION	12208	D	067	0	HISTORY FE354SS/90-- OPR-D111-90; ITEM NO. 4; UNCHARTED OBSTRUCTION ì LOCATED BY WHITING (H-10337) IN LAT. 36-50-16.64N, LONG. ì 75-48-10.71W. ESTIMATED DEPTH OF 14.7 METERS (48 FEET). ALSO ì LOCATED BY HECK ON PRESENT SURVEY WITH AN ESTIMATED DEPTH OF 15 ì METERS (49 FEET). EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION ì WITH AN ESTIMATED DEPTH OF 14.7 METERS AS SHOWN ON H-10337/90. ì FURTHER WORK RECOMMENDED TO OBTAIN LEAST DEPTH. (ENT 6/15/92, ì SJV) DESCRIPTION **** MEMO TO CAPT. DEAN SEIDEL (N/CG24) FROM CDR. CHRISTOPHER LAWRENCE (CG244) DATED 9/16/92; RE. EXCHANGE OF INFO. BETWEEN NOS, USCG, AND USACE. ATTACHMENTS DOCUMENT USCG SALVAGE OF THIS ITEM ON 11/13/91. ITEM WAS A 18,000 LB. WEIGHT AND 90-FOOT CHAIN RECOVERED BY USCGC COWSLIP IN LAT. 36-50-16.42N, LONG. 75-48-11.96W. BUOY LOST 3/25/90 LOCATED BY NOAAS HECK IN 10/90 AND RECOVERED BY USCGC COWSLIP ON 11/13/91. SUBSEQUENT SSS SURVEY BY USACE ON 8/24/92 NEGATIVE FOR ANY TARGETS IN AN AREA 1300 FEET BY 1100 FEET (UP 3/17/95, SJV)
8278	OBSTRUCTION	12208	D	067	0	HISTORY FE354SS/90-- OPR-D111-HE; ITEM NO. 10; UNCHARTED OBSTRUCTION ì LOCATED BY WHITING (H-10337/90) IN LAT. 36-51-20.55N, LONG. ì 75-50-50.87W WITH AN ESTIMATED DEPTH OF 14.3 METERS (47 FEET). ì FOUR SIDE SCAN SONAR CONTACTS WITH DEEPER ESTIMATED DEPTHS WERE ì LOCATED BY T PRESENT SURVEY. NO LD OBTAINED ON ANY OF THE ì ITEMS. WHITING DEPTH CARRIED FORWARD TO PRESENT SURVEY. EVALUATOR ì RECOMMENDS CHARTING "OBSTRUCTIONS" WITHIN A LIMIT CURVE WI AN ì ESTIMATED DEPTH OF 14.3 METERS AS SHOWN ON PRESENT SURVEY. ì ADDITIONAL WORK RECOMMENDED TO OBTAIN THE LD ON THE SHOALEST ì OBSTRUCTION WITHIN THE LIMITS. IF CHART SCALE ALLOWS, AN ì ADDITIONAL OBSTRUCTION SHOULD BE CHARTED IN LAT. 36-51-21.93N, ì LONG. 75-54.48W AS SHOWN ON H-10337/90 AND BROUGHT FORWARD ON ì FE354SS/90. ESTIMATED DEPTH OF 14 METERS. (ENT 6/15/92, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUAT RECOMMENDS DELETING. (UP 2/15/96, SJV)
8279	OBSTRUCTION	12221	D	0067	0	SURVEY REQUIREMENT COMMENTS THE RESOLUTION OF THIS ITEM HAS HIGH PRIORITY DUE TO ITS ì LOCATION WITHIN THE TWO-WAY, DEEP WATER ROUTE APPROACHING ì CHESAPEAKE BAY. HISTORY FE354SS/90-- OPR-D111-HE; ITEM NO. 17; UNCHARTED OBSTRUCTION ì LOCATED IN LAT. 36-52-27.08N, LONG. 75-52-21.42W WITH AN ì ESTIMATED DEPTH OF 15.6 METERS (51 FEET). EVALUATOR RECOMMENI CHARTING AN OBSTRUCTION WITH AN ESTIMATED DEPTH OF 15.6 METERS AS ì SURVEYED AND ADDITIONAL WORK TO OBTAIN A LD. (ENT 6/15/92, SJV) FE395SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 9/6/95, SJV)
8313	OBSTRUCTION	12221	D	0067	0	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì WITH AN ESTIMATI DEPTH OF 15.6 METERS IN POSITION LAT. ì 36-53-26.89N, LONG. 75-54-42.99W. LOCATED WHILE SEARCHING FOR ì AWOIS NO. 7522. SEE ADDITIONAL WORK BY HECK, BELOW. FE353SS/90-- OPR-D111- ITEM NO. 1 (BUOY ANCHOR) LOCATED IN ì LAT. 36-53-27.23N, LONG. 75-54-42.64W. WAS NOT SALVAGED COAST ì GUARD AS PLANNED. EVALUATOR RECOMMENDS CHARTING A DANGEROUS ì SUBMERGED OBSTRUCTION WITH A DIVER LD OF 47 FEET (14.5 METERS) AS ì SURVEYED. (ENT 7/14/92, SJV)
8314	OBSTRUCTION	12208	D	0067	0	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-54-10.52 LONG. 75-53-50.11W WITH AN ESTIMATED DEPTH ì OF 16.7 METERS (55 FEET). LOCATED WHILE SEARCHING FOR AWOIS ITEM ì NO. 7522. ADDITIONAL WORK REQUIRED. FE353SS/90-- OPR-D111-HE; ITE NO. 3. INVESTIGATION NOT ì ADEQUATE TO DETERMINE SIGNIFICANCE. EVALUATOR RECOMMENDS CHARTING ì AN OBSTRUCTION WITH AN ESTIMATED DEPTH OF 16.7 METERS (55 FEET) ì AS SURVEYED C H-10340/90 (ABOVE). ADDITIONAL WORK RECOMMENDED. ì (ENT 7/14/92, SJV) FE412SS/95-- OPR-E696-HE 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
8315	OBSTRUCTION	12221	D	067	0	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-53-43.78 LONG. 75-54-10.80W WHILE SEARCHING FOR ì AWOIS ITEM 7522. ESTIMATED DEPTH OF 13.3 METERS (44 FEET). ì ADDITIONAL WORK RECOMMENDED. (UP 3/17/95, SJV) FE353SS/90-- OPR-D111-HE; ITEM NO. 10 (BUOY ANCHOR). LOCATED BY ì SIDE SCAN SONAR IN LAT. 36-53-41.88N, LONG. 75-54-11.60W. ì EVALUAT RECOMMENDS CHARTING AN OBSTRUCTION WITH AN ECHO SOUNDER ì DEPTH OF 15.4 METERS (50.0 FEET) AS SURVEYED. (ENT 7/14/92, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVI EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV) DESCRIPTION **** MEMO TO CAPT. DEAN SEIDE (N/CG241) FROM CDR. CHRISTOPHER LAWRENCE (N/CG244) DATED 9/16/92. RE. EXCHANGE OF INFO. BETWEEN NOS, USCG, AND USACE. ATTACHMENTS DOCUMENT UCCG SALVAGE OF THREE OBJECTS APPROXIMATELY 430 FEET NORTHEAST OF NOS LOCATED LOCATED OBSTRUCTION ABOVE. TWO 12,70C LB. CONCRETE SINKERS AND A BUNDLE OF 1 1/2 " DIA. CHAIN APPROXIMATELY 180 FEET LONG IN BETWEEN THE TWO SINKERS WERE REMOVED BY USCGC COWSLIP ON 8/26/92. ALL ITEMS LOCATED WITHIN 12- FOOT DIA. CIRCLE AND COMPLETELY ENTANGLED IN A DETERIORATED FISHING NET. DEPTH OVER THESE SALVAGED ITEMS WAS 50.2 FEET (MLLW). DUE TO POSITION DIFFERENCE, USACE RECOMMENDS RETAINING CHARTED OBSTRUCTION AT THE NOS POSITION BUT REVISING THE DEPTH FROM 44 FEET TO 50 FEET. NOTE: THIS ENTIRE PACKAGE WAS "FAXED" TO N/CG241 (STEVE VERRY) BY USCAE, NORFOLK (CHRIS ROWLEY) ON 3/17/95. (ENT 3/17/95, SJV)
8316	OBSTRUCTION	12208	D	067	0	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-54-58.05 LONG. 75-53-14.89W. LOCATED WHILE SEARCHING ì FOR AWOIS ITEM NO. 7522. ADDITIONAL WORK RECOMMENDED. FE353SS/90-- OPR-D111-HE; ITEM NO. 14. OBSTRUCTION LOCATED BY ì SIDE SCAN SONAR IN LAT. 36-54-58.12N, LONG. 75-53-15.56W. ì EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH AN ECHO SOUNDER ì DEPTH OF 9.2 METERS (30 FEET) AS SURVEYED. ADDITIONAL WORK ì RECOMMENDED AT AN OPPORTUNE TIME. (ENT 7/14/92, SJV) FE412SS/95-- OPR-E696-95; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
8317	OBSTRUCTION	12208	D	067	0	HISTORY H10340/90-- OPR-D111-WH; DANGEROUS SUBMERGED OBSTRUCTION ì LOCATED BY SIDE SCAN SONAR IN LAT. 36-52-34.06N, LONG. ì 75-53-22.01W. ESTIMATED DEPTH OF 46 FEET (14.2 METERS). ì ADDITIONAL WORK RECOMMENDED. FE353SS/90-- OPR-D111-HE; ITEM NO. 5. DEEPER ESTIMATED DEPT OBTAINED ON WHITING CONTACT, ABOVE. NO DIVE OPS CONDUCTED. ITEM ì WAS CARRIED FORWARD. EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION ì WITH AN ESTIMATED DEPTH OF 14.2 METERS AS SHOWN ON H-10340/90. ì ADDITIONAL WORK RECOMMENDED. (ENT 7/15/92, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
8318	OBSTRUCTION	12221	D	067	0	HISTORY H10340/90-- OPR-D111-WH; DANGEROUS SUBMERGED OBSTRUCTION ì LOCATED BY SIDE SCAN SONAR IN LAT. 36-52-36.10N, LONG. ì 75-52-39.30W. ESTIMATED DEPTH OF 16.8 METERS. ADDITIONAL WORK ì RECOMMENDED. FE353SS/90-- OPR-D111-HE; ITEM NO. 12. OBSTRUCTION LOCATED IN ì LAT. 36-52-36.24N, LONG. 75-52-38.56W. ECHO SOUNDER DEPTH OF 16.1 ì METERS (53 FEET). EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION ì WITH A DEPTH OF 16.1 METERS AS SURVEYED. ADDITION WORK ì RECOMMENDED. (ENT 7/15/92, SJV) NOTE: THIS ITEM WAS SALVAGED BY ì USCG ON 8/26/92. SE DESCRIPTION BELOW FOR DOCUMENTATION DATA. ì (ENT 3/17/95, SJV) DESCRIPTION **** MEMO TO CAF DEAN SEIDEL (N/CG24) FROM CDR. CHRISTOPHER LAWRENCE (N/CG244) DATED 9/16/92; RE. EXCHANGE OF INFO. BETWEEN NOS, USCG, AND USACE. ATTACHMENTS DOCUMENT USCG SALVAGE OF THIS ITEM ON 8/26/92. A 18,000 LB. CONCRETE BUOY SINKER WITH ABOUT 135 FEET OF 1 1/2" CHAIN WAS REMOVE

						BY USCGC COWSLIP. USACE SIDE SCAN SONAR SURVEY ON 8/24/92 NEG. FOR OTHER ITEMS. USACE RECOMMENDS REMOVING THIS OBSTRUCTION FROM THE CHART. NOTE: THIS ENTIRE PACKAGE WAS "FAXED" TO N/CG241 (STEVE VERRY) BY USACE, NORFOLK (CHRIS ROWLEY) ON 3/16/95. (ENT 3/17/95, S
8319	OBSTRUCTION	12208	D	0067	55	HISTORY FE353SS/90-- OPR-D111-HE; ITEM NO. 19. OBSTRUCTION LOCATED BY ì SIDE SCAN SONAR IN L 36-54-51.46N, LONG. 75-55-31.86W. ASSUMED ì TO BE A BUOY ANCHOR SINCE SIDE SCAN SONAR IMAGE SIMILAR TO ì THAT OBTAINED ON ITEM NO. 17 (BUOY ANCHOR SALVAGED BY THE COAST ì GUARD). EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH AN ECHO ì SOUNDER DEPTH OF 16.9 METERS (55 FEET) AS SURVEYED. (ENT 7/15/92, ì SJV) FE412SS/95-- OPR-E696-HE; OBSTRUCTION LOCA BY SIDE SCAN ì SONAR. ECHO SOUNDER LD OF 16.7 METERS (55 FEET) IN LAT. ì 36-54-52.595N, LONG. 7 55-32.613W. EVALUATOR RECOMMENDS DELETING ì CHARTED OBSTR REP 1990 AND CHARTING A 55 OBSTR AS SURVEYED. (UP ì 2/15/96, SJV)
8320	OBSTRUCTION	12208	D	0067	52	HISTORY FE353SS/90-- OPR-D111-WH; ITEM NO. 20. OBSTRUCTION LOCATED BY ì SIDE SCAN SONAR IN L 36-54-43.98N, LONG. 75-55-31.28W. ì EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH AN ECHO SOUNDER ì DEPTH OF 16.8 METERS (55 FEET) AS SURVEYED. (ENT 7/17/92, SJV) FE412SS/95-- OP E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN ì SONAR. ECHO SOUNDER LD OF 16.0 METERS (52 FEE IN LAT. ì 36-54-45.097N, LONG. 75-55-32.467W. EVALUATOR RECOMMENDS DELETING ì OBSTR REP 1990 A CHARTING 52 OBSTR AS SURVEYED. (UP 2/15/96, ì SJV)
8321	OBSTRUCTION	12208	D	067	0	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-55-26.21 LONG. 75-55-23.44W WITH AN ESTIMATED DEPTH ì OF 19.7 METERS. ADDITIONAL WORK RECOMMENDED FE353/90-- OPR-D111-HE; ITEM NO. 21. NOT INVESTIGATED BECAUSE ì ITEM WAS INCORRECTLY SCALED ONTO THE FIELD SHEET. EVALUATOR ì RECOMMENDS CHARTING ACCORDING TO WHITINGS' FINDINGS, ABOVE. ì ADDITIONAL WORK RECOMMENDED. (ENT 7/15/92, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
8322	OBSTRUCTION	12221	D	067	0	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-56-06.27 LONG. 75-55-17.07W WITH AN ESTIMATED DEPTH ì OF 16.1 METERS. FE353SS/90-- OPR-D111-HE; ITEM NO 25. OBSTRUCTION LOCATED IN ì LAT. 36-56-06.36N, LONG. 75-55-16.22W. APPEARED ON FATHOGRAM ì ONLY. SONARGRAM QUALITY POOR. EVALUATOR RECOMMENDS CHARTING AN ì OBSTRUCTION WITH AI ECHO SOUNDER DEPTH OF 14.5 METERS (47 FEET) ì AS SURVEYED. ADDITIONAL WORK RECOMMENDE (ENT 7/15/92, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
8323	OBSTRUCTION	12208	D	0067	44	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-55-49.64 LONG. 75-54-50.73W WITH AN ESTIMATED DEPTH ì OF 14.4 METERS. ADDITIONAL WORK RECOMMENDED FE353SS/90-- OPR-D111-HE; ITEM NO. 26. OBSTRUCTION LOCATED BY ì SIDE SCAN SONAR IN LAT. 36-55-49.12N, LONG. 75-54-50.55W. DIVERS ì DESCRIBE SUNKEN BUOY PARTIALLY BURIED. EVALUATOR RECOMMENDS ì CHARTING AN OBSTRUCTION WITH AN ECHO SOUNDER DEPTH OF 13.8 METERS ì (45 FEET) AS SURVEYED. (7/15/92, SJV) FE412SS/95-- OPR-E696-HE; LOCATED BY SIDE SCAN SONAR. ECHO SOUNDER LD OF 13.3 METERS (44 FEET) IN LAT. 36-55-49.234N, LONG. ì 75-54-50.327W. EVALUATOR RECOMMENDS CHARTING A 44 OBSTR AS ì SURVEYED. (UP 2/15/96, SJV) H11027/01-- OPR-D324-WH; LOCATED DURING MAINSCHEME HYDROGRAPHY. CALCULATED HEIGHT OF OBSTRUCTION APPROX. 0.79 METERS (2.6 FEET) IN SURROUNDING DEPTHS OF 47 FEET. THIS IS CONSISTENT WITH THE CHARTED 44-FOOT LD. DUE TO TIME CONSTRAINTS NO LD WAS DETERMINED. EVALUATOR RECOMMENDS RETAINIG CHARTED. (UP 2/25/02, SJV)
8324	OBSTRUCTION	12208	D	0067	42	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-55-58.55 LONG. 75-54-56.84W WITH AN ESTIMATED DEPTH ì OF 14.5 METERS. ADDITIONAL WORK RECOMMENDED FE353SS/90-- OPR-D111-HE; ITEM NO. 28. OBSTRUCTION LOCATED IN ì LAT. 36-55-59.08N, LONG. 75-54-55.19W. DIVERS DESCRIBE AN OLD ì BUOY RISING 1.3 METERS OFF THE BOTTOM. EVALUATOR RECOMMENDS ì CHARTING AN OBSTRUCTION WITH AN ECHO SOUNDER DEPTH OF 12.5 METERS ì (41.0 FEET) AS SURVEYED. FE412SS/95-- OPR-E696-HE; LOCATED BY SIDE SCAN SONAR. EVALUATOR ì RECOMMENDS DELETING OBSTR REP 1990 AND CHARTING A 42 OBSTR (12.9 ì METERS) AS SURVEYED I LAT. 36-56-01.593N, LONG. 75-54-58.690W. ì (UP 2/15/96, SJV) H11027/01-- OPR-D324-WH; LOCATED DURIN MAINSCHEME SIDE SCAN OPS. CALCULATED HEIGHT APPROX. 0.94 METERS (3.1 FEET) IN SURROUNDIN DEPTHS OF 44 TO 46 FEET. THIS IS CONSISTENT WITH CHARTED 42-FOOT LD. DUE TO TIME CONSTRAINT NO LD WAS DETERMINED. EVALUATOR RECOMMENDS RETAINING AS CHARTED. (UP 2/25/02, SJV)
8862	UNKNOWN	12254	E	0100	17	HISTORY NM30/66-- CHESAPEAKE BAY-LYNNHAVEN ROADS-LITTLE CREEK APPROACH; ì DANGEROUS SUBMERGED WRECK OF A 22-FOOT CABIN CRUISER REPORTED ì BURNED TO THE WATERLINE AND SU IN APPROX. POSITION LAT. ì 36-57.3N, LONG. 76-10.8W. H9910/80-- OPR-103-MI; WRECK LOCATED IN LAT. 57-11.71N, LONG. ì 76-10-36.18W, 17.5 LD. DESCRIBED AS A METAL OBSTRUCTION, 3 X 8 ì FEET. CHARTED WRECK (NM30/66 ABOVE) REVISED TO SURVEYED POSITION. LNM19/82-- PUBLISHES INFORMATION FRO H-9910. (ENT 2/23/94, ì SJV) FE388SS/94-- OPR-E696-HE; SIDE SCAN SONAR SEARCH NEGATIVE FOR ì WRECK AS DESCRIBED. HOWEVER, WHILE CONDUCTING A SIDE SCAN ì CONFIDENCE CHECK NEAR TH "LC" BUOY, 2 CONCRETE BLOCKS, 10 METERS ì APART WERE LOCATED. LARGER BLOCK WAS 5 X 5 FEE EXTENDING 3 FEET ì OFF THE BOTTOM. LOCATED IN LAT. 36-56-58.405N, LONG. ì 76-10-44.284W. EVALUATOR RECOMMENDS DELETING CHARTED WRECK AND ì CHARTING A DANGEROUS OBSTR, 18 FE AS SURVEYED (SEE AWOIS NO. ì 9559). LORAN-C RATES (9960 CHAIN): W=15960.1, X=27219.8, ì Y=41219. Z=58485.2. (UP 9/20/95, SJV)
8863	UNKNOWN	12245	E	0370	30	HISTORY NM1/47-- SMALL BOAT REPORTED SUNK 1300 YARDS, 155 DEG. FROM ì ANCHORAGE LIGHT F-1 APPROXIMATE POSITION LAT. 36-57-59N, LONG. ì 76-21-39W. H7602WD/48-- CS326; WRECK CLEARED TO FEET. NOT HUNG. (ENT ì 3/1/94, SJV) FE394SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 9/6/94, SJV)
8864	OBSTRUCTION	12245	E	0370	27	HISTORY H7602/48WD-- CS326, POSSIBLE GROUNDING AT 30 FEET AND CLEARED ì AT 27 FEET IN LAT. 36 57-50N, LONG. 76-21-50W. (ENT 3/1/94, SJV) FE394SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/6/94, SJV)
8866	OBSTRUCTION	12245	E	0067	19	SURVEY REQUIREMENT COMMENTS DEVELOP ALL INDICATIONS OF SHOALING, BOTH CHARTED AND ì DISCOVERED. HISTORY H7894/51-- 17-FOOT SHOAL LOCATED IN LAT. 36-56-48N, LONG. ì 76-20-30W. POSITION SCALED FROM CHART 12245. (ENT 3/1/94, SJV) FE394SS/94-- OPR-E696-HE; CHARTED SHOAL DISPROVED. HOWEVER, AN ì OLD DREDGE PIPEWAS LOCATED IN LAT. 36-56-46.590N, LONG. ì 76-20-33.164W. PNEUMO. LD OF 5.9 METERS (19 FEET). PIPE IS 2 FEET ì IN DIA., 25 METERS LONG. COVERED WITH HEAVY MARINE GROWTH. ì LORAN-C RATES: W=15987.4, X=27257.8, Y=41247.1, Z=58442.1. ì EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (UP 9/6/95, SJV)
						SURVEY REQUIREMENT COMMENTS FULLY DEVELOP ALL INDICATIONS OF SHOALING BOTH CHARTED A ì DISCOVERED. HISTORY LNM30/69-- SHOALING TO 22 FEET HAS BEEN REPORTED IN THE ì FOLLOWING

8867	SNDNG	12245	E	0067	22	POSITIONS: LAT. 36-56-55N, LONG. 76-21-37W; LAT. ì 36-57-06N, LONG. 76-21-37W. MARINERS ARE ADVISE TO EXERCISE ì CAUTION IN THE AREA. (ENT 3/1/94, SJV) FE394/94-- OPR-E696-HE; SHOAL DISPROVED. EVALUATOR RECOMMENDS ì CHARTING AS SURVEYED. (UP 9/6/95, SJV)
8868	SNDNG	12245	E	0067	22	SURVEY REQUIREMENT COMMENTS FULLY DEVELOP ANY INDICATIONS OF SHOALING, CHARTED OR ì DISCOVERED. HISTORY LNM30/69-- SHOALING TO 22 FEET HAS BEEN REPORTED IN THE ì FOLLOWING POSITIONS: LAT. 56-57-06N, LONG. 76-21-34W AND LAT. ì 36-56-55N, LONG. 76-21-37W. MARINERS ARE ADVISED TO EXERCISE ì CAUTION IN THE AREA. (ENT 3/1/94, SJV) FE394SS/94-- OPR-E696-HE; SHOAL DISPROVED. EVALUATOR RECOMMENDS ì CHARTING AS SURVEYED. (ENT 9/6/95, SJV)
8869	SNDNG	12245	E	0067	25	SURVEY REQUIREMENT COMMENTS FULLY DEVELOP ANY INDICATIONS OF SHOALING CHARTED OR ì DISCOVERED. HISTORY BP73637/68-- COE; CHARTED 35-FOOT SOUNDING REVISED TO 25 FEET. FE394S: 94-- OPR-E696-HE; SHOAL DISPROVED. EVALUATOR RECOMMENDS ì CHARTING AS SURVEYED. (UP 9/6/ SJV) DESCRIPTION **** OFFICE RESEARCH INDICATES THAT THE SOUNDING ON THE BLUEPRINT MAY HA BEEN MISREAD AS A 25 VICE A 35. HOWEVER, SINCE THIS DEPTH IS CLOSE TO AN IMPORTANT CHANNE WIDENER ITS INVESTIGATION IN THE FIELD IS JUSTIFIED. (ENT 3/2/94, SJV)
8897	UNKNOWN	12254	E	0100	5	HISTORY H9255WD/71-- OPR-467-R/H-71; SUBMERGED WRECK LOCATED IN LAT. ì 36-54-49N, LONG. 76-05-24W. IDENTIFIED AS THE WRECK OF AN ARMED ì SAILING VESSEL, LL LD OF 5.0 FEET. THIS ITEM WAS ASSIGNED THROUGH ì THE ATLANTIC MARINE CENTER FROM THE ARMY CORPS OF ENGINEERS AFTER SEVERAL VESSELS HAD REPORTED STRIKING A SUBMERGED OBSTRUCTION IN ì THE CHANNEL ENTRANCE TO LYNNHAVEN, VIRGINIA. CL200/71-- RADIO MESSAGE, NOAAS HECK TO CGD5, INFO NOS, ATLANTIC ì MARINE CENTER, NORFOLK, VA., FEB. 22, 1971. UNDERWATER ì OBSTRUCTION LOCATED LA' 36-54-48N, LONG. 76-05-25W. LEAST DEPTH ì 6 FEET MLW. (REPORTED TO BE OLD WARSHIP, SAILING TYPE, BETWEEN ì 100 AND 200 YEARS OLD PER WHEATLY WARD, C-351). LNM8/71-- UNDERWATER OBSTRUCTION REPORTED TO EXIST IN LAT. ì 36-54-48N, LONG. 76-05-25W. COVERED 6 FEET AT MLW. LN 71-- LYNNHAVEN INLET CHANNEL BUOY 3 (LLP 332) HAS BEEN ì RELOCATED IN POSITION LAT. 36-54-47N LONG. 76-05-25W TO MARK ì ROUTE OF BEST WATER (SEE PAGE 3 OF LNM 8/71, UNDERWATER ì OBSTRUCTION). (ENT 4/7/94, SJV) DESCRIPTION **** TELCON, 4/12/94, S. VERRY (NOS) AND CHRIS ROWL (COE, NORFOLK); DANGEROUS SUBMERGED WRECK LOCATED IN LAT. 36-54-48.7N, LONG. 76-05-23.9W (NAD27). LEAST OBSERVED ECHO SOUNDER DEPTH 6.7 FEET. (TEL. NO. 804-441-7018) DIVERS REPORT FINDING TIMBERS, COPPER PLATING AND A PILE OF BALLAST. **** VIRGINIA-PILOT, SAT., MARCH 20, 197 NEWSPAPER ITEM. SALVAGE WORK ON WRECK CARRIED OUT BY CHARLES V. SPENCER. SEVEN CANNON AND THREE SWIVEL GUNS BROUGHT UP. RU/HE SALVAGED ONE CANNON ON 2/22/71, THE DA' THE WRECK WAS FOUND. ALL THAT REMAINS IS A PILE OF BALLAST STONE. GUNS DIFFER IN SIZE LEADING SPENCER TO SPECULATE THAT THE SHIP WAS EITHER A PRIVATEER OR A PIRATE VESSEL CIRCA 1770-1820. SPENCER TO TAKE ONE OF THE SMALL SWIVEL GUNS TO THE MARINERS MUSEUM (NEWPORT NEWS) TO HELP IDENTIFY AND DATE THE WRECK MORE PRECISELY. HE PLANS TO CLEAN AND SELL THE GUNS. THE GUNS FOR SALE WEIGH 1,800 LBS. EACH. (UP 4/13/94, SJV)
9343	OBSTRUCTION	12208	E	0067	0	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN APPROX. LAT. 3 52-45.80N, LONG. 75-53-16.81W. ESTIMATED DEPTH ì OF 14.6 METERS (48 FEET). EVALUATOR RECOMMENDS CHARTING AN OBSTR ì (A) COVERED 48 FEET AS SURVEYED. ADDITIONAL WORK RECOMMENDED. ì (ENT 12/23/94, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
9344	OBSTRUCTION	12208	E	0067	0	HISTORY H10340/90-- OPR-D111-WH; SIDE SCAN SONAR CONTACT IDENTIFIED ì DURING OFFICE PROCESSING IN LAT. 36-54-57.39N, LONG. ì 75-55-46.96W. ESTIMATED DEPTH OF 14.4 METERS (47.0 FEET FE353SS/90-- OPR-D111-HE; DISPROVED. EVALUATOR RECOMMENDS NOT ì CHARTING. (UP 1/17/95, SJV)
9345	OBSTRUCTION	12208	E	067	0	HISTORY H10340/90-- OPR-D111-HE; SIDE SCAN SONAR CONTACT LOCATED IN ì LAT. 36-56-12N, LONG. 75-10.5W. CHARTED AS A 37-FOOT ì OBSTRUCTION REPORTED 1990. (ENT 1/18/95, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/1: 96, SJV)ì
9346	SNDNG	12245	E		0	HISTORY FE205WD/66-- (OLD FE NO. 1, 1967WD); OPR-467-WA/HI; PSR NO. 3; ì DRAG GROUNDED IN 25 FE IN LAT. 36-57-55N, LONG. 76-26-25W. ì SOUNDING OF 26 FEET AND CLEARED TO 24 FEET. CURRENT TOO STRONG ì FOR DIVE OPS. CHARTED AS A SHOAL (SHL) CLEARED TO 24 FEET. (ENT ì 1/24/95, SJV) FE408 95-- OPR-E696-HE; 200% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING SHOAL (FT) FROM THE CHART. (UP ì 3/12/96, SJV)
9347	OBSTRUCTION	12245	E		0	HISTORY FE205WD/66-- (OLD FE NO.1, 1967WD); OPR-467-WA/HI;PSR NO.3; DRAG ì GROUNDED IN 36 FEE IN LAT. 36-58-14.5N, LONG. 76-26-33.0W. ì SOUNDING OF 36 FEET AND CLEARED TO 32 FEET. CHARTED A AN ì OBSTRUCTION CLEARED TO 32 FEET AS SURVEYED. (ENT 1/24/95, SJV) FE408SS/95-- OPR-E696-HE; 200% SIDE SCAN SONAR NEGATIVE. ì HOWEVER, ONE CONTACT WAS NOTED WITHIN THE ASSIGNED RADIUS (SEE ì AWOIS NO. 9813). EVALUATOR RECOMMENDS DELETING. (UP 3.12.96, SJV)
9381	OBSTRUCTION	12208	E	067	0	HISTORY H10340/90-- OPR-D111-WH; SIDE SCAN SONAR CONTACT IDENTIFIED ì DURING OFFICE PROCESSING IN LAT. 36-54-29.32N, LONG. ì 75-55-34.22W. ESTIMATED DEPTH OF 15.4 METERS (50.5 FEET NOT ì SUBSEQUENTLY INVESTIGATED BY HECK. (ENT 3/17/95, SJV) FE412SS/95-- OPR-E696-HE; 400% SIE SCAN SONAR SEARCH NEGATIVE. ì EVALUATROR RECOMMENDS DELETING. (UP 2/15/96, SJV)
9382	OBSTRUCTION	12245	E	0067	0	HISTORY FE408SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE FOR ì THIS ITEM. HOWEVER, C CONTACT WAS NOTED OUTSIDE THE ASSIGNED ì SEARCH RADIUS (SEE AWOIS NO. 9817). EVALUATOR RECOMMENDS NOT ì CHARTING. (UP 3/12/96, SJV) DESCRIPTION **** COE, NORFOLK; SIDE SCAN SONAR SURVEYS OF OCTOBER 1991 AND JULY 1992 NEGATIVE FOR AWOIS ITEM NO. 8013. HOWEVER, FOUR ADDITIONAL CONTACTS NOT CONSIDERED TO BE AWOIS 8013 WERE NOTED. THREE OF THESE CONTAC WERE IDENTIFIED BY CONTRACT DIVERS IN MAY AND JUNE 1993 WHILE THE FOURTH COULD NOT BE LOCATED. OF THE THREE CONTACTS LOCATED, ONE WAS CONSIDERED WORTH REINVESTIGATING. OBJECT LOCATED IN LAT. 36-57-45.16N, LONG. 76-20-14.40W (NAD27). 6 FEET LONG, 2 FEET WIDE CONCRETE SLAB WITH A 5-FOOT, 18 INCH DIA. WOODEN PILE PROTRUDING OUT OF THE CENTER. 5-FOC RELIEF. LD OF 49.5 FEET AT MLLW. (ENT 3/28/95, SJV)
9425	OBSTRUCTION	12254	E	0067	0	HISTORY H7177WD/48-- (AD. WK.); PBS-WD-2248; 1:20,000-SCALE; VISUAL ì CONTROL; HANG DEPTH UNKNOWN, CLEARED TO 15 FEET IN LAT. ì 36-57-20.0N, LONG. 76-09-47.0W (SCALED FROM CHART 12254' (ENT ì 4/26/95, SJV) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
						HISTORY FE387SS/94-- OPR-E696-HE; INDICATION OF AN OBSTRUCTION ON ì FATHOGRAM 3 TIMES IN VICINITY OF CHARTED BUOY WHICH WAS REPORTED ì MISSING BY COAST GUARD. NEW BUOY ANCHOF WAS DROPPED IN CLOSE ì PROXIMITY. EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION SINCE ì DOCUMENTATION EXISTS OF REMOVAL OF OLD ANCHOR. FATHO. LD OF 13.7 ì METERS (45 FEET)

9542	OBSTRUCTION	12254	K	0067	46	LOCATED IN LAT. 36-57-50.61N, LONG. ì 76-04-41.01W. (ENT 9/12/95, SJV) F00439/98-- S-E900-RU; ITEM LOCATED IN LAT, 36-57-50.73N, LONG. 76-04-41.18W WITH A MULTIBEAM LD OF 46.0 FEET. ITEM BELIEVEI TO BE AN OLD BUOY ANCHOR. EVALUATOR RECOMMENNDS DELETING CHARTED OBSTN 45 FT AND CHARTING AN OBSTN 46 FT AS SURVEYED. (UP 8/16/99, SJV)
9543	OBSTRUCTION	12254	E	0067	48	HISTORY FE387SS/94-- OPR-E696-HE; TWO OBSTRUCTIONS LOCATED IN CLOSE ì PROXIMITY OF EACH OTHER. ONE IN LAT. 36-56-09.98N, LONG. ì 76-02-32.08W WITH A FATHOMETER LD OF 14.6 METERS (48 FEET) AND ì THE OTHER IN LAT. 36-56-07.95N, LONG. 76-02-34.88W. EVALUATOR ì RECOMMENDS ENCLOSING BOTH OBSTRUCTIONS WITH A DANGER CURVE WITH ì LABEL 48-FOOT OBSTR. (ENT 9/12/95, SJV)
9544	UNKNOWN	12254	E	0100	33	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OF 0.9 METER 12.1 METERS.DIVERS DESCRIBE A STEEL ì HULLED VESSEL MOSTLY BURIED WITH A WOODEN MAST AI BEAMS. ALSO ì SCATTERED WRECKAGE. PNEUMO LD OF 10.1 METERS (33 FEET) IN LAT. ì 36-55-56.868N LONG. 76-03-17.065W. EVALUATOR RECOMMENDS CHARTING ì AS SURVEYED. LORAN-C RATES (9960 CHAIN): W=15937.4, X=27187.7, ì Y=41269.4, Z=58512.5. VISIBILITY WAS 4 FEET. (ENT 9/12/95, SJV)
9545	UNKNOWN	12254	E	0100	32	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OF 1.3 METER 11.7 METERS. DIVERS DESCRIBE A STEEL ì HULLED VESSEL WITH A WOODEN MAST IN LAT. 36-56-02.7N LONG. ì 76-03-19.6W. PNEUMO. LD OF 9.8 METERS (32 FEET). MAST IS 15 FEET ì LONG. VISIBILITY 4 FEET EVALUATOR RECOMMENDS CHARTING AS ì SURVEYED. LORAN-C RATES (9960 CHAIN): W=15939.8, X= 27108.4, ì Y=41270.4, Z=58512.4. (ENT 9/12/95, SJV)
9546	OBSTRUCTION	12254	E	0067	38	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OFF BOTTOM METERS IN 13.6 METERS. VISIBILITY 5-6 FEET. ì DIVERS DESCRIBE BADLY CORRODED METAL CONTAINERS. PNEUMO. LD OF 40 ì FEET IN LAT. 36-57-07.421N, LONG. 76-03-23.419W. LORAN-C RATES ì (9960 CHAIN): W=15939.1, X=27190.5, Y=41282.8, Z=58516.4. ì EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH A FATHOMETER LD ì OF 11.6 METERS (38 FEET) IN LAT. 36-57-05.73N, LONG. ì 76-03-24.68W. SEVERAL SIDE SCAN SONAR CONTACTS LIE IN CLOSE ì PROXIMITY. DIVERS DESCRIBE 2 AREA OF SCATTERED DEBRIS WHICH ì APPEAR TO BE STEEL CONTAINERS. PNEUMO. LD OF 12.2 METERS (40 FEET) IN LAT. 36-57-07.032N, LONG. 76-03-24.878W. LORAN-C RATES ì (9960 CHAIN): W=15939.1, X=27190.6 Y=41282.6, Z=58516.2. WOODEN ì TIMBERS ALSO LYING ON BOTTOM. EVALUATOR DOES NOT RECOMMEND ì CHARTING THESE ITEMS DUE TO THE 38-FOOT FATHOMETER DEPTH (ABOVE). ì (ENT 9/12 95,SJV)
9547	OBSTRUCTION	12254	E	0067	39.8	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SONAR CONTACT. COMPUTED HEIGHT ì OFF BOTTOM OF 0.9 METERS IN 12.9 METERS. DIVERS DESCRIBE A ì CYLINDRICAL PIPE 8 FEET 9 INCHES LONG AND 3 FEET DIA. PNEUMO. ì LD OF 12.1 METERS (39 FEET) IN LAT. 36-57-10.545N, LONG. ì 76-03-27.170W. EVALUATOR RECOMMENDS CHARTING A 12.1 METER OBSTR ì AS SURVEYED. LORAN-C RATES (9960 CHAIN): W-15939.2, X=27191.0, ì Y=41283.3, Z=58516.4. VISIBILITY 6-10 FEET. PIPE IS HEAVILY ì ENCRUSTED WITH MARINE GROWTH AND BADLY RUSTED. (ENT 9/12/95, SJV)
9548	OBSTRUCTION	12254	E	0067	34	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. DIVERS ì DESCRIBE A 8 X 15-FOOT METAL CONTAINER ENCRUSTED WITH MARINE ì GROWTH WITH A LENGTH OF CHAIN ON THE TOP. PNEUMO. LD OF 10.6 ì METERS (34 FEET) IN LAT. 36-56-37.009N, LONG. 76-03-10.589W. ì FALLS WITHIN AWOIS CIRCLE FOR NOS. 3758, 3759, 3760, AND 3762. ì EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH A LD OF 10.6 ì METERS AS SURVEYED. LORAN-C RATES (9960 CHAIN): W=15938.2, ì 27188.8, Y=41277.3, Z=58515.4. (ENT 9/12/95, SJV)
9549	OBSTRUCTION	12254	E	0067	42	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. DIVERS ì DESCRIBE METAL PLATES TOP OF A CONCRETE BLOCK TIED TOGETHER ì WITH CHAINS. PNEUMO LD OF 12.9 METERS (42 FEET) IN LAT. ì 36-56-27.426N, LONG. 76-02-31.286W. EVALUATOR RECOMMENDS CHARTING ì AS SURVEYED. ITEM EXTENDS 1.4 METERS ABOVE BOTTOM IN 14.8 METERS. ì LORAN-C RATES (9960 CHAIN): W=15936.1, X= 27185.8, Y=41276.8, ì Z=58517.5. ROUND BUOY BLOCK WITH CHAIN ALSO LOCATED IN CLOSE ì PROXIMIT LD 13.2 METERS (43 FEET) IN LAT. 36-56-27.095, LONG. ì 76-02-31.561W. EVALUATOR DOES NOT RECOMMEND CHARTING THIS BLOCK. ì (ENT 9/12/95, SJV)
9550	OBSTRUCTION	12254	E	0067	23	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. DIVERS DESCRIBE DERELICT NET HUNG ON SMALL UNIDENTIFIABLE OBSTRUCTION. ì EXTENDS 1.4 METERS OFF THE BOTTOM. PNEUMO L OF 7.8 METERS (23 ì FEET) IN 9.2 METERS IN LAT. 36-57-03.525N, LONG. 76-05-32.844W. ì EVALUATOR RECOMMENDS CHARTING AN OBSTR AS SURVEYED. LORAN-C RATES ì (9960 CHAIN): W=15945.4, X= 27199.8, Y=41278.1, Z=58507.2. (ENT ì 9/12/95, SJV)
9551	OBSTRUCTION	12254	E	0067	23	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OFF BOTTOM (1.1 METERS IN 8.3 METERS OF WATER. DIVERS ì DESCRIBE DERELICT NET HUNG ON UNIDENTIFIABLE OBSTRUCTION 3 FEET ì OFF THE BOTTOM. PNEUMO. LD OF 7.5 METERS (23 FEET) IN LAT. ì 36-56-47.832N LONG. 76-05-37.241W. EVALUATOR RECOMMENDS CHARTING ì AN OBSTRUCTION AS SURVEYED. LORAN RATES (9960 CHAIN): ì W=15943.2, X=27199.0, Y=41274.8, Z=58505.9. (ENT 9/12/95, SJV)
9552	OBSTRUCTION	12254	E	0067	27	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT 0.9 METERS IN METERS. DIVERS DESCRIBE WHAT APPEARED TO ì BE THE BOTTOM SECTION OF A BUOY EXTENDING 3 FEET OFF THE BOTTOM. ì PNEUMO LD OF 8.2 METERS (27 FEET) IN LAT. 36-56-39.11N, LONG. ì 76-04-19.618W. EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION AS ì SURVEYED. LORAN-C RATES (9 CHAIN): W=15941.6, X=27193.5, ì Y-47275.6, Z=58510.8. VISIBILITY 3 FEET. A SHACKLE WAS IN ONE ì END. (ENT 9/12/95, SJV)
9553	OBSTRUCTION	12254	E	0067	33	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OF 1.9 METER 12.1 METERS. DIVERS DESCRIBE A BUOY BLOCK ì WITH CHAIN ATTACHED EXTENDING 5 FEET OFF THE BOTTOM. PNEUMO LD OF ì 10.3 METERS (33 FEET) IN LAT. 36-56-15.379N, LONG. 76-03-02.631W. ì VISIBILI 3 FEET. LORAN-C RATES (9960 CHAIN): W=15937.4, ì X=27187.6, Y=41273.4, Z=58514.5. (ENT 9/12/95, SJV)
9554	OBSTRUCTION	12254	E	0067	37	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OF 0.7 METER 12.8 METERS. DIVERS DESCRIBE 25-FOOT LONG ì PIPE WITH WITH A CEMENT OR METAL BLOCK AT ONE END. PNEUMO. LD OF ì 11.5 METERS (37 FEET) IN LAT. 36-55-53.368N, LONG. 76-03-03.406W. ì VISIBILITY 1 FOOT. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. ì LORAN-C RATES (9960 CHAIN): W=15937. X=27187.0, Y=41269.2, ì Z=58513.1. LD OBTAINED ON BLOCK. (ENT 9/12/95, SJV)
9555	OBSTRUCTION	12254	E	0067	42	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OF 1.3 METER 12.7 METERS. DIVERS DESCRIBE A SMALL ì BARGE OR PONTOON FLOAT LYING UPSIDE DOWN ON BOTTOM WITH A HEIGHT ì OF 5 FEET OFF BOTTOM. DIVERS PNEUMO. LD OF 12.9 METERS (42 FEET). ì FATHOMETER DEPTH OF 12.3 METERS (40 FEET) IN SAME LOCATION. ì EVALUATOR RECOMMENDS

						CHARTING AN OBSTRUCTION WITH THE FATHOMETER ì DEPTH AS SURVEYED IN LAT. 36-56-48.231N, LON 76-02-55.683W. ì VISIBILITY 6-10 FEET. ENCRUSTED WITH MARINE GROWTH. LORAN-C RATES ì (9960 CHA W=15937.4, X=27188.1, Y=41279.9, Z=58517.1. ì DIMENSIONS OF ITEM ARE 22 X 12 FEET. (ENT 9/12/95, SJV
9556	OBSTRUCTION	12254	E	0067	41	HISTORY FE367SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. FATHOMETER DEPTH OF 12.5 METE (41 FEET) FOUND IN LAT. 36-57-59.22N, LONG. 76-05-19.07W. EVALUATOR CONSIDERS THIS DEPTH IS ON THE ANCHOR THAT WAS DIVED ON BY FIELD UNIT PERSONNEL AND IS THE SHOALEST DEPTH ON THE ANCHOR (SEE AWOIS NO. 9557). EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION AS SURVEYE (ENT 9/12/95, SJV) F00450/99-- OPR-E350-RU; 2 SIDE SCAN SONAR CONTACTS WERE INVESTIGATED WIT SWMB. NO SIGNIFICANT CONTACTS FOUND. EVALUATOR RECOMMENDS DELETING CHARTED "OBSTN 4 FT" AND LABEL "OBSTNS". (UP 4/27/00, SJV)
9557	OBSTRUCTION	12254	E	0067	42	HISTORY FE387SS/94-- OPR-E696-HE; UNCHARTED OBSTRUCTION LOCATED IN LAT. 36-57-58.48N, LONG. 05-14.64W. DIVERS DESCRIBE A BUOY ANCHOR. DEPTH OF 13 METERS (42 FEET) DETERMINED FROM SURROUNDING DEPTHS AND HEIGHT ABOVE BOTTOM REPORTED BY DIVERS. EVALUATOR RECOMMEN CHARTING AWOIS ITEM 9556 INSTEAD OF THIS ITEM DUE TO LESSER LD AND CLOSE PROXIMITY TO EAC OTHER. DIVER LD DESIRED ON THIS ITEM AT A LATER DATE. (ENT 9/12/95, SJV) F00450/99-- OPR-E350-RU SIDE SCAN SONAR CONTACT INVESTIGATED WITH SWMB. NO SIGNIFICANT CONTACTS WERE FOUND. EVALUATOR RECOMMENDS DELETING CHARTED "OBSTN 42 FT" AND LABEL "OBSTNS" & CHART SURVE DEPTHS. (UP 4/27/00, SJV)
9558	OBSTRUCTION	12254	E	0067	18	HISTORY FE394SS/94-- OPR-E696-HE; WHILE INVESTIGATING A 17-FOOT SHOAL ì (AWOIS NO. 8866), 2 UNCHARTED OBSTRUCTIONS WITH DEPTHS OF 18 FEET ì (5.5 & 5.6 METERS) WERE NOTED DURING OFFICE PROCESSING IN LAT. ì 36-56-40.24, LONG. 76-20-26.37W & LAT. 36-56-42.67N, LONG. ì 76-20-26.71V RESPECTIVELY. EVALUATOR RECOMMENDS REMOVING CHARTED ì 17-FOOT SOUNDING AND CHARTING OBSTRUCTIONS AS SURVEYED. (ENT ì 9/6/95, SJV)
9559	OBSTRUCTION	12254	D	067	18	HISTORY FE388SS/94-- OPR-E696-HE; WHILE SEARCHING FOR AWOIS ITEM 8862, ì 2 CONCRETE BLOCKS WERE DISCOVERED DURING A ROUTINE SIDE SCAN ì CONFIDENCE CHECK IN THE VICINITY OF THE "LC" BUOY. DIVERS ì DESCRIBE 2 CONCRETE BLOCKS, 10 METERS APART. THE LARGER BLOCK ì MEASUREI X 5 FEET AND EXTENDED 3 FEET OFF THE BOTTOM. PNEUMO LD ì OF 18 FEET IN LAT. 36-56-58.405N, LON 76-10-44.284W. EVALUATOR ì RECOMMENDS DELETING CHARTED WRECK (AWOIS 8862) AND CHARTING DANGEROUS SUBM OBSTR 18 FEET AS SURVEYED. LORAN-C RATES (9960 ì CHAIN): W=15960.1, X=2721 Y=41219.8, Z=58485.2. (ENT 9/6/95, ì SJV)
9813	OBSTRUCTION	12245	E	0067	16.2	HISTORY FE408SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT NOTED WITHIN ì THE SEARCH RADIU FOR AWOIS ITEM 9347 (NOT CONSIDERED TO BE THAT ì ITEM). DEVELOPED WITH ECHO SOUNDER. EVALUATOR RECOMMENDS DELETING ì "OBSTR (32 FT)" AND CHARTING "SHOAL 53 FT" (16.2 METERS) IN LAT. ì 36-58-20.518N, LONG. 76-26-24.287W. (ENT 7/9/96, SJV)
9817	OBSTRUCTION	12245	E	0067	52	HISTORY FE408SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT NOTED WITHIN ì SEARCH RADIUS OF AWOIS ITEM 9382 (NOT CONSIDERED TO BE THAT ì ITEM). ECHO SOUNDER DEVELOPMENT DESCRIBED BOTTOM FEATURE 100 ì METERS LONG LYING WITHIN THE NORFOLK REACH CHANNEL. USACE (CHRIS ì ROWLEY, TEL. 804-441-7482) STATED FEATURE MAY BE THE REMAINS OF ì AN OLD DEGAUSSING INSTALLATION. EVALUATOR RECOMMENDS CHARTING A ì 52 OBSTR IN LAT. 36-57-50.89N, LONG. 76-20-05.16W. (ENT 7/9/96, ì SJV)
9825	OBSTRUCTION	12254	D	067	19	HISTORY FE410SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. ECHO SOUNDER ì LD OF 6 METERS FEET) IN 6-8 METERS IN LAT. 36-57-16.627N, ì LONG. 76-09-35.608W. EVALUATOR RECOMMENDS CHARTIN A 19 OBSTR AS ì SURVEYRD. (ENT 7/12/96, SJV)
9826	OBSTRUCTION	12254	D	067	19	HISTORY FE410SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. ECHO SOUNDER ì LD OF 5.8 METER (19 FEET). IN 7.2 METERS IN LAT. 36-57-31.041N, ì LONG. 76-09-16.181W. EVALUATOR RECOMMENDS CHARTING A 19 OBSTR AS ì SURVEYED. (ENT 7/12/96, SJV)
9827	OBSTRUCTION	12254	D	067	20	HISTORY FE410SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. ECHO SOUNDER ì LD OF 6.2 METER (20 FEET) IN 7.3 METERS IN LAT. 36-57-32.793N, ì LONG. 76-08-50.147W. EVALUATOR RECOMMENDS CHARTING A 20 OBSTR AS ì SURVEYED. (ENT 7/12/96, SJV)
9828	OBSTRUCTION	12254	E	0067	18	HISTORY FE410SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. ECHO SOUNDER ì LD OF 5.5 METER (18 FEET) IN 7.2 METERS IN LAT. 36-57-26.500N, ì LONG. 76-09-00.487W. EVALUATOR RECOMMENDS CHARTING AN 18 OBSTR AS ì SURVEYED. (ENT 7/12/96, SJV)
9837	OBSTRUCTION	12254	E	0067	0	HISTORY LNM47/94-- ADD DANGEROUS SUBM OBSTN IN APPROX. LAT. 36-57-26.20N, LONG. 76-03-05.70W (ENT 11/20/96, SJV) F00439/98-- S-E900-RU; 200% SIDE SCAN SONAR SEARCH NEGATIVE, EVALUATOR RECOMENDS DELETING. (UP 8/16/99, SJV)
9917	OBSTRUCTION	12221	D	0067	0	HISTORY H9871/76WD-- OPR-515-RU/HE; TEMPOARY HANG AT 49 FEET IN APPROX. ì POSITION LAT. 36-51 52.8N, LONG. 75-53-52.8W. CLEARED IN ONE ì DIRECTION BY 42.5 FEET AND IN THE OPPOSITE DIRECTIO BY 42.0 ì FEET. (ENT 3/11/97, SJV)
9930	UNKNOWN	12208	D	100	0	HISTORY LNM41/96-- 47-FOOT P/C SINK IN VICINITY OF THE "CB" BUOY IN ì APPROX. POSITION LAT. 36-49 LONG. 75-46.1W. MARKED BY A ì LIGHTED WRECK BUOY SHOWING Q F WITH MARKINGS "W CB". MARINERS ARE ì ADVISED TO EXERCISE CAUTION WHEN NAVIGATING IN THE AREA. (ENT ì 4/25/97, SJV)
50005	ACTIVE	0	M	0999	0	SURVEY REQUIREMENTS INFORMATION
50035	AURORA	18685	L	0999	0	SURVEY REQUIREMENTS INFORMATION
10595	OBSTRUCTION	12254	E	067	39	HISTORY F00450/99-- OPR-E350-RU; UNCHARTED OBSTRUCTION NOTED DURING OFFICE PROCESSING. L OF 39 FEET (11.9 METERS) IN LAT. 36-58-13.56N, LONG. 76-06-26.76W. EVALUATOR RECOMMENDS CHARTING A 39 OBSTN AS SURVEYED. (ENT 4/27/00, SJV)
10596	OBSTRUCTION	12254	E	067	39	HISTORY F00450/99-- OPR-E350-RU; UNCHARTED OBSTRUCTION LOCATED DURING OFFICE PROCESSING LD DEPTH OF 39 FEET (11.9 METERS) LOCATED IN LAT. 36-58-10.74N, LONG. 76-06-17.35W. EVALUATOR RECOMMENDS CHARTING A 39 OBSTN AS SURVEYED. (ENT 4/27/00, SJV)
10791	OBSTRUCTION	12208	D			
10823	IMPULSIVE	12253	E	0100		

11396	OBSTRUCTION	12208	D	067	34	HISTORY H11027/02-- OPR-D324-WH; CONTACT IDENTIFIED DURING MAINSCHEME SIDE SCAN OPS AND DEVELOPED BY SWMB. LD OF 10.35 METERS (34 FEET) IN LAT. 36-55-31.58N, LONG. 75-50-09.44W. SURROUNDING DEPTHS OF APPROX. 11.3 METERS (37 FEET). EVALUATOR RECOMMENDS CHARTING A : OBSTN AS SURVEYED. (ENT 2/25/02, SJV)
11397	OBSTRUCTION	12222	E	067		
11398	OBSTRUCTION	12222	E	067		
11399	UNKNOWN	12253	E	098		
11400	UNKNOWN	12253	E	100		
11430	KINGSTON CELONITE	12208	D	067		
11433	OBSTRUCTION	12208	D	067	60	HISTORY H10341/90--OPR-D111-WH; SIGNIFICANT CONTACT LOCATED IN LAT. 36-51-49.96N, LONG. 75-47-00.51W (NAD 83). CONTACT WAS APPROXIMATELY 40 - 50 METERS NORTH OF AWOIS ITEM 1608. FE355/9 -OPR-D111-HE; OBSTRUCTION ORIGINATING FROM H10341/90 IN LAT. 36-51-49.96N, LONG. 75-47-00.51W (NAD 83) INVESTIGATED BY FIELD UNIT AND CONSIDERED INSIGNIFICANT. EVALUATOR RECOMMENDS DELETING FROM CHARTS. (ENT 03/02, PSH)
11434	OBSTRUCTION	12208	D	067	58	HISTORY FE355/90--OPR-D111-HE; WHILE INVESTIGATING AWOIS ITEM 7529, AN OBSTRUCTION WAS LOCATED AND INVESTIGATED BY DIVERS IN LAT. 36-52-03.15N, LONG.75-44-53.45W (NAD 83), WITH AN ESTIMATED DEPTH OF 17.7 METERS (58 FEET). EVALUATOR RECOMMENDS CHARTING A DANGEROUS SUBMERGED OBSTRUCTION AS SURVEYED WITH AN ESTIMATED LD OF 17.7 METERS (58 FEET) (17.7 OBSTN (A)) IF CHART SCALE ALLOWS. PRESENTLY CHARTED AS A 58 OBSTN (REP 1990). (ENT 03/02, PS
11435	OBSTRUCTION	12208	D	067		
11436	UNKNOWN	12208	D	100		
11437	OBSTRUCTION	12208	D	067		
11448	GULF HUSTLER	12221	D	100		
11449	GULF HUSTLER	12221	D	100		
11431	OBSTRUCTION	12221	D	067	60	HISTORY F00355SS/90-- OPR-D111-HE; 4 CONTACTS WERE OBTAINED BY SIDE SCAN SONAR WHILE SEARCHING FOR AWOIS NO. 788. TWO OF THE CONTACTS WERE CONSIDERED INSIGNIFICANT. THE OTHER TWO WERE CONSIDERED SIGNIFICANT AND WERE LOCATED IN LAT. 36-51-51.90N, LONG. 75-45-30.24W, (LD OF 18.5 METERS, 60 FEET) AND LAT. 36-51-49.17N, LONG. 75-45-30.00W (LD OF 18.4 METERS, FEET). EVALUATOR RECOMMENDS CHARTING THE DANGEROUS SUBMERGED OBSTRUCTIONS (60 OBST AS SURVEYED. ONLY ONE OBSTRUCTION (60 OBSTN, SIC) WAS CHARTED DUE TO CHART SCALE. NOTE CARTOGRAPHER MIGHT HAVE CONSIDERED CHARTING "60 OBSTNS". (ENT 3/12/02, SJV)
12259	OBSTRUCTION	12208	D	370	20	HISTORY NM44/20-- CHESAPEAKE BAY APPROACHES-WRECK-LIGHT BUOY ESTABLISHED- ON OCTOBEF 15, 1920 A LIGHT BUOY, HORIZONTALLY STRIPED, WAS ESTABLISHED ABOUT 2.5 MILES, 129 DEGS. FRO CAPE HENRY LIGHTHOUSE IN 4 FATHOMS OF WATER TO MARK THE WRECK OF THE SUNKEN SCHOONE "T.F. POLLARD. THE LIGHT BUOY WHICH IS CONICAL WITH A SKELETON SUPERSTRUCTURE SHOWING A OCCULTING RED LIGHT EVERY 10 SEC - LIGHT 5 SEC, ECLIPSE 5 SEC - OF 5 CANDLE POWER 11 FEET ABOVE THE WATER, IS MOORED ON THE BEARINGS: VIRGINIA BEACH, TANK 196 DEG. 30 MIN.; CAPE HENRY LIGHTHOUSE 309 DEG. THE WRECK LIES 100 YARDS, 241 DEG. FROM THE LIGHT BUOY WITH 5 FEET OF WATER OVER IT AT LOW TIDE. (REF. NM43 (1370) BUREAU OF LIGHTHOUSES, 1920). NM1/21-- CHESAPEAKE BAY APPROACHES-WRECK NO LONGER A MENACE-LIGHT BUOY WITHDRAWN- ON DECEMBER 11, 1920, THE LIGHT BUOY MOORED TO MARK THE WRECK OF THE SCHOONER "THOMAS F. POLLARD" WAS WITHDRAWN, THE WRECK BEING NO LONGER A MENACE TO NAVIGATION. CL347/58-- FROM CHIEF, USC&GS CHART DIVISION TO "ALL CARTOGRAPHERS"; SUBJECT: NONDANGEROUS WRECKS, CHARTING OF; DATED MAY,8 1958; CHART ALL KNOWN WRECKS (DANGEROUS AS WELL AS THOSE CONSIDERED NON-DANGEROUS) OUT TO THE 300-FATHOM CURVE. (NOTE: THESE WRECKS ORIGINATED WITH THE NAVY WRECK LIST (24) BELOW). H09293WD/72-- OPR-467-RH-72; ITEM #16. ("T.F. POLLARD") WIRE DRAG INVESTIGATION NEGATIVE FOR WRECK. HOWEVER, A "METAL CLUMP" WAS HUNG IN LAT. 36-54-22N, LONG. 75-57-47W. COVERED WITH TRAWLER NETS (NOTE ON "A&D PLOT). THE EVALUATOR RECOMMENDS DELETING THE NON-DANGEROUS WRECK ("TF POLLARD") AND CHARTING A DANGEROUS OBSTRUCTION, CLEARED TO 24 FEET AS SURVEYED. CL24/84-- "MINUTE MEMO" DATED JANUARY 10, 1984; FROM DAVE PETERSON (N/CG24X5) TO JEANETTE O'CONNOR ("AREA 2" MCD) RE. FINDINGS OF WIRE DRAG SURVEY H9293; RECOMMENDS CHARTING "ITEM 16", ABOVE AS CLEARED TO FEET VICE 24 FEET. OF THE TWO CLEARANCE STRIPS, 20 FEET WAS THE LEAST EFFECTIVE CLEARED DEPTH. (SEE AWOIS NO. 804) DESCRIPTION 24 NO.1324; SCHOONER; LAT. 36-54-00N, LONG. 55-58-00W. SUNK 1920; POSITION ACCURACY WITHIN 1 MILE. (NOTE: SPELLING IS "TF POLLAND" IN THIS SOURCE). (I 2/19/04, SJV)
12260	OBSTRUCTION	12208	D	370	37	HISTORY H09293/72WD-- OPR-467-RU/HE; TEMPORARY HANG IN LAT. 36-54-46N, LONG. 75-57-43W. EFFECTIVE CLEARED DEPTH OF 23 FEET. NOT INVESTIGATED. H09905/80-- OPR-D103-MI/PE; 24-FOOT DEPTH OBTAINED AT ABOVE LOCATION. 23-FOOT CLEARED DEPTH BROUGHT FORWARD TO PRESENT SURVEY. CL25/84-- MEMO DATED JANUARY 10 1984 FROM DAVE PETERSON (N/CG24X5) TO JEANETTE O'CONNOR (MARINE CHART DIVISION) RE. CHARTING OF ABOVE INFORMATION. RECOMMENDS CHARTIN AN OBSTN, (23 REP 1972) AS FOUND ON H09293WD. (NOTE: REVISED TO A 37-FOOT CLEARED DEPTH IN 1990. SOURCE OF THIS REVISION NOT READILY ASCERTAINABLE). (ENT 2/25/04, SJV)
12261	OBSTRUCTION	12221	D	067		
12363	OBSTRUCTION	12254	D	067	20	HISTORY F00388/94-- OPR-E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN SONAR. LD (PNEUMO) OF 6.3METERS (20 FEET) IN LAT. 36-57-48.666N, LONG. 76-10-32.694W. DIVERS DESCRIBE A 2X2X2 FOOT CONCRETE BLOCK. EVALUATOR RECOMMENDS CHARTING A 20 OBSTN AS SURVEYED. (ENT 3/24/04, SJ
12364	OBSTRUCTION	12254	D	067	22	HISTORY F00387--OPR-E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN SONAR. LD.(PNEUMO) OF 7.1 METERS (23 FEET) LOCATED IN LAT. 36-57-03.525N, LONG. 76-05-32.844W. DIVERS DESCRIBE WHAT APPEARED TO BE AN OLD DERELICT FISHING NET HUNG ON A SMALL UNIDENTIFIED OBSTRUCTION EXTENDING 3 FEET OFF THE BOTTOM. EVALUATOR RECOMMENDS CHARTING A 23 OBSTN AS SURVEYE (ENT 3/24/04, SJV)

12394	OBSTRUCTION	12222	D	067	59	HISTORY NO REGISTRY NUMBER ASSIGNED; S-E604-RU-02' HLS PROJECT REPORT; SIDE SCAN SONAR CONTACT. SWMB LD OF 59 FEET IN LAT. 36-56-10.04N, LONG. 75-57-45.36W. EVALUATOR RECOMMENDS CHARTING A 59 OBSTN AS SURVEYED. (ENT 4/2/04, SJV)
12395	OBSTRUCTION	12222	D	067	43	HISTORY NO REGISTRY NUMBER ASSIGNED; S-E604-RU-02; HLS PROJECT REPORT; SIDE SCAN SONAR CONTACT; SWMB LD OF 43 FEET IN LAT. 36-55-10.48N, LONG. 75-57-31.25W. EVALUATOR RECOMMENDS CHARTING A 43 OBSTN AS SURVEYED. (ENT 4/2/04, SJV)
12367	OBSTRUCTION	12254	D	067		
12368	OBSTRUCTION	12254	D	067		
12369	OBSTRUCTION	12254	D	067		
12371	OBSTRUCTION	12254	D	067		
12365	OBSTRUCTION	12254	D	067	23	HISTORY F00387– OPR-E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN SONAR. LD (PNEUMO) OF 7.0 METERS (23 FEET) LOCATED IN LAT. 36-56-47.832N, LONG. 76-05-37.241W. DIVERS DESCRIBE AN OLD DERELICT FISHING NET HUNG ON AN UNIDENTIFIED OBSTRUCTION EXTENDING 3 FEET OFF THE BOTTOM EVALUATOR RECOMMENDS CHARTING A 23 OBSTN AS SURVEYED. (ENT 3/24/04, SJV)
12366	OBSTRUCTION	12254	D	067		

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Vessel Name	Chart #	Area	Cartocode	Depth	Latitude*	Longitude*	History
OBSTRUCTION	12281	E	0067		39/16/07.80	076/34/21.60	HISTORY LNM5/99-- AN UNKNOWN SUBMERGED OBJECT HAS BEEN REPORTED IN APPROXIMATE POSITION LAT. 39-16.13N, LONG. 76-34.36W IN 41 FEET OF WATER WITH A CLEARANCE OF 35 FEET. MARINERS ARE URGED TO EXERCISE CAUTION WHEN TRANSITING THE AREA. (ENT 9/9/ 99, SJV) NOTE: THIS OBSTRUCTION HAS BEEN INCORRECTLY CHARTED IN LAT. 39-16-21.60N, LONG. 76-34-21.60W. THIS DISCREPANCY HAS BEEN BROUGHT TO THE ATTENTION OF MCD PERSONNEL. A LNM WILL LIKELY BE ISSUED CORRECTING THE SITUATION. (UP 2/28/02, SJV) LNM11/02--MD-BALTIMORE HARBOR; RELOCATE 35-FOOT SOUNDING WITH DOTTED

							DANGER CURVE, BLUE TINT, AND LABEL OBSTN FROM LAT. 39-16-21.6N, LONG. 76-34-21.6W TO LAT. 39-16-07.8N, LONG. 76-34-21.6W. (UP 4/3/02, SJV) F00481/01-02--OPR-E346-BH; HYDROGRAPHER CONDUCTED DISPROVAL INVESTIGATION OF OBSTRUCTION AT THE INCORRECTLY CHARTED POSITION. CHARTED 34-FOOT DEPTH LOCATED IN LAT. 39-16-21.29N,LONG. 76-34-21.70W AND VERIFIED AS NATURAL BOTTOM. EVALUATOR RECOMMENDS DELETING THE 35OBSTN PA AND CHART AREA AS SURVEYED. (UP 3/26/03, SJV)
OBSTRUCTION	12281	E	0067	0	39/15/28.20	076/37/03.00	HISTORY LNM32/72--SUBMERGED PIPE REPORTED IN LAT. 39-15.48N, LONG. ì 76-37-09W. IN 8 FEET. H9566/75-76--OPR-514-AHP; DRAG LOCATED SUBMERGED PIPE IN LAT. ì 39-15-28.2N, LONG. 76-37-03.0W. IRON PIPE PROTRUDING 2 FEET ABOVE ì BOTTOM. (ENT 8/23/95, SJV) H10632/95-- OPR-E346-AHP; OBSTRUCTION LOCATED IN LAT. ì39-15-30.466N, LONG. 76-37-05.021W. LD OF 12 FEET (3.6 METERS). ì EVALUATOR RECOMMENDS RETAINING SUBM. PIPE AS CHARTED AND CHARTING ì A 12-FOOT OBSTRUCTION AS SURVEYED (SEE AWOIS ITEM #9933). (UP ì 5/23/97, SJV)
UNKNOWN	12281	E	0100	0	39/15/18.38	076/35/40.87	HISTORY LNM37/73-- 20-FOOT INBOARD BOAT REPORTED SUNK IN APPROX. LAT. ì 39-15.3N, LONG. 76-35.7W. H9566/75-76--OPR-514-AHP; BOTTOM DRAG NEGATIVE. EVALUATOR ì RECOMMENDS ADDING "ED" TO CHARTED WRECK SYMBOL. A STEEL CABLE WAS ì LOCATED WHILE SEARCHING FOR THIS ITEM (SEE AWOIS NO. 9526). (ENT ì 8/23/95, SHV)
OBSTRUCTION	12281	E	0067	0	39/15/15.58	076/35/38.67	HISTORY H9566/75-76; OPR-514-AHP; STEEL CABLE LYING FLAT ON BOTTOM ì LOCATED IN LAT. 39-15-15.2N, LONG. 76-35-39.8W WHILE SEARCHING ì FOR AWOIS ITEM 9525. EVALUATOR RECOMMENDS CHARTING A

							SUBMERGED ì OBSTRUCTION (NO DEPTH NOTED) AS SURVEYED. (ENT 8/23/95, SJV)
OBSTRUCTION	12281	E	0067	9	39/16/04.58	076/34/46.27	HISTORY CL1581/73 (NOT AVAILABLE)-- OBSTRUCTION, 9 FEET REPORTED PA IN ì LAT. 39-16.07N, LONG. 76-34.79W. REPORTED TO BE A 7-PILE DOLPHIN ì LOCATED CLOSE EASTWARD OF PIER AT U.S. NAVAL RESERVE STATION AT ì FORT MC HENRY. A DESTROYER HIT OBSTRUCTION IN 10/73. H9565/75-76-- OPR-514-AHP; OBSTRUCTION FOUND WAS NOT ITEM ì SOUGHT. OBSTRUCTION LOCATED IN LAT. 39-16-04.2N, LONG. ì 76-34-47.4W. LL LD OF 18 FEET. 9-FOOT OBSTRUCTION CHARTED IN LAT. ì 39-16.07N, LONG. 76-34.79W. (ENT 8/23/95, SJV) H10632/95-- OPR-E346-AHP; SUBMERGED PILE LOCATED IN LAT. ì 39-16-03.517N, LONG. 75-34-45.137W. FATHOMETER DEPTH OF 17 FEET ì (5.2 METERS). IS NOT CONSIDERED TO BE AWOIS ITEM. EVALUATOR ì RECOMMENDS RETAINING 9-FOOT OBSTRUCTION AS CHARTED. DELETE SUBM. ì PILE IN LAT. 39-16-03.6N, LONG. 76-34-44.6W AND CHART A 17-FOOT ì OBSTRUCTION AS SURVEYED (SEE AWOIS #9934). (UP 5/23/97, SJV)
OBSTRUCTION	12281	E	0067	0	39/17/02.00	076/36/27.00	HISTORY UNKNOWN SOURCE-- FIRST CHARTED IN 1983. LAT. 39-17-02.0N, LONG. ì 76-36-27.0W. SCALED FROM CHART 12281). (ENT 8/24/95, SJV) H10632/95-- OPR-E346-AHP; EVALUATOR CONSIDERS ITEM NOT ì DISPROVED. RETAIN AS CHARTED. (UP 5/23/97, SJV)
OBSTRUCTION	12281	E	0067	23	39/17/02.79	076/36/30.81	HISTORY UNKNOWN SOURCE-- FIRST CHARTED IN 1983. LAT. 39-17-03.4N, LONG. ì 76-36-30.0W. SCALED FROM CHART 12281. (ENT 8/24/95, SJV) H10632/97-- OPR-E346-AHP; OBSTRUCTION LOCATED BY SIDE SCAN ì SONAR IN LAT. 39-17-02.789N, LONG. 76-36-30.281W (PILE). ì FATHOMETER LD OF 23 FEET. EVALUATOR RECOMMENDS CHARTING A 23-

							FOOT ì OBSTN AS SURVEYED AND DELETING THE TWO CHARTED SUBM. PILES. (UP ì 5/ 23/97, SJV)
OBSTRUCTION	12281	E	0067	0	39/14/30.00	076/32/35.00	HISTORY SOURCE UNKNOWN-- PILE SYMBOL FIRST CHARTED IN 1984. NO LABEL OR ì OTHER IDENTIFYING LEGEND. SCALED FROM CHART 12281 (1:15,000). ì (ENT 8/4/95, SJV)
OBSTRUCTION	12281	E	0067	17	39/16/03.52	076/34/45.14	HISTORY H10632/97-- OPR-E346-AHP; OBSTRUCTION LOCATED WHILE SEARCHING ì FOR AWOIS #9527. A SUBMERGED PILE WITH A FATHOMETER DEPTH OF 17 ì FEET (5.2 METERS) WAS LOCATED IN LAT. 39-16-03.517N, LONG. ì 76-34-45.137W. EVALUATOR RECOMMENDS CHARTING A 17-FOOT OBSTN AS ì SURVEYED. (ENT 5/23/97, SJV)
OBSTRUCTION	12281	E	067	32	39/15/16.00	076/33/29.00	DESCRIPTION **** WHILE PERFORMING A POST-HURRICANE ("ISABEL") SURVEY IN BATIMORE HARBOR AT THE REQUEST OF USCG, THE NOAA S/V BAY HYDROGRAPHER LOCATED A DANGEROUS SUBMERGED OBSTRUCTION BY SIDE SCAN SONAR ON 9/25/03. MULTIBEAM OBTAINED A LD OF 32 FEET (PRELIMINARY TIDES) IN LAT. 39-15-16N, LON. 76-33-29W. APPEARS TO BE A PIPE PROJECTING ABOUT 3-5 METERS INTO THE MAINTAINED CHANNEL GOING INTO THE SEAGIRT MARINE TERMINAL (SEAGIRT MARINE TERMINAL WEST CHANNEL). MULTIBEAM IMAGERY SHOWS THE PIPE EXTENDING FROM THE SIDE OF THE CHANNEL ADJACENT TO ANCHORAGE AREA NO. 2. THIS PIPE WAS PRESUMED TO HAVE EXISTED AT THIS LOCATION PRIOR TO THE PASSAGE OF HURRICANE "ISABEL". THE BNM ISSUED BY COMCOGARDACT BALTIMORE MD DATED 9/29/03 @2:54 PM CONTAINED AN INCORRECT POSITION OF 39-15.3N, 76-33.5. THIS POSITION WAS APPROX. 66 METERS, 338° FROM THE BAY HYDROGRAPHER'S SURVEYED

							POSITION. CGD5 TO PUBLISH CORRECTION IN LNM43/03. EMAIL FROM JEFF MCKEE (USACE, BALT) DATED 10/24/03 TO LT. JON SWALLOW (NOAA) STATED THAT PIPE WAS CUT OFF AT MUD LINE AND REMOVED THE AFTERNOON OF 10/22/03. APPROX. 100 FEET OF 24" DIA. PIPE WAS REMOVED LEAVING AN UNDETERMINED AMOUNT OF PIPE BELOW THE MUD LINE (NOTE:PRESUMABLY IN ANCHORAGE AREA NO. 2; SJV). (ENT 10/27/03, SJV)
OBSTRUCTION	12281	E	067		39 13 12.00	076 29 59.40	LNM47/95--11/21/95, 5TH CGD; ADD OBSTRUCTION IN LAT 39-13-12.00N, LONG 076-29-59.40W (NAD 83). (ENTERED BY PSH, 02/02)
OBSTRUCTION	12281	E	085		39 13 28.75	076 34 46.57	***NOTE: AWOIS G.P. PROVIDED IS THE SCALED POSITION OF THE SOUTHERNMOST OF THE THREE DOLPHINS.*** BP146771/91--08/03/91, 1991 NANCI SOURCE; 3 DOLPHINS ADDED IN APPROXIMATELY: LAT 39-13-29.82N, LONG 076-34-47.77W (NAD 83) LAT 39-13-29.47N, LONG 076-34-46.59W (NAD 83) LAT 39-13-28.75N, LONG 076-34-46.57W (NAD 83) (ENTERED BY PSH, 02/02)
OBSTRUCTION	12281	E	085		39 13 26.91	076 34 44.49	BP95602-TP-00842--0625/75; DOLPHIN CHARTED IN APPROXIMATELY LAT 39-13-26.91N, LONG 076-34-44.49W (NAD 83). (ENT 02/02, PSH)
OBSTRUCTION	12281	E	085		39-14-31.56	076-32-09.57	LNM13/74--04/04/74, 3RD CGD; DOLPHIN ADDED. (ENT 02/02, PSH)
OBSTRUCTION	12281	E	085		39 12 34.43	076-29-02.50	***NOTE: AWOIS G.P. PROVIDED IS THE SCALED POSITION OF EASTERNMOST OF THE TWO OBSTRUCTIONS.*** AIR PHOTO REVISION, 1953--10/2/53, PROBABLE SOURCE, NO DOCUMENT; SCALED OFF THE CHART IN THE FOLLOWING POSITONS: LAT 39-12-34.32N, LONG 076-29-03.92W (NAD 83) LAT 39-12-34.43N, LONG 076-29-02.50W (NAD 83) NOTE: CHART DOES NOT LABEL OBSTRUCTIONS AS EITHER PILINGS OR DOLPHINS. (ENTERED BY PSH, 02/02)
							***NOTE: AWOIS G.P. PROVIDED IS THE SCALED POSITION OF WESTERNMOST OF THE

OBSTRUCTION	12281	E	085		39 12 51.77	076 30 02.94	DOLPHINS.*** H09643--OPR-514-AHP; MOORING DOLPHINS CHARTED IN THE FOLLOWING LOCATIONS: LAT 39-12-51.77N, LONG 076-30-02.94W (NAD 83) LAT 39-12-51.93N, LONG 076-30-01.34W (NAD 83) (ENTERED BY PSH, 02/02)
OBSTRUCTION	12281	E	0067	12	39/15/30.47	076/37/05.02	HISTORY H10632/95-- OPR-E346-AHP; WHILE SEARCHING FOR AWOIS ITEM 9524 ì AN OBSTRUCTION WAS LOCATED IN LAT. 39-15-30.466N, LONG. ì 76-37-05.021W. ES LD OF 12 FEET (3.6 METERS). EVALUATOR ì RECOMMENDS RETAINING CHARTED SUBM. PIPE AS CHARTED (AWOIS 9524) ì AND CHARTING A 12-FOOT OBSTN AS SURVEYED. (ENT 5/23/97, SJV)

CONFINED DISPOSAL FACILITY – LOWER BAY, VIRGINIA
AWOIS FILES

Record #	Vessel Name	Chart #	Area	Cartocode	Depth	History
803	SANTORE	12208	D	100	44	HISTORY NM25/42-- WRECK, LIGHTED BUOY ESTABLISHED; LIGHTED BUOY, R/B ì HORIZONTAL BANDS, FL R, ESTABLISHED 8,390 YARDS, 58 DEG. FROM ì CHESAPEAKE BAY ENTRANCE LIGHTED WHISTLE BUOY 2CB TO MARK WRECK. ì BUOY MOORED 150 YDS., 55 DEG. FROM WRECK. APPROX. POSITION OF ì BUOY 36-54-00N, 75-46-30W. NM28/42-- 0N JULY 8, 1942, CHESAPEAKE WRECK LIGHTED BUOY ì REPLACED BY LIGHTED BELL BUOY, NO OTHER CHANGE. NM41/43-- BUOY DISCONTINUED; LD OF 40 FEET OVER WRECK. FE77/49WD (FE NO. 3, 1949)-- HUNG WRECK AT 39 FEET, CLEARED AT ì 37 FEET. CL1579/48-- TO DIRECTOR, USC&GS, FROM C.0., PARKER, BOWEN, AND ì STIRNI; RE. WRECK SANTORE; LOCATED IN LAT. 36-53.85N, LONG. ì 75-46.92W. GOOD SONAR CONTACT MADE ON WRECK. HUNG AT 40 FEET, ì CLEARED AT 38 FEET (PREDICTED TIDES). LETTER FROM DIRECTOR, ì USC&GS, TO C.O. PARKER, BOWEN, AND STIRNI, NOTES LATEST POSITION ì .5 NM DIFFERENT FROM PREVIOUSLY REPORTED GP. WRECK REPORTED ì CLEARED BY WIRE DRAG SET TO 42 FEET IN SEPT., 1943 BY USCGC ì GENTIAN. H9871WD/76-- OPR-515-RU/HE; WRECK OF THE SANTORE CLEARED TO 41 ì FEET IN ONE DIRECTION; DID NOT HANG. Q.C. REPORT RECOMMENDS ì CHARTING A 41 FOOT CLEARED DEPTH AT WRECK'S CHARTED POSITION. ì FURTHER WORK CONSIDERED IMPRACTICAL BY Q.C. REPORT. (UP 7/20/92, ì SJV) FE412SS/95-- OPR-E696-HE; WRECK LOCATED BY SIDE SCAN SONAR. ì DIVER LD OF 13.4 METERS (44 FEET) IN LAT. 36-53-53.177N, LONG. ì 75-46-51.071W. EVALUATOR RECOMMENDS DELETING CHARTED WRECK AND ì CHARTING A 44 WK AS SURVEYED. (UP 2/15/96, SJV) DESCRIPTION 24 NO. 399; CARGO, 7117 GT; SUNK 6/17/42 BY NAVY MINE, WD CLEARED TO 38 FEET, POSITION ACCURACY ONE MILE. 27 NO. 274; CARGO, 4498 NT, SUNK 6/17/42. BUOY DICCONTINUED. LD OF 40 FEET.
804	THOMAS F. POLLARD	12221	D		0	HISTORY NM44/20-- CHESAPEAKE BAY APPROACHES-WRECK-LIGHT BUOY ESTABLISHED- ON OCTOBER 15, 1920 A LIGHT BUOY, HORIZONTALLY STRIPED, WAS ESTABLISHED ABOUT 2.5 MILES, 129 DEGS. FROM CAPE HENRY LIGHTHOUSE IN 4 FATHOMS OF WATER TO MARK THE WRECK OF THE SUNKEN SCHOONER "T.F. POLLARD. THE LIGHT BUOY WHICH IS CONICAL WITH A SKELETON SUPERSTRUCTURE SHOWING AN OCCULTING RED LIGHT EVERY 10 SEC - LIGHT 5 SEC, ECLIPSE 5 SEC - OF 5 CANDLE POWER 11 FEET ABOVE THE WATER, IS MOORED ON THE BEARINGS: VIRGINIA BEACH, TANK 196 DEG. 30 MIN.; CAPE HENRY LIGHTHOUSE 309 DEG. THE WRECK LIES 100 YARDS, 241 DEG. FROM THE LIGHT BUOY WITH 5 FEET OF WATER OVER IT AT LOW TIDE. (REF. NM43 (1370) BUREAU OF LIGHTHOUSES, 1920). NM1/21-- CHESAPEAKE BAY APPROACHES-WRECK NO LONGER A MENACE-LIGHT BUOY WITHDRAWN- ON DECEMBER 11, 1920, THE LIGHT BUOY MOORED TO MARK THE WRECK OF THE SCHOONER "THOMAS F. POLLARD" WAS WITHDRAWN, THE WRECK BEING NO LONGER A MENACE TO NAVIGATION. CL347/58-- FROM CHIEF, USC&GS CHART DIVISION TO "ALL CARTOGRAPHERS"; SUBJECT: NONDANGEROUS WRECKS, CHARTING OF; DATED MAY,8 1958; CHART ALL KNOWN WRECKS (DANGEROUS AS WELL AS THOSE CONSIDERED NON-DANGEROUS) OUT TO THE 300-FATHOM CURVE. (NOTE: THESE WRECKS ORIGINATED WITH THE NAVY WRECK LIST (24) BELOW). H09293WD/72-- OPR-467-RH-72; ITEM #16. ("T.F. POLLARD") WIRE DRAG INVESTIGATION NEGATIVE FOR WRECK. HOWEVER, A "METAL CLUMP" WAS HUNG IN LAT. 36-54-22N, LONG. 75-57-47W. COVERED WITH TRAWLER NETS (NOTE ON "A&D PLOT). THE EVALUATOR RECOMMENDS DELETING THE NON-DANGEROUS WRECK ("TF POLLARD") AND CHARTING A DANGEROUS OBSTRUCTION, CLEARED TO 24 FEET AS SURVEYED. CL24/84-- "MINUTE MEMO" DATED JANUARY 10, 1984; FROM DAVE PETERSON (N/CG24X5) TO JEANETTE O'CONNOR ("AREA 2" MCD) RE. FINDINGS OF WIRE DRAG SURVEY H9293; RECOMMENDS CHARTING "ITEM 16", ABOVE AS CLEARED TO 20 FEET VICE 24 FEET. OF THE TWO CLEARANCE STRIPS, 20 FEET WAS THE LEAST EFFECTIVE CLEARED DEPTH. (SEE AWOIS NO. 12259 FOR NEW POSITION OF OBSTRUCTION). DESCRIPTION 24 NO.1324; SCHOONER; LAT. 36-54-00N, LONG. 55-58-00W. SUNK 1920; POSITION ACCURACY WITHIN 1 MILE. (NOTE: SPELLING IS "TF POLLAND" IN THIS SOURCE). (UP 2/19/04, SJV)
805	DR CARTER	12222	D	0999	0	HISTORY NM12/18 BARGE, LOADED W/PILING SANK IN 12 FT, 1/2 MI 343 DEG FROM CRANEY I LTHS. H7602/45-48WD INVESTIGATION BY SOUNDING IN AREA W/NO SUCCESS; LOCAL COE HAS NO KNOWLEDGE OF WK, HAS DREDGED AREA; A GROUNDED DRAG WIRE WAS TOWED OVER SITE W/NO HANG, WK DELETION RECOMMENDED.
806	OBSTRUCTION	12200	D	102	0	HISTORY H9922/80--OPR-D103-MI-80; ITEM 102; A LIMITED INVEST. WAS PERFORMED ON THE NON-DANGEROUS SUBM. WK. IN LAT.36-54-09N, LONG.75-51-30W. WITH 100M LINE SP. PARALLEL TO MAIN SCHEME HYDRO. NO INDICATION OF OBSTR. WAS NOTED ON ECHO SOUNDER. QC INSP. RECOMMENDS RETAINING NON-DANGEROUS SUBM. WK. ON CHART 12221. NOTE. PRESENTLY CHARTED AS A DANGEROUS SUBMERGED WRECK (NO PA, PD). SEE AWOIS 7549. (ENTERED, 2/2/84, MJF). DESCRIPTION 24 NO.1330; POSITION ACCURACY WITHIN 1 MILE; REPORTED THROUGH CGS SURVEY, DATED 1947 (REG. NO. NOT ASCERTAINED)
807	OBSTRUCTION	12220	E	0085	0	HISTORY ———ORIGINATING SOURCE NOT DETERMINED, CHARTED AS DOLPHIN. CL1406/79-COOP. CHARTING REPORT. INVESTIGATED 9/8/79 DOL NOT VISIBLE, MCD REVISED TO SUBM. DOLPHIN
808	UNKNOWN	12200	D	100	46.3	HISTORY NM37/47-- OBSTRUCTION REPORTED, 5.7 MILES, 103 DEG. 30 MINS. ì FROM CAPE HENRY LIGHT. H6976/45-47WD-- CS-326-WA/HI; ITEM NO. 3; HUNG AT 41 AND 43 ì FEET, CLEARED AT 40 FEET IN TWO DIRECTIONS IN LAT. 36-54-440(M)N, ì LONG. 75-53-760(M)W. H9922/80-- OPR-D103-MI-80; OBSTRUCTION BROUGHT FOWARD. H10340/90-- OPR-D111-WH; DANGEROUS SUNKEN WRECK LOCATED IN LAT. ì 36-54-14.31N, LONG. 75-53-28.90W. DIVER LD OF 14.1 METERS (46 ì FEET). WRECK DISPERSED OVER A 17.1 METER AREA. EVALUATOR ì RECOMMENDS CHARTING A DANGEROUS SUNKEN WRECK WITH LD OF 14.1 ì METERS (14.1 WK) WITH DANGER CURVE AS SURVEYED. DELETE CHARTED ì DANGEROUS SUBMERGED OBSTRUCTION CLEARED 40 FEET. (UP 10/29/91, ì SJV) DESCRIPTION 24 NO. 624; WD CLEAR TO 40 FEET (SOURCE UNKNOWN); LOCATED 1931 (SOURCE UNKNOWN), REPORTED DEMOLISHED (SOURCE UNKNOWN). 177 HONM 37/47; CHARTED AS OBSTRUCTION - WD BY USC&GS, LD 40 FEET; 5.7 MILES, 103 DEG. 30 MINS. FROM CAPE HENRY LIGHT.
809	UNKNOWN	12220	E	0100	0	HISTORY ———ORIGINATING SOURCE NOT DETER. CHARTED AS VISIBLE WK. CL1400/79-COOP. CHARTING REPORT. WK. NOT VISIBLE, MCD REVISED TO SUBM.
						HISTORY H7602/45-48WD ASSIGNED AS PSR 23, PROJ. CS-313, 9/12/44; UNIDENTIFIED HANG AT

810	UNKNOWN	12222	D	0370	5.5	ABOVE GP AT 5.5 FT, CLEARED TO 5.5 FT(ACTUAL TIDES), NO LEAST DEPTH.
811	OBSTRUCTION	12220	E	0067	0	HISTORY CL1433/67–PILING
812	OBSTRUCTION	12221	D	067		
814	UNKNOWN	12200	D	100	0	DESCRIPTION 24 NO.1328; POSITION ACCURACY WITHIN 1 MILE; REPORTED THROUGH CGS SURVEY, DATED 1914
815	FAYE	12200	D		0	DESCRIPTION 18 UNKNOWN OBST. HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN C, OBSERVED RATES: 9960X-27135.2MS,9960Y-41279.6MS(APPROX. 1979)
816	EIDSVOLD	12200	D	0102	0	DESCRIPTION 24 NO.3145, CARGO, 1570 GT, SUNK 4/6/18; POSITION ACCURACY 5-10 MILES 74
817	B.A.VAN BRUNT	12200	D	0102	0	DESCRIPTION 01 1926 24 NO.8833; SCHOONER, 1191 GT,SUNK 9/20/25 BY MARINE CASUALTY
818	UNKNOWN	12221	D	0999	0	DESCRIPTION 24 NO.1004; POSITION ACCURACY WITHIN 1 MILE; LOCATED 1945 (SOURCE UNK.); REPORTED THROUGH H.O. CHART RECORDS, DATED 1954
819	VICKY	12200	D	****	0	DESCRIPTION 18 IN 32 FATHOMS, HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN C, OBSERVED RATES: 9960X-26880.8MS,9960Y-41409.6MS(APPROX. 1979)
820	OBSTRUCTION	12208	D	0370	16	HISTORY NM DATED 5/23/50 H7028/50WD-- PBS-2150-WD; VISUAL CONTROL; OBSTRUCTION LOCATED ì IN LAT. 36-55-32.5N, LONG. 76-04-05W; HUNG AT 19 FEET; CLEARED BY ì 16 FEET; EVALUATOR RECOMMENDED CHARTING AN OBSTR WITH CLEARED ì DEPTH OF 16 FEET. H9255/71-- OPR-467-RH-71; 1:20,000-SCALE; RADIST (HYBERBOLIC, ì R/R); OBSTRUCTION NOT FOUND; CLEARED IN ONE DIRECTION TO 23 FEET ì BUT WITH INSUFFICIENT OVERLAP FOR A VALID CLEARANCE; EVALUATOR ì RECOMMENDED RETAIN AS CHARTED. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE; ARGO (R/R), DELNORTE ì (R/A) CONTROL; ECHO SOUNDER; 45 METER LINE SPACING; OBSTRUCTION ì NOT FOUND; EVALUATOR RECOMMENDED RETAIN AS CHARTED IN LAT. ì 36-55-32.4N, LONG. 76-04-04.8W. (ENT 11/19/84, MSM) FE387SS/94-- OPR-E696-HE; 100 % SIDE SCAN SONAR COVERAGE ON 25% ì OF ITEM. TOO SHALLOW FOR HECK. EVALUATOR RECOMMENDS RETAINING AS ì CHARTED AND REASSIGNING FOR ADDITIONAL WORK. (UP 9/12/95, SJV) FE410SS-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
821	UNKNOWN	12221	E	0999	0	HISTORY NM DATED 8/1/16 DESCRIPTION 24 NO.1326; BARGE; SUNK 1916; POSITION ACCURACY WITHIN 1 MILE
822	UNKNOWN	12254	D	370	16	HISTORY LNM1/72--A 36-FT. BARGE WITH PILE DRIVER ATTACHED HAS SUNK IN APPROX. 18 FT., IN THE VICINITY OF THE ENTRANCE TO LITTLE CREEK HARBOR; POS. DOUBTFUL. 1969 R/H INVESTIGATION 20-2-69 (UNPROCESSED); BOTTOM LITTERED WITH MISC. DEBRIS H9910/80-- OPR-D103-MI-80; 1:10,000 SCALE SURVEY; DEL NORTE CONRTOL (R/R, R/A) ECHO SOURNDER W/50M LINE SPACING, DID NOT LOCATE WK; H9255WD DID NOT LOCATE BUT CLEARED WK TO 16FT IN 19-21FT DEPTHS; RECOMMEND RETAIN SUBM DANG WK W/ED AND NOTE (CLEARED TO 16FT); NOT CONSIDERED DISPROVED BY THIS SURVEY. (ENTERED 10/15/84, MSM)
823	OBSTRUCTION	12221	D	0370	0	HISTORY CL702/47--SP. REPORT ON WIRE DRAG OF ITEM 4, WA/HI-CS 326; SEE ì H6976WD/45-47 BELOW. H6976WD/45-47--CS-326-WA/HI; HUNG AT 34 FEET, CLEARED 32 FEET ì (PREDICTED TIDES), IN LAT. 36-55-1840(M)N, LONG. 75-54-440(M)W. ì CHARTED AS A 30-FOOT CLEARED DEPTH IN LAT. 36-56-00N, LONG. ì 75-54-18W. H10340/90-- OPR-D111-WH; NO SIDE SCAN SONAR CONTACTS FOUND IN ì THE AREA COMMON TO THE PRESENT SURVEY AND THE AWOIS ITEM. ì OBSTRUCTION BROUGHT FOWARD TO THE PRESENT SURVEY. EVALUATOR ì RECOMMENDS THAT A CHARTING RECOMMENDATION BE DEFERRED UNTIL ì COMPLETION OF OFFICE PROCESSING OF JUNCTIONAL SURVEY H10356/90, ì AND A FINAL DISPOSITION OF THE INVESTIGATED ITEM HAS BEEN MADE. ì (UP 10/29/91, SJV) H10356/90--OPR-D111-HE; LOCATED OLD STYLE ANCHOR ENCRUSTED WITH ì MARINE GROWTH APPROX. 19 METERS SOUTHWEST OF CHARTED OBSTRUCTION. ì 15 FEET LONG PROJECTING 8 FEET OFF BOTTOM. SALVAGED BY USCGC ì COWSLIP ALONG WITH A SECOND ANCHOR. EVALUATOR RECOMMENDS THE ì SUBMERGED DANGEROUS OBSTRUCTION CLEARED 30 FEET BE DELETED FROM ì THE CHART. (UP 3/5/92, SJV)) DESCRIPTION 24 NO.625; POS. ACCURACY WITHIN 1 MILE; WD CLEARED TO 30 FT.(SOURCE UNK.) LOCATED 1947; REPORTED THROUGH H.O. CHART RECORDS
824	UNKNOWN	12221	D	370	0	HISTORY CL702/47--SP. REPORT ON WIRE DRAG OF ITEM 4, WA/HI-CS 326; SEE ì H6976WD/45-47 BELOW. H6976WD/45-47--CS-326-WA-HI; HUNG AT 32 FEET, CLEARED AT 30 ì FEET (PREDICTED TIDES), IN LAT. 36-56-120(M)N, LONG. ì 75-53-1455(M)W. CHARTED AS A 30-FOOT CLEARED DEPTH IN LAT. ì 36-56-05N, LONG. 75-54-00W. H10340/90-- OPR-D111-WH; NO SIDE SCAN SONAR CONTACTS FOUND IN ì THE AREA COMMON TO THE PRESENT SURVEY AND THE AWOIS ITEM. ì OBSTRUCTION BROUGHT FORWARD TO THE PRESENT SURVEY. EVALUATOR ì RECOMMNENDS THAT A CHARTING RECOMMENDATION BE DEFERRED UNTIL THE ì COMPLETION OF OFFICE PROCESSING OF JUNCTIONAL SURVEY H10356/90, ì AND A FINAL DISPOSITION OF THE ITEM HAS BEEN MADE. (UP 10/29/91, ì SJV) H10356/90-- OPR-D111-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 3/5/92, SJV) DESCRIPTION 24 NO.626; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 30 FT. (SOURCE UNK.); LOCATED 1947 (SOURCE UNK.); REPORTED THROUGH H.O. CHART RECORDS
826	UNKNOWN	12221	E	0370	26.6	HISTORY NM DATED 8/29/22. H9255/71WD-- OPR-467-RH-71; ITEM NO. 14; 1:20,000-SCALE SURVEY; ì RAYDIST TYPE "T" HYPERBOLIC; COVERAGE WITHIN 3-5 FEET OF BOTTOM; ì WRECK NOT LOCATED; CRITERIA FOR DISPROVAL NOT MET; EVALUATOR ì RECOMMENED CHARTING AS SUBM WK, ED WITH CLEARED DEPTH TO 26 FEET. H9814/80-- OPR-D103-PE-80; ITEM NO. 87; 1:10,000-SCALE SURVEY; ì AGGO (R/R), DELNORTE (R/A), ECHO SOUNDER; 45 METER LINE SPACING; ì WRECK NOT FOUND; EVALUATOR CONCURS WITH RECOMMENDATION IN SURVEY ì H9255WD. (ENT 11/13/84, MSM) FE387SS/94-- OPR-E696-HE; 11 CONTACTS FOUND WITHIN AREA OF ì SEARCH. NONE FIT THE DESCRIPTION OF THIS ITEM. EVALUATOR ì RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV) DESCRIPTION 24 NO. 1322; POSITION ACCURACY WITHIN ONE MILE. (8/29/22)

827	UNKNOWN	12221	E	0100	0	HISTORY NM43/63--BUOY DISCONTINUED AT LAT.36-56-55N LONG.76-25-31W. WRECK WAS SALVAGED AND IS NOW IN 9 FT APPROX. 1,400 YDS, 200 DEG FROM FORMER CHARTED POSITION
828	OBSTRUCTION	12221	D	370	0	SURVEY REQUIREMENTS COMMENTS IF ITEM IS FOUND TO BE A SHOAL AREA, REDUCE LINE SPACING AS ì NEEDED TO DEVELOP. SECOND 200% WOULD THEN NOT BE REQUIRED. HISTORY CL702/47--SP. REPORT ON WIRE DRAG OF ITEM 4, WA/HI-CS 326; ì SEE H6976WD/45-47 BELOW. H6976WD/45-47--CS-326-WA/HI; HUNG AT 34 FEET, CLEARED TO 32 ì FEET (PREDICTED TIDES), IN LAT. 36-56-705(M)N, LONG. ì 75-54-255(M)W. CHARTED AS A 32-FOOT CLEARED DEPTH IN LAT. ì 36-56-24N, LONG. 75-54-24W. THIS MAY BE A SHOAL SPOT AS THE WIRE ì SLIPPED OFF PREMATURELY. H10340/90-- OPR-D111-WH; NO SIDE SCAN SONAR CONTACTS FOUND IN ì THE AREA COMMON TO THE PRESENT SURVEY AND THE AWOIS ITEM. ì OBSTRUCTION BROUGHT FORWARD TO THE PRESENT SURVEY. EVALUATOR ì RECOMMENNDS THAT A CHARTING RECOMMENDATION BE DEFERRED UNTIL THE ì COMPLETION OF OFFICE PROCESSING OF JUNCTIONAL SURVEY H10356/90 ì AND A FINAL DISPOSITION OF THE ITEM HAS BEEN MADE. (UP 10/29/91, ì SJV) H10356/90-- OPR-D111-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 3/5/90, SJV) DESCRIPTION 24 NO.627; POS. ACCURACY WITHIN 1 MILE; WD CLEARED TO 32 FT. LOCATED 1947 (SOURCE REPORTED THROUGH H.O. CHART RECORDS)
829	OBSTRUCTION	12222	E	0370	13	HISTORY UNKNOWN SOURCE, CHARTED AS SUNKEN WRECK FE 1 1967 HUNG AT 16 FT, CLEARED TO 13 FT(ACTUAL TIDE), NO IDENTIFICATION OF HANG RECOMMENDED DELETE FROM CHART; PSR ITEM 4.
830	OBSTRUCTION	12221	D	370	0	HISTORY CL702/47--SP. REPORT ON WIRE DRAG OF ITEM 4, WA/HI-CS 326; SEE ì H6976WD/45-47 BELOW. H6976WD/45-47--CS-326-WA/HI; HUNG AT 32.5 FEET, CLEARED 31.5 ì FEET (PREDICTED TIDES), IN LAT. 36-56-1108(M), LONG. ì 75-53-791(M)W. CHARTED AS A 30-FOOT CLEARED DEPTH IN LAT. ì 36-56-34N LONG. 75-33-36W. H10356/90 --OPR-D111-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 3/5/90, SJV) DESCRIPTION 24 NO.628; POS. ACCURACY WITHIN 1 MILE; WD CLEARED TO 30 FT. LOCATED 1947; REPORTED THROUGH H.O. CHART RECORDS
831	UNKNOWN	12221	D		0	HISTORY UNKNOWN SOURCE-- POSSIBLY NM DATED 10/17/39 (FROM 1957 NAVY ì WRECK LIST). H6976/45-47WD-- CS-313 & 326 - WA/HI; LOCATION OF WRECK CLEARED ì TO 34 FEET. NOT HUNG. RETAIN AS CHARTED SINCE REQUIREMENT FOR ì BOTTOM CLEARANCE AND SEARCH RADIUS NOT SATISFIED. CL347/58-- REF. NAVY WRECK LIST. SEE DESCRIPTION, BELOW. H9905/80-- OPR-D103-PE; NOT LOCATED. ADDITIONAL FIELD WORK ì RECOMMENDED (WIRE DRAG). H10343/90-- OPR-D111-WH; NOT ASSIGNED. H10356/90-- OPR-D111-HE; NOT ASSIGNED. H10372/90-- OPR-D111-HE; NOT ASSIGNED. (UP 7/24/92, SJV) DESCRIPTION 24 UNKNOWN WRECK NO. 1310, FORMERLY CHARTED. NM DATED 10/17/39 (?). LAT. 36-56-45N, LONG. 75-55-00W. ACCURACY WITHIN ONE MILE.
832	UNKNOWN	12221	E	0999	0	HISTORY NM DATED 8/8/56 DESCRIPTION 24 NO.1300; SUNK 1950; LOCATED 2/21/50, POS. ACCURACY 1-3 MILES, SUBSEQUENTLY FAILED TO LOCATE
833	WESTMORELAND	12221	D	0370	50	HISTORY NM42/39-- (LIGHTHOUSE NOTICE TO MARINERS); WRECK OF BARGE ì WESTMORELAND LOCATED IN 86 FEET, ABOUT 5300 YARDS, 63 DEG. FROM ì CAPE HENRY LIGHTHOUSE; LD OF 49 FEET. CL725/45-- PROJECT CS-313, WRECK NO. 5; HILGARD & WAINWRIGHT ì HUNG WRECK AT 55 FEET. ECHO SOUNDING OF 55.5 FEET OBTAINED ON ì WRECK. POS. LAT. 36-56.75N, LONG. 75-57.60W. H10343/90-- OPR-D111-WH; SIDE SCAN SONAR CONTACT IN LAT. ì 36-56-45.70N, LONG. 75-57-31.02W WITH CALCULATED HEIGHT OF 5 ì METERS IN 26.6 METERS. FATHOMETER DEPTH OF 22.7 METERS OBTAINED ì IN LAT. 36-56-45.83N, LONG. 73-57-29.91W. EVALUATOR RECOMMENDS ì RETAINING AS CHARTED PENDING DISPOSITION OF ITEM ON H-10372/90. ì (UP 1/3/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); WRECK LOCATED IN ì LAT. 36-56-45.35N, LONG. 75-57-29.96W. FATHOMETER DEPTH OF 68 ì FEET. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (UP 4/20/92, ì SJV) DESCRIPTION 24 NO.421; BARGE; SUNK BY MARINE CASUALTY; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 50 FT. (SOURCE UNK.); POS.36-56-48N, 75-57-36W. 27 NO.605; WRECK IS IN 86 FT OF WATER WITH A LEAST DEPTH OF 49 FT.
834	UNKNOWN	12254	D	100	0	HISTORY LNM22/80--A 15-FT OUTBOARD HAS SUNK IN APPROX. POS. ABOVE
835	UNKNOWN	12208	E	0100	56	SURVEY REQUIREMENT COMMENTS INVESTIGATION MAY BE CONSTRAINED BY VESSEL TRAFFIC. SURVEY AT ì COMMANDING OFFICER'S DISCRETION HISTORY NM31/44(2883)-- EXAMINATION VESSEL SUNK AT POSITION 36-57N, ì 76-01-20W. NM36/44(3376)-- WRECK DISPERSED TO A 45-FOOT DEPTH. H7028/45-50WD-- CS 326; CLEARED TO 49 FEET WITHOUT HANG, ì CONSIDERED DISPROVED. CL347/58-- NO. 1308, H.O. WRECK LIST; WRECK SUNK 1944 AT POS. ì 36-57N, 76-01-18W, SUBS. REPORTED SILTED OVER. H9901/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO R/R ì CONTROL; ECHO SOUNDER; THREE SMALL SCOURS ON FATHOGRAM WHICH MAY ì OR MAY NOT BE THE REMAINS OF WRECK. NOT DEFINITE ENOUGH TO SAFELY ì SAY FOR SURE. 62-65-FOOT SURVEY DEPTHS. H10343/90-- OPR-D111-WH; WRECK LOCATED BY SIDE SCAN SONAR IN ì LAT. 36-56-58.97N, LONG. 76-01-20.87W APPROX. 25 METERS EAST OF ì NAVIGATION BUOY "ITS". DEPTH OF 16.8 METERS IN 19.2 METERS. RADIO ì MEMO TO 5CGD ON 6/6/90. HYDROGRAPHER RECOMMENDS DIVER ì INVESTIGATION AND LD TO FULLY RESOLVE ITEM. H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); FATHOMETER DEPTH ì OF 17.2 METERS OBTAINED. WRECK BROUGHT FORWARD SINCE DEPTH FROM ì H-10343/90 IS SHOALER (16.8 METERS). EVALUATOR RECOMMENDS ì CHARTING WRECK WITH A DEPTH OF 16.8 METERS (55 FEET) AS SHOWN ON ì THE PRESENT SURVEY (UP 4/20/92, SJV) FE412SS/95-- OPR-E696-HE; WRECK LOCATED BY SIDE SCAN SONAR. ì DIVER LD OF 17.1 METERS (56 FEET) IN LAT. 36-56-58.755N, LONG. ì 76-01-20.203W. DIVERS DESCRIBE A PARTIALLY DECOMPOSED WRECK. ì EVALUATOR RECOMMENDS DELETING THE CHARTED WRECK AND CHARTING A 56 ì WK AS SURVEYED. (UP 2/15/95, SJV) DESCRIPTION 24 NO. 1308; SUNK 1944; REPORTED SILTED OVER; POSITION ACCURACY WITHIN ONE MILE.
837	UNKNOWN	12221	E	0999	0	HISTORY NM DATED 4/30/44 DESCRIPTION 24 NO.1309; SUNK 3/00/44; POSITION ACCURACY WITHIN 1 MILE; SUBSEQUENTLY FAILED TO LOCATE
						HISTORY NM33/70-- UNDESCRIBED WRECK IN LAT. 36-57-00N, LONG. 76-03-36W. H9255/71WD-- OPR-467-RH-71; ITEM NO. 53; 1:20,000-SCALE SURVEY; ì RAYDIST TYPE "T" HYPERBOLIC

838	UNKNOWN	12254	D	0100	36	COVERAGE WITHIN 3 FEET OF BOTTOM; ì CRITERIA FOR DISPROVAL NOT MET; WRECK NOT LOCATED; EVALUATOR ì RECOMMENDED CHARTING SUBM WK WITH CLEARED DEPTH TO 36 FEET. H9814/80-- OPR-D103-PE-80; ITEM NO. 84; 1:10,000-SCALE SURVEY; ì ARGO (R/R); CONCURRED WITH RECOMMENDATION IN H9255WD. (ENT ì 11/9/84, MSM) FE387SS/94-- OPR-E696-HE; 6 CONTACTS FOUND WITHIN SEARCH AREA. ì NONE FIT THE DESCRIPTION OF THIS ITEM. EVALUATOR RECOMMENDS ì DELETING FROM CHART. (UP 9/12/94, SJV)
839	OBSTRUCTION	12220	D	0067	0	HISTORY NM42/50(6113)-- CHESAPEAKE ENTRANCE OBSTRUCTION LIGHTED GONG ì BUOY, R/B HOR. BANDS, INT QK FL ESTABLISHED 3950 YARDS, 28 DEG. ì FROM CAPE HENRY LIGHT TO MARK SUBMERGED OBSTRUCTION WHICH LIES ì 200 FEET 300 DEG. FROM BUOY. NM30/ 52(3616)-- CHESAPEAKE ENTRANCE OBSTRUCTION LIGHTED GONG ì BUOY DISCONTINUED, THE OBSTRUCTION WHICH IT MARKED HAVING BEEN ì REMOVED. APPROX. POSITION LAT. 36-57-18N, LONG. 75-59-18W. ì SUPERSEDES NM42/50(6113). CL347/58-- REF. #1297 (H.O. WRECK LIST); OBSTRUCTION AT ì POSITION LAT. 36-57-18N, LONG. 75-59-18W CHART AS NON-DANGEROUS ì WRECK (LISTED AS AN OBSTRUCTION IN WRECK LIST, BELOW). NM INFO ì (ABOVE) STATES THAT THIS OBSTRUCTION HAS BEEN REMOVED. H9901/80-- OPR-D103-PE-80; ITEM 94; 1:10,000-SCALE SURVEY; ARGO ì R/R CONTROL; ECHO SOUNDER; 1000-METER RADIUS SEACH AT 45 METER ì LINE SPACING; NO INDICATION OF ITEM FOUND; QC REPORT STATES ì OBSTR. WAS REPORTED REMOVED IN NM30/52; CONSIDERS REAPPLICATION ì TO CHART THRU CL347/58 TO BE IN ERROR; RECOMMENDED WRECK SYMBOL ì BE EXPUNGED FROM CHART. ALSO, 73-FOOT SOUNDING LOCATED IN LAT. ì 36-57-24.80N, LONG. 75-59-33.87W DURING STAR PATTERN DEVELOPMENT ì 440 METERS NORTHWEST OF CHARTED POSITION OF WRECK; REF. AWOIS ì ITEM #00892 (ENT 10/11/84 MSM). H10343/91-- OPR-D111-WH; NOT PRESENTLY CHARTED (12/30/91). ì EVALUATOR RECOMMENDS NO CHARTING ACTION BE TAKEN THRU PRESENT ì SURVEY. SEVERAL SIGNIFICANT SONAR CONTACTS WILL BE ADDRESSED ON ì H-10372/90. (UP 12/30/91, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); SEARCH NEGATIVE ì EXCEPT FOR ITEM CORREPONDING TO AWOIS NO. 892. EVALUATOR ì RECOMMENDS NO CHARTING ACTION REQUIRED. (UP 4/20/92, SJV) DESCRIPTION 24 NO.1297; OBSTRUCTION, PREVIOUSLY CHARTED; POSITION ACCURACY TO WITHIN ONE MILE. **** CHART 12221 IS A WRECK CHART. ACCORDING TO MARINE CHART BRANCH POLICY, UNLESS NM30/52 USED THE WORD "RAISED" IN THE REPORT OF THE OBSTRUCTION'S REMOVAL, THE ITEM SHOULD NOT BE DELETED FROM THE WRECK CHART.
841	OBSTRUCTION	12221	E	0999	0	HISTORY NM DATED 6/13/47 DESCRIPTION 24 NO.1303; POSITION ACCURACY WITHIN 1 MILE, UNKNOWN AUTHORITY REPORTED FAILURE TO LOCATE.
842	OBSTRUCTION	12221	E	0999	0	HISTORY H7176/47WD PROJECT CS-326, 9/30/46; HANG IN 25 FT WATER, DIVER INVESTIGATED, FOUND 3 PILES ABOUT 12 FT OFF BOTTOM; PART OF FISH TRAP EXTENDING TO SHORE.
843	UNKNOWN	12221	D	370	53	HISTORY H7028/45-50WD-- PBS-2150WD; 1:40,000-SCALE SURVEY, 53-FOOT ì CLEARED DEPTH IN APPROX. LAT. 36-57-11N, LONG. 76-00-45W. H9901/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO R/R ì CONTROL; ECHO SOUNDER; SURVEY DEPTHS IN AREA ARE 71-74 FEET; ì EVALUATOR RECOMMENDED RETAIN AS CHARTED. (ENT 10/18/84, MSM) LNM8/81-- DELETE CLEARED 53-FOOT DEPTH. DESCRPIPTION 24 NO. 1331; WRECK IN LAT. 36-57-00N, LONG. 76-00-42W.
844	OBSTRUCTION	12221	E	0370	17	HISTORY H7176/47WD PROJECT CS-326, 9/30/46; HUNG AT 18 CLEARED AT 17; METALLIC OBJECT, GRAPPELED CL347/47 COPY OF PART OF ABOVE DR
845	UNKNOWN	12200	D	****	0	DESCRIPTION 18 BARGE; IN 27 FATHOMS, HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN C, OBSERVED RATES:9960X-26895.1MS,9960Y-41424.7MS(APPROX. 1979)
846	OBSTRUCTION	12254	D	067	14	HISTORY NM30/70--LEAST DEPTH OF 19FT AT MLW IN A RECTANGULAR SHAPED AREA 262YDS LONG AND 73 YDS WIDE ALONG EAST SIDE OF AND PARALLEL TO THE BRIDGE. H9814/80-- OPR-D103-PE-80; ITEM #81; 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); REP AS DEBRIS CONSISTING OF BRIDGE SECTIONS RESULTING FROM A COLLISION OF USS YANCEY W/TRESTLE AT LAT.36-57-30N, LONG.76-06-55.6W; SOUNDING SEARCH; IMPROVISED CHAIN DRAG; DIVER INVESTIGATION OBTAINING LEAST DEPTH OF 14FT IN LAT.36-57-32.57N, LONG.76-06-52.51W; EVALUATOR RECOMMENDS RETAINING AREA LIMITS AS CHARTED W/REVISED LEAST DEPTH OF 14FT. (ENTERED 11/8/84 MSM)
847	UNKNOWN	12248	D	0370	37	HISTORY NM13/47--WRECK OF A FISHING BOAT REPORTED SUNK AT APPROX. LAT.36-57-32N, LONG.76-25-23W. H7602/45-48WD WRECK OF OYSTER BOAT, SUNK IN COLLISION W/NEWPORT NEWS CAR FERRY SUBSEQUENTLY REMOVED BY COE, AREA CLEARED TO 37 FT. NM28/47-- WRECK AT APPROX. LAT.36-57-37N, LONG.76-25-23W HAS BEEN REMOVED.
848	CARMINA	12222	D	0370	46	HISTORY SOURCE UNKNOWN-- REPORTED SUNK IN 1938. CL792/44-- ADVANCE SURVEY REPORT; OBSTRUCTION HUNG AT 39.5 ì FEET, CLEARED TO 37 FEET (PREDICTED) AT POS. LAT. 36-57-32.6N, ì LONG. 76-01-17.0W. NM9/45-- REPORTED DEMOLISHED, WD CLEARED TO 37 FEET (MLW) BY ì C&GS. H7028/45WD-- ITEM 20; NAVY DIVERS IDENTIFY AS PILOT BOAT AND ì BLOW HOUSE OFF AFTER FIRST HANG, SUBSEQUENTLY HUNG AT 42 FEET, ì CLEAR TO 40 FEET (MLW) AT POS. LAT. 36-57-36N, LONG. 76-01-18W. H9901/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO R/R ì CONTROL; ECHO SOUNDER; SURVEY DEPTHS OF 55-57 FEET IN AREA; ITEM ì NOT INVESTIGATED; EVALUATOR RECOMMENDED RETAIN AS CHARTED. (ENT ì 10/17/84, MSM) H10343/90-- OPR-D111-WH; WRECK LOCATED IN LAT. 36-57-34.63N, ì LONG. 76-01-16.53W, COVERED 15 METERS. EVALUATOR RECOMMENDS NO ì CHANGE IN CHARTING STATUS PENDING FINAL DISPOSITION ON ì H-10372/90. (UP 1/3/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); WRECK LOCATED IN ì LAT. 36-57-35.01N, LONG. 76-01-16.90W. DIVER LD OF 46 FEET. ì EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (UP 4/20/92, SJV) DESCRIPTION 24 NO.435; SUNK 7/24/44, REPORTED DEMOLISHED, WD CLEARED TO 37FT (MLW) BY CGS; POSITION ACCURACY 1 MILE. 27 NO.811; WD CLEAR TO DEPTH OF 37FT AT MLW. WK DEMOLISHED, BUOY DISC.
849	UNKNOWN	12221	E		0	HISTORY NM DATED 8/22/50 DESCRIPTION 24 NO.1185; POSITION ACCURACY WITHIN 1 MILE; REPORTED DEMOLISHED; LOCATED 1954 (SOURCE UNK.)
						HISTORY NM19/42-- U.S.C. & G.S. LOCATED A WRECK IN 29 FEET OF WATER. FE34/42-- LOCATED AND IDENTIFIED VISIBLE WRECK OF E.H. BLUM. A ì STACK AND MAST WERE VISIBLE

850	E H BLUM	12221	D	370	20	AT THE TIME OF THE SURVEY (MARCH 30, ì 1942). POSITION BY RANGE AND BEARING FROM CAPE HENRY LIGHTHOUSE. H6976/45-47WD– WAHI4245; 1:40,000-SCALE; VISUAL CONTROL; ITEM ì NO. 6;WRECK IN PA LAT. 36-57-36N, LONG. 75-57-10W. DISPERSED ì PRIOR TO 1947 SURVEY; CLEARED BY 20 FEET; HYDROGRAPHER CONSIDERED ì ITEM DISPROVED. H9901/80– OPR-D103-PE-80; 1:10,000-SCALE; ARGO (R/R) CONTROL; ì ECHO SOUNDER; SURVEY DEPTHS IN AREA ARE 25-27 FEET; EVALUATOR ì RECOMMENDED RETAIN AS CHARTED. DESCRIPTION 24 NO. 1304; LOCATED 1942 (SOURCE UNKNOWN); POSITION ACCURACY WITHIN ONE MILE AT 36-57-33N, 75-57-21W; REPORTED THROUGH CGS SURVEY DATED 1945 27 NO. 273; NOT DESCRIBED; POSITION 36-57-33N, 75-57-21W.
851	OBSTRUCTION	12222	E	370	20	HISTORY H6976/45-47WD–WAHI4245; 1:40,000 SCALE SURVEY; VISUAL CONTROL; SUBM. OBSTR. HUNG AT 21FT; CLEARED BY 20FT; DRAG INDICATED SMALL OBJECTS RATHER THE SHOAL; CLOSE TO WARTIME MINE FIELD; SUSPECTED THAT OBSTR. IS A MINE ANCHOR OR LISTENING DEVICE EMBEDDED IN BOTTOM; LAT.36-57-30N, LONG.75-58-07W. H9901/80–OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; OBSTR REP IN WK LIST (ITEM #622) 26-28FT DEPTHS IN AREA; EVALUATOR RECOMMENDED RETAIN AS CHARTED. DESCRIPTION 24 NO.622; POS. ACCURACY WITHIN 1 MILE; WD CLEARED TO 20 FT.(SOURCE UNK.) REPORTED THROUGH H.O. CHART RECORDS, DATED 1949. LAT.36-57-33N, LONG.75-58-08W.
853	OBSTRUCTION	12221	E	0370	31	HISTORY NM DATED 6/13/47 DESCRIPTION 24 NO.1302; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 31 FT. (SOURCE UNK.)
854	OBSTRUCTION	12245	E	0370	23	HISTORY H7602/48– CS326; OBSTRUCTION HUNG AND CLEARED AT 23 FEET. ì ASSUMED TO BE BOTTOM IN LAT. 36-57-34N, LONG. 76-22-22W. (UP ì 3/1/94, SJV) FE394SS/94– OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/6/95, SJV)
855	WILLIAM D. SANNER	12221	E	0370	42	HISTORY H7028/45-50WD– PBS-2150WD; 1:40,000-SCALE SURVEY; 42-FOOT ì CLEARED DEPTH IN POS. LAT. 36-57-36N, LONG. 76-00-30W. H9871/76WD– SWEPT IN ONE DIRECTION TO 38 FEET. H9901/80– OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO R/R ì CONTROL; ECHO SOUNDER; SURVEY DEPTHS IN AREA ARE 61-64 FEET. ì EVALUATOR RECOMMENDED RETAIN AS CHARTED . (ENT 10/18/84, MSM) H10343/90–OPR-D111-WH; NOT PRESENTLY CHARTED (12/30/ 91). NO ì SIGNIFICANT SIDE SCAN SONAR CONTACTS NEAR THIS ITEM. EVALUATOR ì RECOMMENDS NO CHANGE IN CHARTING STATUS PENDING FINAL DISPOSITION ì ON H-10372/ 90. (UP 1/3/92, SJV) H10372/90– OPR-D111-HE (FORMERLY FE-356SS); LOCATION NOT ì INVESTIGATED. EVALUATOR RECOMMENDS RETAINING AS CHARTED. (UP ì 4/20/92, SJV) DESCRIPTION 01 DATED 1941 24 NO.8374; TRAWLER; 2 60 GT; SUNK 12/1/38 BY MARINE CASUALTY; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 37 FT. (SOURCE UNK.)
856	OBSTRUCTION	12254	E	0067	22	HISTORY LNM34/72–A DIESEL ENGINE HAS BEEN REPORTED LOST IN APPROX. POS. ABOVE H9910/80--OPR-D103-MI-80; ITEM 135; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); ECHO SOUNDER W/50M LINE SPACING PLUS A STAR PATTER OVER POSITION OF OBSTR AS CHARTED IN LAT.36-57-37N, LONG.76-09-16W. NO OBSTR WAS FOUND, DURING WIRE DRAG INVESTIGATION A HANG WAS REPORTED IN THE VICINITY; DIVERS REPORTED AN IRREGULAR SHAPED METAL OBJECT POSSIBLY THE DIESEL ENGINE, W/LEAST DEPTH OF 22FT; EVALUATOR RECOMMENDED DELETING THE CHARTED OBSTR REP PA AND CHART THE OBSTR IN LAT.36-57-37.16N LONG.76-09-27.28W. (ENTERED 10/16/84 MSM) FE410SS/95– OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 2/9/ 96, SJV)
857	CHILORE	12254	D	100	46	HISTORY NM42/43– AMENDED POSITION OF LIGHTED BELL BUOY APPROX. 300 YARDS, 231 DEG. FROM WRECK AT POS. LAT. 36-57-28N, LONG. 76-00-48W. NM48/44– WD CLEAR DEPTH OF 30 FEET AT MLW. CL809/44– ADVANCE REPORT OF A WD HANG AT 31.5 FEET CLEARED TO 30 FEET AT POSITION LAT. 36-57-38N, LONG. 76-00-39W. UNIDENTIFIED BUT THOUGHT TO BE WRECK OF THE CHILORE WHICH CHART LETTER ABOVE STATES IS CHARTED A LITTLE SOUTH. H7028/45WD– WD CLEARED TO 37 FEET. CL540/54– CS-370, PRELIMINARY REPORT; EVIDENCE OF A WRECK WAS FOUND BY ECHO SOUNDER AT POS. LAT. 36-57-34.7N, LONG. 76-00-40.3 WITH A LD OF 43 FEET, SHORAN CONTROL. H8218/54– WRECK INFO. FOR CL540/54 (ABOVE). NM27/54– WRECK INFO.; PREVIOUSLY REPORTED WRECK CHARTED IN LAT. 36-57-32N, LONG. 76-00-39W AND YELLOW BUOYS NO LONGER EXIST. WRECK OF THE CHILORE LOCATED AND CORRECTLY CHARTED IN LAT. 36-57-38N, LONG. 76-00-39W. CLEARED 37 FEET. H9901/80– OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO R/R CONTROL; ECHO SOUNDER; 51-FOOT PEAK IN 60 FEET INVESTIGATED; 43-FOOT LD OBTAINED IN LAT. 36-57-35N, LONG. 76-00-40W. EVALUATOR RECOMMENDED RETAIN AS CHARTED. (ENT 10/11/84) H10343/90– OPR-D111-WH; SIGNIFICANT SIDE SCAN SONAR CONTACT LOCATED IN LAT. 36-57-37.15N, LONG. 76-00-38.65W. CALCULATED HEIGHT OF 5 METERS ABOVE BOTTOM. EVALUATOR RECOMMENDS NO CHANGE IN CHARTING STATUS PENDING FINAL DISPOSITION ON H-10372/90. (UP 1/3/92, SJV) H10372/90– OPR-D111-HE (FORMERLY FE-356SS); DIVER LD OBTAINED. HOWEVER, NOT CONSIDERED VALID SINCE NEITHER A TIME NOR POSITION WERE PROVIDED. FATHOMETER DEPTH OF 47.6 FEET OBTAINED. SINCE THIS DEPTH IS DEEPER THAN THE HANG DEPTH FROM H-9871/76WD, EVALUATOR RECOMMENDS RETAINING AS CHARTED. FURTHER INVESTIGATION RECOMMENDED. (UP 4/20/92, SJV) FE412SS/95– OPR-E696-HE; WRECK LOCATED BY SIDE SCAN SONAR. DIVER LD OF 13.8 METERS (45 FEET) IN LAT. 36-57-38.018N, LONG. 76-00-38.306W. EVALUATOR RECOMMENDS DELETING CHARTED WK CLEARED 37 FEET AND CHARTING 46 WK AS SURVEYED. (UP 2/15/96, SJV) DESCRIPTION 24 NO.398; CARGO; 8310 GT,SUNK 7/15/42 BY SUBMARINE; POSITION ACCURACY WITHIN 1 MILE; REPORTED DEMOLISHED, WD CLEARED TO 30 FT THRU NM 48/44. 27 NO.272; CARGO, 4565 NT, SUNK 7/24/ 42; CLEAR DEPTH OF 30 FT AT MLW
858	OBSTRUCTION	12254	E	0370	35	HISTORY H7177/47WD– PBS-WD-2248; 1:20,000-SCALE SURVEY; SEXTANT ì CONTROL; 35-FOOT SOUNDINGIN 38-FOOT DEPTHS IN LAT. 36-57-38.4N, ì LONG. 76-05-09W; HUNG AT 35.5 FEET; CLEARED BY 32 FEET; EVALUATOR ì RECOMMENDED CHARTING AS A SUBM OBSTR WITH 32-FOOT CLEARANCE ì DEPTH. CL577/71– MAR; OPR-467; ITEM 13C; OBSTRUCTION REVISED TO ì CLEARED TO 34 FEET. OBSTRUCTION NOT FOUND BUT CLEARED BY 35 FEET; ì EVALUATOR RECOMMENDED CHARTING AS A SUBM OBSTR WITH WIRE DRAG ì CLEARANCE OF 35 FEET IN LAT. 36-57-38.6N, LONG. 76-05-09.1W. H9814/80– OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R); ì ECHO SOUNDER; 45 METER LINE SPACING; OBSTRUCTION NOT FOUND; ì EVALUATOR CONCURRED WITH RECOMMENDATION IN H9255. (ENT 11/19/84, ì MSM) FE387SS/ 94– OPR-E696-HE; SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS

						DELETING FROM CHART. (UP 9/12/95, SJV)
892	SNDG	12222	D	127	0	HISTORY H9901/80-- OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) ì CONTROL; ECHO SOUNDER; 73-FOOT PEAK IN 82 FEET IN LAT. ì 36-57-24.80N, LONG. 75-59-33.87W; STAR PATTERN DEVELOPMENT; ì INVESTIGATION FOUND NO SHOALER SOUNDINGS; RECOMMENDED FOR FURTHER ì INVESTIGATION; ALSO REF. AWOIS ITEM #839. 74 FOOT SOUNDING ì CHARTED. (ENT 10/18/84, MSM) H10343/90-- OPR-D111-WH; SIGNIFICANT CONTACT LOCATED IN LAT. ì 36-57-40.21N, LONG. 75-59-32.23W. ESTIMATED 3.7 METERS ABOVE ì BOTTOM. EVALUATOR RECOMMENDS NO CHANGE IN CHARTING STATUS PENDING ì FINAL DISPOSITION OF H-10372/90. (UP 1/28/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); FATHOMETER DEPTH ì OF 79 FEET OBTAINED ON AN OBSTRUCTION IN LAT. 36-57-26.31N, LONG. ì 75-59-32.75W BY PRESENT SURVEY. 73-FOOT SOUNDING OBTAINED ON ì PRIOR SURVEY H-10343/90, ABOVE. OBSTRUCTION LOCATED BY SIDE SCAN ì SONAR, ESTIMATED DEPTH OF 72 FEET ALSO FOUND BY PRIOR SURVEY. ì EVALUATOR RECOMMENDS REVISING THE CHARTED 74-FOOT SOUNDING TO 73 ì FEET AS LOCATED ON H-10343/90. ALSO RECOMMENDS DIVER ì INVESTIGATION AND LD DETERMINATION AT OPPORTUNE TIME. (UP ì 4/ 20/92, SJV)
2553	OBSTRUCTION	12200	D		0	DESCRIPTION 185 ITEM D; SIDE SCAN SONAR IMAGE, 35 FT L HARD CONTACT, 3 FT ABOVE BOTTOM, MAY BE SMALL BOAT OR PIPE SECTION, TANK. RAYDIST HORIZONTAL CONTROL. NOTE: NOT PRESENTLY CHARTED.
2555	OBSTRUCTION	12208	D	067	0	HISTORY UNKNOWN SOURCE-- POSSIBLY NM DATED 5/16/40 (FROM 1957 NAVY ì WRECK LIST). H6976/45-47WD-- CS-313 & 326 - WA/HI; LOCATION OF OBSTRUCTION ì CLEARED TO 32 FEET. NOT HUNG. RETAIN AS CHARTED SINCE REQUIREMENT ì FOR BOTTOM CLEARANCE AND SEARCH RADIUS NOT SATISFIED. CL347/58-- REF. NAVY WRECK LIST. SEE DESCRIPTION, BELOW. H9905/80-- OPR-D103-PE; NOT LOCATED. ADDITIONAL WORK ì RECOMMENDED (WIRE DRAG). H10340/90-- OPR-D111-WH; NOT ASSIGNED. FE353SS/HE-- OPR-D111-HE; NOT ASSIGNED. FE412SS/HE-- OPR-E696-HE; 200% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV) DESCRIPTION 24 OBSTRUCTION NO. 1311, FORMERLY CHARTED. NM DATED 5/16/40 (?). LAT. 36-56-12N, LONG. 75-54-48W. ACCURACY WITHIN ONE MILE.
2738	WILLIAM	12220	E	****	0	02738 HISTORY LNM5/72--TUG, SANK IN 23 FT OF WATER AT POS.36-57-18N, 76-21-22W CL1504/ 80--USCG; VESSEL REFLOATED ON 2/2/72 DESCRIPTION 01 TOWING VESSEL, 22 GT, 41.9 FT L, 12.4 FT W, 6.6 FT D OWNER: GREAT LAKES & DOCK CO., PO BOX 9489, NORFOLK,VA 27505 SURVEY REQUIREMENTS MISCELLANEOUS--SALVAGED
2748	UNKNOWN	12220	E	0098	0	02748 HISTORY CL1679/80--CGAUX; WRECK 20 FT L, PART SUBM AT HW. LOCALS SAY IN EXISTENCE FOR YEARS SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE. DISPROVE BY EXAMINING AN AREA OF AT LEAST 100 METER RADIUS. MAY BE POSSIBLE TO DO VISUALLY AT LW. IF SHOAL DOES NOT BARE FOR THIS EXTENT THAN BOTTOM DRAG SUBM. PORTION
2798	MARY HOOPER	12221	E	0999	0	SURVEY REQUIREMENTS NOT DETERMINED
2800	UNKNOWN	12221	E	0999	0	SURVEY REQUIREMENTS NOT DETERMINED
2802	OCEAN BELLE	12221	D		0	
2902	OBSTRUCTION	12221	D	0067	0	HISTORY NM29/57--7/20/57; U.S. NAVY ADVISES A BUOY ESTABLISHED TO MARK ì A SUBMERGED STEEL HYDROGRAPHIC EXPERIMENTAL STRUCTURE WHICH ì EXTENDS 5 FEET ABOVE THE BOTTOM; IN 1966 NO EVIDENCE COULD BE ì FURNISHED CONCERNING THE STRUCTURE'S REMOVAL. H9901/80-- OPR-D103-PE-80; ITEM NO. 95; 1:10,000-SCALE SURVEY; ì ARGO (R/R) CONTROL; ECHO SOUNDER; 1000 METER RADIUS SEARCH AT 45 ì METER LINE SPACING; NO INDICATION OF OBSTRUCTION OR SHOALING; ì COULD NOT PERFORM A WIRE DRAG BECAUSE OF STRONG CURRENTS AND THE ì INABILITY OF LAUNCHES TO CONTROL A DRAG AT 90 FEET; EVALUATOR ì RECOMMENDED RETAIN AS CHARTED IN LAT. 36-57-21N, LONG. 75-58-12W ì AND ASSIGNING TO R/H FOR INVESTIGATION. (ENT 10/11/84, MSM) H10343/90- - OPR-D111-WH; AN OBSTRUCTION WITH AN ESTIMATED DEPTH ì OF 24.5 METERS LOCATED IN LAT. 36-57-23.99N, LONG. 75-58-13.58W. ì EVALUATOR RECOMMENDS NO CHANGE IN CHARTING STATUS PENDING FINAL ì DISPOSITION OF SURVEY H-10372/90. (UP 1/28/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); EVALUATOR DOES NOT ì CONSIDER ITEM DISPROVED. HOWEVER, RECOMMENDS CHARTING THE ì FOLLOWING CONTACTS, CHART SCALE ALLOWING: OBSTRUCTION IN LAT. ì 36-57-18.93N, LONG. 75-58-26.06W, FATHOMETER DEPTH OF 28.9 ì METERS; OBSTRUCTION IN LAT. 36-57-24.07N, LONG. 75-58-13.38W, ì FATHOMETER DEPTH OF 26.5 METERS. (UP 4/20/92, SJV)
3080	UNKNOWN	12208	D	100	0	HISTORY LNM40/72-10/3/72 (5TH CG)--26 FT. DANGEROUS SUNKEN WRECK PA. (CHART 12221, 2ND ED.) REP. IN APPROX. POS. LAT.36-53-54N, LONG.75-58-48W. MAST POSSIBLY VISIBLE. H9905/80--OPR-D103-MI/PE-80; NOAA SHIP PEIRCE; LIMITED INVESTIGATION CONDUCTED 45 METER DEVELOPMENT, 1000 METER SEARCH RADIUS CENTERED ON APPROX. POS. LISTED ABOVE. SEARCH NEGATIVE. HYDROGRAPHER AND QC INSPECT. RECOMMENDED REVISION TO ED. ITEM 96.
3081	SNDG	12221	D	067	0	HISTORY CL310/40-- 30-FOOT SHOAL REPORTED BY USCG MENDOTA (LIGHTHOUSE TENDER). OBTAINED WITH LEAD LINE AND COMPASS BEARINGS, CHARTED ON CHART 12221. ì NOT TIDE CORRECTED. FE-77 (F.E. NO. 3 1949)-- NEITHER VERIFIED NOR DISPROVED. H9905/80-- OPR-D103-MI/PE-80; NOAA SHIP PEIRCE; NEITHER ì VERIFIED NOR DISPROVED. MAIN SCHEME HYDRO (100 METER SPACING). H10340/90-- OPR-D111-WH; SURVEY OPS. NEGATIVE. HOWEVER, CHARTED ì SHOAL FALLS BETWEEN LINES. EVALUATOR RECOMMENDS THAT DISCUSSION ì AND CHARTING RECOMMENDATION BE DEFERRED UNTIL THE COMPLETION OF ì OFFICE PROCESSING OF JUNCTIONAL SURVEY H-10356/90, AND A FINAL ì DISPOSITION OF ITEM HAS BEEN MADE. (UP 10/29/91, SJV) H10356/90-- OPR-D111-HE; SIDE SCAN SONAR SEARCH AND ì ECHOSOUNDER HYDROGRAPHY NEGATIVE. EVALUATOR RECOMMENDS DELETING ì FROM CHART. (UP 3/5/92, SJV)
						HISTORY H9293/72--OPR-467-R/H-72; TEMPORARY HANG NOT INVESTIGATED IN APPROX. POSITION LAT. 36-53-48N, LONG. 75-56-26W. CHARTED AS OBSTR PA (31 FT REP 1972) CL25/84-- DAVE PETERSON (SPECIAL ASSISTANT FOR FIELD OPERATIONS, N/CG24X5) TO JEANNETTE

3418	OBSTRUCTION	12221	D	067	0	O'CONNOR (N/CG221); RECOMMENDS CHARTING TEMP. HANG AS OBSTR PA (31 FT REP 1972). (SEE AWOIS NO. 03416 AND 03417) DESCRIPTION **** TELECON, 1/30/86, M. HICKSON (MOA2321) AND S. VERRY (N/CG241); RE. TEMPORARY HANG (ABOVE). CHARTNG RECOMMENDATION; OBSTR PA (CLEARED 31 FT 1972).
3420	UNKNOWN	12200	D	100	54	HISTORY H9959/81--OPR-D103-MI/PE-81; ARGO R/R CONTROL; 55FT SHOAL SNDG. OBTAINED BY ECHO SOUNDER DURING ROUTINE MAINSCHEME HYDRO. FURTHER INVEST., CONDUCTED VIA 10M ECHO SOUNDER LINE SP. AND BY DIVERS, PROVIDED RESULTS THAT REVEALED A BARGE LYING ON ITS SIDE IN LAT.36-55-04.58N, LONG.75-43-42.50W. THE LD OBTAINED BY LEADLINE AND DIVERS DEPTH GAGE IS 54FT. EVALUATOR RECOMMENDS CHARTING A 54 WK AT THE POS. LISTED ABOVE. (ENTERED 10/84 MJF)
3685	OBSTRUCTION	12254	D	0370	15	03685 HISTORY FE233WD/69--DEBRIS W/150FT OF WIRE CABLE RECOVERED; HUNG AT 16FT; CLEARED AT 15FT IN LAT.36-55-52.6N, LONG.76-09-35.6W. H9910/80--OPR-D103-MI-80; ITEM 132; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); ECHO SOUNDER W/50M LINE SPACING; EVALUATOR RECOMMENDS COMBINING WITH CONCRETE CLUMP AND MUSHROOM ANCHOR FOUND WITHIN 130M OF HANG AND CHART AS ONE FEATURE: OBSTRS W/WIRE DRAG CLEARANCE OF 15FT IN LAT.36-55-53N, LONG.76-09-35W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS LIMITED NOT ASSIGNED
3686	OBSTRUCTION	12254	D	0370	15	03686 HISTORY H9255WD/71-72--MUSHROOM ANCHOR; HUNG AT 18FT WITH 18FT LEAST DEPTH; EXTENDS 4FT OFF THE BOTTOM IN LAT.36-55-52.8N, LONG.76-09-34.6W. H9910/80--OPR-D103-MI-80; ITEM 132; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); ECHO SOUNDER W/50M LINE SPACING; EVALUATOR RECOMMENDS COMBINING W/DEBRIS (APPROX. 30M W) AND CONCRETE CLUMP (APPROX. 10M NE OF DEBRIS) AND CHART AS ONE FEATURE: OBSTRS W/WIRE DRAG CLEARANCE OF 15FT IN LAT.36-55-53N, LONG.76-09-35W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS LIMITED NOT ASSIGNED
3687	OBSTRUCTION	12254	D	0067	0	03687 HISTORY H7089/46--SUBM DOLPHIN; US ARMY TIDE GAGE IN LAT.36-55-40.5N, LONG.76-07-18W H9910/80--OPR-D103-MI-80, 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); ECHO SOUNDER NORTH TO SOUTH W/20M LINE SPACING; NOT ON FATHOGRAMS; NOT SEEN BY LAUNCH PERSONNEL; EVALUATOR RECOMMENDS REVISING TO SUBM DOLPHIN ED ON CHART. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS LIMITED NOT ASSIGNED: INCOMPLETE
3689	OBSTRUCTION	12254	D	0370	15	03689 HISTORY H9910/80--OPR-D103-MI-80; ITEM 132: ; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); ECHO SOUNDER W/50M LINE SPACING; 3X3 FT CONCRETE BLOCK CHARTED THRU CL1028/70 IN LAT.36-55-48N, LONG.76-09-32.5W; CLEARED TO 15FT IN FE233WD/69; CONCRETE CLUMP (2X4X4 FT) HUNG DURING SURVEY H9255WD/71-72 IN LAT.36-55-52.9N, LONG.76-09-35.4W AND WAS CLEARED BY 15FT; H9910/80 RECOMMENDS DELETING FIRST ITEM AS CHARTED; COMBINE SECOND ITEM WITH DEBRIS AND MUSHROOM ANCHOR LOCATED DURING THIS SURVEY AND CHART AS SINGLE FEATURE OBSTRS WITH CLEARED DEPTH OF 15FT IN LAT.36-55-53N, LONG.76-09-35W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS LIMITED NOT ASSIGNED
3692	OBSTRUCTION	12254	D	370	21	HISTORY CL182/70, CL1028/70--AMC-SP-5-69; 10/69; PROCESSED UNDER SURVEY REGISTRY NO. FE-233WD; SUBM DANG OBSTR; CARGO LOST DURING TRANSFER BETWEEN NAVY SHIPS; PROJECT TWO FEET ABOVE BOTTOM; BUOYED BY FIELD PARTY AND NAVY NOTIFIED; NAVY COULD NOT LOCATE AND NO FURTHER ATTEMPTS TO LOCATE WERE MADE; TEMP HUNG AT 22FT; CLEARED TO 21FT IN LAT.36-56-31.2N, LONG.76-09-58.8W. H9910/80--OPR-D103-MI-80; ITEM 134; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); ECHO SOUNDER W/50M LINE SPACING; 3FT SPIKE ON FATHOGRAM; STAR PATTERN INVESTIGATION OVER SPIKE W/NO FURTHER SIGN OF OBSTR; OBSTR WAS LEAST DEPTH OF 23FT; EVALUATOR RECOMMENDS AND OBSTR CLEARED BY 21FT BE CHARTED IN LAT.39-56-31N, LONG.76-09-59W (FROM FE233WD) AND A 23FT OBSTR BE CHARTED IN LAT.36-56-29N, LONG.76-09-50 (FROM H9910). (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; NOT INVESTIGATED DUE TIME CONSTRAINTS. EVALUATOR RECOMMENDS RETAINING AS CHARTED AND REASSIGNING IN FUTURE. (UP 2/9/96, SJV)
3693	OBSTRUCTION	12254	D	067	23	HISTORY H9910/80--OPR-D103-MI-80; ITEM 134; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); INVESTIGATING AND OBSTR IN LAT.36-56-31N, LONG.76-09-59W ORIGINATED IN FE233WD; ECHO SOUNDER W/50M LINE SPACING; 3FT SPIKE ON FATHOGRAM; STAR PATTERN INVESTIGATION OVER AREA OF SPIKE W/NO FURTHER SIGN OF OBSTR; OBSTR HAS LEAST DEPTH OF 23FT; EVALUATOR RECOMMENDED CHARTING 23FT OBSTR IN LAT.36-56-29N, LONG.76-09-50W. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; NOT INVESTIGATED DUE TIME CONSTRAINTS. EVALUATOR RECOMMENDS RETAINING AS CHARTED AND REASSIGNING IN FUTURE. (UP 2/9/96, SJV)
3694	OBSTRUCTION	12254	D	0085	0	03694 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A); ECHO SOUNDER; LINE OF 53 STAKES (APPROX. 4" IN DIAM. AND 15' APART) BEGINNING INSHORE AND RUNNING NORTH; N END IS SERIES OF STAKES IN SPIRAL SHAPE; A NET CONNECTS ALL STAKES; SNDG LINE RUN ON EITHER SIDE AND N LIMIT OF FISH TRAP NORTHERNMOST POS. IS LAT.36-52-42.3N, LONG.76-07-54.1W; SOUTHER LIMIT IS LAT.36-55-32.7N, LONG.76-07-59.3W; POSITION ABOVE (LAT.36-55-37.6N, LONG.76-07-56.9W IS CENTRAL PT OF FISH TRAP SCALED FROM SMOOTH SHEET; PERMANENT FIXTURE; RECOMMENDED CHARTING. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3695	OBSTRUCTION	12254	D	370	21	HISTORY FE233WD/69--AMC-SP-5-69; GROUNDING OF DRAG AT EFFECTIVE DEPTH OF 22FT IN PA LAT.36-56-10N, LONG.76-09-54W; CLEARED DEPTH OF 21FT; EVALUATOR RECOMMENDED NOT CHARTING SINCE SUBSEQUENT SURVEY H9910/80 SHOWS EVIDENCE OF SHOAL; H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A) ECHO SOUNDER; SHOWS 27FT DEPTH IN THE AREA OF PREVIOUS GROUNDING; H9255/71-72 DID NOT VERIFY OF DISPROVE GROUNDING; EVALUATOR DOES NOT CONCUR WITH RECOMMENDATION IN FE233WD AS BOTTOM IS CLUTTERED IN THIS AREA; RECOMMENDS CHARTING AND OBSTR W/CLEARED DEPTH OF 21FT AT POS. LISTED ABOVE. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; NOT INVESTIGATED DUE TIME CONSTRAINTS. EVALUATOR RECOMMENDS RETAINING AS CHARTED AND REASSIGNING IN FUTURE. (UP 2/9/96, SJV)
						03696 HISTORY UNKNOWN SOURCE--3FT X 3FT CONCRETE BLOCK REPORTED CHARTED AS AN

3696	OBSTRUCTION	12254	D	0370	14	OBST IN LAT 36-55-48N, LONG 76-09-33W. FE233WD/69--AMC-SP-5-69; 1:20,000 SCALE SURVEY; CONCRETE BLOCK NOT LOCATED HOWEVER INVESTIGATED HANG IS 95 M EAST OF CHARTED POSITION; MAY HAVE HUNG ON BOTTOM; HUNG AT 15FT IN PA LAT.36-55-49N, LONG.76-09-29W. CLEARED TO 14FT. EVAL. RECOMMENDS DELETING ORIGINAL OBSTR & CHARTING SUBM OBSTR CLEARED TO 14FT IN NEW POSITION. (ENTERED MSM 6/11/85) H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; DEL NORTE CONTROL (R/R, R/A) ECHO SOUNDER, DEPTHS TO 17FT IN AREA,CONCUR W/RECOMMENDATION IN FE233WD TO CHART AN OBSTR. CLEARED TO 14FT AT POS. LISTED ABOVE. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3697	OBSTRUCTION	12254	D	370	18	HISTORY FE233WD/69--AMC-SP-5-69; 1:20,000 SCALE SURVEY; UNINVESTIGATED HANG AT 19FT IN PA LAT.36-55-51.6N, LONG.76-08-44.4W; CLEARED AT 18FT; RECOMMEND CHARTING AS SUBM DANG OBSTR W/18FT CLEARED DEPTH. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY, DEL NORTE CONTROL (R/R, R/A) ECHO SOUNDER SHOWS DEPTHS TO 21FT IN AREA; EVALUATOR CONCURS WITH RECOMMENDATION IN FE233WD TO CHART AN OBSTR CLEARED TO 18FT AT POS. LISTED ABOVE. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3698	OBSTRUCTION	12254	D	370	17	HISTORY FE233WD/69--AMC-SP-5-69; 1:20,000 SCALE SURVEY; OBSTR IDENTIFIED AS ROCK 4X6FT; 5.4FT ABOVE BOTTOM; HUNG AT 19FT AND CLEARED BY 19FT IN PA LAT.36-55-57N, LONG.76-09-04W; DIVER LEADLINE LEAST DEPTH OF 22FT; EVALUATOR RECOMMENDED CHARTING AS OBSTR W/CLEARED DEPTH OF 19FT. QUALITY REVIEWER RECOMMENDED CHARTING 22FT OBSTR; H9255WD/71-72--CONCRETE CLUMP EXTENDING 6FT OFF THE BOTTOM IN LAT.36-55-56.5N, LONG.76-09-03.5W. RECOMMENDED ITEM BE CHARTED AS OBSTR W/ CLEARED DEPTH OF 17FT THRU H9255WD. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY, DEL NORTE CONTROL (R/R, R/A) ECHO SOUNDER 23FT DEPTHS IN AREA. (ENTERED 10/15/84 MSM)
3699	OBSTRUCTION	12254	D	0085	0	03699 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE CHART; PIER OF GROIN; CHARTED, NOT LOCATED OF DISCUSSED BY FIELD UNIT; ORIGINAL SOURCE NOT ASCERTAINED; EVALUATOR RECOMMENDS RETAIN AS CHARTED IN LAT.36-55-48N, LONG.76-11-09W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3700	OBSTRUCTION	12254	D	0284	0	03700 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; THREE AREAS COVERING AT MLW; NOT LOCATED OR ADDRESSED BY HYDROGRAPHER. SOURCE UNASCERTAINABLE. RAN ONE LINE OF SNDGS INSIDE LIMITS PARALLEL TO REACH AND SEVERAL LINES OUTSIDE LIMITS COMING INTO BEACH; EVALUATOR RECOMMENDS RETAIN AS CHARTED IN LAT.36-55-34N, LONG.76-09-48W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3701	OBSTRUCTION	12254	D	0085	0	03701 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY, PIER OR GROIN AND SHOAL AREA; NOT LOCATED OR ADDRESSED BY HYDROGRAPHER. SOURCE UNASCERTAINABLE AT TIME OF REPORT. RECOMMEND ITEMS BE RETAINED AS CHARTED IN LAT.36-55-36N, LONG.76-09-36W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3702	OBSTRUCTION	12254	D	0085	0	03702 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; GRION, NOT LOCATED OR ADDRESSED BY HYDROGRAPHER; SOURCE NOTM ASCERTAINABLE AT TIME OF REPORT; RECOMMEND ITEM BY RETAINED AS CHARTED IN LAT.36-55-33.5N, LONG.76-09-27W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3703	OBSTRUCTION	12254	D	067	0	HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; UNEXPLODED DEPTH CHARGE APR. 1956. NOT LOCATED OR ADDRESSED BY HYDROGRAPHER, SOURCE NOT ASCERTAINABLE AT LONG.76-09-02.5W. (ENTERED 10/15/84 MSM)
3704	OBSTRUCTION	12254	D	0085	0	03704 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; GROIN, NOT LOCATED OR ADDRESSED BY HYDROGRAPHER; SOURCE NOT ASCERTAINABLE AT TIME OF THIS REPORT. RECOMMENDED ITEM BE RETAINED AS CHARTED IN LAT.36-55-24N, LONG.76-08-30W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3705	OBSTRUCTION	12254	D	0067	0	03705 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; GROIN OR RUINS, NOT LOCATED OR ADDRESSED BY HYDROGRAPHER; SOURCE NOT ASCERTAINABLE AT TIME OF REPORT. RECOMMENDED THAT THIS ITEM BE RETAINED AS CHARTED IN LAT.36-55-19N, LONG.76-08-12W. (ENTERED 10/15/84, MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3706	UNKNOWN	12254	D	0100	0	03706 HISTORY H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; SUNKEN DANG WK PA. SOURCE UNKNOWN. NOT INVESTIGATED OR ADDRESSED BY SURVEY. NOT CONSIDERED VERIFIED OR DISPROVED. RECOMMENDED RETAIN AS CHARTED IN LAT.36-56-54N, LONG.76-08-25W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3709	OBSTRUCTION	12254	D	370	20	HISTORY H9255WD/71-72--OPR-467-RH-71,72; ITEM 47; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL; STEEL POST EXTENDING 1FT OFF BOTTOM; HUNG AT 20FT (ESTIMATED); CLEARED BY 20FT IN ONE DIRECTION. RECOMMENDED CHARTING AS SUBM OBSTR W/WIRE DRAG CLEARANCE OF 20FT IN LAT.36-57-05.6N, LONG.76-11-42.8W. SURVEY DEPTHS IN AREA FROM H9910/80 ARE 20-21FT. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3710	OBSTRUCTION	12254	E	0067	18	HISTORY H9255WD/71,72--OPR-467-RH-71,72; ITEM 39; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL; LEADLINE, SECTIONS OF RAILROAD TRACK EXTENDING 4 1/2FT OFF BOTTOM. HUNG AT 19FT. 18FT LEAST DEPTH. RECOMMENDED CHARTING SUBM OBSTR W/LEAST DEPTH OF 18FT IN LAT.36-57-17.7N, LONG.76-09-46.5 DEPTHS IN AREA FROM H9910/80 ARE 23 TO 24 FT (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 2/9/ 96, SJV)
3711	OBSTRUCTION	12254	D	370	21	HISTORY H9255WD/71,72--OPR-467-R/H-71,72; ITEM 37; 1:20,000 SCALE SURVEY. RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL. ANCHOR EXTENDING 1 1/2FT OFF BOTTOM. HUNG AT 21FT; CLEARED BY 21FT. DEPTHS IN AREA FROM H9910/80 ARE 26-27FT. RECOMMENDED CHARTING AS A SUBM OBSTR W/WIRE DRAG CLEARANCE OF 21FT IN LAT.36-56-19.1N, LONG.76-09-38.3W. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; NOT INVESTIGATED

						DUE TIME CONSTRAINTS. EVALUATOR RECOMMENDS RETAINING AS CHARTED AND REASSIGNING IN FUTURE. (UP 2/9/96, SJV)
3712	OBSTRUCTION	12254	D	370	15	HISTORY H9255WD/71,72--OPR-467-RH-71,72; ITEM 30; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL. UNINVESTIGATED HAND AT 18FT. CLEARED BY 15FT. DEPTHS IN AREA FROM H9910/80 ARE 21-22FT; RECOMMENDED THAT A SUBM OBSTR CLEARED TO 15FT BE CHARTED IN LAT.36-55-52.5N, LONG.76-08-36.1W. (ENTERED 10/15/84 MSM)
3713	OBSTRUCTION	12254	D	370	17	HISTORY H9255WD/71,72--OPR-467-RH-71,72; ITEM 31; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL. SCRAP METAL EXTENDING 2FT OFF BOTTOM. HUNG AT 17FT. CLEARED BY 17FT; DEPTHS IN AREA FROM H9910/80 ARE 20-22FT. ECOMMENDED CHARTING A SUBM OBSTR W/WIRE DRAG CLEARANCE OF 17 FT IN LAT.36-55-55N, LONG.76-08-59.3W. (ENTERED 10/15/84 MSM)
3714	OBSTRUCTION	12254	D	370	12	HISTORY H9255WD/71,72--OPR-467-RH-71,72; ITEM 33; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL. TRACTOR TREAD EXTENDING 1FT OFF BOTTOM. HUNG AT 15FT; CLEARED BY 12FT. DEPTHS IN AREA FROM H9910/80 ARE 17-18FT; RECOMMENDED CHARTING A SUBM OBSTR W/WIRE DRAG CLEARANCE OF 12FT IN LAT.36-55-49.8N, LONG.76-09-31.4W. (ENTERED 10/15/84 MSM)
3715	OBSTRUCTION	12254	E	0370	15	03715 HISTORY H9255W/71,72--OPR-467-RH-71,72; ITEM 38; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL; UNINVESTIGATED HANG AT 15FT (ESTIMATED) CLEARED BY 15FT; DEPTHS IN AREA FROM H9910/80 ARE 17-18FT. RECOMMENDED CHARTING AND OBSTR W/WIRE DRAG CLEARANCE OF 15FT IN LAT.36-55-51.8N, LONG.76-09-45.1W. (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3716	OBSTRUCTION	12254	D	067	19	HISTORY H9255WD/71,72--OPR-467-RH-71,72; ITEM 34; 1:20,000 SCALE SURVEY. RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL; MUSHROOM ANCHOR EXTENDING 3FT OFF BOTTOM. HUNG AT 19FT, CLEARED BY 18FT. LEAST DEPTH OF 19FT. DEPTHS IN AREA FROM H9910/80 ARE 22-23FT. RECOMMENDS CHARTING OBSTR W/LEAST DEPTH OF 19FT. IN LAT.36-55-58.5N, LONG.76-09-33.3W. (ENTERED 10/15/84 MSM)
3718	OBSTRUCTION	12254	D	370	14	HISTORY H9255WD/71,72--OPR-467-RU-71,72; ITEM 40; 1:20,000 SCALE SURVEY; RAYDIST CONTROL (HYPERBOLIC, R/R) AND VISUAL. UNINVESTIGATED HANG AT 15FT (ESTIMATED) CLEARED BY 14FT. DEPTHS IN AREA FROM H9910/80 ARE 16-18FT; RECOMMENDED AN OBSTR W/WIRE DRAG CLEARANCE OF 14FT BY CHARTED IN LAT.36-55-49.7N, LONG.76-09-51.5W. (ENTERED 10/15/84 MSM)
3721	OBSTRUCTION	12254	D	0370	15	03721 HISTORY H7177WD/48(AD. WK)--PBS-WD-2248; 1:20,000 SCALE SURVEY; VISUAL CONTROL, HUNG AT 15 1/2FT, CLEARED BY 15FT, CHARTED AS OBSTR, DANGER CURVE, AND BASKET W/15FT CLEARANCE DEPTH IN LAT.36-57-20N, LONG.76-09-49W. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; NO INVESTIGATION OF ITEM BY FIELD UNIT; DEPTH IN AREA IS 22FT. RECOMMENDED RETAIN OBSTR AS CHARTED (ENTERED 10/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3722	OBSTRUCTION	12254	D	0370	11	HISTORY H7177WD/48(AD.WK)--PBS-WD-2248; 1:20,000 SCALE SURVEY; VISUAL CONTROL, HUNG AT 14FT, CLEARED BY 11FT, CHARTED AS OBSTR, DANGER CURVE, AND BASKET W/ 11FT CLEARED DEPTH IN LAT.36-57-23N, LONG.76-09-27W. (ENTERED 10/15/84 MSM) H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY; NO INVESTIGATION OF ITEM BY FIELD UNIT; DEPTHS IN AREA ARE 22-23FT. RECOMMENDED RETAIN ITEM AS CHARTED. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
3723	OBSTRUCTION	12254	D	067	18	HISTORY H7177WD/48 (AD.WK)--PBS-WD-2248; 1:20,000 SCALE SURVEY; VISUAL CONTROL, HUNG AT 15 1/2FT, CLEARED BY 15FT, CHARTED AS OBSTR W/DANGER CURVE, AND BASKET W/15FT CLEARED DEPTH IN LAT.36-57-33N, LONG.76-09-02.5W.. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY, NO INVESTIGATION BY FIELD UNIT, DEPTHS IN AREA ARE 23FT. RECOMMENDED RETAIN ITEM AS CHARTED. (ENTERED 10/15/84 MSM) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH LOCATED ì ITEM SOUGHT JUST OUTSIDE SEARCH AREA IN LAT. 36-57-26.500N, LONG. ì 76-09--00.487W. ECHO SOUNDER LD OF 5.5 METERS (18 FEET). ì EVALUATOR RECOMMENDS REVISING CHARTED BASKET SOUNDING TO AN 18 OBSTR AS SURVEYED. (UP 2/9/96, SJV)
3726	OBSTRUCTION	12254	D	0067	0	HISTORY CL570/62 (5/11/62)--C&GS NORFOLK DISTRICT; VISIBLE PILE, MOVED FROM LAT.36-56-45N, LONG.76-07-06W TO SAME RELATIVE POSITION ON WEST SIDE OF TRESTLE IN PA LAT.36-56-48N, LONG.76-07-18W. H9910/80--OPR-D103-MI-80; 1:10,000 SCALE SURVEY, DEL NORTE CONTROL (R/R, R/A) ECHO SOUNDER W/20M LINE SPACING; NOT ON FATHOGRAM, NOT SEEN BY LAUNCH PERSONNEL. EVALUATOR RECOMMENDED REVISING TO SUBM PILE. (ENTERED 10/15/84 MSM)
3746	UNKNOWN	12254	D	0100	0	03746 HISTORY LNM23/73--6/5/73; 5TH CGD; 12 FT BOAT REP SUNK IN LAT.36-54-50N, LONG.76-05-50W AREA WAS SWEPT BUT WK WAS NOT LOCATED. H9814/80--OPR-D103-PE-80; ITEM #90; 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); ECHO SOUNDER; LIMITED FATHOMETER SEARCH WAS PERFORMED; WK WAS NOT FOUND; EVALUATOR RECOMMENDED THAT WK BE RETAINED AS CHARTED. SURVEY NOT CONSIDERED SUFFICIENTLY EXTENSIVE TO DISPROVE ITEM. (ENTERED 11/13/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED: NOT COMPLETE
3747	UNKNOWN	12254	D	0100	0	03747 HISTORY LNM30/74-- 7/23/74; 5TH CGD; 32 FT CABIN CRUISER PARTIALLY SUBMERGED W/ BOW OUT OF WATER; LODGED IN FISH NETS AND STAKES; IN LAT.36-55-00N LONG.76-05-10W H9814/80--OPR-D103-PE-80; ITEM #89; 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); ECHO SOUNDER; FATHOMETER AND DIVE SEARCH CONDUCTED; WK NOT FOUND; EVALUATOR STATED EXTENT OF SEARCH WAS INADEQUATE FOR DISPROVAL AND RECOMMENDED CHARTING AS SUBM WK PD. (ENTERED 11/13/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED: NOT COMPLETE
						AWOIS ITEM 3748 HISTORY LNM47/73-- 11/20/73; CGD5; 35-FOOT AMPHIBIOUS CRAFT SUNK IN 40 ì FEET IN APPROX. POS. LAT. 36-56-00N, LONG. 76-02-30W. H9814/80-- OPR-D103-PE-80; ITEM

						NO. 88; 1:10,000-SCALE SURVEY; ì ARGO (R/R), DELNORTE (R/A); ECHO SOUNDER; 45 METER LINE SPACING; ì WRECK NOT LOCATED; EVALUATOR RECOMMENDED RETAINING AS CHARTED. ì (RNT 11/13/84, MSM) FE387SS/94-- OPR-E696-HE; ONE CONTACT, NOT CONSIDERED THIS ì ITEM, WAS FOUND WITHIN SEARCH AREA. A WRECK MATCHING THE AWOIS ì DESCRIPTION WAS LOCATED 100 METERS OUTSIDE THE ASSIGNED SEARCH ì RADIUS IN LAT. 36-55-46.556N, LONG. 76-03-11.609W. DIVER ì (PNEUMATIC DEPTH GAUGE) LD OF 8.4 METERS (27 FEET). WRECK IS ì APPROX. 30 FEET LONG, 10 FEET WIDE, AND EXTENDS 5 FEET OFF THE ì BOTTOM. ENCRUSTED WITH HEAVY MARINE GROWTH AS WELL AS BEING ì HEAVILY CORRODED. LORAN-C RATES (9960 CHAIN): W=15937.6, ì X=27187.3, Y=41267.6, Z=58511.9. EVALUATOR RECOMMENDS DELETING ì CHARTED SUBM DANGEROUS WRECK, PA AND CHARTING A WRECK WITH A LD ì OF 8.4 METERS AS SURVEYED. (UP 9/12/95, SJV)
3748	UNKNOWN	12254	D	0100	27	
3749	UNKNOWN	12254	D	0100	0	HISTORY LNM35/78-- 8/29/78; CGD5; WRECK OF A 27-FOOT PLEASURE CRAFT IN ì LAT. 36-55-48N, LONG. 76-05-24W. SUNK IN 26 FEET OF WATER. H9814/80--OPR-D103-PE-80; ITEM NO. 86; 1:10,000-SCALE SURVEY; ì ARGO (R/R), DELNORTE (R/A); ECHO SOUNDER; 45 METER LINE SPACING; ì WRECK NOT FOUND; INVESTIGATION NOT EXTENSIVE OR CONCLUSIVE ENOUGH ì TO DISPROVE WRECK; EVALUATOR RECOMMENDED REVISING WRECK TO ED. ì (ENT 11/13/84, MSM) FE387SS/94-- OPR-E696-HE; INCOMPLETE SIDE SCAN SONAR COVERAGE. ì ITEM WAS REASSIGNED TO FE410/95. ONE CONTACT FOUND WITHIN SEARCH ì AREA. EVALUATOR RECOMMENDS RETAINING AS CHARTED. (UP 9/12/94, ì SJV) FE410SS/95-- OPR-E696-HE; 200% SIDE SCAN SONAR SEARCH NEGATIVE. ì 5 CONTACTS CONSIDERED INSIGNIFICANT. EVALUATOR RECOMMENDS ì DELETING WRECK. (UP 2/9/96, SJV)
3750	MINNIE V	12254	E	0370	36	HISTORY NM17/60-- F/V REPORTED SUNK IN APPROX. POS. LAT. 36-57-19N, ì LONG. 76-04-04W. FE233/69WD-- AMC-SP-5-69; ITEM NOT LOCATED BUT CLEARANCE OF 36 ì FEET OBTAINED OVER CHARTED POSITION. INVESTIGATION NOT COMPLETE; ì EVALUATOR RECOMMENDED RETAINING AS CHARTED. (ENT 6/11/85, MSM) H9255/71WD-- OPR-467-RH-71; 1:20,000-SCALE SURVEY; RAYDIST TYPE ì "T" HYPERBOLIC; .5 MILE RADIUS SEARCH; WRECK NOT LOCATED; ì HYDROGRAPHER RECOMMENDS ADDITIONAL WIRE DRAG WORK; COVERAGE ì WITHIN 2-4 FEET OF CHARTED BOTTOM; CRITERIA FOR DISPROVAL NOT ì MET; EVALUATOR RECOMMENDS CHARTING AS A SUNKEN WRECK, ED WITH A ì 36-FOOT WIRE DRAG CLEARANCE THRU FE233WD. H9814/80-- OPR-D103-PE-80; ITEM NO. 83; 1:10,000-SCALE SURVEY; ì ARGO (R/R). DELNORTE (R/A); ECHO SOUNDER; 45 METER LINE SPACING; ì NO TRACE OF WRECK WAS FOUND; EVALUATOR RECOMMENDS CHARTING AS A ì SUBM WK, ED WITH CLEARED TO 36-FOOT NOTE THRU H9255WD. (ENT ì 11/9/84, MSM) FE387SS/94-- OPR-E696-HE; 5 CONTACTS FOUND WITHIN SEARCH AREA. ì NONE RELATED TO AWOIS ITEM. SIDE SCAN SONAR NEGATIVE FOR WRECK. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
3751	OBSTRUCTION	12254	D	0370	19	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 25; 1:20,000-SCALE SURVEY; ì RADIST (HYPERBOLIC, R/R) CONTROL; PIPE, 1 FOOT IN DIAMETER, ì EXTENDING 4 INCHES OFF THE BOTTOM; HUNG AT 36 FEET IN LAT. ì 36-57-03.7N, LONG. 76-05-38.9W; CLEARED IN ONE DIRECTION TO 19 ì FEET; EVALUATOR RECOMMENDED CHARTING AS A SUBM OBSTR WITH A ì CLEARANCE OF 19 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AS AN ì OBSTR THRU H9255WD. (ENT 11/20/84, MSM) FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR SEARCH NEGATIVE FOR ì ITEM. ONE CONTACT FOUND IN AREA OF SEARCH. EVALUATOR RECOMMENDS ì DELETING FROM CHART. (UP 9/12/95, SJV)
3752	UNKNOWN	12254	D	0100	0	HISTORY NM36/66--24FT BOAT SUNK IN 24FT WATER IN PA LAT.36-56-15N, LONG. 76-06-19N. H9255/71WD--OPR-467-RH-71; ITEM #54; 1:20,000 SCALE SURVEY; RAYDIST TYPE T HYPERBOLIC; COVERAGE WITHIN 3-4FT OF BOTTOM; CRITERIA FOR DISPROVAL NOT MET; EVALUATOR RECOMMENDED CHARTING AS SUBM WK ED W/CLEARED TO 24FT; WK NOT LOCATED; POSSIBLY WK OF STEEL VESSEL HUNG IN LAT.36-55-50N, LONG.76-06-44.3W IS THIS ITEM. (REF. AWOIS #03753). H9814/80--OPR-D103-PE-80; ITEM #85; 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); ECHO SOUNDER; 45M LINE SPACING; WK NOT FOUND; EVALUATOR CONCURS W/ RECOMMENDATION IN H9255WD EVAL REP. (ENTERED 11/84 MSM) F00439/98-- S-E900-RU; 200% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 8/16/99, SJV)
3753	OBSTRUCTION	12254	D	0067	18	HISTORY H9255/71WD--OPR-467-RH-71; ITEM #28; 1:20,000 SCALE; RAYDIST (HYPERBOLIC, R/R) CONTROL; WK OF STEEL VESSEL HUNG AT ESTIMATED 20FT IN LAT.36-55-50N, LONG.76-06-44.3W; CLEARED IN ONE DIRECTION BY 18FT; EVALUATOR RECOMMENDED CHARTING A SUBM WK W/WIRE DRAG CLEARANCE OF 18FT; THIS IS POSSIBLY THE VESSEL REP SUNK THRU NM36/66 IN LAT.36-56-15N, LONG.76-06-19W; THAT WK WAS NEITHER FOUND NOR DISPROVED BY SURVEY H9255. (REF AWOIS #03752). H9814/80--OPR-D103-PE-80; 1:10,000 SCALE; ARGO (R/R), DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING A WK. (ENTERED 11/84 MSM) F00439/98-- S-E900-RU; 200% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 8/16/99, SJV)
3754	OBSTRUCTION	12254	D	0067	0	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 21; 1:20.000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC R/R) CONTROL; OLD ANCHOR EXTENDING 2 FEET OFF ì THE BOTTOM HUNG AT 24 FEET IN LAT. 36-55-55.2N, LONG. ì 76-05-03.3W; NOT CLEARED; EVALUATOR RECOMMENDED CHARTING A SUBM ì OBSTR. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A/) CONTROL; EVALUATOR CONCURRED WITH RECOMMENDATION ì IN H9255. (ENT 11/84, MSM) FE387SS/94-- OPR-E696-HE; NOT COMPLETED. EVALUATOR RECOMMENDS ì ASSIGNING TO FE410SS/95 FOR ADDITIONAL WORK. (UP 9/12/95, SJV) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì 1 CONTACT CONSIDERED INSIGNIFICANT. EVALUATOR RECOMMENDS ì DELETING. (UP 2/9/96, SJV)
3755	OBSTRUCTION	12254	D	0370	22	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 21; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC, R/R) CONTROL; TEMPORARY UNINVESTIGATED HANG ì IN LAT. 36-56-20.1N, LONG. 76-04-26.7W; HUNG AT 24 FEET; CLEARED ì BY 22 FEET; EVALUATOR RECOMMENDED CHARTING A SUBM OBSTR WITH A ì WIRE DRAG CLEARANCE OF 22 FEET. H9814/80-- OPR-D103-PE-80; 1:10,0000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) COMTROL; EVALUATOR RECOMMENDS CHARTING AN OBSTR. ì (ENT 11/84, MSM) FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
						HISTORY H9255/72WD-- OPR-467-RH-72; ITEM NO. 11; 1:20,000-SCALE SURVEY; ì RAYDIST

3756	OBSTRUCTION	12254	D	0370	30	(HYPERBOLIC, R/R) CONTROL; 8 X 8 X 7 FOOT ALUMINUM CLUMP ì EXTENDING 1 FOOT OFF THE BOTTOM HUNG IN LAT. 36-56-27.6N, LONG. ì 76-03-27.2W; DIVERS REPORT PART OF AN AIRPLANE WING; HUNG AT 33 ì FEET, CLEARED BY 30 FEET; HYDROGRAPHER AND EVALUATOR RECOMMEND ì NOT CHARTING BECAUSE ITS LIGHT WEIGHT WOULD FACILITATE MOVEMENT ì WITH CURRENT. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/ R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING A SUBM ì OBSTR. (ENT 11/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING.
3757	OBSTRUCTION	12254	D	0370	30	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 12; 1:20,000-SCALE; ì RAYDIST (HYPERBOLIC R/R) CONTROL; UNINVESTIGATED HANG IN LAT. ì 36-56-34.3N, LONG. 76-03-41.2W; HUNG AT 31 FEET CLEARED BY 30 ì FEET; EVALUATOR RECOMMENDED CHARTING A SUBM OBSTR WITH WIRE DRAG ì CLEARANCE OF 30 FEET. H9814/80-- OPR-D103-PE-80; 1:10000-SCALE; ARGO (R/ R), DELNORTE ì (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AN OBSTR. (ENT ì 11/ 27/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATUR RECOMMNEDS DELETING FROM CHART. (UP 9/12/94, SJV)
3758	OBSTRUCTION	12254	D	0067	42	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 9; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC, R/R) CONTROL; UNINVESTIGATED HANG IN LAT. ì 36-56-34.3N, LONG. 76-03-19W; HUNG AT 34 FEET, CLEARED BY 34 ì FEET; EVALUATOR RECOMMENDED CHARTING A SUBM OBSTR WITH A WIRE ì DRAG CLEARANCE OF 34 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AN OBSTR. ì (ENT11/27/84, MSM) FE367SS/94-- OPR-E696-HE; SIGNIFICANT CONTACT LOCATED IN LAT. ì 36-56-27.426N, LONG. 76-02-31.286W. DIVERS DESCRIBE METAL PLATES ì ON TOP OF A CONCRETE BLOCK WITH CHAIN. PNEUMO LD OF 12.9 METERS ì (42 FEET). EVALUATOR RECOMMENDS DELETING AWOIS ITEMS 3758, 3759, ì 3760, AND 3762 AND CHARTING AN OBSTRUCTION AS SURVEYED. (UP ì 9/12/95, SJV)
3759	OBSTRUCTION	12254	D	0370	34	HISTORY H9255WD/71-- OPR-467-RH-71; ITEM NO. 3; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC R/R) CONTROL; UNINVESTIGATED HANG IN LAT. ì 36-56-41.8N, LONG. 76-03-12.8W; HUNG AT 34 FEET, CLEARED BY 34 ì FEET; EVALUATOR RECOMMENDS CHARTING A SUBM OBSTR WITH A WIRE DRAG ì CLEARANCE OF 34 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AS AN ì OBSTR. (ENT 11/27/84, MSM) FE387SS/94-- OPR-E696-HE; DISPROVED. SEE AWOIS NO. 3758. (UP ì 9/12/95, SJV)
3760	OBSTRUCTION	12254	D	0370	34	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 5; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC R/R) CONTROL; SCRAP METAL EXTENDING .5 FOOT ì OFF BOTTOM IN LAT. 36-56-42.4N, LONG. 76-03-16.3W; HUNG AT 34 ì FEET, CLEARED BY 34 FEET; EVALUATOR RECOMMENDED CHARTING A SUBM ì OBSTR WITH A WIRE DRAG CLEARANCE OF 34 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AN OBSTR. ì (ENT 11/27/84, MSM) FE387SS/94-- OPR-E696-HE; DISPROVED. SEE AWOIS ITEM 3758. (UP ì 9/12/95, SJV)
3761	OBSTRUCTION	12254	D	0370	37	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 2; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC, R/R) CONTROL; CONCRETE CLUMP ANCHOR ì EXTENDING ONE FOOT OFF BOTTOM IN LAT. 36-56-43.7N, LONG. ì 76-03-11.4W; ESTIMATED HANG AT 38 FEET; CLEARED BY 37 FEET; ì EVALUATOR RECOMMENDEDCHARTING AS A SUBM OBSTR WITH A WIRE DRAG ì CLEARANCE OF 37 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AS AN ì OBSTR. (ENT 11/ 27/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 9/12/95, SJV)
3762	OBSTRUCTION	12254	D	0370	34	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 4; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC R/R) CONTROL; SCRAP METAL EXTENDING 1.5 FEET ì OFF BOTTOM IN LAT. 36-56-44.8N, LONG. 76-03-12.2W; HUNG AT 37 ì FEET, CLEARED BY 34 FEET; EVALUATOR RECOMMENDED CHARTING AS A ì SUBM OBSTR WITH A WIRE DRAG CLEARANCE OF 34 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AS AN ì OBSTR. (ENT 11/27/84, MSM) FE387SS/94-- OPR-E696-HE; DISPROVED. SEE AWOIS ITEM 3758. (UP ì 9/12/95, SJV)
3763	OBSTRUCTION	12254	D	0370	36	HISTORY H9255WD/71-- OPR-467-RH-71; ITEM NO. 10; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC (R/R) CONTROL; UNINVESTIGATED HANG AT 39 FEET ì IN LAT. 36-56-56.1N, LONG. 76-03-27.0W; CLEARED BY 36 FEET; ì EVALUATOR RECOMMENDED CHARTING AS A SUBM OBSTR WITH A 36-FOOT ì CLEARANCE. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR CONCURRED WITH RECOMMENDATION ì IN H9255WD. ENT 11/20/84, MSM) FE387SS/94-- OPR-E3696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
3764	OBSTRUCTION	12254	D	0370	32	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 18; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC, R/R) CONTROL; UNINVESTIGATED HANG AT 35 FEET ì IN LAT. 36-57-09.8N, LONG. 76-04-37.2W; CLEARED BY 32 FEET; ì EVALUATOR RECOMMENDED NOT CHARTING. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AN OBSTR ì THRU H9255WD. (ENT 11/20/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
3765	OBSTRUCTION	12254	D	0370	38	HISTORY H9255/71WD-- OPR-467-RH-71; ITEM NO. 7; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC, R/R) CONTROL; OLD ANCHOR EXTENDS 2 FEET OFF ì BOTTOM IN LAT. 36-57-09.8N, LONG. 76-03-18.5W; 43-FOOT ESTIMATED ì HANG; CLEARED BY 36 FEET; EVALUATOR RECOMMENDED CHARTING IN ì CONJUNCTION WITH A TEMPORARY UNINVESTIGATED HANG (FROM ì FE233WD/69) IN LAT. 36-57-09.8N, LONG. 76-03-18.1W; THIS LATTER ì HANG WAS AT AN ESTIMATED 38 FEET, AND CLEARED BY 38 FEET; THESE ì ARE POSSIBLY THE SAME OBSTRUCTION; EVALUATOR RECOMMENDED CHARTING ì AS A SUBM OBSTR WITH A WIRE DRAG CLEARANCE OF 38 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR RECOMMENDED CHARTING AS AN ì OBSTR WITH A DEPTH OF 43 FEET THRU H9255WD. (ENT 11/20/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE FOR ì THIS ITEM. 3 SONAR CONTACTS WERE FOUND IN AREA OF SEARCH, ì HOWEVER. EVALUATOR RECOMMENDS DELETING ITEM FROM CHART. (UP ì 9/12/95, SJV)

3766	OBSTRUCTION	12254	D	0067	0	HISTORY H9255/71WD-- OPR-467-EH-71; ITEM NO. 24; 1:20,000-SCALE SURVEY; ì RAYDIST (HYPERBOLIC R/R) CONTROL; TEMPORARY, UNINVESTIGATED ì 32-FOOT HANG; GRAPNEL HOOK RECOVERED ON GROUND WIRE; NOT CLEARED; ì EVALUATOR RECOMMENDED CHARTING AS SUBM. OBSTR. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; EVALUATOR CONCURRED WITH RECOMMENDATION ì IN H9255. (ENT 11/20/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
3768	OBSTRUCTION	12254	D	0370	38	03768 HISTORY FE233/69WD--AMC-SP-5-69; 1:20,000 SCALE; VISUAL CONTROL; HUNG AT 38 FT AND CLEARED BY 38 FT; PROTRUDES LESS THAN THREE FT ABOVE BOTTOM; EVALUATOR RECOMMENDED CHARTING SUBM OBSTR. H9814/80--OPR-D103-PE-80; 1:10,000 SCALE; ARGO (R/R), DELNORTE (R/A) CONTROL; ECHO SOUNDER; EVALUATOR RECOMMENDED CHARTING AS SUBM OBSTR. W/38FT CLEARANCE (ENTERED 11/19/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED
3770	OBSTRUCTION	12254	D	067	20	HISTORY H9814/80--OPR-D103-PE-80; 1:10,000 SCALE; ARGO (R/R), SEXTANT FIXES; ECHO SOUNDER; IRREGULAR SNDGS ON FATHOMETER, DEVELOPMENT INDICATED OBSTR; DIVER INVESTIGATION; WOODEN AND STEEL DEBRIS EXTENDING 85 FT IN AN E-W DIRECTION; LEAST DEPTH OF 20 FT; HYDROGRAPHER RECOMMENDED CHARTING SUBM OBSTR W/ LEAST DEPTH OF 20 FT. (ENTERED 11/19/84 MSM) EVALUATOR RECOMMENDS WD OR SSS FOR LD AND EXTENT.
3771	OBSTRUCTION	12254	D	0085	0	03771 HISTORY H9814/80--OPR-D103-PE-80; 1:10,000 SCALE; ARGO (R/R), DELNORTE (R/A) CONTROL; ROW OF PILING W/MOST SEAWARD IN LAT 36-54-49.35N LONG 76-06-32.9W; HYDROGRAPHER RECOMMENDED CHARTING ACCORDING TO PRESENT SURVEY (ENTERED MSM 11/19/84) SURVEY REQUIREMENTS NOT ASSIGNED
3772	OBSTRUCTION	12254	D	0085	0	03772 HISTORY H918/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A) CONTROL VISIBLE DOLS SEARCHED FOR IN LAT 36-54-38N LONG 76-05-40W; LOCATED IN LAT 36-54-36.2N LONG 76-05-38.4W (POSITION OF MIDDLE OF 3 DOLS SCALED FROM SMOOTH SHEET); HYDROGRAPHER RECOMMENDED CHARTING AT NEW POSITION. (ENTERED MSM 11/27/84) SURVEY REQUIREMENTS NOT ASSIGNED
3773	OBSTRUCTION	12254	D	0067	36	HISTORY H9255/71WD-- OPR-467-RH-71; 1:20,000-SCALE SURVEY; RAYDIST ì (HYPERBOLIC, R/R) CONTROL; 4 X 4-FOOT METAL CLUMP EXTENDING 3 ì FEET OFF THE BOTTOM IN LAT. 36-57-17.6N, LONG. 76-03-48W.; HUNG ì AT 38 FEET; 36-FOOT LD BY DIVER LEADLINE; EVALUATOR RECOMMENDED ì CHARTING AS A SUBM OBSTR WITH A LEAST DEPTH OF 36 FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; ECHO SOUNDER; 45 METER LINE SPACING; ITEM ì NOT FOUND; EVALUATOR CONCURRED WITH RECOMMENDATION IN H9255; (ENT ì 11/19/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
3774	UNKNOWN	12254	D	0100	35	HISTORY H7177/47WD-- PBS-WD-2248; 1:20,000-SCALE SURVEY; SEXTANT ì CONTROL; 34-FOOT GROUNDING IN LAT. 36-57-32.8N, LONG. 76-04-32.0W ì IN 37-FOOT DEPTHS; IDENTIFIED AS AN OLD HULK; CLEARED BY 31 FEET; ì EVALUATOR RECOMMENDED CHARTING AS AN OBSTR. WITH A 31-FOOT ì CLEARANCE. (ENT 11/19/84, MSM) H9255/71WD-- OPR-467-RH-71; 1:20,000-SCALE SURVEY; RAYDIST ì (HYPERBOLIC R/R) CONTROL; ITEM NOT FOUND BUT CLEARED BY 35 FEET; ì EVALUATOR RECOMMENDED CHARTING THE SYMBOL WK WITH 35-FOOT ì CLEARANCE. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A CONTROL; ECHO SOUNDER; 45 METER LINE SPACING; ITEM ì NOT FOUND; EVALUATOR CONCURRED WITH RECOMENDATION IN H9255WD. ì (ENT 11/16/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
3775	OBSTRUCTION	12254	D	0067	31	HISTORY H9255/71WD-- OPR-467-RH-71; HANG NO. 22; 1:20,000-SCALE SURVEY; ì RAYDIST TYPE "T" HYPERBOLIC CONTROL; IRON PIPE, 1-FOOT IN DIA., ì EXTENDING 8 FEET OFF THE BOTTOM IN LAT. 36-57-37.8N, LONG. ì 76-05-22W; HUNG AT 31 FEET; CLEARED BY 31 FEET; EVALUATOR ì RECOMMENDED CHARTING AS A SUBM OBSTR WITH A LEAST DEPTH OF 31 ì FEET. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R), ì DELNORTE (R/A) CONTROL; ECHO SOUNDER; 45 METER LINE SPACING; NO ì TRACE OF OBSTRUCTION FOUND; EVALUATOR CONCURRED WITH ì RECOMMENDATION IN H9255WD. (ENT 11/16/84, MSM) FE387SS/94-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 9/12/95, SJV)
3776	OBSTRUCTION	12254	D	0067	0	HISTORY ORIGINAL SOURCE UNKOWN; PILES PA IN LAT 36-55-45N LONG 76-00-30W. H9814/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); SEARCHED FOR BUT NOT FOUND AT CHARTED LOCATION; SUBM PILES LOCATED AT LAT 36-55-4371N LONG 76-00-2273W; EVALUATOR RECOMMENDED CHARTING SUBM PILES AS SHOWN ON SURVEY. (ENTERED 11/15/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED:ITEM COMPLETED
3778	SNDG	12254	D	127	0	HISTORY CL2005/77--8/27/77; USPS; SHL TO BARE AT LOW WATER REP IN PA LAT 36-54-48N, LONG 76-05-18W. H9814/80--OPR-D103-PE-80; ITEM #93; 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); ECHO SOUNDER; AREA UNDER CONSTANT CHANGE; SHOALING TO BARE CONFIRMED IN LAT 36-54-40.04N LONG 76-05-33.08W (POSITION SCALED FROM HYDRO SMOOTH SHEET); EVALUATOR RECOMMENDED REMOVING CHARTED SHL NOTE, CHART PRESENT SURVEY DEPTHS AND ADD NOTE "SUBJECT TO FREQUENT CHANGE". (ENTERED 11/14/84 MSM)
3779	OBSTRUCTION	12254	D	0067	0	03779 HISTORY LNM7/77--2/15/77; 5TH CGD; SUBM PIPE REP BY COE IN LAT 36-54-36N, LONG.76-05-42W. H9814/80--OPR-D103-PE-80; ITEM #92; 1:10,000 SCALE SURVEY; ARGO (R/R), DELNORTE (R/A); VISUAL SEARCH BY WALKING A 300M RADIUS AT MLW; DEPTHS AT LOW WATER FROM BARE TO APPROX 3FT; NO TRACE OF PIPE FOUND; DUE TO CHANGEABLE NATURE OF BOTTOM, THE EVALUATOR RECOMMENDED RETAINING AS CHARTED. (ENTERED 11/14/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED: NOT COMPLETE
						04491 HISTORY LNM47/73--5TH CGD; 11/20/73; RAILROAD CAR REP LOST OVERBOARD FROM PENN. RR TERMINAL WHARF IN PA LAT 36-54-50N, LONG 76-10-46W; CHARTED AS SUBM DANG

4491	OBSTRUCTIONS	12255	D	0067	13	WK PA. CL400/80--USPS; SUNKEN WK CONSISTING OF AT LEAST THREE RAILROAD CAPS LOCATED 418 FT OFF FACE OF RAILROAD LOADING PIER; LEAST DEPTH OF 12 FT; SOURCE OF INFO IS TUG CAPTAIN WHO SUPERVISED DIVERS SENT DOWN TO PARTIALLY CLEAR THE OBSTRS; CHARTED AS SUBM DANG WK ED IN LAT 36-54-52.3N; LONG 76-10-43.3W. H9923/80--OPR-D103-MI/PE-80; PSR ITEMS 140 AND 141; DIVER INVESTIGATION FOUND 3 RAILROAD CARS, AND LEAST DEPTHS WERE OBTAINED FOR TWO OF THEM; 13 FT OBSTR LOCATED IN LAT 36-54-52.59N, LONG 76-10-43.17W (LEADLINE LEAST DEPTH); ECHO SOUNDER LEAST DEPTH OF 20 FT OBTAINED ON OBSTR IN LAT 36-54-53.28N, LONG 76-10-42.78W (AWOIS ITEM 4492); EVALUATOR RECOMMENDS CHARTING ACCORDING TO SURVEY AND DELETE CHARTED WKS. (ENTERED MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED
4492	OBSTRUCTIONS	12255	D	0067	20	04492 HISTORY LNM47/73--5TH CGD; 11/20/73; RAILROAD CAR REP LOST OVERBOARD FROM PENN. RR TERMINAL WHARF IN PA LAT 36-54-50N, LONG 76-10-46W; CHARTED AS SUBM DANG WK PA. CL400/80--USPS; SUNKEN WK CONSISTING OF AT LEAST THREE RAILROAD CARS LOCATED 418 FT OFF FACE OF RAILROAD LOADING PIER; LEAST DEPTH OF 12 FT; SOURCE OF INFO IS TUG CAPTAIN WHO SUPERVISED DIVERS SENT DOWN TO PARTIALLY CLEAR THE OBSTRS; CHARTED AS SUBM DANG WK ED. IN LAT 36-54-52.3N; LONG 76-10-43.3W. H9923/80-OPR-D103-MI/PE-80P; PSR ITEMS 140 AND 141; DIVER INVESTIGATION FOUND 3 RAILROAD CARS, AND LEAST DEPTHS WERE OBTAINED FOR TWO OF THEM; 13 FT OBSTR LOCATED IN LAT 36-54-52.59N, LONG 76-10-43.17W (LEADLINE LEAST DEPTH) (AWOIS ITEM 4491); ECHO SOUNDER LEAST DEPTH OF 20 FT OBTAINED ON OBSTR IN LAT 36-54-53.28N, LONG 76-10-42.78W; EVALUATOR RECOMMENDS CHARTING THESE O ACCORDING TO SURVEY AND DELETE CHARTED WKS. (ENTERED MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED
4493	OBSTRUCTION	12255	D	0067	21	04493 HISTORY H9923/80--OPR-D103-MI/PE-80; WHILE INVESTIGATING PSR ITEM 139, OBSTRUCTION WAS HUNG; DIVER INVESTIGATED; METAL MASS APPROX. 2X4 FT; LEADLINE LEAST DEPTH OF 21 FT IN LAT 36-55-17.41N, LONG 76-10-39.02W; EVALUATOR RECOMMENDS CHARTING 21 OBSTR. (ENTERED MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED
4494	CAPT NICKS DREAMBOAT	12255	D	0098	0	04494 HISTORY CL400/80--USPS; 235 FT VESSEL PERMANENTLY STRANDED HARD AGROUND IN LAT 36-55-21N, LONG 76-11-03W (POSITION OF STERN); CONVERTED TO SHORESIDE RESTAURANT, RENAMED CAPT NICK'S DREAMBOAT, BUT NOW CLOSED; FORMERLY SEA BELLE; IN GENERAL DISREPAIR. H9923/80--OPR-D103-MI/PE-80; PSR ITEM 138 FERRY FOUND IN LAT 36-55-22.1N, LONG 76-11-02.8W; BURNED DURING PERIOD OF SURVEY AND IS NO LONGER IN USE; EXPECTED TO BE THERE PERMANENTLY; HYDROGRAPHER AND EVALUATOR RECOMMEND CHARTING FERRY LIMITS AS SHOWN ON SURVEY. (ENTERED MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED
7060	UNKNOWN	12245	E	0100	0	HISTORY LNM35/81-- 5TH CGD; 27 FOOT CABIN CRUISER SANK AUG. 21, 1981 IN ì 50 FEET IN ANCHORAGE D-8. PA LAT. 36-57-25.0N, LONG. 76-20-42W. ì (ENT. 12/88, MCR) DESCRIPTION **** TELECON 5CGD AND N/CG241, 10/22/90; NO ADDITIONAL INFORMATION ON WRECK; AS FAR AS THEY KNOW THE WRECK IS STILL THERE. (UP. 10/90, MSD) **** ITEM WILL BE REMOVED FROM AFFECTED CHARTS PENDING APPLICATION OF COE SURVEY OF 1991. (UP 3/1/94, SJV)
7522	BEAUTY	12208	D	725	47	HISTORY NM8/31-- COAST GUARD REPORTS F/V BEAUTY SUNK 5.25 MILES, 100 ì DEGS. FROM CAPE HENRY LIGHT HOUSE IN LAT. 36-54-42N, LONG. ì 75-54-00W. H6976WD/45-47-- CS-326-WA/HI; CLEARED IN ONE DIRECTION BY 47 ì FEET WHILE INVESTIGATING ITEM 3 (AWOIS NO. 808). THIS WRECK WAS ì NOT CHARTED AT TIME OF SURVEY. CL347/58-- ITEM CHARTED VIA H.O. WRECK LIST AS A 47-FOOT ì CLEARED DEPTH. H9922/80-- OPR-D103-MI-80; NO WIRE DRAG SURVEY HAS FURTHER ì INVESTIGATED THIS ITEM. H10340/90-- OPR-D111-WH; TWO SIGNIFICANT CONTACTS FOUND WITHIN ì THE 2000-METER SEARCH RADIUS AND SEVERAL CONTACTS WERE FOUND ì OUTSIDE THE RADIUS (WITHIN 700 METERS). APPROX. 10% OF SEARCH ì RADIUS WAS NOT COVERED BY SIDE SCAN SONAR (NORTHEASTERN AREA). ì ADDITIONAL WORK WAS REQUESTED ON ALL SIGNIFICANT CONTACTS. ì EVALUATOR RECOMMENDS THAT THE ITEM BE RETAINED AS CHARTED AND ì THAT FURTHER DISCUSSION AND CHARTING RECOMMENDATION BE DEFERRED ì UNTIL THE COMPLETION OF OFFICE PROCESSING OF SURVEY FE-353SS/90, ì AND A FINAL DISPOSITION OF THE ITEM IS MADE. (UP 10/29/91, SJV) FE353SS/90-- OPR-D111-HE; ITEM NOT DISPROVED. APPROXIMATELY 15% ì OF THE SEARCH RADIUS NOT COMPLETED. EVALUATOR RECOMMENDS ì RETAINING AS CHARTED. SEE AWOIS NOS. 8313, 8314, 8315, AND 8316 ì FOR ADDITIONAL INFO. REGARDING CONTACTS WITHIN SEARCH RADIUS FOR ì THIS ITEM. (UP 7/14/92, SJV) FE412SS/95-- OPR-E696-HE; 200% SIDE SCAN SONAR OVER REMAINING ì 15% SEARCH RADIUS NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP ì 2/15/96, SJV) DESCRIPTION 24 NO.1332; POSITION ACCURACY WITHIN 1 MILE
7549	UNKNOWN	12221	D	102	0	HISTORY CL347/58--ADD NON-DANGEROUS WRECK THRU CAPT. LEWEY'S MEMO DATED ì 5/8/58 IN LAT. 36-54-09N, LONG. 75-51-30W. (ENT 1/17/90, SJV) H10340/90-- OPR-D111-WH; NO CONTACTS FOUND. EVALUATOR ì RECOMMENDS RETAINING AS CHARTED. NOTE: PRESENTLY CHARTED AS A DANGEROUS SUBMERGED WRECK (NOPA, PD). SEE AWOIS 806. (UP 10/30/91, SJV) DESCRIPTION 24 NO. 1330; REPORTED IN 1947 AS AN OBSTRUCTION; FORMERLY ì CHARTED; ACCURACY WITHIN ONE MILE.
7550	OBSTRUCTION	12221	D	370	0	HISTORY NM37/47-- OBSTRUCTION REPORTED WITH LD OF 30 FEET. 6.46 MILES, ì 99 DEGS. 30 MINS. FROM CAPE HENRY LIGHTHOUSE. LAT. 36-54-30.0N, ì LONG. 75-52-30.0W. H6976/47WD--CS-313 & 326-WA/HI-45-47; WHILE SEARCHING FOR ITEM ì NO. 3, A SMALL OBSTRUCTION WAS FOUND JUST OUTSIDE THE ONE MILE ì RADIUS. HUNG AT 30 FEET, CLEARED AT 29 FEET (REAL TIDES). LOCATED ì IN LAT. 36-54-910(M)N, LONG. 75-52-710(M)W. H10340/90-- OPR-D111-WH; NO SIDE SCAN SONAR CONTACTS FOUND IN ì THE AREA COMMON TO THE PRESENT SURVEY AND THE AWOIS ITEM. ì OBSTRUCTION BROUGHT FORWARD TO THE PRESENT SURVEY. EVALUATOR ì RECOMMENDS RETAINING ITEM AS CHARTED AND THAT FURTHER DISCUSSION ì AND A CHARTING RECOMMENDATION BE DEFERRED UNTIL THE COMPLETION OF ì OFFICE PROCESSING OF FE-353SS/90, AND A FINAL DISPOSITION OF THE ì ITEM HAS BEEN MADE. NOTE: NOT ADDRESSED IN SUBSEQUENT SURVEYS. (UP 3/17/03, SJV)
7554	UNKNOWN	12222	D	100	0	HISTORY CL540/54-- FROM C.O. USCGS SHIP BOWEN; WRECK NOT FOUND; 50-75 ì METER LINE SPACING. RECOMMEND DELETING DANGEROUS WRECK. FOUR ì DISTINCT DEPTHS WERE RECORDED ON WRECK OF CHILORE, HOWEVER. (SEE ì AWOIS NO. 857) (ENT 1/26/90, SJV H10343/90-- OPR-D111-WH; ITEM NOT CHARTED. HYDROGRAPHER STATES ì THAT THERE WERE SIGNIFICANT CONTACTS WITHIN THE SEARCH RADIUS. ì ONE NEAREST THE AWOIS POSITION WITHIN 90 METERS. EVALUATOR ì RECOMMENDS NO CHANGE IN CHARTING STATUS AND

						CONSIDERS THIS ITEM ì DISPROVED BY THE PRESENT SURVEY. (UP 1/28/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); INVESTIGATION ì NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 4/20/92, ì SJV) DESCRIPTION **** 24 NO. 1185; DEMOLISHED, FORMERLY BUOYED, 1 MILE ACCURACY. ì REPORTED THRU NOTICE TO MARINERS 8/22/50.
7556	OBSTRUCTION	12222	D	370	36	HISTORY H7028/45-50WD-- CS-313; 43-FOOT GROUNDING IN LAT. 36-56-42.5N, ì LONG. 76-02-04.8W, NOT CLEARED. UNCHARTED SOUNDING PLOTTED DURING ì VERIFICATION. 43.5 FEET IN CHARTED DEPTHS OF 49-54 FEET IN LAT. ì 36-56.7N, LONG. 76-02.08W. H9255/71-72WD-- OPR-467-RU/HE; NO HANGS OR GROUNDINGS IN ì VICINITY OF PRIOR GROUNDING. MAXIMUM CLEARANCE DEPTH OF 38 FEET ì OBTAINED. EVALUATOR STATES "STRONG POSSIBILITY THAT A SLOPING ì WRECK OR OBSTRUCTION CAUSED GROUNDING ON PRIOR". RECOMMENDED THAT ì GROUNDING (43-FOOT DEPTH) BE RETAINED AS CHARTED. H-7750 AND ì H-9814 SHOW NO INDICATION OF SHOALING IN VICINITY. FURTHER WORK ì RECOMMENDED. H9814/80--OPR-D103-PE-80; CLEARANCE DEPTH ABOVE BROUGHT ì FORWARD. 36 FOOT CLEARANCE DEPTH CHARTED IN 1985 FROM SURVEY ì H9814/80. (ENT 2/7/90, SJV) H10343/90-- OPR-D111-90; SIGNIFICANT CONTACT LOCATED IN LAT. ì 36-56-50.35N, LONG. 76-02-02.96W. ESTIMATED DEPTH OF 14 METERS. ì EVALUATOR RECOMMENDS NO CHANGE IN CHARTING STATUS PENDING FINAL ì DISPOSITION OF SURVEY H-10372/90. (UP 1/28/92, SJV) H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); INVESTIGATION ì NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 4/20/92, ì SJV) DESCRIPTION **** TELCON., 2/19/90, S. VERRY (CG241) AND M. HICKSON (CG2441); H9255/71-72WD A&D SHEET NOTES MAX. CLEARANCE OVER GROUNDING AS 36 FEET. DESCCRIPTIVE REPORT NOTES CLEARANCE AS 38 FEET. DISCREPANCY WILL BE INVESTIGATED BY HICKSON. 36-FOOT CLEARED DEPTH CHARTED DESPITE EVALUATOR'S RECOMMENDATION TO RETAIN 43-FOOT DEPTH AS CHARTED THROUGH H-7028.
8013	OBSTRUCTION	12245	E	0067	0	HISTORY H9255WD/71-- OPR-467-RU/HE-71; CLEARANCE STRIP ENDED IN A HANG ì WHICH WAS NEITHER CLEARED NOR INVESTIGATED. HUNG AT 36 FEET IN ì LAT. 36-57-38.0N, LONG. 76-20-25.0W. CHARTED AS A 36-FOOT ì OBSTRUCTION (NO PA). HYDROGRAPHER STATES THAT HANG OCURRED ON A ì MOORING CABLE LYING ON THE BOTTOM. EVALUATOR DOES NOT CONCUR ì SINCE HANG EXTENDED 6-7 FEET OFF THE BOTTOM. SINCE THE SURVEY ì RECORDS STATE THAT THIS HANG WAS NOT INVESTIGATED, IT IS UNCLEAR ì HOW THE HYDROGRAPHER OBTAINED INFORMATION REGARDING THE MOORING ì CABLE. (ENT. 6/7/91, SJV) DESCRIPTION * *** ITEM WILL BE REMOVED FROM AFFECTED CHARTS PENDING APPLICATION OF COE SURVEYS OF 1991-93. (UP 3/1/94, SJV)
8225	OBSTRUCTION	12221	D	067	0	HISTORY NM17/14-- CHESAPEAKE BAY APPROACH - OBSTRUCTION REPORTED. THE ì COMMANDING OFFICER OF THE U.S.S. NEBRASKA REPORTED ON 4/1/14 THAT ì HIS VESSEL DRAWING 26 FEET 11 INCHES STRUCK A SUBMERGED ì OBSTRUCTION IN (APPROX.) LAT. 36-55-00N, LONG. 75-46-30W. VESSEL ì MAKING 14 KNOTS, SMOOTH SEA. INTERNAL INSPECTION SAW NO DAMAGE. ì REFERENCED BY NM25/14 (SEE AWOIS NO. 796). (ENT 4/3/92, SJV)
8251	OBSTRUCTION	12208	D	067	0	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED BY H-10343/90 (WHITING) NOT DISPROVED. IN LAT. ì 36-56-32.95N, LONG. 75-55-29.73W. ESTIMATED DEPTH OF 12 METERS. ì RECOMMEND CHARTING AND ADDITIONAL WORK AT AN OPPORTUNE TIME. (ENT ì 4/20/92, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
8252	OBSTRUCTION	12221	D	067	0	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED BY H-10343/90 (WHITING) NOT DISPROVED. IN LAT. ì 36-57-12.90N, LONG. 75-58-15.82W. ESTIMATED DEPTH OF 25.2 METERS. ì RECOMMEND CHARTING AND ADDITIONAL WORK AT AN OPPORTUNE TIME. (ENT ì 4/20/92, SJV)
8253	OBSTRUCTION	12208	D	067	41	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED BY H-10343/90 (WHITING) NOT DISPROVED. IN LAT. ì 36-56-27.59N, LONG. 75-55-29.61W. ESTIMATED DEPTH OF 11.7 METERS. ì RECOMMEND CHARTING AND ADDITIONAL WORK AT AN OPPORTUNE TIME. ì (ENT 4/20/92, SJV) FE412SS/95-- OPR-E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN ì SONAR. ECHO SOUNDER LD OF 12.5 METERS (41 FEET) IN LAT. ì 36-56-27.466N, LONG. 75-55-29.856W. EVALUATOR RECOMMENDS DELETING ì OBSTR REP AND CHARTING A 41 OBSTR AS SURVEYED. (UP 2/15/96, SJV)
8254	OBSTRUCTION	12221	D	0067	0	SURVEY REQUIREMENT COMMENTS SALVAGE OF THIS ITEM BY THE 5CGD IS LIKELY. CONTACT WITH 5CGD ì OR COE SHOULD BE MADE BEFORE ANY HYDROGRAPHIC INVESTIGATION IS ì INITIATED. HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); UNCHARTED ì OBSTRUCTION LOCATED IN LAT. 36-56-06.39N, LONG. 75-57-17.86Wì COVERED 54.1 FEET. EVALUATOR STATES THIS ITEM IS THE SAME AS THAT ì DISCUSSED IN A COE REPORT TITLED "ENGINEERING ANALYSIS OF NINE ì SIDE SCAN SONAR TARGETS FROM THE THIMBLE SHOAL CHANNEL TO THE ì SOUTH ATLANTIC SEA LANE, CHESAPEAKE BAY ENTRANCE, VIRGINIA", ì FEB., 1985. THIS IS TARGET ATL #11 WHICH WAS DESCRIBED AS A STEEL ì CHANNEL BUOY LYING ON ITS SIDE IN AN E-W DIRECTION, UPPER 12 FEET ì OF STEEL-FRAMED TOWER BENT 90 DEGS. TO THE SOUTH. BASE OF BUOY 9 ì FEET IN DIA., 8 FEET TALL. SHORT LENGTH OF CHAIN ATTACHED TO WEST ì END OF BUOY. DENTED ON ONE SIDE, RIPPED OPEN ALONG THE BOTTOM, ì INDICATING IT WAS POSSIBLY HIT AND SUNK BY A SHIP. IN ABOUT 63 ì FEET. COAST GUARD WAS NOTIFIED BY COE AND SALVAGE ATTEMPTS WERE ì LIKELY.
8255	OBSTRUCTION	12221	D	067	59.7	HISTORY H10372/92-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-55-57.84N, LONG. 75-57-33.89W. FATHOMETER ì DEPTH OF 18.2 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. ì (ENT 4/20/92, SJV)
8256	OBSTRUCTION	12221	D	067	66.6	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-56-25.67N, LONG. 74-57-16.55W. FATHOMETER LD ì OF 20.3 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8257	OBSTRUCTION	12221	D	0067	0	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-57-18.38N, LONG. 76-01-06.33W. FATHOMETER LD ì OF 18.4 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8258	OBSTRUCTION	12221	D	067	63.3	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-56-29.52N, LONG. 75-58-04.45W. FATHOMETER LD ì OF 19.3 METERS. EVALUATOR

						RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8259	OBSTRUCTION	12221	D	0067	0	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-56-45.73N, LONG. 76-01-16.46W. FATHOMETER LD ì OF 17.8 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8260	OBSTRUCTION	12221	D	067	44.3	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-55-32.1N, LONG. 75-57-47.6W. ESTIMATED DEPTH ì FROM SONARGRAM OF 13.5 METERS. EVALUATOR RECOMMENDS CHARTING AN ì OBSTR (A) COVERED 13.5 METERS. (ENT 4/20/92, SJV)
8261	OBSTRUCTION	12221	D	067	80	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-56-47.75N, LONG. 75-57-24.50W. FATHOMETER LD ì OF 24.4 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8262	UNKNOWN	12221	D	100	84.6	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-57-12.44N, LONG. 75-57-57.71W. FATHOMETER LD ì OF 25.8 METERS. EVALUATOR RECOMMENDS CHARTING A WRECK AT SURVEYED ì POSITION. (ENT 4/20/92, SJV)
8263	OBSTRUCTION	12221	D	0067	0	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-56-38.30N, LONG. 76-00-42.25W. FATHOMETER LD ì OF 17 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8264	OBSTRUCTION	12221	D	067	88.3	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED IN LAT. 36-57-28.27N, LONG. 75-58-26.95W. FATHOMETER LD ì OF 26.9 METERS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT ì 4/20/92, SJV)
8314	OBSTRUCTION	12208	D	0067	0	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-54-10.52N, LONG. 75-53-50.11W WITH AN ESTIMATED DEPTH ì OF 16.7 METERS (55 FEET). LOCATED WHILE SEARCHING FOR AWOIS ITEM ì NO. 7522. ADDITIONAL WORK REQUIRED. FE353SS/90-- OPR-D111-HE; ITEM NO. 3. INVESTIGATION NOT ì ADEQUATE TO DETERMINE SIGNIFICANCE. EVALUATOR RECOMMENDS CHARTING ì AN OBSTRUCTION WITH AN ESTIMATED DEPTH OF 16.7 METERS (55 FEET) ì AS SURVEYED ON H-10340/90 (ABOVE). ADDITIONAL WORK RECOMMENDED. ì (ENT 7/14/92, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
8316	OBSTRUCTION	12208	D	067	0	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-54-58.05N, LONG. 75-53-14.89W. LOCATED WHILE SEARCHING ì FOR AWOIS ITEM NO. 7522. ADDITIONAL WORK RECOMMENDED. FE353SS/90-- OPR-D111-HE; ITEM NO. 14. OBSTRUCTION LOCATED BY ì SIDE SCAN SONAR IN LAT. 36-54-58.12N, LONG. 75-53-15.56W. ì EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH AN ECHO SOUNDER ì DEPTH OF 9.2 METERS (30 FEET) AS SURVEYED. ADDITIONAL WORK ì RECOMMENDED AT AN OPPORTUNE TIME. (ENT 7/14/92, SJV) FE412SS/95-- OPR-E696-95; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
8319	OBSTRUCTION	12208	D	0067	55	HISTORY FE353SS/90-- OPR-D111-HE; ITEM NO. 19. OBSTRUCTION LOCATED BY ì SIDE SCAN SONAR IN LAT. 36-54-51.46N, LONG. 75-55-31.86W. ASSUMED ì TO BE A BUOY ANCHOR SINCE SIDE SCAN SONAR IMAGE IS SIMILAR TO ì THAT OBTAINED ON ITEM NO. 17 (BUOY ANCHOR SALVAGED BY THE COAST ì GUARD). EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH AN ECHO ì SOUNDER DEPTH OF 16.9 METERS (55 FEET) AS SURVEYED. (ENT 7/15/92, ì SJV) FE412SS/95-- OPR-E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN ì SONAR. ECHO SOUNDER LD OF 16.7 METERS (55 FEET) IN LAT. ì 36-54-52.595N, LONG. 75-55-32.613W. EVALUATOR RECOMMENDS DELETING ì CHARTED OBSTR REP 1990 AND CHARTING A 55 OBSTR AS SURVEYED. (UP ì 2/15/96, SJV)
8320	OBSTRUCTION	12208	D	0067	52	HISTORY FE353SS/90-- OPR-D111-WH; ITEM NO. 20. OBSTRUCTION LOCATED BY ì SIDE SCAN SONAR IN LAT. 36-54-43.98N, LONG. 75-55-31.28W. ì EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH AN ECHO SOUNDER ì DEPTH OF 16.8 METERS (55 FEET) AS SURVEYED. (ENT 7/17/92, SJV) FE412SS/95-- OPR-E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN ì SONAR. ECHO SOUNDER LD OF 16.0 METERS (52 FEET) IN LAT. ì 36-54-45.097N, LONG. 75-55-32.467W. EVALUATOR RECOMMENDS DELETING ì OBSTR REP 1990 AND CHARTING 52 OBSTR AS SURVEYED. (UP 2/15/96, ì SJV)
8321	OBSTRUCTION	12208	D	067	0	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-55-26.21N, LONG. 75-55-23.44W WITH AN ESTIMATED DEPTH ì OF 19.7 METERS. ADDITIONAL WORK RECOMMENDED. FE353/90-- OPR-D111-HE; ITEM NO. 21. NOT INVESTIGATED BECAUSE ì ITEM WAS INCORRECTLY SCALED ONTO THE FIELD SHEET. EVALUATOR ì RECOMMENDS CHARTING ACCORDING TO WHITINGS' FINDINGS, ABOVE. ì ADDITIONAL WORK RECOMMENDED. (ENT 7/15/92, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
8322	OBSTRUCTION	12221	D	067	0	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-56-06.27N, LONG. 75-55-17.07W WITH AN ESTIMATED DEPTH ì OF 16.1 METERS. FE353SS/90-- OPR-D111-HE; ITEM NO. 25. OBSTRUCTION LOCATED IN ì LAT. 36-56-06.36N, LONG. 75-55-16.22W. APPEARED ON FATHOGRAM ì ONLY. SONARGRAM QUALITY POOR. EVALUATOR RECOMMENDS CHARTING AN ì OBSTRUCTION WITH AN ECHO SOUNDER DEPTH OF 14.5 METERS (47 FEET) ì AS SURVEYED. ADDITIONAL WORK RECOMMENDED. (ENT 7/15/92, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
8323	OBSTRUCTION	12208	D	0067	44	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-55-49.64N, LONG. 75-54-50.73W WITH AN ESTIMATED DEPTH ì OF 14.4 METERS. ADDITIONAL WORK RECOMMENDED. FE353SS/90-- OPR-D111-HE; ITEM NO. 26. OBSTRUCTION LOCATED BY ì SIDE SCAN SONAR IN LAT. 36-55-49.12N, LONG. 75-54-50.55W. DIVERS ì DESCRIBE SUNKEN BUOY PARTIALLY BURIED. EVALUATOR RECOMMENDS ì CHARTING AN OBSTRUCTION WITH AN ECHO SOUNDER DEPTH OF 13.8 METERS ì (45 FEET) AS SURVEYED. (7/15/92, SJV) FE412SS/95-- OPR-E696-HE; LOCATED BY SIDE SCAN SONAR. ECHO ì SOUNDER LD OF 13.3 METERS (44 FEET) IN LAT. 36-55-49.234N, LONG. ì 75-54-50.327W. EVALUATOR RECOMMENDS CHARTING A 44 OBSTR AS ì SURVEYED. (UP 2/15/96, SJV) H11027/01-- OPR-D324-WH; LOCATED DURING

						MAINSCHEME HYDROGRAPHY. CALCULATED HEIGHT OF OBSTRUCTION APPROX. 0.79 METERS (2.6 FEET) IN SURROUNDING DEPTHS OF 47 FEET. THIS IS CONSISTENT WITH THE CHARTED 44-FOOT LD. DUE TO TIME CONSTRAINTS NO LD WAS DETERMINED. EVALUATOR RECOMMENDS RETAINIG AS CHARTED. (UP 2/25/02, SJV)
8324	OBSTRUCTION	12208	D	0067	42	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-55-58.55N, LONG. 75-54-56.84W WITH AN ESTIMATED DEPTH ì OF 14.5 METERS. ADDITIONAL WORK RECOMMENDED. FE353SS/90-- OPR-D111-HE; ITEM NO. 28. OBSTRUCTION LOCATED IN ì LAT. 36-55-59.08N, LONG. 75-54-55.19W. DIVERS DESCRIBE AN OLD ì BUOY RISING 1.3 METERS OFF THE BOTTOM. EVALUATOR RECOMMENDS ì CHARTING AN OBSTRUCTION WITH AN ECHO SOUNDER DEPTH OF 12.5 METERS ì (41.0 FEET) AS SURVEYED. FE412SS/95-- OPR-E696-HE; LOCATED BY SIDE SCAN SONAR. EVALUATOR ì RECOMMENDS DELETING OBSTR REP 1990 AND CHARTING A 42 OBSTR (12.9 ì METERS) AS SURVEYED IN LAT. 36-56-01.593N, LONG. 75-54-58.690W. ì (UP 2/15/96, SJV) H11027/01-- OPR-D324-WH; LOCATED DURING MAINSCHEME SIDE SCAN OPS. CALCULATED HEIGHT APPROX. 0.94 METERS (3.1 FEET) IN SURROUNDING DEPTHS OF 44 TO 46 FEET. THIS IS CONSISTENT WITH CHARTED 42-FOOT LD. DUE TO TIME CONSTRAINTS NO LD WAS DETERMINED. EVALUATOR RECOMMENDS RETAINING AS CHARTED. (UP 2/25/02, SJV)
8862	UNKNOWN	12254	E	0100	17	HISTORY NM30/66-- CHESAPEAKE BAY-LYNNHAVEN ROADS-LITTLE CREEK APPROACH; ì DANGEROUS SUBMERGED WRECK OF A 22-FOOT CABIN CRUISER REPORTED ì BURNED TO THE WATERLINE AND SUNK IN APPROX. POSITION LAT. ì 36-57.3N, LONG. 76-10.8W. H9910/80-- OPR-103-MI; WRECK LOCATED IN LAT. 36-57-11.71N, LONG. ì 76-10-36.18W, 17.5 LD. DESCRIBED AS A METAL OBSTRUCTION, 3 X 8 ì FEET. CHARTED WRECK (NM30/66 ABOVE) REVISED TO SURVEYED POSITION. LNM19/82-- PUBLISHES INFORMATION FROM H-9910. (ENT 2/23/94, ì SJV) FE388SS/94-- OPR-E696-HE; SIDE SCAN SONAR SEARCH NEGATIVE FOR ì WRECK AS DESCRIBED. HOWEVER, WHILE CONDUCTING A SIDE SCAN ì CONFIDENCE CHECK NEAR THE "LC" BUOY, 2 CONCRETE BLOCKS, 10 METERS ì APART WERE LOCATED. LARGER BLOCK WAS 5 X 5 FEET, EXTENDING 3 FEET ì OFF THE BOTTOM. LOCATED IN LAT. 36-56-58.405N, LONG. ì 76-10-44.284W. EVALUATOR RECOMMENDS DELETING CHARTED WRECK AND ì CHARTING A DANGEROUS OBSTR, 18 FEET, AS SURVEYED (SEE AWOIS NO. ì 9559). LORAN-C RATES (9960 CHAIN): W=15960.1, X=27219.8, ì Y=41219.8, Z=58485.2. (UP 9/20/95, SJV)
8866	OBSTRUCTION	12245	E	0067	19	SURVEY REQUIREMENT COMMENTS DEVELOP ALL INDICATIONS OF SHOALING, BOTH CHARTED AND ì DISCOVERED. HISTORY H7894/51-- 17-FOOT SHOAL LOCATED IN LAT. 36-56-48N, LONG. ì 76-20-30W. POSITION SCALED FROM CHART 12245. (ENT 3/1/94, SJV) FE394SS/94-- OPR-E696-HE; CHARTED SHOAL DISPROVED. HOWEVER, AN ì OLD DREDGE PIPEWAS LOCATED IN LAT. 36-56-46.590N, LONG. ì 76-20-33.164W. PNEUMO. LD OF 5.9 METERS (19 FEET). PIPE IS 2 FEET ì IN DIA., 25 METERS LONG. COVERED WITH HEAVY MARINE GROWTH. ì LORAN-C RATES: W=15987.4, X=27257.8, Y=41247.1, Z=58442.1. ì EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (UP 9/6/95, SJV)
8867	SNDNG	12245	E	0067	22	SURVEY REQUIREMENT COMMENTS FULLY DEVELOP ALL INDICATIONS OF SHOALING BOTH CHARTED AND ì DISCOVERED. HISTORY LNM30/69-- SHOALING TO 22 FEET HAS BEEN REPORTED IN THE ì FOLLOWING POSITIONS: LAT. 36-56-55N, LONG. 76-21-37W; LAT. ì 36-57-06N, LONG. 76-21-37W. MARINERS ARE ADVISED TO EXERCISE ì CAUTION IN THE AREA. (ENT 3/1/94, SJV) FE394/94-- OPR-E696-HE; SHOAL DISPROVED. EVALUATOR RECOMMENDS ì CHARTING AS SURVEYED. (UP 9/6/95, SJV)
8868	SNDNG	12245	E	0067	22	SURVEY REQUIREMENT COMMENTS FULLY DEVELOP ANY INDICATIONS OF SHOALING, CHARTED OR ì DISCOVERED. HISTORY LNM30/69-- SHOALING TO 22 FEET HAS BEEN REPORTED IN THE ì FOLLOWING POSITIONS: LAT. 56-57-06N, LONG. 76-21-34W AND LAT. ì 36-56-55N, LONG. 76-21-37W. MARINERS ARE ADVISED TO EXERCISE ì CAUTION IN THE AREA. (ENT 3/1/94, SJV) FE394SS/94-- OPR-E696-HE; SHOAL DISPROVED. EVALUATOR RECOMMENDS ì CHARTING AS SURVEYED. (ENT 9/6/95, SJV)
8869	SNDNG	12245	E	0067	25	SURVEY REQUIREMENT COMMENTS FULLY DEVELOP ANY INDICATIONS OF SHOALING CHARTED OR ì DISCOVERED. HISTORY BP73637/68-- COE; CHARTED 35-FOOT SOUNDING REVISED TO 25 FEET. FE394SS/94-- OPR-E696-HE; SHOAL DISPROVED. EVALUATOR RECOMMENDS ì CHARTING AS SURVEYED. (UP 9/6/95, SJV) DESCRIPTION **** OFFICE RESEARCH INDICATES THAT THE SOUNDING ON THE BLUEPRINT MAY HAVE BEEN MISREAD AS A 25 VICE A 35. HOWEVER, SINCE THIS DEPTH IS CLOSE TO AN IMPORTANT CHANNEL WIDENER ITS INVESTIGATION IN THE FIELD IS JUSTIFIED. (ENT 3/2/94, SJV)
8897	UNKNOWN	12254	E	0100	5	HISTORY H9255WD/71-- OPR-467-R/H-71; SUBMERGED WRECK LOCATED IN LAT. ì 36-54-49N, LONG. 76-05-24W. IDENTIFIED AS THE WRECK OF AN ARMED ì SAILING VESSEL, LL LD OF 5.0 FEET. THIS ITEM WAS ASSIGNED THROUGH ì THE ATLANTIC MARINE CENTER FROM THE ARMY CORPS OF ENGINEERS AFTER ì SEVERAL VESSELS HAD REPORTED STRIKING A SUBMERGED OBSTRUCTION IN ì THE CHANNEL ENTRANCE TO LYNNHAVEN, VIRGINIA. CL200/71-- RADIO MESSAGE, NOAAS HECK TO CGD5, INFO NOS, ATLANTIC ì MARINE CENTER, NORFOLK, VA., FEB. 22, 1971. UNDERWATER ì OBSTRUCTION LOCATED LAT. 36-54-48N, LONG. 76-05-25W. LEAST DEPTH ì 6 FEET MLW. (REPORTED TO BE OLD WARSHIP, SAILING TYPE, BETWEEN ì 100 AND 200 YEARS OLD PER WHEATLY WARD, C-351). LNM8/71-- UNDERWATER OBSTRUCTION REPORTED TO EXIST IN LAT. ì 36-54-48N, LONG. 76-05-25W. COVERED 6 FEET AT MLW. LNM9/71-- LYNNHAVEN INLET CHANNEL BUOY 3 (LLP 332) HAS BEEN ì RELOCATED IN POSITION LAT. 36-54-47N, LONG. 76-05-25W TO MARK ì ROUTE OF BEST WATER (SEE PAGE 3 OF LNM 8/71, UNDERWATER ì OBSTRUCTION). (ENT 4/7/94, SJV) DESCRIPTION **** TELCON, 4/12/94, S. VERRY (NOS) AND CHRIS ROWLEY (COE, NORFOLK); DANGEROUS SUBMERGED WRECK LOCATED IN LAT. 36-54-48.7N, LONG. 76-05-23.9W (NAD27). LEAST OBSERVED ECHO SOUNDER DEPTH 6.7 FEET. (TEL. NO. 804-441-7018) DIVERS REPORT FINDING TIMBERS, COPPER PLATING AND A PILE OF BALLAST. **** VIRGINIA-PILOT, SAT., MARCH 20, 1971. NEWSPAPER ITEM. SALVAGE WORK ON WRECK CARRIED OUT BY CHARLES V. SPENCER. SEVEN CANNON AND THREE SWIVEL GUNS BROUGHT UP. RU/HE SALVAGED ONE CANNON ON 2/22/71, THE DAY THE WRECK WAS FOUND. ALL THAT REMAINS IS A PILE OF BALLAST STONE. GUNS DIFFER IN SIZE LEADING SPENCER TO SPECULATE THAT THE SHIP WAS EITHER A PRIVATEER OR A PIRATE VESSEL CIRCA 1770-1820. SPENCER TO TAKE ONE OF THE SMALL SWIVEL GUNS TO THE MARINERS MUSEUM (NEWPORT NEWS) TO HELP IDENTIFY AND DATE THE WRECK MORE PRECISELY. HE PLANS TO CLEAN AND SELL THE GUNS. THE GUNS FOR SALE WEIGH 1,800 LBS. EACH. (UP 4/13/94, SJV)

9344	OBSTRUCTION	12208	E	0067	0	HISTORY H10340/90-- OPR-D111-WH; SIDE SCAN SONAR CONTACT IDENTIFIED ì DURING OFFICE PROCESSING IN LAT. 36-54-57.39N, LONG. ì 75-55-46.96W. ESTIMATED DEPTH OF 14.4 METERS (47.0 FEET). FE353SS/90-- OPR-D111-HE; DISPROVED. EVALUATOR RECOMMENDS NOT ì CHARTING. (UP 1/17/95, SJV)
9345	OBSTRUCTION	12208	E	067	0	HISTORY H10340/90-- OPR-D111-HE; SIDE SCAN SONAR CONTACT LOCATED IN ì LAT. 36-56-12N, LONG. 75-55-10.5W. CHARTED AS A 37-FOOT ì OBSTRUCTION REPORTED 1990. (ENT 1/18/95, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)ì
9381	OBSTRUCTION	12208	E	067	0	HISTORY H10340/90-- OPR-D111-WH; SIDE SCAN SONAR CONTACT IDENTIFIED ì DURING OFFICE PROCESSING IN LAT. 36-54-29.32N, LONG. ì 75-55-34.22W. ESTIMATED DEPTH OF 15.4 METERS (50.5 FEET). NOT ì SUBSEQUENTLY INVESTIGATED BY HECK. (ENT 3/17/95, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATROR RECOMMENDS DELETING. (UP 2/15/96, SJV)
9425	OBSTRUCTION	12254	E	0067	0	HISTORY H7177WD/48-- (AD. WK.); PBS-WD-2248; 1:20,000-SCALE; VISUAL ì CONTROL; HANG DEPTH UNKNOWN, CLEARED TO 15 FEET IN LAT. ì 36-57-20.0N, LONG. 76-09-47.0W (SCALED FROM CHART 12254). (ENT ì 4/26/95, SJV) FE410SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
9543	OBSTRUCTION	12254	E	0067	48	HISTORY FE387SS/94-- OPR-E696-HE; TWO OBSTRUCTIONS LOCATED IN CLOSE ì PROXIMITY OF EACH OTHER. ONE IN LAT. 36-56-09.98N, LONG. ì 76-02-32.08W WITH A FATHOMETER LD OF 14.6 METERS (48 FEET) AND ì THE OTHER IN LAT. 36-56-07.95N, LONG. 76-02-34.88W. EVALUATOR ì RECOMMENDS ENCLOSING BOTH OBSTRUCTIONS WITH A DANGER CURVE WITH ì LABEL 48-FOOT OBSTR. (ENT 9/12/95, SJV)
9544	UNKNOWN	12254	E	0100	33	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OF 0.9 METERS IN 12.1 METERS.DIVERS DESCRIBE A STEEL ì HULLED VESSEL MOSTLY BURIED WITH A WOODEN MAST AND BEAMS. ALSO ì SCATTERED WRECKAGE. PNEUMO LD OF 10.1 METERS (33 FEET) IN LAT. ì 36-55-56.868N, LONG. 76-03-17.065W. EVALUATOR RECOMMENDS CHARTING ì AS SURVEYED. LORAN-C RATES (9960 CHAIN): W=15937.4, X=27187.7, ì Y=41269.4, Z=58512.5. VISIBILITY WAS 4 FEET. (ENT 9/12/95, SJV)
9545	UNKNOWN	12254	E	0100	32	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OF 1.3 METERS IN 11.7 METERS. DIVERS DESCRIBE A STEEL ì HULLED VESSEL WITH A WOODEN MAST IN LAT. 36-56-02.7N, LONG. ì 76-03-19.6W. PNEUMO. LD OF 9.8 METERS (32 FEET). MAST IS 15 FEET ì LONG. VISIBILITY 4 FEET. EVALUATOR RECOMMENDS CHARTING AS ì SURVEYED. LORAN-C RATES (9960 CHAIN): W=15939.8, X=27108.4, ì Y=41270.4, Z=58512.4. (ENT 9/12/95, SJV)
9546	OBSTRUCTION	12254	E	0067	38	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OFF BOTTOM 1.0 METERS IN 13.6 METERS. VISIBILITY 5-6 FEET. ì DIVERS DESCRIBE BADLY CORRODED METAL CONTAINERS. PNEUMO. LD OF 40 ì FEET IN LAT. 36-57-07.421N, LONG. 76-03-23.419W. LORAN-C RATES ì (9960 CHAIN): W=15939.1, X=27190.5, Y=41282.8, Z=58516.4. ì EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH A FATHOMETER LD ì OF 11.6 METERS (38 FEET) IN LAT. 36-57-05.73N, LONG. ì 76-03-24.68W. SEVERAL SIDE SCAN SONAR CONTACTS LIE IN CLOSE ì PROXIMITY. DIVERS DESCRIBE 2 AREAS OF SCATTERED DEBRIS WHICH ì APPEAR TO BE STEEL CONTAINERS. PNEUMO. LD OF 12.2 METERS (40 ì FEET) IN LAT. 36-57-07.032N, LONG. 76-03-24.878W. LORAN-C RATES ì (9960 CHAIN): W=15939.1, X=27190.6, Y= 41282.6, Z=58516.2. WOODEN ì TIMBERS ALSO LYING ON BOTTOM. EVALUATOR DOES NOT RECOMMEND ì CHARTING THESE ITEMS DUE TO THE 38-FOOT FATHOMETER DEPTH (ABOVE). ì (ENT 9/12/95,SJV)
9547	OBSTRUCTION	12254	E	0067	39.8	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SONAR CONTACT. COMPUTED HEIGHT ì OFF BOTTOM OF 0.9 METERS IN 12.9 METERS. DIVERS DESCRIBE A ì CYLINDRICAL PIPE 8 FEET 9 INCHES LONG AND 3 FEET IN DIA. PNEUMO. ì LD OF 12.1 METERS (39 FEET) IN LAT. 36-57-10.545N, LONG. ì 76-03-27.170W. EVALUATOR RECOMMENDS CHARTING A 12.1 METER OBSTR ì AS SURVEYED. LORAN-C RATES (9960 CHAIN): W-15939.2, X=27191.0, ì Y=41283.3, Z=58516.4. VISIBILITY 6-10 FEET. PIPE IS HEAVILY ì ENCRUSTED WITH MARINE GROWTH AND BADLY RUSTED. (ENT 9/12/95, SJV)
9548	OBSTRUCTION	12254	E	0067	34	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. DIVERS ì DESCRIBE A 8 X 15-FOOT METAL CONTAINER ENCRUSTED WITH MARINE ì GROWTH WITH A LENGTH OF CHAIN ON THE TOP. PNEUMO. LD OF 10.6 ì METERS (34 FEET) IN LAT. 36-56-37.009N, LONG. 76-03-10.589W. ì FALLS WITHIN AWOIS CIRCLE FOR NOS. 3758, 3759, 3760, AND 3762. ì EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH A LD OF 10.6 ì METERS AS SURVEYED. LORAN-C RATES (9960 CHAIN): W=15938.2, ì X=27188.8, Y=41277.3, Z=58515.4. (ENT 9/12/95, SJV)
9549	OBSTRUCTION	12254	E	0067	42	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. DIVERS ì DESCRIBE METAL PLATES ON TOP OF A CONCRETE BLOCK TIED TOGETHER ì WITH CHAINS. PNEUMO LD OF 12.9 METERS (42 FEET) IN LAT. ì 36-56-27.426N, LONG. 76-02-31.286W. EVALUATOR RECOMMENDS CHARTING ì AS SURVEYED. ITEM EXTENDS 1.4 METERS ABOVE BOTTOM IN 14.8 METERS. ì LORAN-C RATES (9960 CHAIN): W=15936.1, X=27185.8, Y=41276.8, ì Z=58517.5. ROUND BUOY BLOCK WITH CHAIN ALSO LOCATED IN CLOSE ì PROXIMITY. LD 13.2 METERS (43 FEET) IN LAT. 36-56-27.095, LONG. ì 76-02-31.561W. EVALUATOR DOES NOT RECOMMEND CHARTING THIS BLOCK. ì (ENT 9/12/95, SJV)
9550	OBSTRUCTION	12254	E	0067	23	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. DIVERS DESCRIBE DERELICT NET HUNG ON SMALL UNIDENTIFIABLE OBSTRUCTION. ì EXTENDS 1.4 METERS OFF THE BOTTOM. PNEUMO LD OF 7.8 METERS (23 ì FEET) IN 9.2 METERS IN LAT. 36-57-03.525N, LONG. 76-05-32.844W. ì EVALUATOR RECOMMENDS CHARTING AN OBSTR AS SURVEYED. LORAN-C RATES ì (9960 CHAIN): W=15945.4, X=27199.8, Y=41278.1, Z=58507.2. (ENT ì 9/12/95, SJV)
9551	OBSTRUCTION	12254	E	0067	23	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OFF BOTTOM OF 1.1 METERS IN 8.3 METERS OF WATER. DIVERS ì DESCRIBE DERELICT NET HUNG ON UNIDENTIFIABLE OBSTRUCTION 3 FEET ì OFF THE BOTTOM. PNEUMO. LD OF 7.5 METERS (23 FEET) IN LAT. ì 36-56-47.832N, LONG. 76-05-37.241W. EVALUATOR RECOMMENDS CHARTING ì AN OBSTRUCTION AS SURVEYED. LORAN-C RATES (9960 CHAIN): ì W=15943.2, X=27199.0, Y= 41274.8, Z=58505.9. (ENT 9/12/95, SJV)

9552	OBSTRUCTION	12254	E	0067	27	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT 0.9 METERS IN 9.9 METERS. DIVERS DESCRIBE WHAT APPEARED TO ì BE THE BOTTOM SECTION OF A BUOY EXTENDING 3 FEET OFF THE BOTTOM. ì PNEUMO LD OF 8.2 METERS (27 FEET) IN LAT. 36-56-39.11N, LONG. ì 76-04-19.618W. EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION AS ì SURVEYED. LORAN-C RATES (9960 CHAIN): W=15941.6, X=27193.5, ì Y-47275.6, Z=58510.8. VISIBILITY 3 FEET. A SHACKLE WAS IN ONE ì END. (ENT 9/12/95, SJV)
9553	OBSTRUCTION	12254	E	0067	33	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OF 1.9 METERS IN 12.1 METERS. DIVERS DESCRIBE A BUOY BLOCK ì WITH CHAIN ATTACHED EXTENDING 5 FEET OFF THE BOTTOM. PNEUMO LD OF ì 10.3 METERS (33 FEET) IN LAT. 36-56-15.379N, LONG. 76-03-02.631W. ì VISIBILITY 3 FEET. LORAN-C RATES (9960 CHAIN): W=15937.4, ì X=27187.6, Y=41273.4, Z=58514.5. (ENT 9/12/95, SJV)
9554	OBSTRUCTION	12254	E	0067	37	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OF 0.7 METERS IN 12.8 METERS. DIVERS DESCRIBE 25-FOOT LONG ì PIPE WITH WITH A CEMENT OR METAL BLOCK AT ONE END. PNEUMO. LD OF ì 11.5 METERS (37 FEET) IN LAT. 36-55-53.368N, LONG. 76-03-03.406W. ì VISIBILITY 1 FOOT. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. ì LORAN-C RATES (9960 CHAIN): W=15937.2, X=27187.0, Y=41269.2, ì Z=58513.1. LD OBTAINED ON BLOCK. (ENT 9/12/95, SJV)
9555	OBSTRUCTION	12254	E	0067	42	HISTORY FE387SS/94-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. COMPUTED ì HEIGHT OF 1.3 METERS IN 12.7 METERS. DIVERS DESCRIBE A SMALL ì BARGE OR PONTOON FLOAT LYING UPSIDE DOWN ON BOTTOM WITH A HEIGHT ì OF 5 FEET OFF BOTTOM. DIVERS PNEUMO. LD OF 12.9 METERS (42 FEET). ì FATHOMETER DEPTH OF 12.3 METERS (40 FEET) IN SAME LOCATION. ì EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH THE FATHOMETER ì DEPTH AS SURVEYED IN LAT. 36-56-48.231N, LONG. 76-02-55.683W. ì VISIBILITY 6-10 FEET. ENCRUSTED WITH MARINE GROWTH. LORAN-C RATES ì (9960 CHAIN): W=15937.4, X=27188.1, Y=41279.9, Z=58517.1. ì DIMENSIONS OF ITEM ARE 22 X 12 FEET. (ENT 9/12/95, SJV)
9558	OBSTRUCTION	12254	E	0067	18	HISTORY FE394SS/94-- OPR-E696-HE; WHILE INVESTIGATING A 17-FOOT SHOAL ì (AWOIS NO. 8866), 2 UNCHARTED OBSTRUCTIONS WITH DEPTHS OF 18 FEET ì (5.5 & 5.6 METERS) WERE NOTED DURING OFFICE PROCESSING IN LAT. ì 36-56-40.24, LONG. 76-20-26.37W & LAT. 36-56-42.67N, LONG. ì 76-20-26.71W, RESPECTIVELY. EVALUATOR RECOMMENDS REMOVING CHARTED ì 17-FOOT SOUNDING AND CHARTING OBSTRUCTIONS AS SURVEYED. (ENT ì 9/6/95, SJV)
9559	OBSTRUCTION	12254	D	067	18	HISTORY FE388SS/94-- OPR-E696-HE; WHILE SEARCHING FOR AWOIS ITEM 8862, ì 2 CONCRETE BLOCKS WERE DISCOVERED DURING A ROUTINE SIDE SCAN ì CONFIDENCE CHECK IN THE VICINITY OF THE "LC" BUOY. DIVERS ì DESCRIBE 2 CONCRETE BLOCKS, 10 METERS APART. THE LARGER BLOCK ì MEASURED 5 X 5 FEET AND EXTENDED 3 FEET OFF THE BOTTOM. PNEUMO LD ì OF 18 FEET IN LAT. 36-56-58.405N, LONG. 76-10-44.284W. EVALUATOR ì RECOMMENDS DELETING CHARTED WRECK (AWOIS 8862) AND CHARTING A ì DANGEROUS SUBM OBSTR 18 FEET AS SURVEYED. LORAN-C RATES (9960 ì CHAIN): W=15960.1, X=27219.8, Y=41219.8, Z=58485.2. (ENT 9/6/95, ì SJV)
9825	OBSTRUCTION	12254	D	067	19	HISTORY FE410SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. ECHO SOUNDER ì LD OF 6 METERS (19 FEET) IN 6-8 METERS IN LAT. 36-57-16.627N, ì LONG. 76-09-35.608W. EVALUATOR RECOMMENDS CHARTING A 19 OBSTR AS ì SURVEYRD. (ENT 7/12/96, SJV)
9826	OBSTRUCTION	12254	D	067	19	HISTORY FE410SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. ECHO SOUNDER ì LD OF 5.8 METERS (19 FEET). IN 7.2 METERS IN LAT. 36-57-31.041N, ì LONG. 76-09-16.181W. EVALUATOR RECOMMENDS CHARTING A 19 OBSTR AS ì SURVEYED. (ENT 7/12/96, SJV)
9827	OBSTRUCTION	12254	D	067	20	HISTORY FE410SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. ECHO SOUNDER ì LD OF 6.2 METERS (20 FEET) IN 7.3 METERS IN LAT. 36-57-32.793N, ì LONG. 76-08-50.147W. EVALUATOR RECOMMENDS CHARTING A 20 OBSTR AS ì SURVEYED. (ENT 7/12/96, SJV)
9828	OBSTRUCTION	12254	E	0067	18	HISTORY FE410SS/95-- OPR-E696-HE; SIDE SCAN SONAR CONTACT. ECHO SOUNDER ì LD OF 5.5 METERS (18 FEET) IN 7.2 METERS IN LAT. 36-57-26.500N, ì LONG. 76-09-00.487W. EVALUATOR RECOMMENDS CHARTING AN 18 OBSTR AS ì SURVEYED. (ENT 7/12/96, SJV)
9837	OBSTRUCTION	12254	E	0067	0	HISTORY LNM47/94-- ADD DANGEROUS SUBM OBSTN IN APPROX. LAT. 36-57-26.20N, LONG. 76-03-05.70W. (ENT 11/20/96, SJV) F00439/98-- S-E900-RU; 200% SIDE SCAN SONAR SEARCH NEGATIVE, EVALUATOR RECOMENDS DELETING. (UP 8/16/99, SJV)
50005	ACTIVE	0	M	0999	0	SURVEY REQUIREMENTS INFORMATION
10791	OBSTRUCTION	12208	D			
11396	OBSTRUCTION	12208	D	067	34	HISTORY H11027/02-- OPR-D324-WH; CONTACT IDENTIFIED DURING MAINSCHEME SIDE SCAN OPS AND DEVELOPED BY SWMB. LD OF 10.35 METERS (34 FEET) IN LAT. 36-55-31.58N, LONG. 75-50-09.44W. SURROUNDING DEPTHS OF APPROX. 11.3 METERS (37 FEET). EVALUATOR RECOMMENDS CHARTING A 34 OBSTN AS SURVEYED. (ENT 2/25/02, SJV)
11397	OBSTRUCTION	12222	E	067		
11398	OBSTRUCTION	12222	E	067		
11436	UNKNOWN	12208	D	100		
11437	OBSTRUCTION	12208	D	067		
						HISTORY NM44/20-- CHESAPEAKE BAY APPROACHES-WRECK-LIGHT BUOY ESTABLISHED- ON OCTOBER 15, 1920 A LIGHT BUOY, HORIZONTALLY STRIPED, WAS ESTABLISHED ABOUT 2.5 MILES, 129 DEGS. FROM CAPE HENRY LIGHTHOUSE IN 4 FATHOMS OF WATER TO MARK THE WRECK OF THE SUNKEN SCHOONER "T.F. POLLARD. THE LIGHT BUOY WHICH IS CONICAL WITH A SKELETON SUPERSTRUCTURE SHOWING AN OCCULTING RED LIGHT EVERY 10 SEC - LIGHT 5 SEC, ECLIPSE 5 SEC - OF 5 CANDLE POWER 11 FEET ABOVE THE WATER, IS MOORED

12259	OBSTRUCTION	12208	D	370	20	ON THE BEARINGS: VIRGINIA BEACH, TANK 196 DEG. 30 MIN.; CAPE HENRY LIGHTHOUSE 309 DEG. THE WRECK LIES 100 YARDS, 241 DEG. FROM THE LIGHT BUOY WITH 5 FEET OF WATER OVER IT AT LOW TIDE. (REF. NM43 (1370) BUREAU OF LIGHTHOUSES, 1920). NM1/21-- CHESAPEAKE BAY APPROACHES-WRECK NO LONGER A MENACE-LIGHT BUOY WITHDRAWN- ON DECEMBER 11, 1920, THE LIGHT BUOY MOORED TO MARK THE WRECK OF THE SCHOONER "THOMAS F. POLLARD" WAS WITHDRAWN, THE WRECK BEING NO LONGER A MENACE TO NAVIGATION. CL347/58-- FROM CHIEF, USC&GS CHART DIVISION TO "ALL CARTOGRAPHERS"; SUBJECT: NONDANGEROUS WRECKS, CHARTING OF; DATED MAY,8 1958; CHART ALL KNOWN WRECKS (DANGEROUS AS WELL AS THOSE CONSIDERED NON-DANGEROUS) OUT TO THE 300-FATHOM CURVE. (NOTE: THESE WRECKS ORIGINATED WITH THE NAVY WRECK LIST (24) BELOW). H09293WD/72-- OPR-467-RH-72; ITEM #16. ("T.F. POLLARD") WIRE DRAG INVESTIGATION NEGATIVE FOR WRECK. HOWEVER, A "METAL CLUMP" WAS HUNG IN LAT. 36-54-22N, LONG. 75-57-47W. COVERED WITH TRAWLER NETS (NOTE ON "A&D PLOT). THE EVALUATOR RECOMMENDS DELETING THE NON-DANGEROUS WRECK ("TF POLLARD") AND CHARTING A DANGEROUS OBSTRUCTION, CLEARED TO 24 FEET AS SURVEYED. CL24/84-- "MINUTE MEMO" DATED JANUARY 10, 1984; FROM DAVE PETERSON (N/CG24X5) TO JEANETTE O'CONNOR ("AREA 2" MCD) RE. FINDINGS OF WIRE DRAG SURVEY H9293; RECOMMENDS CHARTING "ITEM 16", ABOVE AS CLEARED TO 20 FEET VICE 24 FEET. OF THE TWO CLEARANCE STRIPS, 20 FEET WAS THE LEAST EFFECTIVE CLEARED DEPTH. (SEE AWOIS NO. 804) DESCRIPTION 24 NO.1324; SCHOONER; LAT. 36-54-00N, LONG. 55-58-00W. SUNK 1920; POSITION ACCURACY WITHIN 1 MILE. (NOTE: SPELLING IS "TF POLLAND" IN THIS SOURCE). (UP 2/19/04, SJV)
12260	OBSTRUCTION	12208	D	370	37	HISTORY H09293/72WD-- OPR-467-RU/HE; TEMPORARY HANG IN LAT. 36-54-46N, LONG. 75-57-43W. EFFECTIVE CLEARED DEPTH OF 23 FEET. NOT INVESTIGATED. H09905/80-- OPR-D103-MI/PE; 24-FOOT DEPTH OBTAINED AT ABOVE LOCATION. 23-FOOT CLEARED DEPTH BROUGHT FORWARD TO PRESENT SURVEY. CL25/84-- MEMO DATED JANUARY 10 1984 FROM DAVE PETERSON (N/CG24X5) TO JEANETTE O'CONNOR (MARINE CHART DIVISION) RE. CHARTING OF ABOVE INFORMATION. RECOMMENDS CHARTING AN OBSTN, (23 REP 1972) AS FOUND ON H09293WD. (NOTE: REVISED TO A 37-FOOT CLEARED DEPTH IN 1990. SOURCE OF THIS REVISION NOT READILY ASCERTAINABLE). (ENT 2/25/04, SJV)
12261	OBSTRUCTION	12221	D	067		
12364	OBSTRUCTION	12254	D	067	22	HISTORY F00387--OPR-E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN SONAR. LD.(PNEUMO) OF 7.1 METERS (23 FEET) LOCATED IN LAT. 36-57-03.525N, LONG. 76-05-32.844W. DIVERS DESCRIBE WHAT APPEARED TO BE AN OLD DERELICT FISHING NET HUNG ON A SMALL UNIDENTIFIED OBSTRUCTION EXTENDING 3 FEET OFF THE BOTTOM. EVALUATOR RECOMMENDS CHARTING A 23 OBSTN AS SURVEYED. (ENT 3/24/04, SJV)
12394	OBSTRUCTION	12222	D	067	59	HISTORY NO REGISTRY NUMBER ASSIGNED; S-E604-RU-02' HLS PROJECT REPORT; SIDE SCAN SONAR CONTACT. SWMB LD OF 59 FEET IN LAT. 36-56-10.04N, LONG. 75-57-45.36W. EVALUATOR RECOMMENDS CHARTING A 59 OBSTN AS SURVEYED. (ENT 4/2/04, SJV)
12395	OBSTRUCTION	12222	D	067	43	HISTORY NO REGISTRY NUMBER ASSIGNED; S-E604-RU-02; HLS PROJECT REPORT; SIDE SCAN SONAR CONTACT; SWMB LD OF 43 FEET IN LAT. 36-55-10.48N, LONG. 75-57-31.25W. EVALUATOR RECOMMENDS CHARTING A 43 OBSTN AS SURVEYED. (ENT 4/2/04, SJV)
12367	OBSTRUCTION	12254	D	067		
12368	OBSTRUCTION	12254	D	067		
12369	OBSTRUCTION	12254	D	067		
12371	OBSTRUCTION	12254	D	067		
12365	OBSTRUCTION	12254	D	067	23	HISTORY F00387-- OPR-E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN SONAR. LD (PNEUMO) OF 7.0 METERS (23 FEET) LOCATED IN LAT. 36-56-47.832N, LONG. 76-05-37.241W. DIVERS DESCRIBE AN OLD DERELICT FISHING NET HUNG ON AN UNIDENTIFIED OBSTRUCTION EXTENDING 3 FEET OFF THE BOTTOM. EVALUATOR RECOMMENDS CHARTING A 23 OBSTN AS SURVEYED. (ENT 3/24/04, SJV)
12366	OBSTRUCTION	12254	D	067		

COX CREEK EXPANSION SITE, PATAPSCO RIVER, MARYLAND
AWOIS FILES

Record #	Vessel Name	Chart #	Area	Cartocode	Depth	History
576	ANDERSON	12318	C	0999	0	ITEM NOT CHARTED. ITEM PROVIDED AS AN INFORMATION ITEM. SEE THE PROPRIETARY FIELD FOR HISTO
1288	OBSTRUCTION	12300	C	067	0	NM14/51--4/17/51,USN; A SUBMERGED OBSTRUCTION CONSTITUTING A MENACE TO NAVIGATION, HAS BEEI (UPDATED 1/02 BY PSH) 24 NO.381; POS. ACCURACY WITHIN 1 MILE; LOCATED 11/09/44 IN ORIGINAL LISTED U.S.C.G. GENTIAN (A DISTANCE OF APPROX. 1,800 METERS FROM THE CHARTED POSITION ORIGINATING FI FT. OF WATER; REPORTED THROUGH FOURTH NAVAL DISTRICT HEADQUARTERS SURVEY 1/10/45
1289	UNKNOWN	12278	E	0100	12	HISTORY NM49/68-- A 22 TO 24-FOOT BOAT BURNED TO WATERLINE, LAT. ì 39-12-01.8N, LONG. 76-27--55.8W. BOTTOM DRAG, ì 12 FEET LD NOT IDENTIFIED. (UP 2/28/95, SJV)
1290	ALLIES OF GLASGOW	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. SEE THE PROPRIETARY FIELD FOR HISTO
1291	CARDIFF	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. SEE THE PROPRIETARY FIELD FOR HISTO
1292	COL JAMES PAGE	12318	C	0999	0	ITEM NOT CHARTED. ITEM PROVIDED AS AN INFORMATION ITEM. SEE THE PROPRIETARY FIELD FOR HISTO
1293	UNKNOWN	12278	E	0102	0	HISTORY T5421/33-- BARGE. H9562/75-- OPR-514-AHP-75; ITEM #2; VERIFIED. (UP 2/28/95, SJV)
1294	UNKNOWN	12278	E	0100	0	HISTORY CL680/69-- COE INVESTIGATED WRECK, 22 FEET LONG, IN ABOUT 4.7 ì FEET OF WATER (MLW), BC MLW. REST OF WRECK BELOW SURFACE. NOT CONSIDERED AN UNREASONABLE ì HAZARD TO NAVIGATIC - OPR-514-AHP-75; ITEM #2; SEARCHED FOR BUTNOT ì LOCATED. WRECK FOUND AT LAT. 39-12-33.6N, LONG ITEM #1293). (UP 2/28/95, SJV)
1295	OBSTRUCTION	12278	E	0067	0	HISTORY NM33/70 H9562/75-- OBSTRUCTION LOCATED COVERED 4 FEET AT MLW; BY WIRE ì DRAG. (UP 2/2ε
1296	C.F. PRICHARD	12318	C	0999		
1299	ANGELINA BREWER	12318	C	0999	0	ITEM NOT CHARTED. ITEM PROVIDED AS AN INFORMATION ITEM. SEE THE PROPRIETARY FIELD FOR HISTO
1300	BUENA VISTA	12318	C	0999	0	ITEM NOT CHARTED. ITEM PROVIDED AS AN INFORMATION ITEM. SEE THE PROPRIETARY FIELD FOR HISTO
1301	DASAAWAY	12318	C	0999	0	ITEM NOT CHARTED. ITEM PROVIDED AS AN INFORMATION ITEM. SEE THE PROPRIETARY FIELD FOR HISTO
1302	SAN JOSE	12318	C	100	69	SOURCE UNKOWN--FIRST APPEARS ON THE CHART BETWEEN 1939 AND 1942 EDITIONS. THE CHART HISTO REGAURDING THIS WRECK. F00094/50--FORMERLY FE NO.3, 1951 WD; A C&GS WIRE DRAG SURVEY THAT FI 06.00W (NAD 27) AND OBTAINED A LEAST DEPTH BY FATHOMETER OVER THE WRECK OF 69 FEET MLW AN INFORMATION CHARTED THROUGH CL416/50 WHICH WAS ADVANCE INFORMATION OF THIS INVESTIGATION. GT, SUNK 1/17/42 BY MARINE CASUALTY; POSITION ACCURACY WITHIN 1 MILE, REPORTED IN 14 FMS BY ES FT(18.5 FM) THRU 4 ND HQ 1/10/45 AT LAT. 39-15-00N, LONG. 74-09-00W; WD CLEAR TO 69 FT POSSIBLY IN 19 1/17/42 IN 14 FMS. WRECK IS 31 FT HIGH IN 105 FT OF WATER AT POS.39-15N, LONG.74-09W. **** LORAN-C F TARACKA, GREENWICH, CT. POLICE DEPT., TEL. NO. 203-622-8007; 9960-X 26877.5, 9960-Y 42955.4 (ENTEREI
1304	UNKNOWN	12318	C	0999		
1305	UNKNOWN	12300	C	0999	0	01305 DESCRIPTION 18 UNKNOWN OBST. HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LOR 42956.7MS(APPROX. 1979) SURVEY REQUIREMENTS NOT DETERMINED
1306	RIO TERCERO	12300	C	0999	0	DESCRIPTION 24 NO.334, CARGO, 4864 GT; SUNK 6/22/42 BY SUBMARINE; POS. ACCURACY 1-3 MILES REPO REPORTS. 27 NO.234; CARGO, 4866 NT, SUNK 6/22/42 (ESF SR) SURVEY REQUIREMENTS NOT DETERMINED
2480	UNKNOWN	12300	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. 178 ANTHONY VRAIM, DIVERS; OBSERVEI 9960-Y-42939.30 (ASF CORRECTED) POS.39-13-28.5N, 74-17-17.25W.
2481	UNKNOWN	12300	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. THIS ITEM IS AT THE SOUTHERN LIMIT OF PART OF THE FISH HAVEN. 178 ANTHONY VRAIM, DIVER; OBSERVED LORAN-C 9960-X-26958.20. 9960-Y-4294 41.30W; WWI TANKER. 200 EDWARD E. SUAREZ, DIVER, REFERRED TO AS OFFSHORE OIL WK; OBSERVED
2482	UNKNOWN	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. 178 ANTHONY VRAIM, DIVER; OBSERVED £ 42934.80 (ASF CORRECTED), POS.39-12-4929N, 74-14-4963W.
2483	AMERICAN	12300	C	100	41	CL557/25--10/14/25-USCG; THE IRON TANK BARGE "AMERICAN" (NO. 107433) WEIGHING 836 TONS, OWNED B NY IS REPORTED TO HAVE SUNK AT 9:30PM, 10/14/25 IN LAT 39/150N, LONG 074/25W (ASSUME THE 1902 DA MIXING OIL CL165/26--4/15/26; ON 4/7/26 AN EXAMINATION OF THE WRECK OF THE OIL BARGE "AMERICAN", INLET, WAS MADE BY THE USCG CUTTER "SENECA". THE ENTIRE AREA WAS CAREFULLY AND SYSTEMATI NEARLY IDEAL CONDITIONS AND THE LEAST DEPTH OVER THE WRECK WAS FOUND TO BE 7 FATHOMS. TH 15N, LONG 074/23/00W (ASSUME THE 1902 DATUM). H6343WD/38-- FOUND THE SUNKEN BARGE "AMERICAN' (NAD27). THE WRECK WAS HUNG AT AN EFFECTIVE DEPTH OF 41 FEET AND WAS CLEARED BY AN EFFECT FEET (UNKNOWN DATUM AND METHOD) WAS OBTAINED ON THIS WRECK. F00093/50 & CL416/50-- FOUND TI LONG 074/22/50W (NAD27). THE WRECK WAS HUNG AT AN EFFECTIVE DEPTH OF 43 FEET AND WAS CLEAR SOUNDING OF 41 1/2 FEET MLW WAS OBTAINED ON THIS WRECK. (ENTERED 1/02 BY PSH) 178 ANTHONY VF 9960-Y-42945.70 ì POS. 39-13-57.25N, 74-21-41.30W 195 LORAN C RATES PROVIDED BY MR. RICHARD TARACI 8020; 9960-X 26896.5, 9960-Y ì 42944.9; IDENTIFIED AS THE AMERICA. (ENTERED MSM 4/90)
2719	UNKNOWN	12304	D	0100	34.7	NM38/62--F/V WAS REP. SUNK ABOUT 5270 YARDS 328 DEG. FROM ELBOW OF CROSS LEDGE LT IN APPRC CHARTED AS DANGEROUS SUBM. WK. PA (CHART 12304, 28TH ED). (REVISED, 1/25/84, MJF) H10255/87--OPR 12-56.61N, LONG 75-17-45.18W DESCRIBED BY DIVERS TO BE WOOD AND METAL DEBRIS ON A GENTLY SLC FOUND ON THE WRECKAGE. EVALUATOR RECOMMENDS CHARTING AS A 31 WK. (UPDATE 6/22/89 LQ) H11(57.41N, LONG 075/17/43.22W (NAD83) WITH A LEAST DEPTH OF 34.7 FEET MLLW. (UPDATED 3/04 BY MBH)
2720	UNKNOWN	12304	D	0100	0	NM45/55--A VESSEL WAS REP. SUNK ABOUT 3 MILES, 293 DEG FROM ELBOW OF CROSS LEDGE LT. THE W POS. LAT.39-12-07N, LONG.75-19-41W. (REVISED, 1/25/84, MJF). NM53/55--THE COE REP. THAT THE VESSEL S 41W COULD NOT BE LOCATED. PRESENTLY CHARTED AS A DANGEROUS SUBM WK PD (CHART 12304, 28TI

						HFP-86; WK NEITHER VERIFIED NOR DISPROVED (UPDATED 6/22/89 LQ) H11022/01--OPR-D307-KR; ONLY 75% THE WRECK WAS FOUND WITHIN THE AREA COVERED. RETAIN AS CHARTED. (UPDATED 3/04 BY MBH)
2721	UNKNOWN	12304	D	0100	12	LNM31/73--3RD CGD; A 16FT OUTBOARD BOAT WAS REP. SUNK IN 16FT DEPTHS IN APPROX. POS. LAT.39-14 SUBM. DANGEROUS WK. PA (CHART 12304, 28TH ED) (REVISED, 1/25/84,MJF) H10255/87--OPR-D219-HFP-86; ' 22/89 LQ) H11022/01--OPR-D307-KR; ITEM FOUND IN LAT. 39/13/59.18N, LONG 075/14/38.92W (NAD83) WITH A I IDENTIFIED AS TWO WRECKS IN CLOSE PROXIMITY. (UPDATED 3/04 BY MBH)
2722	ANNA M. FROME	12304	D	0100	0	HISTORY CL1115/71--COE; LOCATION OF SUNKEN VESSEL ANNA M. FROME IN LEIPSIC R. HAS ITS POS. REV (REVISED, 1/25/84 MJF) LNM36/71--3RD CGD; COE ADIVSES 69FT VESSEL ANNA M. FROME HAS SUNK IN LEI 29.8W ITS FWD. AND AFT MASTS ARE VISIBLE AT ALL STAGES OF TIDE AND THE TOP OF CABIN SUBM. AT I CURRENTS. PRESENTLY CHARTED AS WK (CHART 12304, 28TH ED). (REVISED, 1/25/84 MJF). MAR--8/87, OPI BELOW) STATED THAT THE WRECK WAS PULLED FROM WATER A WEEK OR TWO AFTER HE REPORTED TH (UPDATED MSM 9/87) D81/87--OPR-D219-HFP-87; SAME AS MAR. (UP 6/89 SRB) DESCRIPTION **** MR. DANIEI
2723	THERESA I	12304	D	100	17.26	NM27/67--POS. OF WRECK THERESA I REMAINS DOUBTFUL PENDING INVEST. BY COE. THE ELBOW OF CRO DEPTHS, APPROX. 3900 YDS, 020 DEG. FROM ELBOW OF CROSS LEDGE LT TO MARK THE WRECKS OF THE (REVISED, 1/25/84, MJF) CL1167/67--COE SURVEY (6/3/67); WRECK THERESA I. IN 21FT DEPTHS COVERED B ELBOW OF CROSS LEDGE LT. THE WK BUOY FOR THE THERESA I. IS LOCATED 3900YDS AND 016DEG FRO MJF) NM37/67--PUBLISHES RESULTS OF COE SURVEY ABOVE. GP ABOVE SCALED FROM CHART 12304. PR REP) ON CHART 12304 (28TH ED). (REVISED, 1/25/84, MJF). H10255/87--OPR-D219-HFP-86; SUBM WK LOCATEI BY DIVERS TO BE TWO(2) WRECKS SIDE BY SIDE (SEE AWOIS ITEM 2724) A LEAST DEPTH OF 15FT (15WKS 23/89 LQ) F00453/99--OPR-D392-WH; SIDE SCAN SONAR INVESTIGATION LOCATED CONTACT. LD OF 19 FEET 02.0W. HYDROGRAPHER RECOMMENDS CHARTING A 19 OBSTN AS SURVEYED. EVALUATOR DOES NOT CO INVESTIGATED BY THE FIELD UNIT. WRECK WAS BROUGHT FORWARD TO SOPPLEMENT PRESENT SURVEY SEE ALSO AWOIS NO. 2724 "WALTER GRAZE". (UP 7/18/00, SJV) F00467/00-- OPR-D392-WH; 100% SWMB ACC DURING F00453 OPS. CONTACT RESEMBLING A WRECK WAS FOUND WITH A LD OF 16 FEET IN LAT. 39-12-3 RECOMMENDS DELETING THE CHARTED 15 WKS AND CHARTING 16 WKS AS SURVEYED. (UP 2/25/02, SJV) CLOSE PROXIMITY. ONE IN LAT. 39/12/38.35N, LONG 075/15/14.71W (NAD83) WITH A LEAST DEPTH OF 17.36 F 075/15/13.57W (NAD83) WITH A LEAST DEPTH OF 17.26 FEET MLLW.THE LATTER WRECK, BEING THE SHOAL (UPDATED 3/04 BY MBH)
2724	WALTER GRAZE	12304	D	100	14	NM27/67--F/V WALTER GRAZE REP. SUNK IN 22FT DEPTHS 3700 YDS 021 DEG FROM ELBOW OF CROSS LED FT OF MAST VISIBLE AT HIGH WATER. POS. OF THE WRECK THERESA I (SEE AWOIS NO.02723) REMAINS IN BUOY WR HAS BEEN REESTABLISHED IN 22FT DEPTHS APPROX. 3900 YDS.,020 DEG. FROM ELBOW OF CR BUOY IS APPROX 250. YDS., 002 DEG. FROM THE F/V WALTER GRAZE. (REVISED, 1/25/84, MJF) CL1167/67--C WALTER GRAZE LOCATED 3680 YDS., 020 DEG. FROM ELBOW OF CROSS LEDGE LIGHT. THE WRECK BUOY FROM ELBOW OF CROSS LEDGE LIGHT; NM37/67--PUBLISHES RESULTS OF COE SURVEY ABOVE. THE GP CHARTED AS DANGEROUS SUBM. WK. (CHART 12304, 28TH ED) (REVISED, 1/25/84, MJF) H10255/87--OPR-D2 LONG 75-15-16.42W DESCRIBED BY DIVERS TO BE TWO(2) WRECKS LYING SIDE BY SIDE. WOOD AND META ITEM 2723) A LEAST DEPTH OF 15FT (15WKS) WAS RECOMMENDED FOR CHARTING (UPDATED 6/23/89 LQ) F A CONTACT IN LAT. 39-12-38.6N, LONG. 75-15-02.0W. ECHO SOUNDER LD OF 19 FEET (5.9 METERS). HYDROC DELETING WRECKS. EVALUATOR DOES NOT CONCUR. DOES NOT CONSIDER ITEM ADEQUATELY INVESTIGA SURVEY. NO CHANGE IN CHARTING STATUS RECOMMENDED. SEE ALSO AWOIS NO. 2723, "THERESA I". (UI WAS ACQUIRED OVER TWO CONTACT AREAS IDENTIFIED DURING F00453 OPS. CONTACT RESEMBLING A V 39-12-53.40N, LONG. 75-15-17.04W. AWOIS ITEM NO. 2723 IS LOCATED APPROX. 475 METERS SUOTH OF AW 14 WK AS SURVEYED. (UP 2/25/02, SJV) H11022/01--OPR-D307-KR; WRECK FOUND IN LAT. 39/12/53.33N, LON FEET MLLW. (UPDATED 3/04 BY MBH)
3246	OBSTRUCTION	12304	D	0067	0	AWOIS ITEM 3246 HISTORY LNM36/79--3RG CGD; A PILE STRUCTURE 3FT ABOVE MHW, WITH RED TRIANGUI ESTABLISHED IN APPROX. POS. LAT.39-14-12N, LONG.75-11-06W. LIGHTING EQUIPMENT WAS TO BE INSTALI PRESENTLY CHARTED AS PILE PA(CHART 12304, 28TH ED) (ENTERED, 1/25/84, MJF) H10167/84--OPR-D219-PI RESULTS; INQUIRY OF FORTESCUE HARBOR MASTER WHO STATED PILE WAS DESTROYED BY ICE; NO FU REVISING ITEM TO SUBM PILE PA; ADDITIONAL WORK RECOMMENDED. (UPDATED MSM 8/86) FE290/86-87--(INADEQUATE FOR DISPROVAL. FORTESQUE HARBOR MASTER DESCRIBES MARKER AS A SEASONAL 2-3 II REVISING TO SUBM PILE ED. BD INVESTIGATION REQUIRED. (UP 7/89 SRB)
3249	OBSTRUCTION	12304	D	0067	0	HISTORY CL438/81--COAST PILOT INSP. REP.; SHOALING TO 5FT WAS REP. ALONG A 10FT RIDGE IN APPRO) CHARTED AS A SHL REP 1980 (CHART 12304, 28TH ED). (ENTERED, 1/25/84 MJF) H10255/87--OPR-D219-HFP-8 HAS MIGRATED 2000 METER SOUTHEAST. EVALUATOR RECOMMEND DELETION OF SHL REP, 1980 NOTATIC
3492	OBSTRUCTION	12304	D	0067	0	03492 HISTORY BP109946(TP00124)/1970-80--NOS CHART MAINT. PRINT (CLASS III).(ENTERED,5/8/ 84,MJF). BP UNCHARTED PIERS, CENTERED IN THE VIC. OF LAT.39-14-24N, LONG.75-10-30W,THAT ORIGINALLY APPEARE ON SUBSEQUENT 1982 AERIAL PHOTOS. THE POS. WAS SCALED FROM THE CLASS III SHORELINE MAP. TH EDITION OF CHART 12304. (ENTERED,5/8/84,MJF). H10167/84--OPR-D219-PE-84; SURVEY DATA REJECTED DUI RECOMMENDED. (UPDATED MSM 11/86) SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE. IF RUINS A NECESSARY. A MIN. 400M RADIUS SWEEP, FROM THE LISTED POS. ABOVE, SHOULD BEGIN SEAWARD OF THE FULL EXTENT OF THE RUINS. ASSIGNED:OPR-D219-PE-84. NOT ASSIGNED: PROBABLY COMPLETE
3493	OBSTRUCTION	12304	D	0067	0	03493 HISTORY BP109946(TP00124)/1970-80--NOS CHART MAINT. PRINT(CLASS 111). (ENTERED,5/8/84,MJF). BI UNCHARTED PIERS, CENTERED IN THE VIC. OF LAT. 39-12-51N, LONG. 075-09-43W., WERE NOT LOCATED ON POS. LISTED ABOVE. THE POS. WAS SCALED FROM THE CLASS III SHORELINE MAP. DUE TO THE SCALE OI CHART 12304.(ENTERED,5/8/84,MJF). H10167/84--OPR-D219-PE-84; AREA VISUALLY INSPECTED DURING SHO HYDROGRAPHER AND EVALUATOR RECOMMEND THAT NEITHER PIERS NOR RUINS BE CHARTED SINCE TH CHART SCALE. (UPDATED MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED
3494	OBSTRUCTION	12304	D	0067	0	03494 HISTORY BP122254(TP00125)/1970-83-83--TOPO REVISION PRINT; PRESENTLY CHARTED TOWER ORIG IN LAT.39-12-46N, LONG.75-03-36W. THE TOWER WAS NOT LOCATED ON SUBSEQUENT 1982 NOS AERIAL PH FROM THE CLASS III SHORELINE MAP. THE TOWER WILL BE REVISED TO SUBM. OBSTR. ON THE NEXT EDIT 10167(1985) REPORTED TOWER WAS VISUALLY VERIFIED. NO DETACHED POSITION WAS OBTAINED. (ENTE VERIFY WITH DETACHED POSITION OR DISPROVE BY BOTTOM DRAG INVEST. WITH A MIN. 250M SEARCH R REQUIRED IF FOUND. DISPROVAL MAY BE OBTAINED BY SALVAGE DOCUMENTATION. REASSIGNED OPR-D
3495	OBSTRUCTION	12304	D	0067	0	03495 HISTORY BP122254(TP00125)1970-83-83--TOPO REVISION PRINT; UNCHARTED TOWER WAS ORIGINALL 43N, LONG.75-06-23W. IT DID NOT APPEAR ON SUBSEQUENT 1982 NOS AERIAL PHOTO. AT THE POS. LISTEI SHORELINE MAP. THE TOWER WILL BE APPLIED AS A SUBM. OBSTR. TO THE NEXT EDITION OF CHART 123(MR JOE DOBARRO, N.J. BUREAU OF SHELLFISHERIES, BIVALVE, N.J. TEL NO (609) 785-0730 REPORTS TOWI POSITIONING SIGNAL AND CONSISTED OF A TELEPHONE POLE WITH 1X12 BOARDS AS COVERING MATERIA DESTROYED BY A STORM IN 1983. (UPDATED MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED
						03496 HISTORY BP122254(TP00125)1970-83-83--TOPO REVISION PRINT; UNCHARTED PIER WAS ORIGINALLY I 44N. LONG.75-07-17W. IT DID NOT APPEAR ON SUBSEQUENT 1982 NOS AERIAL PHOTO. AT THE POS. LISTED

3496	OBSTRUCTION	12304	D	0067	0	SHORELINE MAP. DUE TO CHART SCALE, THE PIER WILL NOT BE DEPICTED AS RUINS ON THE NEXT EDITIO OPR-D219-PE-84; ITEM NOT ADDRESSED (UPDATED MSM 11/86) SURVEY REQUIREMENTS NOT ASSIGNED
7461	OBSTRUCTION	12304	D	0067	10.4	H10255/87--OPR-D219-HFP-86; OBSTRUCTION LOCATED IN LAT 39-14-52.29N, LONG 75-15-40.13W A POLE SOL SURROUNDING DEPTHS OF 13 TO 15FT. EVALUATOR RECOMMENDS CHARTING AS 6 OBSTR. WITH A DANGI KR; FOUND TWO OBSTRUCTIONS, THE SHOALEST IS DESCRIBED AS A MOUND. ONE OBSTRUCTION WAS L((NAD83) WITH A LEAST DEPTH OF 11.16 FEET MLLW. THE OTHER OBSTRUCTION (MOUND) WAS LOCATED IN A LEAST DEPTH OF 10.4 FEET MLLW. THE LATTER, WHICH IS THE SHOALER, IS CONSIDERED THE AWOIS P(
7736	FIRST LADY	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. THE ITEM POSITION IS IN A FISH HAVEN (/ OF THE AUTHORIZED MATERIALS FOR THE FISH HAVEN. 195 LORAN C RATES PROVIDED BY MR. RICHARD TEL. NO. 203-622-8020; IDENTIFIED AS FIRST LADY; 9960-X 26897.3, 9960-Y 42943.3; LAT. 39-13-42.82N, LONG. (ENTERED 5/90 MSM)
7737	PAULINE MARIE	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. THE ITEM POSITION IS IN A FISH HAVEN (/ OF THE AUTHORIZED MATERIALS FOR THE FISH HAVEN. 195 LORAN C RATES PROVIDED BY MR. RICHARD TEL. NO. 203-622-8020; IDENTIFIED AS PAULINE MARIE; 9960-X 26895.4, 9960-Y 42944.0; LAT. 39-13-46.44N, LO (ENTERED 5/90 MSM)
7738	MARANA ABACO	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. THE ITEM POSITION IS IN A FISH HAVEN (/ OF THE AUTHORIZED MATERIALS FOR THE FISH HAVEN. 195 LORAN C RATES PROVIDED BY MR. RICHARD TEL. NO. 203-622-8020; IDENTIFIED AS MARANA ABACO; 9960-X 26896.1, 9960-Y 42948.1; LAT. 39-14-09.43N, L((ENTERED 5/90 MSM)
9519	UNKNOWN	12278	E	0098	0	HISTORY LNM26/80-- OPR-E346-AHP; 230-FOOT FUEL BARGE REPORTED AGROUND ì IN APPROX. POSITION
9523	OBSTRUCTION	12281	E	0067	0	HISTORY SOURCE UNKNOWN-- PILE SYMBOL FIRST CHARTED IN 1984. NO LABEL OR ì OTHER IDENTIFYING 8/4/95, SJV)
9524	OBSTRUCTION	12281	E	0067	0	HISTORY LNM32/72-- SUBMERGED PIPE REPORTED IN LAT. 39-15.48N, LONG. ì 76-37-09W. IN 8 FEET. H9566/7 PIPE IN LAT. ì 39-15-28.2N, LONG. 76-37-03.0W. IRON PIPE PROTRUDING 2 FEET ABOVE ì BOTTOM. (ENT 8/23/ LOCATED IN LAT. ì39-15-30.466N, LONG. 76-37-05.021W. LD OF 12 FEET (3.6 METERS). ì EVALUATOR RECOMM CHARTING ì A 12-FOOT OBSTRUCTION AS SURVEYED (SEE AWOIS ITEM #9933). (UP ì 5/23/97, SJV)
9525	UNKNOWN	12281	E	0100	0	HISTORY LNM37/73-- 20-FOOT INBOARD BOAT REPORTED SUNK IN APPROX. LAT. ì 39-15.3N, LONG. 76-35.7W NEGATIVE. EVALUATOR ì RECOMMENDS ADDING "ED" TO CHARTED WRECK SYMBOL. A STEEL CABLE WA: AWOIS NO. 9526). (ENT ì 8/23/95, SHV)
9526	OBSTRUCTION	12281	E	0067	0	HISTORY H9566/75-76; OPR-514-AHP; STEEL CABLE LYING FLAT ON BOTTOM ì LOCATED IN LAT. 39-15-15.2N, ITEM 9525. EVALUATOR RECOMMENDS CHARTING A SUBMERGED ì OBSTRUCTION (NO DEPTH NOTED) AS
9727	OBSTRUCTION	12278	E	0067	0	HISTORY CL923/91-- USPS; SUBMERGED OBSTRUCTION HIT BY 34-FOOT SAIL BOAT ì DRAWING 5 FEET 7 INC POSITION LAT. 39-12-11N, LONG. 76-27-17W. (ENT 4/24/96, SJV)
9728	OBSTRUCTION	12278	E	0067	0	
9729	OBSTRUCTION	12278	E	0085	0	HISTORY LNM18/90-- ADD SYMBOL FOR PILE IN APPROX. LAT. 39-14-58.0N, ì LONG. 76-16-01.0W. (ENT 4/24/96 SONAR NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 10/22/99, SJV)
9731	OBSTRUCTION	12278	E	0067	0	HISTORY CL1245/80-- CAPT, USN (RET), BURKE LUCAS TO DMA; LETTER DATED ì 8/1/80; SAIL BOAT STRUCK LONG GASH 4 FEET BELOW THE WATERLINE. OWNER AND BOAT YARD ì PERSONNEL BELIEVE OBSTRUCT BUOY OR BARGE. POSITION SCALED IN APPROX. LAT. 39-13-05N, ì LONG. 76-14-47W. (ENT 4/24/96, SJV) H10 SEARCH NEGATIVE. ONLY 120 METERS WAS CONDUCTED TO THE EAST DUE TO SHALLOW WATER. EVALU
9741	UNKNOWN	12278	E	0100	0	HISTORY NM44/67-- CHESAPEAKE BAY - HAWK COVE APPROACH - WRECK ì INFORMATION; A 44-FOOT CAE WITH 18 FEET OF WATER OVER IT IN APPROX. POSITION LAT. ì 39-15.4N, LONG. 76-19.5W. (ENT 4/24/96, SJV)
9745	OBSTRUCTION	12278	E	0067	0	HISTORY NM19/67-- CHESAPEAKE BAY - BALTIMORE HARBOR APPROACHES - ì FISHING REEF ESTABLISHE (MD) ADVISES THAT A FISHING REEF HAS BEEN ESTABLISHED ì SOUTH OF MILLER ISLAND IN APPROX. POS CONSTRUCTED WITH AUTO TIRES. (ENT 4/24/96, ì SJV)
9746	OBSTRUCTION	12278	E	0085	0	HISTORY CL889/70-- USCGAUX; STAKE OR PILING APPROX. 10 INCHES IN DIA. ì JUST OUTSIDE CHANNEL. AT LAT. 39-12-52.5N, LONG. 76-14-55W. PILE ALSO VISIBLE ON AERIAL ì PHOTOGRAPHY. (ENT 4/24/96, SJV) H10 SEARCH NEGATIVE. ONLY 120 METERS CONDUCTED TO THE EAST DUE TO SHALLOW WATER. EVALUATOR
9747	UNKNOWN	12278	E	0100	0	HISTORY LNM32/72-- CHESAPEAKE BAY - UPPER PART - WRECK INFORMATION; A ì BARGE HAS SUNK IN 15 06N, LONG. 76-19-48W. MARKED WITH A WHITE LIGHT. (ENT ì 4/24/96, SJV)
9751	OBSTRUCTION	12278	E	0067	0	HISTORY CL62/90-- LETTER, MARYLAND DNR TO NOS, DATED 9/19/89; FISH ì HAVEN CONSTRUCTED OF CLE DEPOSITED IN INACTIVE FOSSIL OYSTER SHELL DREDGE CUTS. THIS ì MATERIAL WILL NOT EXTEND ABOVE OR WILL BE NO LESS THAN 15 FEET BELOW MLW. APPROX. ì CENTER OF FISH HAVEN LIMITS SCALED IN L
9933	OBSTRUCTION	12281	E	0067	12	HISTORY H10632/95-- OPR-E346-AHP; WHILE SEARCHING FOR AWOIS ITEM 9524 ì AN OBSTRUCTION WAS LC ES LD OF 12 FEET (3.6 METERS). EVALUATOR ì RECOMMENDS RETAINING CHARTED SUBM. PIPE AS CHART AS SURVEYED. (ENT 5/23/97, SJV)
10734	UNKNOWN	12304	D	098		
11176	LINDA SNOW II	12318	C	100		
11253	FISH HAVEN	12318	C	067		
11295	OBSTRUCTION	12281	E	067		
11296	OBSTRUCTION	12281	E	085		
11297	OBSTRUCTION	12281	E	085		

11298	OBSTRUCTION	12281	E	085		
11302	OBSTRUCTION	12281	E	085		
11303	OBSTRUCTION	12281	E	085		
11306	OBSTRUCTION	12282	E	085		
11648	SEWER OUTFALL	12318	C	067		
11654	FISH HAVEN	12318	C	067		
11655	FREDERICK M.	12318	C	100		
11990	OBSTRUCTION	12281	E	067	32	DESCRIPTION **** WHILE PERFORMING A POST-HURRICANE ("ISABEL") SURVEY IN BATIMORE HARBOR AT T HYDROGRAPHER LOCATED A DANGEROUS SUBMERGED OBSTRUCTION BY SIDE SCAN SONAR ON 9/25/03. (PRELIMINARY TIDES) IN LAT. 39-15-16N, LON. 76-33-29W. APPEARS TO BE A PIPE PROJECTING ABOUT 3-5 M THE SEAGIRT MARINE TERMINAL (SEAGIRT MARINE TERMINAL WEST CHANNEL). MULTIBEAM IMAGERY SH(CHANNEL ADJACENT TO ANCHORAGE AREA NO. 2. THIS PIPE WAS PRESUMED TO HAVE EXISTED AT THIS L "ISABEL". THE BNM ISSUED BY COMCOGARDACT BALTIMORE MD DATED 9/29/03 @2:54 PM CONTAINED AN I POSITION WAS APPROX. 66 METERS, 338° FROM THE BAY HYDROGRAPHER'S SURVEYED POSITION. CGD5 JEFF MCKEE (USACE, BALT) DATED 10/24/03 TO LT. JON SWALLOW (NOAA) STATED THAT PIPE WAS CUT OI 10/22/03. APPROX. 100 FEET OF 24" DIA. PIPE WAS REMOVED LEAVING AN UNDETERMINED AMOUNT OF PII ANCHORAGE AREA NO. 2; SJV). (ENT 10/27/03, SJV)
12278	OBSTRUCTION	12304	D	067	17.85	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/14/20.80N, LONG. 075/18/08.23W (NAD83 (ENTERED 3/04 BY MBH)
12279	OBSTRUCTION	12304	D	067	22.34	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/11/56.37N, LONG. 075/16/21.70W (NAD83 (ENTERED 3/04 BY MBH)
12280	OBSTRUCTION	12304	D	067	25	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/12/19.76N, LONG. 075/16/39.44W (NAD83 3/04 BY MBH)
12281	OBSTRUCTION	12304	D	067	17.32	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/14.07.63N, LONG. 075/16/34.48W (NAD83 (ENTERED 3/04 BY MBH)
12282	OBSTRUCTION	12304	D	067	14.31	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/13/23.42N, LONG. 075/16/18.58W (NAD83 (ENTERED 3/04 BY MBH)
12288	OBSTRUCTION	12304	D	067	21.2	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/11/49.26N, LONG. 075/18/50.00W (NAD83 3/04 BY MBH)
12293	OBSTRUCTION	12304	D	067	25.99	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/15/29.69N, LONG. 075/20/41.65W (NAD83 OBSTRUCTION IS WITHIN A CHARTED FISH HAVEN WITH AN AUTHORIZED MINIMUM DEPTH OF 15 FEET MLL\
12295	OBSTRUCTION	12304	D	067	20.8	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/14/12.96N, LONG. 075/19/21.65W (NAD83 3/04 BY MBH)
12299	OBSTRUCTION	12304	D	067	27	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/12/13.30N, LONG. 075/17/24.00W (NAD83 3/04 BY MBH)
12300	OBSTRUCTION	12304	D	067	33	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/12/20.00N, LONG. 075/17/24.80W (NAD83 3/04 BY MBH)
12314	OBSTRUCTION	12304	D	067	17	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/12/53.10N, LONG. 075/15/41.30W (NAD83 3/04 BY MBH)
12315	OBSTRUCTION	12304	D	067	39	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/12/22.50N, LONG. 075/17/22.70W (NAD83 3/04 BY MBH)
12316	OBSTRUCTION	12304	D	067	30	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/12/41.80N, LONG. 075/17/37.00W (NAD83 3/04 BY MBH)
12317	OBSTRUCTION	12304	D	067	15	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/12/51.20N, LONG. 075/18/20.60W (NAD83 3/04 BY MBH)
12318	OBSTRUCTION	12304	D	067	15	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/14/12.40N, LONG. 075/17/32.90W (NAD83 3/04 BY MBH)
12319	OBSTRUCTION	12304	D	067	40	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/14/00.80N, LONG. 075/18/01.70W (NAD83 3/04 BY MBH)
12320	OBSTRUCTION	12304	D	067	21	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/14/48.10N, LONG. 075/18/48.50W (NAD83 3/04 BY MBH)
12321	OBSTRUCTION	12304	D	067	19	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/15/33.40N, LONG. 075/15/34.40W (NAD83 3/04 BY MBH)
12322	OBSTRUCTION	12304	D	067	16	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/15/36.10N, LONG. 075/15/37.10W (NAD83 3/04 BY MBH)

HART-MILLER ISLAND EXPANSION SITE,
PATAPSCO RIVER, MARYLAND
AWOIS FILES

Record #	Vessel Name	Chart #	Area	Cartocode	Depth	History
576	ANDERSON	12318	C	0999	0	ITEM NOT CHARTED. ITEM PROVIDED AS AN INFORMATION ITEM. SEE THE PROPRIETARY FIELD FOR HISTORY.
1296	C.F. PRICHARD	12318	C	0999		
1299	ANGELINA BREWER	12318	C	0999	0	ITEM NOT CHARTED. ITEM PROVIDED AS AN INFORMATION ITEM. SEE THE PROPRIETARY FIELD FOR HISTORY.
1300	BUENA VISTA	12318	C	0999	0	ITEM NOT CHARTED. ITEM PROVIDED AS AN INFORMATION ITEM. SEE THE PROPRIETARY FIELD FOR HISTORY.
1301	DASAAWAY	12318	C	0999	0	ITEM NOT CHARTED. ITEM PROVIDED AS AN INFORMATION ITEM. SEE THE PROPRIETARY FIELD FOR HISTORY.
1302	SAN JOSE	12318	C	100	69	SOURCE UNKOWN--FIRST APPEARS ON THE CHART BETWEEN 1939 AND 1942 EDITIONS. THE CHART HISTORIES AND AID PROOFS PROVIDE NO INFORMATION REGAURDING THIS WRECK. F00094/50--FORMERLY FE NO.3, 1951 WD; A C&GS WIRE DRAG SURVEY THAT FOUND THIS WRECK IN LAT 39-14-46.00N, LONG 074-09-06.00W (NAD 27) AND OBTAINED A LEAST DEPTH BY FATHOMETER OVER THE WRECK OF 69 FEET MLW AND ALSO CLEARED THE WRECK BY 69 FEET MLW. THIS INFORMATION CHARTED THROUGH CL416/50 WHICH WAS ADVANCE INFORMATION OF THIS INVESTIGATION. (UPDATED BY MBH, 01/02) 24 NO 333; CARGO, 3358 GT, SUNK 1/17/42 BY MARINE CASUALTY; POSITION ACCURACY WITHIN 1 MILE, REPORTED IN 14 FMS BY ESF 3/23/42; REPORTED STANDING 31 FT HIGH IN 105 FT(18.5 FM) THRU 4 ND HQ 1/10/45 AT LAT. 39-15-00N, LONG. 74-09-00W; WD CLEAR TO 69 FT POSSIBLY IN 1950 (SOURCE UNK.) 27 NO.233; CARGO, 1932 NT, SUNK 1/17/ 42 IN 14 FMS. WRECK IS 31 FT HIGH IN 105 FT OF WATER AT POS.39-15N, LONG.74-09W. **** LORAN-C RATES HAVE BEEN PROVIDED BY MR. RICHARD TARACKA, GREENWICH, CT. POLICE DEPT., TEL. NO. 203-622-8007; 9960-X 26877.5, 9960-Y 42955.4 (ENTERED MSM 6/89)
1304	UNKNOWN	12318	C	0999		
1305	UNKNOWN	12300	C	0999	0	01305 DESCRIPTION 18 UNKNOWN OBST. HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN C, OBSERVED RATES;9960X-26814.4MS,9960Y-42956.7MS(APPROX. 1979) SURVEY REQUIREMENTS NOT DETERMINED
1306	RIO TERCERO	12300	C	0999	0	DESCRIPTION 24 NO.334, CARGO, 4864 GT; SUNK 6/22/42 BY SUBMARINE; POS. ACCURACY 1-3 MILES REPORTED THROUGH EASTERN SEA FRONTIER SURVIVOR REPORTS. 27 NO.234; CARGO, 4866 NT, SUNK 6/22/42 (ESF SR) SURVEY REQUIREMENTS NOT DETERMINED
1307	UNKNOWN	12318	C	100	0	NM9/70--02/28/70, USN; REPORTS A WRECK REPORTED IN LNM 5/70, CG NEW YORK, 01/29/70, IN LAT 39/16.1N, LONG 074/24.3W (NAD 27) WITH 15 FEET OF WATER OVER THE WRECK. 19 FISHING OBSTR. OLD LORAN A 3H4-3824.0, 3H5-3167.0=LORAN C 9960W-15653.2,9960Z-59471.2 (LAT 39/16/03.21N, LONG 074/24/ 20.30W NAD 27) (UPDATED BY PSH, 01/02)
2480	UNKNOWN	12300	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. 178 ANTHONY VRAIM, DIVERS; OBSERVED SUNKEN WWI FREIGHTER; LORAN-C 9960-X-26929.10, 9960-Y-42939.30 (ASF CORRECTED) POS.39-13-28.5N, 74-17-17.25W.
2481	UNKNOWN	12300	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. THIS ITEM IS AT THE SOUTHERN LIMIT OF A CHARTED FISH HAVEN (AWOIS 11,654), BUT IS NOT PART OF THE FISH HAVEN. 178 ANTHONY VRAIM, DIVER; OBSERVED LORAN-C 9960-X-26958.20. 9960-Y-42945.70 (ASG, CORRECTED 1981) POS.39-13-57.25N, 74-21-41.30W; WWI TANKER. 200 EDWARD E. SUAREZ, DIVER, REFERRED TO AS OFFSHORE OIL WK; OBSERVED LORAN- C 9960-X-26955.1 9960-Y-42943.6
2483	AMERICAN	12300	C	100	41	CL557/25--10/14/25-USCG; THE IRON TANK BARGE "AMERICAN" (NO. 107433) WEIGHING 836 TONS, OWNED BY KINGSTON HOLDING CORP., 143 LIBERTY ST., NY, NY IS REPORTED TO HAVE SUNK AT 9:30PM, 10/14/25 IN LAT 39/150N, LONG 074/ 25W (ASSUME THE 1902 DATUM). THE VESSEL WAS CARRYING A CARGO OF MIXING OIL CL165/26--4/15/26; ON 4/7/26 AN EXAMINATION OF THE WRECK OF THE OIL BARGE "AMERICAN", SUNK ABOUT 7 MILES SOUTHWARD OF ABSECON INLET, WAS MADE BY THE USCG CUTTER "SENECA". THE ENTIRE AREA WAS CAREFULLY AND SYSTEMATICALLY SWEPT AT LOW WATER SLACK, UNDER NEARLY IDEAL CONDITIONS AND THE LEAST DEPTH OVER THE WRECK WAS FOUND TO BE 7 FATHOMS. THE APPROX. POSITION WAS FOUND TO BE LAT 39/15/15N, LONG 074/ 23/00W (ASSUME THE 1902 DATUM). H6343WD/38-- FOUND THE SUNKEN BARGE "AMERICAN" IN APPROXIMATELY LAT 39/14/44N, LONG 074/22/51W (NAD27). THE WRECK WAS HUNG AT AN EFFECTIVE DEPTH OF 41 FEET AND WAS CLEARED BY AN EFFECTIVE DEPTH OF 39 FEET. AN ACTUAL SOUNDING OF 49 FEET (UNKNOWN DATUM AND METHOD) WAS OBTAINED ON THIS WRECK. F00093/50 & CL416/50--

						FOUND THE SUNKEN BARGE "AMERICAN" IN LAT 39/14/42N, LONG 074/22/50W (NAD27). THE WRECK WAS HUNG AT AN EFFECTIVE DEPTH OF 43 FEET AND WAS CLEARED BY AN EFFECTIVE DEPTH OF 41 FEET. AN ACTUAL SOUNDING OF 41 1/2 FEET MLW WAS OBTAINED ON THIS WRECK. (ENTERED 1/02 BY PSH) 178 ANTHONY VRAIM, DIVER; OBSERVED LORAN-C 9960-X-26958.20, 9960-Y-42945.70 ì POS. 39-13-57.25N, 74-21-41.30W 195 LORAN C RATES PROVIDED BY MR. RICHARD TARACKA, GREENWICH, ì CT. POLICE DEPARTMENT, 203-622-8020; 9960-X 26896.5, 9960-Y ì 42944.9; IDENTIFIED AS THE AMERICA. (ENTERED MSM 4/90)
2721	UNKNOWN	12304	D	0100	12	LNM31/73--3RD CGD; A 16FT OUTBOARD BOAT WAS REP. SUNK IN 16FT DEPTHS IN APPROX. POS. LAT.39-14-00N, LONG.75-15-00W. PRESENTLY CHARTED AS A SUBM. DANGEROUS WK. PA (CHART 12304, 28TH ED) (REVISED, 1/25/84,MJF) H10255/87--OPR-D219-HFP-86; WK NEITHER VERIFIED NOR DISPROVED (UPDATED 6/22/89 LQ) H11022/01--OPR-D307-KR; ITEM FOUND IN LAT. 39/13/59.18N, LONG 075/14/38.92W (NAD83) WITH A LEAST DEPTH OF 12 FEET MLLW. THE ITEM IS IDENTIFIED AS TWO WRECKS IN CLOSE PROXIMITY. (UPDATED 3/04 BY MBH)
2722	ANNA M. FROME	12304	D	0100	0	HISTORY CL1115/71--COE; LOCATION OF SUNKEN VESSEL ANNA M. FROME IN LEIPSIC R. HAS ITS POS. REVISED TO APPROX. LAT.39-14-48N, LONG.75-29-48W. (REVISED, 1/25/84 MJF) LNM36/71--3RD CGD; COE ADIVSES 69FT VESSEL ANNA M. FROME HAS SUNK IN LEIPSIC R. IN 22FT DEPTHS IN LAT.39-14.8N, LONG.75-29.8W ITS FWD. AND AFT MASTS ARE VISIBLE AT ALL STAGES OF TIDE AND THE TOP OF CABIN SUBM. AT MHW. THE WK IS SUBJECT TO SHIFTING DUE TO TIDAL CURRENTS. PRESENTLY CHARTED AS WK (CHART 12304, 28TH ED). (REVISED, 1/25/84 MJF). MAR--8/87, OPR-D219-HFP-87; OWNER OF ANNA M FROME, (SEE BELOW) STATED THAT THE WRECK WAS PULLED FROM WATER A WEEK OR TWO AFTER HE REPORTED THE SINKING TO THE CG; NO TRACE OF WK LEFT. (UPDATED MSM 9/87) D81/87--OPR-D219-HFP-87; SAME AS MAR. (UP 6/89 SRB) DESCRIPTION **** MR. DANIEL FOX, RD4, DOVER DELAWARE, PHONE 302-734-2864
3246	OBSTRUCTION	12304	D	0067	0	AWOIS ITEM 3246 HISTORY LNM36/79--3RG CGD; A PILE STRUCTURE 3FT ABOVE MHW, WITH RED TRIANGULAR DAYMARK AND REFLECTIVE BORDERS, WAS ESTABLISHED IN APPROX. POS. LAT.39-14-12N, LONG.75-11-06W. LIGHTING EQUIPMENT WAS TO BE INSTALLED AND CALLED FORTESCUE CREEK LT 2. PRESENTLY CHARTED AS PILE PA(CHART 12304, 28TH ED) (ENTERED, 1/25/84, MJF) H10167/84--OPR-D219-PE-84; 1/2 MILE VISUAL INSPECTION WITH NEGATIVE RESULTS; INQUIRY OF FORTESCUE HARBOR MASTER WHO STATED PILE WAS DESTROYED BY ICE; NO FURTHER SEARCH; EVALUATOR RECOMMENDED REVISING ITEM TO SUBM PILE PA; ADDITIONAL WORK RECOMMENDED. (UPDATED MSM 8/86) FE290/86-87--OPR-D219-HFP-86/87; ECHOSOUNDER INVESTIGATION INADEQUATE FOR DISPROVAL. FORTESQUE HARBOR MASTER DESCRIBES MARKER AS A SEASONAL 2-3 INCH DIAMETER POLE. EVALUATOR RECOMMENDS REVISING TO SUBM PILE ED. BD INVESTIGATION REQUIRED. (UP 7/89 SRB)
3249	OBSTRUCTION	12304	D	0067	0	HISTORY CL438/81--COAST PILOT INSP. REP.; SHOALING TO 5FT WAS REP. ALONG A 10FT RIDGE IN APPROX. POS. LAT.39-14-18N, LONG.75-20-18W. PRESENTLY CHARTED AS A SHL REP 1980 (CHART 12304, 28TH ED). (ENTERED, 1/25/84 MJF) H10255/87--OPR-D219-HFP-86; OBSTRUCTION (SHOALING TO 5FT REP 1980) SHOAL HAS MIGRATED 2000 METER SOUTHEAST. EVALUATOR RECOMMEND DELETION OF SHL REP, 1980 NOTATION. (UPDATED 6/23/89 LQ)
3492	OBSTRUCTION	12304	D	0067	0	03492 HISTORY BP109946(TP00124)/1970-80--NOS CHART MAINT. PRINT (CLASS III).(ENTERED,5/8/ 84,MJF). BP12253(TP00124)/1970-80-83--TOPO REVISION PRINT; UNCHARTED PIERS, CENTERED IN THE VIC. OF LAT.39-14-24N, LONG.75-10-30W,THAT ORIGINALLY APPEARED ON 1970 NOS PHOTOGRAPHY,WERE NOT LOCATED ON SUBSEQUENT 1982 AERIAL PHOTOS. THE POS. WAS SCALED FROM THE CLASS III SHORELINE MAP. THESE PIERS WILL BE APPLIED AS RUINS TO THE NEXT EDITION OF CHART 12304. (ENTERED,5/8/84,MJF). H10167/84--OPR-D219-PE-84; SURVEY DATA REJECTED DURING VERIFICATION; ADDITIONAL WORK RECOMMENDED. (UPDATED MSM 11/86) SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE. IF RUINS ARE NOT VISIBLE AT MLW, A BOTTOM DRAG IS NECESSARY. A MIN. 400M RADIUS SWEEP, FROM THE LISTED POS. ABOVE, SHOULD BEGIN SEAWARD OF THE RUINS AND CONTINUE TOWARD THE HWL FOR THE FULL EXTENT OF THE RUINS. ASSIGNED:OPR-D219-PE-84. NOT ASSIGNED: PROBABLY COMPLETE
7461	OBSTRUCTION	12304	D	0067	10.4	H10255/87--OPR-D219-HFP-86; OBSTRUCTION LOCATED IN LAT 39-14-52.29N, LONG 75-15-40.13W A POLE SOUNDING LEAST DEPTH OF 6FT IN CHARTED SURROUNDING DEPTHS OF 13 TO 15FT. EVALUATOR RECOMMENDS CHARTING AS 6 OBSTR. WITH A DANGER CURVE. (ENTERED 6/22/89 LQ) H11022/01--OPR-D307-KR; FOUND TWO OBSTRUCTIONS, THE SHOALEST IS DESCRIBED AS A MOUND. ONE OBSTRUCTION WAS LOCATED IN LAT. 39/14/50.96N, LONG 075/15/39.00W (NAD83) WITH A LEAST DEPTH OF 11.16 FEET MLLW. THE OTHER OBSTRUCTION (MOUND) WAS LOCATED IN LAT. 39/14/52.65N, LONG 075/15/38.75W (NAD83) WITH A LEAST DEPTH OF 10.4 FEET MLLW. THE LATTER, WHICH IS THE SHOALER, IS CONSIDERED THE AWOIS POSITION AND LEAST DEPTH. (UPDATED 3/04 BY MBH)
						ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. THE ITEM POSITION IS IN A FISH HAVEN (AWOIS 11,253), BUT NO VESSELS WERE TO BE A PART OF THE AUTHORIZED MATERIALS FOR THE FISH HAVEN. 195 LORAN C RATES

7736	FIRST LADY	12318	C	0999	0	PROVIDED BY MR. RICHARD TARACKA, GREENWICH, CT. POLICE DEPARTMENT, TEL. NO. 203-622-8020; IDENTIFIED AS FIRST LADY; 9960-X 26897.3, 9960-Y 42943.3; LAT. 39-13-42.82N, LONG. 74-12-29.75W (COMPUTED FROM LORAN RATES). (ENTERED 5/90 MSM)
7737	PAULINE MARIE	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. THE ITEM POSITION IS IN A FISH HAVEN (AWOIS 11,253), BUT NO VESSELS WERE TO BE A PART OF THE AUTHORIZED MATERIALS FOR THE FISH HAVEN. 195 LORAN C RATES PROVIDED BY MR. RICHARD TARACKA, GREENWICH, CT. POLICE DEPARTMENT, TEL. NO. 203-622-8020; IDENTIFIED AS PAULINE MARIE; 9960-X 26895.4, 9960-Y 42944.0; LAT. 39-13-46.44N, LONG. 74-12-10.59W (COMPUTED FROM LORAN RATES). (ENTERED 5/90 MSM)
7738	MARANA ABACO	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. THE ITEM POSITION IS IN A FISH HAVEN (AWOIS 11,253), BUT NO VESSELS WERE TO BE A PART OF THE AUTHORIZED MATERIALS FOR THE FISH HAVEN. 195 LORAN C RATES PROVIDED BY MR. RICHARD TARACKA, GREENWICH, CT. POLICE DEPARTMENT, TEL. NO. 203-622-8020; IDENTIFIED AS MARANA ABACO; 9960-X 26896.1, 9960-Y 42948.1; LAT. 39-14-09.43N, LONG. 74-12-09.91W (COMPUTED FROM LORAN RATES). (ENTERED 5/90 MSM)
9523	OBSTRUCTION	12281	E	0067	0	HISTORY SOURCE UNKNOWN-- PILE SYMBOL FIRST CHARTED IN 1984. NO LABEL OR ì OTHER IDENTIFYING LEGEND. SCALED FROM CHART 12281 (1:15,000). ì (ENT 8/4/95, SJV)
9524	OBSTRUCTION	12281	E	0067	0	HISTORY LNM32/72-- SUBMERGED PIPE REPORTED IN LAT. 39-15.48N, LONG. ì 76-37-09W. IN 8 FEET. H9566/75-76-- OPR-514-AHP; DRAG LOCATED SUBMERGED PIPE IN LAT. ì 39-15-28.2N, LONG. 76-37-03.0W. IRON PIPE PROTRUDING 2 FEET ABOVE ì BOTTOM. (ENT 8/23/95, SJV) H10632/95-- OPR-E346-AHP; OBSTRUCTION LOCATED IN LAT. ì39-15-30.466N, LONG. 76-37-05.021W. LD OF 12 FEET (3.6 METERS). ì EVALUATOR RECOMMENDS RETAINING SUBM. PIPE AS CHARTED AND CHARTING ì A 12-FOOT OBSTRUCTION AS SURVEYED (SEE AWOIS ITEM #9933). (UP ì 5/23/97, SJV)
9525	UNKNOWN	12281	E	0100	0	HISTORY LNM37/73-- 20-FOOT INBOARD BOAT REPORTED SUNK IN APPROX. LAT. ì 39-15.3N, LONG. 76-35.7W. H9566/75-76-- OPR-514-AHP; BOTTOM DRAG NEGATIVE. EVALUATOR ì RECOMMENDS ADDING "ED" TO CHARTED WRECK SYMBOL. A STEEL CABLE WAS ì LOCATED WHILE SEARCHING FOR THIS ITEM (SEE AWOIS NO. 9526). (ENT ì 8/23/95, SHV)
9526	OBSTRUCTION	12281	E	0067	0	HISTORY H9566/75-76; OPR-514-AHP; STEEL CABLE LYING FLAT ON BOTTOM ì LOCATED IN LAT. 39-15-15.2N, LONG. 76-35-39.8W WHILE SEARCHING ì FOR AWOIS ITEM 9525. EVALUATOR RECOMMENDS CHARTING A SUBMERGED ì OBSTRUCTION (NO DEPTH NOTED) AS SURVEYED. (ENT 8/23/95, SJV)
9728	OBSTRUCTION	12278	E	0067	0	
9729	OBSTRUCTION	12278	E	0085	0	HISTORY LNM18/90-- ADD SYMBOL FOR PILE IN APPROX. LAT. 39-14-58.0N, ì LONG. 76-16-01.0W. (ENT 4/24/96, SJV) H10703/96-98--OPR-E346-AHP; 200% SIDE SCAN SONAR NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 10/22/99, SJV)
9741	UNKNOWN	12278	E	0100	0	HISTORY NM44/67-- CHESAPEAKE BAY - HAWK COVE APPROACH - WRECK ì INFORMATION; A 44-FOOT CABIN CRUISER HAS BEEN REPORTED SUNK IN 22 ì FEET WITH 18 FEET OF WATER OVER IT IN APPROX. POSITION LAT. ì 39-15.4N, LONG. 76-19.5W. (ENT 4/24/96, SJV)
9744	OBSTRUCTION	12278	E	0067	0	HISTORY CL1730/78-- USPS; SUBMERGED HAZARD TO NAVIGATION IN 18 FEET OF ì WATER APPROX. 2 FEET BELOW THE SURFACE. APPROX. LAT. 39-16-00N, ì LONG. 76-13-30W. (ENT 4/24/96, SJV) H10703/96-98--OPR-E346-AHP; 200% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 10/22/99, SJV)
9745	OBSTRUCTION	12278	E	0067	0	HISTORY NM19/67-- CHESAPEAKE BAY - BALTIMORE HARBOR APPROACHES - ì FISHING REEF ESTABLISHED; THE DEPARTMENT OF CHESAPEAKE BAY ì AFFAIRS (MD) ADVISES THAT A FISHING REEF HAS BEEN ESTABLISHED ì SOUTH OF MILLER ISLAND IN APPROX. POSITION LAT. 39-14.6N, LONG. ì 76-21.3W. THE REEF IS CONSTRUCTED WITH AUTO TIRES. (ENT 4/24/96, ì SJV)
9933	OBSTRUCTION	12281	E	0067	12	HISTORY H10632/95-- OPR-E346-AHP; WHILE SEARCHING FOR AWOIS ITEM 9524 ì AN OBSTRUCTION WAS LOCATED IN LAT. 39-15-30.466N, LONG. ì 76-37-05.021W. ES LD OF 12 FEET (3.6 METERS). EVALUATOR ì RECOMMENDS RETAINING CHARTED SUBM. PIPE AS CHARTED (AWOIS 9524) ì AND CHARTING A 12-FOOT OBSTN AS SURVEYED. (ENT 5/23/97, SJV)
9934	OBSTRUCTION	12281	E	0067	17	HISTORY H10632/97-- OPR-E346-AHP; OBSTRUCTION LOCATED WHILE SEARCHING ì FOR AWOIS #9527. A SUBMERGED PILE WITH A FATHOMETER DEPTH OF 17 ì FEET (5.2 METERS) WAS LOCATED IN LAT. 39-16-03.517N, LONG. ì 76-34-45.137W. EVALUATOR RECOMMENDS CHARTING A 17-FOOT OBSTN AS ì SURVEYED. (ENT 5/23/97, SJV)

10731	OBSTRUCTION	12304	D	067		
11176	LINDA SNOW II	12318	C	100		
11210	FISH HAVEN	12318	C	067		
11253	FISH HAVEN	12318	C	067		
11296	OBSTRUCTION	12281	E	085		
11298	OBSTRUCTION	12281	E	085		
11306	OBSTRUCTION	12282	E	085		
11654	FISH HAVEN	12318	C	067		
11655	FREDERICK M.	12318	C	100		
11990	OBSTRUCTION	12281	E	067	32	DESCRIPTION **** WHILE PERFORMING A POST-HURRICANE ("ISABEL") SURVEY IN BATIMORE HARBOR AT THE REQUEST OF USCG, THE NOAA S/V BAY HYDROGRAPHER LOCATED A DANGEROUS SUBMERGED OBSTRUCTION BY SIDE SCAN SONAR ON 9/25/03. MULTIBEAM OBTAINED A LD OF 32 FEET (PRELIMINARY TIDES) IN LAT. 39-15-16N, LON. 76-33-29W. APPEARS TO BE A PIPE PROJECTING ABOUT 3-5 METERS INTO THE MAINTAINED CHANNEL GOING INTO THE SEAGIRT MARINE TERMINAL (SEAGIRT MARINE TERMINAL WEST CHANNEL). MULTIBEAM IMAGERY SHOWS THE PIPE EXTENDING FROM THE SIDE OF THE CHANNEL ADJACENT TO ANCHORAGE AREA NO. 2. THIS PIPE WAS PRESUMED TO HAVE EXISTED AT THIS LOCATION PRIOR TO THE PASSAGE OF HURRICANE "ISABEL". THE BNM ISSUED BY COMCOGARDACT BALTIMORE MD DATED 9/29/03 @2:54 PM CONTAINED AN INCORRECT POSITION OF 39-15.3N, 76-33.5. THIS POSITION WAS APPROX. 66 METERS, 338° FROM THE BAY HYDROGRAPHER'S SURVEYED POSITION. CGD5 TO PUBLISH CORRECTION IN LNM43/03. EMAIL FROM JEFF MCKEE (USACE, BALT) DATED 10/24/03 TO LT. JON SWALLOW (NOAA) STATED THAT PIPE WAS CUT OFF AT MUD LINE AND REMOVED THE AFTERNOON OF 10/22/03. APPROX. 100 FEET OF 24" DIA. PIPE WAS REMOVED LEAVING AN UNDETERMINED AMOUNT OF PIPE BELOW THE MUD LINE (NOTE:PRESUMABLY IN ANCHORAGE AREA NO. 2; SJV). (ENT 10/27/03, SJV)
12274	UNKNOWN	12304	D	100	24	H11022/01--OPR-D307-KR; A WRECK WAS FOUND IN LAT. 39/15/54.22N, LONG. 075/ 20/50.58W (NAD83) WITH A LEAST DEPTH OF 24 FEET MLLW. THE WRECK WAS NOTED AS EXTENDING 10.7 FEET OFF THE BOTTOM. (ENTERED 3/04 BY MBH)
12278	OBSTRUCTION	12304	D	067	17.85	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/14/20.80N, LONG. 075/18/08.23W (NAD83) WITH A LEAST DEPTH OF 17.85 FEET MLLW. (ENTERED 3/04 BY MBH)
12281	OBSTRUCTION	12304	D	067	17.32	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/14.07.63N, LONG. 075/16/34.48W (NAD83) WITH A LEAST DEPTH OF 17.32 FEET MLLW. (ENTERED 3/04 BY MBH)
12284	OBSTRUCTION	12304	D	067	10.3	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/15/59.41N, LONG. 075/17/18.42W (NAD83) WITH A LEAST DEPTH OF 10.3 FEET MLLW. (ENTERED 3/04 BY MBH)
12293	OBSTRUCTION	12304	D	067	25.99	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/15/29.69N, LONG. 075/20/41.65W (NAD83) WITH A LEAST DEPTH OF 25.99 FEET MLLW. THIS OBSTRUCTION IS WITHIN A CHARTED FISH HAVEN WITH AN AUTHORIZED MINIMUM DEPTH OF 15 FEET MLLW. (ENTERED 3/04 BY MBH)
12294	OBSTRUCTION	12304	D	067	29.53	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/15/56.04N, LONG. 075/21/09.70W (NAD83) WITH A LEAST DEPTH OF 29.53 FEET MLLW. THIS OBSTRUCTION IS WITHIN A CHARTED FISH HAVEN WITH AN AUTHORIZED MINIMUM DEPTH OF 15 FEET MLLW. (ENTERED 3/04 BY MBH)
12295	OBSTRUCTION	12304	D	067	20.8	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/14/12.96N, LONG. 075/19/21.65W (NAD83) WITH A LEAST DEPTH OF 20.8 FEET MLLW. (ENTERED 3/04 BY MBH)
12318	OBSTRUCTION	12304	D	067	15	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/14/12.40N, LONG. 075/17/32.90W (NAD83) WITH A LEAST DEPTH OF 15 FEET MLLW. (ENTERED 3/04 BY MBH)
12319	OBSTRUCTION	12304	D	067	40	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/14/00.80N, LONG. 075/18/01.70W (NAD83) WITH A LEAST DEPTH OF 40 FEET MLLW. (ENTERED 3/04 BY MBH)
						H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/14/48.10N,

12320	OBSTRUCTION	12304	D	067	21	LONG. 075/18/48.50W (NAD83) WITH A LEAST DEPTH OF 21 FEET MLLW. (ENTERED 3/04 BY MBH)
12321	OBSTRUCTION	12304	D	067	19	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/15/33.40N, LONG. 075/15/34.40W (NAD83) WITH A LEAST DEPTH OF 19 FEET MLLW. (ENTERED 3/04 BY MBH)
12322	OBSTRUCTION	12304	D	067	16	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/15/36.10N, LONG. 075/15/37.10W (NAD83) WITH A LEAST DEPTH OF 16 FEET MLLW. (ENTERED 3/04 BY MBH)
12324	OBSTRUCTION	12304	D	067	45	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/16/01.40N, LONG. 075/20/38.20W (NAD83) WITH A LEAST DEPTH OF 45 FEET MLLW. (ENTERED 3/04 BY MBH)
12338	UNKNOWN	12304	D	100	28	H11022/01--OPR-D307-KR; A WRECK WAS FOUND IN LAT. 39/15/57.50N, LONG. 075/21/23.30W (NAD83) WITH A LEAST DEPTH OF 28 FEET MLLW. THIS OBSTRUCTION IS WITHIN A CHARTED FISH HAVEN WITH AN AUTHORIZED MINIMUM DEPTH OF 15 FEET MLLW. (ENTERED 3/04 BY MBH)

LARGE ISLAND RESTORATION, LOWER BAY, VIRGINIA
AWOIS FILES

Record #	Vessel Name	Chart #	Area	Cartocode	Depth	History
433	UNKNOWN	12264	E	0100	33	00433 HISTORY FE260/84--OPR-E609-RU/HE-85; STEEL BARGE LIKE STRUCTURE LOCATED IN LAT 37-19-47.21N LONG 76-08-33.06W; 48FT LOA WITH 11FT BEAM; DECK OF WESTERN END IS FORCED UPWARD; LEAST DEPTH AT THIS POINT WAS 33FT (USING PNEUMOFATHOMETER); HYDROGRAPHER AND EVALUATOR RECOMMEND CHARTING A SUBM DANG WK; LORAN C RATES OVER THIS WRECK WERE 9960-W 15972, X27256.2, Y 41538.7, Z 58585.4. (ENTERED MSM 5/86) SURVEY REQUIREMENTS FULL--NOT ASSIGNED
966	OBSTRUCTION	12200	D	****	0	00966 DESCRIPTION 18 AIRPLANE; IN 20 FATHOMS, HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN C,OBSERVED RATES:9960X-26951.30MS,9960Y-41629.7MS(APPROX. 1979) SURVEY REQUIREMENTS INFORMATION ASSIGNED: OPR-D103, ITEM 966
967	UNKNOWN	12200	D	0100	0	00967 HISTORY NM18/48--A MEDIUM SIZE LANDING CRAFT WITH SMALLER LANDING CRAFT NESTED IN CARGO WELL, HAS BEEN REPORTED 5.5 MILES SOUTH OF WOLF TRAP LIGHT AT POSITION LAT.37-23-24N, LONG.76-11-24W. H7960/52 NOT FOUND W/100-M DEVELOPMENT; RECOMMENDED WIRE DRAG. SURVEY REQUIREMENTS FULL; POSSIBLE WD, EVALUATE SOURCE FOR VESSEL TYPE.
968	PACIFIC	12221	D	0102	0	00968 HISTORY H9980/81--OPR-D103-MI/PE-81, ITEM 59 NON-DANGEROUS WK IN LAT 37-18-52N, LONG 75-36-30W NOT DISPROVED WITH 100M LINE SPACING (ENTERED 12/84 RWD). DESCRIPTION 24 NO. 1002 BARGE SUNK 1925 POSITION ACCURACY 3-5 MILES REPORTED THROUGH H.O. FILES, DATED 9/2/25 SURVEY REQUIREMENTS NOT ASSIGNED
969	UNKNOWN	12221	D	0102	0	00969 HISTORY H9980/81--OPR-D103-MI/PE-81, ITEM 58; NON-DANGEROUS WK IN LAT 37-19-40N, LONG 75-40-54W NOT DISPROVED WITH 100M LINE SPACING. (ENTERED 12/84 RWD). DESCRIPTION 24 NO. 1327; SCHOONER; SUNK 1916; POSITION ACCURACY WITHIN 1 MILE SURVEY REQUIREMENTS NOT ASSIGNED
971	YC 843	12200	E	0999	0	00971 HISTORY NM DATED 6/20/55 DESCRIPTION 24 NO.2322; POSITION ACCURACY WITHIN 1 MILE; LOCATED 2/21/54 (SOURCE UNK.), SUBSEQUENTLY REPORTED REMOVED SURVEY REQUIREMENTS NOT DETERMINED
3181	UNKNOWN	12224	E	0100	0	HISTORY NM19/74-5/11/74--A DANGEROUS SUBM. WK. WITH A VISIBLE MAST WAS REP. SUNK IN LAT.37-18-12.0N, LONG.76-07-54.0W. IT IS PRESENTLY CHARTED AS A DANGEROUS SUBM. WK. WITH A MAST (CHART 12221, 53RD ED). (ENTERED, 11/22/83, MJF) FE222(20-1-78)--OPR-E609-RU/HE-78; ITEM 3; A HANG WAS ENCOUNTERED AT LAT.37-18-25.2N, LONG.76-07-47.4W. WITH A MAST. HOWEVER, NO DIVER LD OR CLEARED DEPTH WAS OBTAINED, AS WELL AS NO POSITIVE RESULTS FROM SIDE SCAN SONAR INVEST. THE EFFECTIVE DEPTH WAS APPROX. 34.5FT (ENTERED, 11/22/83, MJF) FE260/84--OPR-E609-RU/HE-84; NO INDICATION OF DANG SUBM WK W/ MASTS OBSERVED; 400 % SSS FOR 1/2 MILE SEARCH RADIUS; EVAL AND HYDROGRAPHER RECOMMEND DELETION FROM CHART. (ENT. MSM 5/85) FE222WD/78--OPR-E609-RU/HE-78; ITEM 3 (MODIFIED EVALUATION REPORT); NOT LOCATED. MAST HUNG (AWOIS NO. 3182) IN LAT 37-18-22.6N, LONG 76-07-46.8W. THIS ITEM (3181) ADEQUATELY DISCUSSED IN EVALUATION REPORT FOR FE260/84 (ABOVE). DESCRIPTION **** TELECON WITH N/MOA 2321 (M. HICKSON, 827-6268) ON 11/8/83 AND 4/16/84 REVEALED THAT ITEM 3, COVERING AWOIS ITEMS 03181,03182, AND 03183, WAS FOUND TO BE INCOMPLETE AT THE PRE-VERIFICATION PROCESSING STAGE. IT WAS RECOMMENDED THAT IT BE REASSIGNED FOR FULL INVESTIGATION. (ENTERED, 11/22/83, MJF) SURVEY REQUIREMENTS
3182	UNKNOWN	12224	E	0100	0	HISTORY CL1960/78--OPR-E609-RU/HE-78; WHILE SEARCHING FOR ITEM 3 A HANG WAS ENCOUNTERED ON DRAG STRIP X-1 WITH WHAT THE CO BELIEVED TO BE A WRECK IN LAT.37-18-25.2N, LONG.76-07-47.4W. THERE WAS NO DIVER LD OR CLEARED DEPTH. CHARTED AS A DANG. SUBM. WK. (CHART 12221, 53RD ED). (ENTERED, 11/22/83, MJF) FE222(20-1-78)--OPR-E609-RU/HE-78; ITEM 3; FURTHER INFO. FROM THIS UNPROCESSED SURVEY IS UNDETERMINED SINCE FIRST REP. IN MONTHLY ACTIVITIES REP. ABOVE (CL1960/78). (ENTERED, 11/22/83, MJF) FE260/84--OPR-E609-RU/HE-84; NO INDICATION OF SUBM DANG WK OBSERVED; 250 M SEARCH AREA W/ 400% SSS; HYDROGRAPHER AND EVAL. RECOMMEND DELETION FROM THE CHARTS. (ENTERED MSM 5/85) FE222WD/78--OPR-E609-RU/HE-78; (MODIFIED EVALUATION REPORT); HUNG AT 34 FEET, NOT CLEARED; IN LAT 37-18-22.6N, LONG 76-07-46.8W. NOT DIVED ON. BROKEN OFF METAL MAST APPROX. 6 INCHES IN DIA. PICKED UP ON GROUND WIRE BUT SLIPPED OFF BEFORE IT COULD BE SECURED. EVALUATOR STATES THIS WAS A "SOLID" HANG FOR OVER 35 MINUTES. ALSO STATES THAT THE CONTACT WOULD BY SONICALLY TRANSPARENT IF IT WAS A FIBERGLASS HULL COMPLETELY FILLED WITH WATER. RECOMMENDS ADDITIONAL WIRE DRAG FOR DISPROVAL. (UPDATED

						11/14/88 SJV) SURVEY REQUIREMENTS NOT ASSIGNED
3183	OBSTRUCTION	12264	E	0100	39	HISTORY CL1960/78--OPR-E609-RU/HE-78; MAR; WHILE SEARCHING FOR ITEM 3 A HANG WAS REP. ON DRAG STRIP W-1 IN LAT.37-19-19.8N, LONG.76-08-13.2W. NO DIVER LD OR CLEARED DEPTH WAS OBTAINED. IT IS PRESENTLY CHARTED AS A DANGEROUS SUBM. OBSTR. REP. 1978 (CHART 12221, 53RD ED). (ENTERED, 11/22/83, MJF) FE222WD/78--OPR-E609-RU/HE-78; MODIFIED EVALUATION REPORT; OBSTRUCTION HUNG AT 32 FEET (ESTIMATED) IN LAT 37-19-19.6N, LONG 76-08-09.8W. NOT DIVED ON DUE TO DIVING RESTRICTIONS. SEE FE260/84 FOR CHARTING RECOMMENDATIONS. (UPDATED 11/14/88 SJV) FE260/84--OPR-E609-RU/HE-84; WOOD AND STEEL WK IN THREE SECTIONS LOCATED IN LAT 37-19-20.4N LONG 76-08-12.75W; 39FT LEAST DEPTH BY PNEUMATIC DEPTH FINDER 250M RADIUS 100% SSS SEARCH; THE LORAN C RATES OVER WK WERE 9960-X 27253.9, Y 41534, Z 58585; SEE BELOW FOR CHARTING RECOMMENDATION. (ENT. MSM 5/85) DESCRIPTION **** TELECON WITH N/MOA2321 (MAURICE HICKSON, 827-6268) ON 4/16/84: THE POSITION OF THE OBSTR IN CL1960/78 WAS AN UNVERIFIED FIELD ESTIMATE; THE CORRECT POSITION IS LAT 39-19-19.5N LONG 76-08-09.5W. (ENT. 4/84 MJF) **** TELECON WITH N/MOA2321 (MAURICE HICKSON, 827-6268) ON 5/9/85: THE EVALUATOR'S CHARTING RECOMMENDATION FOR THIS ITEM IN FE260/84 IS INCORRECT. THE HANG IS THE SAME ITEM FOUND IN FE222 AND CL1960/78. HE RECOMMENDED THE OBSTR BE DELETED AND A SUBM DANG WK BE CHARTED IN LAT 37-19-20.4N LONG 76-08-12.75W; FE260/84 RETURNED TO AMC FOR CORRECTION. (ENTERED MSM 5/85) SURVEY REQUIREMENTS FULL--NOT ASSIGNED
3435	OBSTRUCTION	12220	E	0067	0	03435 HISTORY FE222(20-1-78)--OPR-E609-RU/HE-78; A HANG ON A SMALL ROCK THAT EXTENDS 1.5 FT OFF THE BOTTOM WAS OBTAINED ON DRAG STRIP Z-1 IN LAT.37-18-33.0N, LONG.76-07- 43.0W. NO DIVER LD OR CLEARANCE WAS OBTAINED. IT IS PRESENTLY AN UNCHARTED FEATURE. (ENTERED, 4/16/84, MJF) DESCRIPTION **** TELECON WITH N/MOA 2321 (M.HICKSON, 827-6268) ON 4/16/84 REVEALED THAT THIS ITEM WAS NOT REP. AS A SIGNIFICANT DANGER BUT WILL BE RECOMMENDED FOR CHARTING. (ENTERED, 4/16/84, MJF) SURVEY REQUIREMENTS INFORMATION
3436	OBSTRUCTION	12220	E	0067	0	03436 HISTORY FE222(20-1-78)--OPR-E609-RU/HE-78; A HANG ON A PIECE OF METAL EXTENDS 2.5 FT OFF THE BOTTOM WAS OBTAINED ON STRIP AE-2 IN LAT.37-18-51.0N, LONG.76-07-58.0 NO DIVER LD OR CLEARANCE WAS OBTAINED. IT IS PRESENTLY AN UNCHARTED FEATURE. (ENTERED, 4/16/84, MJF) DESCRIPTION **** TELECON WITH N/MOA 2321 (M. HICKSON, 827-6268) ON 4/16/84 REVEALED THAT THIS ITEM WAS NOT REP. AS A SIGNIFICANT DANGER BUT WILL BE RECOMMENDED FOR CHARTING. (ENTERED, 4/16/84, MJF). SURVEY REQUIREMENTS INFORMATION
6828	ALCEE	12224	D	0098	0	HISTORY LNM38/70--5TH CGD; SLOOP REPORTED AGROUND IN 2-3 FT. OF WATER ì AT LAT 37-18-30N, LONG 75-45-30W. H9969/81--OPR-D103-MI-81; PSR ITEM 60; VISIBLE WRECK CONFIRMED ì IN LAT 37-18-07.55N, LONG 75-46-12.09W; EXPOSED AT MOST STAGES OF ì TIDE; TOTALLY SUBMERGED AT VERY HIGH TIDE; EVALUATOR RECOMMENDS ì CHARTING ACCORDING TO SURVEY. (ENTERED MSM 8/87)
50124	INDEPENDENCE	18680	L	0102	0	50124 DESCRIPTION 24 NO.8584; AIRCRAFT CARRIER; SUNK 1/26/51; POSITION ACCURACY WITHIN 1 MILE; REPORTED DEMOLISHED (SOURCE UNK); REPORTED THRU H.O. FILES DATED 1957 SURVEY REQUIREMENTS INFORMATION

LARGE/SMALL ISLAND RESTORATION, MID BAY, MARYLAND
AWOIS FILES

Record #	Vessel Name	Chart #	Area	Cartocode	Depth	History
735	UNKNOWN	12200	D	0100	0	00735 HISTORY LNM37/80--PLEASURE CRAFT, 42 FT L, SUNK W/APPROX 2 FT OF BOW EXPOSED SURVEY OR DISPROVE. DISPROVE BY SIDE SCAN (400%), OR WIRE DRAG FOR 500 METER MINIMUM RADIUS, OR
763	BETH DRYDOCK NO. 5	12214	C	0100	0	00763 HISTORY CL537/85--VESSEL SUNK IN APPROX. 125 FT. WITH A CLEARANCE OF 71 FT. FROM TOP C 38-30.39N, LONG. 74-31.49W. SUNK ON 5/23/85 BY BETHLEHEM STEEL CORP. DESCRIBED AS ONE SECTI(133 FT. X 96 FT. X 54 FT. SUNK APPROX. 27 MILES DUE EAST OF INDIAN RIVER INLET, DE. LORAN-C COOR 42464.4-Y. SUNK IN COMPLIANCE WITH MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT, 40 CF WILLIAM J. HOFFMAN, CHIEF, WETLANDS AND MARINE POLICY SECTION, EPA REGION III (PHILADELPHI/ 00764, 00765. SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE THROUGH 400% SIDE SCAN SONAF INVESTIGATION, 1 MILE MIN. RADIUS. NOT ASSIGNED.
764	BETH DRYDOCK NO. 5	12214	C	0100	0	00764 HISTORY CL537/85--VESSEL SUNK IN APPROX. 125 FT. WITH A CLEARANCE OF 71 FT. FROM TOP C 38-30.91N, LONG. 74-31.58W. SUNK ON 5/20/85 BY BETHLEHEM STEEL CORP. DESCRIBED AS ONE SECTI(133 FT. X 96 FT. X 54 FT. SUNK APPROX. 27 MILES DUE EAST OF INDIAN RIVER INLET, DE. LORAN-C COOR 42470.9-Y. SUNK IN COMPLIANCE WITH MARINE PROTECTION, RESEARCH, AND SANCTUARIES ACT, 40 C WILLIAM J. HOFFMAN CHIEF, WETLANDS AND MARINE POLICY SECTION, EPA REGION III (PHILADELPHIA 00763, 00765. SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE THROUGH 400% SIDE SCAN SONAF INVESTIGATION, 1 MILE MIN. RADIUS. NOT ASSIGNED.
765	BETH DRYDOCK NO. 5	12214	C	0100	0	00765 HISTORY CL537/85--VESSEL SUNK IN 117 FT. WITH A CLEARANCE RECORDED FROM TOP OF VESS LAT. 38-31.05N, LONG. 74-31.60W. SUNK ON 4/28/85 BY BETHLEHEM STEEL CORP. DESCRIBED AS ONE SI DRYDOCK, 133 FT. X 96 FT. X 54FT. SUNK APPROX. 26.0 MILES DUE EAST OF INDIAN RIVER INLET, DE. SU PROTECTION, RESEARCH AND SANCTUARIES ACT, 40 CFR PART 229.3. CONTACT IS WILLIAM J. HOFFMAI POLICY SECTION, EPA REGION III (PHILADELPHIA, PA). SEE AWOIS NUMBERS 00763, 00764. SURVEY RE(DISPROVE THROUGH 400% SIDE SCAN SONAR SEARCH OR WIRE SWEEP INVESTIGATION, 1 MILE MIN. R
1030	UNKNOWN	12200	D	0999	0	01030 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52502.3,9930Z-70478.9=9960W-15724.7,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1031	SAITIA	12200	D	0999	0	DESCRIPTION 24 NO.439; CARGO, 2873 GT; SUNK 11/9/18 BY ENEMY MINE, LOCATED 1950 (SOURCE UNK) MILE; WD CLEARED TO 62 FT.; (SOURCE UNK) REPORTED IN ORIGINAL LISTED POSITION LAT.38-14-1800N FT. HIGH IN 84 FT. THRU 4TH NAVAL DIST. HQ SURVEY 1/10/45; PREVIOUSLY REPORTED AT 38-20N, 74-40' REQUIREMENTS NOT DETERMINED
1032	SAITIA (1 PART)	12200	D	0999	0	DESCRIPTION 24 NO.619; CARGO, 2873 GT; SUNK 11/9/18 BY SUBMARINE; LOCATED 1950 (SOURCE UNK); MILE; WD CLEARED TO 62 FT.(SOURCE UNK) REPORTED THROUGH H.O. CHART RECORDS, DATED 3/10/4 HIGH IN 84 FT OF WATER. PREVIOUSLY REPORTED AT LAT.38-20-00N, LONG.74-40-00W. APPROX. POS.LA SURVEY REQUIREMENTS NOT DETERMINED
1033	UNKNOWN	12200	D	0999	0	01033 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52499.4,9930Z-70478.8=9960W-15723.5,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1034	S.G. WILBUR	12200	D	0999	0	DESCRIPTION 24 NO.438; POS. ACCURACY WITHIN 1 MILE; 604 GT; LEAST DEPTH 60 FT.(SOURCE UNK.); R POSITION LAT. 38-14-1800N LONG. 074-44-4200W IN 100 FT. WITH 75 FT. OVER WRECK THROUGH EASTER STANDS 13 FT. HIGH IN 97 FT. REPORTED THROUGH FOURTH NAVAL DISTRICT HEADQUARTERS SURVEY IN 100 FT OF WATER, APPROX. 75 FT OF WATER OVER WRECK WHICH STANDS 13 FT HIGH IN 97 FT OF V POSITION LAT.38-15-00N, LONG.74-50-00W. SURVEY REQUIREMENTS NOT DETERMINED
1035	ESTHER ANN	12200	D	0999	0	01035 HISTORY NM DATED 2/14/21 DESCRIPTION 24 NO.3930; POSITION ACCURACY WITHIN 1 MILE; REPO BE SAME AS ESTER ANN SURVEY REQUIREMENTS NOT DETERMINED
1036	UNKNOWN	12200	D	0999	0	01036 DESCRIPTION 19 FISHING OBSTR. OLD LORAN A 3H4-3106.0, 3H5-3102.0=LORAN C,9960W-15752.9,99 VALUE) NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREME
1037	UNKNOWN	12200	D	0999	0	01037 DESCRIPTION 19 FISHING OBSTR. OLD LORAN A 3H4-3073.0, 3H5-3122.0=LORAN C,9960W-15663.9,99 VALUE) NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREME
1038	UNKNOWN	12200	D	0999	0	01038 DESCRIPTION 24 NO.614; POSITION ACCURACY WITHIN 1 MILE; REPORTED THROUGH H.O. CHART I REQUIREMENTS NOT DETERMINED
1039	UNKNOWN	12200	D	0999	0	01039 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52571.1,9930Z-70418.1=9960W-15788.9,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1040	ALTAIR	12200	D	0999	0	DESCRIPTION 24 NO.870; CARGO, 6933 GT,SUNK 11/21/43 BY MARINE CASUALTY; POSITION ACCURACY 1 REQUIREMENTS NOT DETERMINED
1041	DRIFTWOOD	12200	C	0999	0	SURVEY REQUIREMENTS NOT DETERMINED
1042	CARPENAS	12200	D	0999	0	01042 HISTORY NM DATED 6/27/29 DESCRIPTION 24 NO.3922; BARGE; POSITION ACCURACY WITHIN 1 MIL UNK). SURVEY REQUIREMENTS NOT DETERMINED
1043	JONES PORT	12200	D	0999	0	DESCRIPTION 01 1937 24 NO.8710; BARGE, 1322 GT; SUNK 2/18/37; POSITION ACCURACY 3-5 MILES SURV DETERMINED
1044	UNKNOWN	12200	D	0999	0	01044 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52554.7,9930Z-70417.3=9960W-15783.11,9960 FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1045	C.W.CHURCH	13003	D	0999	0	01045 DESCRIPTION 01 1915 24 NO.8769; SCHOONER, 844 GT,SUNK 10/31/14 BY MARINE CASUALTY SURV DETERMINED
1046	HARPATHAN	12200	D	0999	0	DESCRIPTION 24 NO.131; CARGO, 4588 GT; SUNK 6/5/18 BY SUBMARINE; POSITION ACCURACY 1-3 MILES SURVEY DATED 4/1/23 (REG.NO. NOT ASCERTAINED) SURVEY REQUIREMENTS NOT DETERMINED
1047	UNKNOWN	12200	D	0999	0	01047 DESCRIPTION 19 FISHING OBSTR. OLD LORAN A 3H4-3115.0, 3H5-1234.0=LORAN C,9960W-15774.8,99 VALUE) NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREME

1048	ESTER ANN	12214	D	0999	0	DESCRIPTION 01 1921 24 NO.8796; SCHOONER, 753 GT, SUNK 10/9/20 BY MARINE CASUALTY; MAY BE SA REQUIREMENTS NOT DETERMINED
1049	UNKNOWN	12200	D	0999	0	01049 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52482.1,9930Z-70409.8=9960W-15759.4,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1050	CITY OF ORLEANS	12200	D	0999	0	01050 HISTORY NM DATED 2/14/24 DESCRIPTION 24 NO.3924; BARGE; POSITION ACCURACY WITHIN 1 MIL UNK) SURVEY REQUIREMENTS NOT DETERMINED
1051	UNKNOWN	12200	D	0999	0	01051 DESCRIPTION 19 FISHING OBSTR. OLD LORAN A 3H4-3153.5, 3H5-1227.0=LORAN C,9960W-15759.4 ,9 VALUE) NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREME
1052	UNKNOWN	12200	D	0999	0	01052 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52426.9,9930Z-70420.6=9960W-15730.7,9960-(FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1053	CARPENDER	12200	D	0999	0	01053 HISTORY NM DATED 4/11/34 DESCRIPTION 24 NO.3925; POSITION ACCURACY WITHIN 1 MILE; REPOI SURVEY REQUIREMENTS NOT DETERMINED
1054	UNKNOWN	12200	D	0999	0	01054 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52495.2,9930Z-70384.8=9960W-15779.9,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1055	SEA SKIP	12200	D	0999	0	01055 DESCRIPTION 18 IN 42 FATHOMS, HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LO 26655.8MS,9960Y-42436.5MS(APPROX. 1979) SURVEY REQUIREMENTS NOT DETERMINED
1056	UNKNOWN	12200	D	0999	0	01056 DESCRIPTION 19 FISHING OBSTR. OLD LORAN A 3H4-3240.0, 3H5-3093.0=LORAN C,9960W-15714.9,99 VALUE) NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREME
1057	ELIZABTH PAL	12200	D	0999	0	HISTORY NM DATED 9/6/49 DESCRIPTION 24 NO. 613; SCHOONER; SUNK 1915; POSITION ACCURACY WITH (SOURCE UNK); WD CLEARED TO 54 FT. (SOURCE UNK); REPORTED DEMOLISHED (SOURCE UNK) SURVE DETERMINED
1058	HVOSLEF	12200	D	0999	0	DESCRIPTION 24 NO.871; CARGO, 1630 GT, SUNK 3/11/42 BY SUBMARINE; POSITION ACCURACY 1-3 MILE REQUIREMENTS NOT DETERMINED
1059	W.L. STEED	12200	D	0999	0	DESCRIPTION 27 NO. 248; TANKER, 3798 NT; SUNK 2/2/42, REPORTED THROUGH 4TH NAVAL DISTRICT HE REQUIREMENTS NOT DETERMINED
1060	UNKNOWN	12200	D	0999	0	01060 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52246.0,9930Z-70443.9=9960W-15639.6,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1061	W L STEED	12200	D	0370	57	HISTORY NM DATED 9/6/49 DESCRIPTION 24 NO.390; TANKER; 6182 GT; SUNK 2/2/42 BY SUBMARINE; POS CLEARED TO 57 FT. (SOURCE UNK.) SURVEY REQUIREMENTS NOT DETERMINED
1062	UNKNOWN	12200	D	0999	0	01062 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52460.5,9930Z-70369.1=9960W-15775.9,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1063	UNKNOWN	12200	D	0999	0	01063 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52389.0,9930Z-70394.9=9960W-15731.4,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1064	UNKNOWN	12200	D	0999	0	01064 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52389.3,9930Z-70394.7=9960W-15731.6,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1065	T.J. HOOPER	12200	D	0999	0	DESCRIPTION 24 NO. 389; SUNK 1935; POSITION ACCURACY WITHIN 1 MILE; 2197 GT; WRECK REPORTED THROUGH FOURTH NAVAL DISTRICT HEADQUARTERS SURVEY 1/10/45; PREVIOUSLY REPORTED IN LAT. : THROUGH OLD COAST GUARD RECORDS; SUBSEQUENTLY FAILED TO LOCATE (SOURCE UNKNOWN) 27 WWII. STANDS 38 FT HIGH IN 135 FT OF WATER. PREVIOUSLY REPORTED AT POS. LAT.38-28N, LONG.74-: DETERMINED
1066	UNKNOWN	12200	D	0999	0	01066 DESCRIPTION 27 NO.807; 7000 NT; AN OLD WRECK WAS LOCATED IN THIS POSITION. FROM THE CC AMOUNT OF MARINE GROWTH, IT IS BELIEVED THE VESSEL HAS BEEN SUNK AT LEAST 10 OR MORE YE UP. REPORTED THROUGH EASTERN SEA FRONTIER 6/13/44 SURVEY REQUIREMENTS NOT DETERMINED
1067	UNKNOWN	12200	D	0999	0	01067 HISTORY NM DATED 8/29/49 DESCRIPTION 24 NO.3918; TRAWLER; POSITION ACCURACY WITHIN 1 M LOCATE SURVEY REQUIREMENTS NOT DETERMINED
1068	RELIANCE	12200	D	0999	0	HISTORY LNM DATED 2/28/51 DESCRIPTION 24 NO.1141; SCHOONER; SUNK 8/17/44; POSITION ACCURACY REQUIREMENTS NOT DETERMINED
1069	UNKNOWN	12214	D	0370	6	DESCRIPTION 24 NO 418; LOCATED BY CGS IN 1929; WD CLEARED TO 6 FT(SOURCE UNK). 27 NO.530; LC OF 1929. SURVEY REQUIREMENTS NOT DETERMINED
1070	UNKNOWN	12260	E	0100	8	01070 DESCRIPTION 24 NO.1234; POS. ACCURACY WITHIN 1 MILE; LEAST DEPTH 8 FT. (SOURCE UNK.); RE RECORDS SURVEY REQUIREMENTS NOT DETERMINED
1071	WASHINGTONIAN	12200	D	0370	62	DESCRIPTION 24 NO.434; CARGO; 7000 GT; SUNK 1915; POSITION ACCURACY WITHIN 1 MILE; WD CLEARE SURVEY REQUIREMENTS NOT DETERMINED
1072	UNKNOWN	12200	D	0999	0	DESCRIPTION 27 NO. 531; SUNK BEFORE WWII, LOCATED BY CGS, 1929 SURVEY REQUIREMENTS NOT D
1073	UNKNOWN	12214	D	0999	0	01073 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52328.2,9930Z-70398.7=9960W-15704.0,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1074	UNKNOWN	12200	D	0999	0	01074 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52431.8,9930Z-70361.2=9960W-15769.5,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1075	UNKNOWN	12200	D	0999	0	01075 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52392.2,9930Z-70375.8=9960W-15744.7,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1076	JOSEPH E. HOOPER	12200	D	0999	0	HISTORY NM DATED 8/8/49 DESCRIPTION 24 NO.612; BARGE, 2233 GT; SUNK 7/15/43; POSITION ACCURAC REQUIREMENTS NOT DETERMINED

1077	UNKNOWN	12200	D	0999	0	01077 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52449.2,9930Z-70351.4=9960W-15782.3,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1078	UNKNOWN	12214	D	0100	90	01078 HISTORY NM DATED 11/17/43 DESCRIPTION 24 NO.3921; POSITION ACCURACY WITHIN 1 MILE; LD 9(REQUIREMENTS NOT DETERMINED
1079	MOONSTONE	12214	D	0370	77	HISTORY NM45/43--YACHT AT POS.38-28-50N, 74-31-48W W/90 FT OF WATER OVER IT DESCRIPTION 24 NC 16/43 BY MARINE CASUALTY; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 77 FT (SOURCE UNI 30N, 74-33-18W STANDING ABOUT 48 FT HIGH IN 124 FT OF WATER W/POS. ACCURACY OF 1 MILE; EARLIE 45 27 NO.766; YACHT, SUNK 10/15/43, STANDS 38 FT HIGH IN 124 FT. PREVIOUSLY REPORTED AT LAT.38-: FT. SURVEY REQUIREMENTS NOT DETERMINED
1080	UNKNOWN	12214	D	0999	0	01080 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52274.8,9930Z-70403.0=9960W-15678.8,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1081	UNKNOWN	12214	D	0999	0	01081 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52317.0,9930Z-70383.0=9960W-15709.3,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1082	UNKNOWN	12214	D	0102	0	HISTORY H10931/99 OPR-D392-WH; CHARTED SUNKEN WRECK, NOT DANGEROUS TO SURFACE NAVIGAT 57W. NEITHER DISCUSSED, VERIFIED, NOR DISPROVED. EVALUATOR RECOMMENDS RETAINING AS CHA RECOMMENDED TO VERIFY OR DISPROVE WRECK. (UP 7/19/00, SJV) F00467/OPR-D392-WH; 200% SIDE S SWMB OPS OVER CONTACTS IDENTIFIED BY H10931 YEILDED NO SIGNIFICANT OBJECTS. EVALUATOR R (UP 2/25/02, SJV) DESCRIPTION 24 NO.3935; BARGE; LEAST DEPTH 63 FT, REPORTED SILTED OVER; POSI REPORTED THROUGH H.O. CHART RECORDS
1083	UNKNOWN	12214	D	0999	0	01083 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52314.0,9930Z-70376.0=9960W-15712.6,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1084	NINA	12214	D	100	62	HISTORY F00453/99--OPR-D392-WH; SIDE SCAN SONAR INVESTIGATION LOCATED THE REMAINS OF A WF 74-50-32.56W. HYDROGRAPHER RECOMMENDS ADDITIONAL WORK IN ORDER TO OBTAIN LD AND POSITI OPR-D392-WH; CONTACT RESEMBLING A WRECK WAS LOCATED WITH A LD OF 62 FEET IN LAT. 38-30-31. EVALUATOR RECOMMENDS DELETING CHARTED WRECK, PA AND CHARTING A 63 WK AS SURVEYED. (U 19 FISHING OBSTRUCTION; OLD LORAN-C TDS (9930 CHAIN): Y = 52374.6, Z = 70353.8; (9960 CHAIN): W = 1: CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. **** TELCON. 6/15/99, S. VERRY (N/CS31) (DELBAY & RIVER PILOT); WRECK IS THE NAVY SALVAGE TUG "NINA" IN 80 FEET OF WATER. LORAN-C TI 42450.7; LAT. 38/30/30N, LONG. 74/50/30W. 216 SHIPWRECKS OF DELAWARE AND MARYLAND BY GARY G GENTILE PRODUCTIONS, P.O. BOX 57137, PHILADELPHIA, PA 19111; IRON-HULLED TUG, LENGTH 137 FEE 420 GT; COAL-FIRED STEAM, BUILDER REANEY, SON, AND ARCHIBOLD, CHESTER, PA; OWNED BY THE U FOURTH-CLASS SCREW STEAMER. SUNK FEBRUARY 6, 1910 IN 80 FEET; LORAN-C TD'S (9960 CHAIN): X : LIES N-S AND SITS UPRIGHT; THE WRECKAGE OF THE BRIDGE LIES IN THE SAND TO THE PORT OF THE I INTACT. THE DECK IS GONE BUT THE BEAMS STILL SPAN THE GUNWALES. FIFTY FEET AFT, JUST FORW SUPERSTRUCTURE USED TO BE, IS A BIG WINDLASS. AMIDSHIPS, PLATES HAVE COLLAPSED OUTWARI STERN LOW TO THE SAND BUT STILL RECOGNIZABLE. LARGE TOWING BITT VISIBLE. (UP 6/30/99, SJV)
1085	UNKNOWN	12214	D	0999	0	01085 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52326.5,9930Z-70370.0=9960W-15721.5,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1086	UNKNOWN	12214	D	0370	73	01086 DESCRIPTION 24 NO 440; LOCATED BY USCG GENTIAN AT LAT. 38-31-30N, LONG. 74-31-54W ON 10/2 FT OF WATER; SUBSEQUENTLY WD CLEARED TO 73 FT(SOURCE UNK); POS. ACCURACY 1 MILE. SURVE' DETERMINED
1087	UNKNOWN	12214	D	0999	0	01087 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52249.6,9930Z-70394.0=9960W-15673.8,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1088	UNKNOWN	12214	D	0999	0	01088 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52258.0,9930Z-70383.0=9960W-15684.6,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1089	UNKNOWN	12200	D	0370	104	01089 DESCRIPTION 24 NO.611; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 104 FT. (SOURCE CHART RECORDS, DATED 1949 SURVEY REQUIREMENTS NOT DETERMINED
1090	INDIA ARROW	12200	D	0999	0	DESCRIPTION 24 NO.416; TANKER, 8327 GT; SUNK 2/4/42 BY SUBMARINE; POSITION ACCURACY WITHIN 1 ESF 12/6/43. 27 NO.519; TK, 5176 NT SUNK 2/4/42. SURVEY REQUIREMENTS NOT DETERMINED
1091	UNKNOWN	12214	D	0999	0	01091 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-51956.0,9930Z-70459.0=9960W-15496.4,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1092	MARIE BEASLEY	12214	D	0370	54	HISTORY NM DATED 3/28/27 F00453/99-- OPR-D392-WH; 200% SIDE SCAN SONAR SEARCH NEGATIVE. EV/ DELETING. (UP 7/18/00,SJV) H10989/00--OPR-D392-WH; 200% SIDE SCAN SONAR SEARCH NEGATIVE. EVA DELETING. (UP 7/11/02, SJV) DESCRIPTION 24 NO.3938; BARGE; POSITION ACCURACY 1 MILE, 60 FT LD (S SCATTERED (SOURCE UNKNOWN). ***** TELCON; 6/15/99, S. VERRY (N/CS31) AND CAPT. DAVID POTTER ASSOCIATION) (302-934-8463); LORAN-C TD'S: (9960 CHAIN); X = 26990.5, Y = 42501.1 - .2
1093	UNKNOWN	12214	D	0999	0	01093 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52283.0,9930Z-70347.0=9960W-15718.2,9960Z FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1094	UNKNOWN	12214	D	100	58	HISTORY H10989/00-- OPR-D392-WH; 200% SIDE SCAN SONAR SEARCH LOCATED DEBRIS. SWMB SONAR LAT. 38-34-57.926N, LONG. 74-44-44.759W. EVALUATOR RECOMMENDS DELETING 54-FOOT CLEARED WRI SURVEYED. (UP 7/11/02, SJV) DESCRIPTION **** 19 FISHING OBSTR. OLD LORAN-C (9930 CHAIN); Y = 523C 15731.5, Z = 59221.7; NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. **** TEL(WITH CAPT. DAVID POTTER (DELBAY & RIVER PILOTS ASSOCIATION); WRECK IS KNOWN LOCALLY AS "J. AFTER THE DOG OF THE OWNER WHO LOCATED THE WRECK. IN 65 FEET OF WATER. WOODEN CONSTF LORAN-C TD'S (9960 CHAIN): X = 27010.0; Y = 42503.3 - .5. LAT. 38/34/54N, LONG. 74/44/54W. (UP 6/30/99, S.
1519	UNKNOWN	12284	E	0100	9	HISTORY NM44/59--BARGE BROKEN IN TWO PARTS SUNK IN 10 FT WATER AT LAT 38-19-50.5N ì LONG 76-: 26-56.5W; 4 FT WATER OVER EACH PART. NM25/60--6/18/60; BARGE REMOVED EXCEPT FOR BOTTOM PO FT OVER BOTTOM SECTION; CHARTED AS SUBM DANG WK WITH LEGEND (9 FT REP). ì (ENTERED 12/14/8 NOT INVESTIGATED. (UP SRB 8/89) MAR--4/87, S-E211-HFP-87; CHAIN DRAG RESULTED IN TWO SNAGS; S' OVER POSITIONS OF SNAGS TO CONFIRM LEAST DEPTHS. (UPDATED ì MSM 9/87) FE297/87--S-E211-HFP- OVER CHARTED ì POSITION OF WRECK REVEALED SNAG IN LAT 39-19-53.93N, LONG ì 76-26-58.01W WITH SOUTHWEST OF ì CHARTED WRECK; EVALUATOR RECOMMENDED CHARTING SUBMERGED WRECK IN ì

						DEPTH WAS DETERMINED BY FATHOMETER, ì EVALUATOR STATED THAT THIS MAY NOT BE THE LEAST I RETAINING THE 9 FT. REP NOTE. (UPDATED MSM 9/88)
2476	GULF RAMBLER	12200	D	0100	0	02476 HISTORY CL1449/81--COE; F/V, 64 FT L, REMAINS LOCATED IN 6 FT OR WATER AT POSITION 38-18-5 EDWARDS, 301-962-3675, SAYS POSITION SUPPLIED BY CG AND ASSUMED TO BE GOOD. WILL SEND CF STATUS 6/21/82. WK HAD BEEN PARTIALLY VISIBLE; STEEL HULL) CL420/82--USPS; CLAM DREDGE SUNK AT POSITION 38-18-34.8N, 75-04-34.2W IN NOVEMBER 1980. (TELECON TO REPORT ORIGINATOR INDICATE TO MCS RECOMMENDS CHARTING ON WK ONLY AT COE POSITION. DESCRIPTION 01 F/V, 82 GT, 64.5 FT HULL, BUILT 1965. OWNER; WOODROW LAURENCE INC, RTE 1, OCEAN CITY, MD 21842 (NO PHONE) SURV OR DISPROVE. DISPROVE THRU SALVAGE DOCUMENTATION OR BY BOTTOM DRAGGING OR WIRE DRAG 500 METER RADIUS BUT TO EXTEND NORTH OF LATITUDE 38-19-21N.
2648	UNKNOWN	12284	E	0102	101	HISTORY H6877/43-44--SUBMARINE, LOCATED AT 38-19-53.4N, 076-29-17.4W BY SEXTANT ì SUBM. PLACED 102 FT LD. MAR--9/85, S-E211-HFP-85; WRECK LOCATED AT LAT 38-19-53.2N, LONG ì 76-29-17.3W BY FATH DEPTH OF 102 FT. ì (UPDATED MSM 11/85) H10195/85--S-E211-HFP-85; SUBMARINE LOCATED IN LAT ì 38-1 ECHOSOUNDER DEPTH OF 101 FT; ì EVALUATOR RECOMMENDED CHARTING AS 101 WK. (UPDATED MSD LIVINGSTON, NATIONAL DIVE CENTER; WRECK STILL THERE (1982) SURVEY REQUIREMENTS FULL--VERII INVESTIGATION; CHAIN DRAG OR DSF-6000N ì ECHO SOUNDER INVESTIGATION (400% BOTTOM COVERA(MINIMUM RADIUS) IS REQUIRED FOR DISPROVAL. IF FOUND, LEAST DEPTH AND POSITION ì ARE REQUIR (COMPLETE)
3336	UNKNOWN	12264	E	098	0	HISTORY LNM37/80--5TH CGD; A SUNKEN 42 FT PLEASURE CRAFT HAS BEEN REPORTED TIED TO A TREI LAT 38-21-45N, LONG 76-23-12W. (ENTERED MSM 2/86)
3428	OBSTRUCTION	12233	E	0067	0	HISTORY CL1412/68--COE RECEIVED APPLICATION FROM USN AIR STATION TO INSTALL RADAR TARGET I STRUCTURE TO EXTEND APPROX.. 17.5 FT ABOVE MLW. CL1052/70--CONSTRUCTION COMPLETED AT THI E609-RU/HE-78, WIRE DRAG INVESTIGATION LOCATED AN OBSTRUCTION IN POS. LAT.38-14-7.8N, LONG.7 TEAM VERIFIED THE OBSTRUCTION AND SECURED A SURFACE MARKER, NO CLEARANCE DEPTH GIVEN OPR-S-E404-PE-84--CHARTED SUBM OBSTR AT LAT 38-14-07.8N, LONG 76-20-18W SEARCHED FOR BY SSS DRAG. SMALL CONTACT WITH LESS THAN 1 METER SHADOW NOTED ON SONARGRAM AT APPROX. POS DRAG DEEMED INEFFECTIVE DUE TO "SPLIT" AT CHARTED POS. INFO PROVIDED TO SHIP PEIRCE DURIN AIR TEST CENTER SAYS THAT CHARTED SUBM OBSTR TO BE FORMER LIGHTED PILE AT GEODETIC POS. 24.68551W. LIGHTED PILE DESTROYED BY ICE IN 1970'S. NOS/NAVY TEAM REPORT DESTROYED PILE LO POS. (SEE CL1382/80). EVALUATOR RECOMMENDS CHARTED SUBM OBSTR BE RETAINED AND CONSIDE SUBM OBSTR AT GEODETIC POSITION, DUE TO POSITIONAL DIFFERENCES NOTED BY SOURCES. (UPDA REQUIREMENTS FULL--VERIFY OR DISPROVE, BY 400% SIDE SCAN SONAR SEARCH OR BOTTOM SWEEI MINIMUM. LEAST DEPTH REQUIRED IF FOUND. NOT ASSIGNED
3433	SQUAREHEAD	12233	E	0100	0	HISTORY NM23/54--SCHOONER YACHT SUNK IN APPROX. LAT.38-16-16N, LONG.76-22-30W AND COVERED IN 26 FT. OF WATER AND MARKED BY LIGHTED SEADROME BUOY. NM33/54--BUOY DISCONTINUED IN API LONG.76-22-27W. THE SQUAREHEAD LAST REPORTED TO LIE 125 FT. BEARING 270 DEG. FROM THIS POS (ENTERED, 3/28/84, MCR) CL1206/84--MAR; OPR-E404-PE-84; MINIRANGER FALCON 484; 400% SSS W/NEG OF APPARENTLY ROCKY BOTTOM; CHAIN IMMEDIATELY HUNG, PRESUMABLY ON BOTTOM; HYDROGRAF WK FROM CHART; AWAITING EVALUATION REPORT FROM AMC. (ENTERED MSM 1/2/85) FE267/84; OPR-S- REPORT CONFIRMS HYDROGRAPHER'S RECOMMENDATION TO DELETE WK FROM CHART. (SEE CL1206/ SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE BY BOTTOM DRAG INVESTIGATION TO A 700 MET SIDE SCAN SONAR COVERAGE. DETERMINE LEAST DEPTH BY LEAD LINE (POSSIBLY COMPLETE). NOT /
3677	UNKNOWN	12264	E	***	0	HISTORY NM25/63--30 FOOT WORK BOAT REPORTED SUNK IN CHESAPEAKE CHANNEL IN 60 FEET 200 Y 38-18-35.5N, LONG 76-18-47.2W. (POSITION SCALED FROM CHART AT 1:40,000). (ENTERED MSM 6/85) MAR CONSIDERED DISPROVED; PENDING VERIFICATION; HYDROGRAPHER RECOMMENDS DELETING WK SYI MSM 3/86) H01193/85-- S-E211-HFP-85; FATHOMETER SEARCH WITH NEGATIVE RESULTS; DELETION REC FE275SS (SEE BELOW) FE275/85SS--(OPR-E609-RU/HE-85); NO SIGNIFICANT SONAR CONTACTS FOUND A SEARCH. HYDRO. AND EVALUATOR RECOMMEND DELETING DANGEROUS WRECK SYMBOL AND CHESA LIGHTED BUOY "PR". (DIVERS NOTED BUOY ANCHOR COMPLETELY BURIED AND BOTTOM CHARACTER V CHAIN FROM MUD TO SILT.) DESCRIPTION **** LTR; JAMES C. IRWIN C.O. 5CGD TO W.V. HULL, AMC; 10/25 REQUESTS CG EST. PILOT TRANSFER BUOYS IN VIC. CEDAR POINT. DESIRE WRECK MARKED BY CHES/ LIGHTED BUOY PR BE INVESTIGATED. 5CGD REQUESTS NOS SURVEY WRECK. SURVEY REQUIREMENT NOT ASSIGNED.
3678	UNKNOWN	12264	E	0100	0	HISTORY LNM26/82--SUBMERGED DANGEROUS WRECK. 30 FOOT CABIN CRUISER SUNK IN 40 FT., 200 YI CHANNEL LIGHTED BELL BUOY 57 (LL 2738). APPROXIMATE POS. LAT. 38-18-21.0W, LONG. 76-21-14W. H1C FATHOMETER SEARCH WITH NEGATIVE ì RESULTS; RECOMMENDED RETAIN AS CHARTED. (UPDATED 1/
3679	UNKNOWN	12264	E	0100	0	HISTORY NM28/45--CEDAR POINT WRECK LIGHTED BELL BUOY 1A, QK FL G, ESTABLISHED IN 45 FEET 2, POINT LIGHT. MARKS SUNKEN DREDGE COVERED BY 27 FEET. BUOY IS 200 FT., 60 DEG. FROM WRECK. BELL BUOY 1A PREVIOUSLY ESTABLISHED 2,150 YDS, 51 DEG. FROM CEDAR POINT LIGHT TO MARK SUN FEET NOW EXISTS OVER WRECK. H7094/45-46--REVIEWER CONSIDERS THIS WRECK DISPROVED BY EC LOCAL INFORMATION ALSO INDICATES WRECK ENTIRELY REMOVED. H10193/85--S-E211-HFP-85; FATHOM RESULTS; SEARCH NOT CENTERED ON CHART POSITION; HOWEVER, BASED ON RECOMMENDATION IN ABOVE); REVIEWER RECOMMENDS DELETING WRECK FROM CHART. (UPDATED MSM 1/88)
3680	OBSTRUCTION	12264	E	0067	0	HISTORY BP96500/73--U.S. NAVY SURVEY, 1973; DEPTHS IN METERS, RAYDIST CONTROL. 21 FEET LOCA 76-22-01W. H9826/79--PSR ITEM NO.3 (21 FOOT SNDG, ABOVE). TWO OBSTRUCTIONS HUNG BY BOTTOM C BOARDS. STRONG CURRENT PREVENTED LEADLINE SOUNDING, HOWEVER, LEADLINE CASTS STRUCK I LINES PULLED UP A SMALL CLUMP OF METAL AND WIRING. OBSTRUCTIONS NOT INDICATED ON FATHOM BOTH OBSTRUCTIONS WERE PLOTTED ON SMOOTH SHEET COVERED 29 AND 30 FEET. THE 29 FOOT OB POS. LAT. 38-20-02N, LONG. 76-22-05W. HYDRO. DOES NOT CONSIDER OBSTRUCTIONS DANGEROUS TO I HFP-85; FATHOMETER SEARCH WITH NEGATIVE RESULTS; NO CHANGE IN CHARTING STATUS IS RECOM
3681	OBSTRUCTION	12266	E	0100	44.6	HISTORY NM29/66--COE REPORTS SUBMERGED OBSTRUCTION WEST OF JAMES ISLAND COVERED 38 FI LONG. 76-23-27W. CL784/66--COE TO NOS. COE INVESTIGATION OF OBSTRUCTION IN LAT. 38-30-42N, LON MLW. NOT CONSIDERED HAZARD TO NAVIGATION, NO PLANS TO REMOVE. FE308/87SS--OPR-E609-RU/HE 26,85N; LONG 76-23-35.70W WITH A LEAST DEPTH OF 44.6FT FOUND BY DIVER PNEUMATIC DEPTH GUAG 44FT WK WITH DANGER CURVE. LORAN-C RATES: 9960-CHAIN; 27499.2X, 42368.7Y, 58837.6Z (UPDATE 4/8 FE308/87SS--STEEL BARGE 125 X 22 EXTENDS 20 FT OFF THE BOTTOM BUT LIES IN SCOUR APPROX 7FT
						HISTORY NM37/40--BRIGHT WRECK LIGHTED BELL BUOY 18B, RED WITH QK FL WHITE LIGHT ESTABLISH DEG. 30 MIN. FROM SHARPS ISLAND LIGHTHOUSE. BUOY IS 100 YDS. WEST OF WRECK. NM38/40--BARG 207 DEG. FROM SHARPS ISLAND LIGHTHOUSE. 18 FT. OVER WRECK. BRIGHT WRECK LIGHT BUOY 18B 5 APPROX. POS. LAT. 38-34N, LONG. 76-26W. NM33/42--BUOY DISCONTINUED. 50 FT. REPORTED OVER WRI 76-25-30W. H6952/44--CS-250; NO INDICATION OF WRECK ON MAINSCHEME HYDRO. NO SPECIFIC INVESTI

3682	BRIGHT	12266	E	0100	51	87SS; OPR-E609-RU/HE-87--THREE CONTACTS BY SIDE SCAN SONAR SEARCH DETERMINED TO BE REM DEPTHS ASCERTAINED BY DIVER'S INVESTIGATION WITH PNEUMATIC DEPTH GAGE ON EACH CONTACT. PARTS OF DETERIORATED WOODEN BARGE (KEEL BEAM, RIBS, HULL PLANKING, TWO LARGE WOODEN WOODEN SPIKES). SIZE OF LARGEST SECTION OF WRECK LOCATED AT CENTER CONTACT IS 114FT X 1! LORAN-C RATES FOR EACH SECTION ARE: 52.3FT AT LAT. 38-33-35.41N, LONG. 76-25-43.00W (9960-CHAIN 58842.0Z); 51.6FT AT LAT 38-33-32.57N, LONG 76-25-41.67W (9960-CHAIN; 16093.2W, 27517.5X, 42400.8Y, 588 LONG 76-25-44.68W (9960-CHAIN; 16093.5W, 27517.5X, 42400.4Y, 58841.3Z). RECOMMENDED THAT THE SE CHARTED IN LAT 38-33-32.57N, LONG 76-25-41.67W AS A DOTTED DANGERCURVE AROUND A 51-FT DEPT REQUIREMENTS
3989	OBSTRUCTION	12284	E	0067	0	03989 HISTORY H6876/43-44--1:10,000 SCALE SURVEY; THREE POINT FIXES ON SHORE SIGNALS FOR CON 17-33.09N LONG 76-27-09.62W; SIGNAL YOU; POS. SCALED FROM SURVEY. BP89276/74--OPR-512-AHP-74; INVESTIGATION; PILE REP GONE; REVISE TO SUBM PILE. (ENTERED 12/20/84 MSM) SURVEY REQUIREME VISUAL SEARCH AT CHART DATUM.IF NOT VISIBLE, A SSS, BOTTOM DRAG OR DIVER INVESTIGATION IS F IF FOUND, LEAST DEPTH AND POSITION ARE REQUIRED. ASSIGNED: S-E211-HFP-86
3990	OBSTRUCTION	12284	E	0067	0	03990 HISTORY H6876/43-44--1:10,000 SCALE SURVEY; THREE POINT FIXES ON SHORE SIGNALS FOR CON 38-17-34.6N LONG 76-27-01.20W; SIGNAL ZED; POSITION SCALED FROM SURVEY. CL1511/68--USPS; 9/11/ PORTION VISIBLE FROM SEAWALL; CHARTED AS SUBM PILING. (ENTERED 12/19/84 MSM) SURVEY REQU DISPROVE. VISUAL SEARCH AT CHART DATUM.IF NOT VISIBLE, A SSS, BOTTOM DRAG OR DIVER INVEST MINIMUM RADIUS)IF FOUND, LEAST DEPTH AND POSITION ARE REQUIRED. ASSIGNED: S-E211-HFP-86
3991	OBSTRUCTION	12284	E	0067	0	03991 HISTORY H6876/43-44--1:10,000 SCALE SURVEY; THREE POINT FIXES ON SHORE SIGNALS FOR CON 38-17-34.09N LONG 76-26-54.77W; SIGNAL ARK; POSITION SCALED FROM SURVEY. CL1511/68--USPS; 9/11 NO PORTION VISIBLE FROM SEAWALL; CHARTED AS SUBM PILING. (ENTERED 12/19/84 MSM) SURVEY RE DISPROVE. VISUAL SEARCH AT CHART DATUM.IF NOT VISIBLE, A SSS, BOTTOM DRAG OR DIVER INVEST MINIMUM RADIUS). IF FOUND, LEAST DEPTH AND POSITION ARE REQUIRED. ASSIGNED: S-E211-HFP-86
3992	OBSTRUCTION	12284	E	0067	0	03992 HISTORY H6876/43-44--1:10,000 SCALE SURVEY; THREE POINT FIXES ON SHORE SIGNALS FOR CON IN LAT 38-17-40.19N LONG 76-25-47.56W (SIGNAL SEX) AND LAT 38-17-48.03N LONG 76-25-47.87W (SIGNAL (SURVEY. BP89276/74--OPR-512-AHP-74; CHART DEFICIENCIES INVESTIGATION; DOLPHINS REP GONE; RE (ENTERED 12/19/84 MSM) SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE. VISUAL SEARCH AT CH SSS, BOTTOM DRAG OR DIVER INVESTIGATION IS REQUIRED (50M MINIMUM RADIUS). IF FOUND, LEAST [REQUIRED. ASSIGNED: S-E211-HFP-86
3993	UNKNOWN	12284	E	0098	0	HISTORY CL1809/75--USPS; SEPT 20-27/75; HALF BURNED HULK OF 40 FT CABIN CRUISER AT ì WATERS E 24N LONG 76-27-07W. (ENTERED 12/18/84 ì MSM) MAR--4/86, S-E211-HFP-86; VISUAL SEARCH CONFIRMED LINE; MR PAUL DREW, PO BOX 72, SOLOMONS ISLAND MD 20688 STATED THAT WK WAS ì NEVER SUBM OTHER WK EXISTED IN THIS LOCATION. ì (UPDATED MSM 9/86) FE280/86,S-E211-HFP-86; SAME AS MAR 4/ SRB 8/86) MAR--3/87, SE211-HFP-86; WOOD HULL REMAINS, HALF BURIED IN SAND, LOCATED IN ì LAT 38- (UPDATED MSM 9/87) FE297/87--S-E211-HFP-87; WRECK LOCATED 1.5M ABOVE APPARENT HIGH ì WATER ADDITIONAL VISUAL SEARCH WAS ì CONDUCTED OFFSHORE OF THE WRECK IN FAIRLY CLEAR WATER \ EVALUATOR RECOMMENDS DELETING WRECK FROM THE ì CHART. (UPDATED MSM 9/88)
3994	UNKNOWN	12284	E	0067	0	HISTORY CL1555/79--USPS; 10/21/79; VISIBLE WK REPORTED IN PA LAT 38-19-39N LONG ì 76-27-09W. BP1' REPOSITIONED TO PA LAT 38-19-38.65N, LONG ì 76-27-09.90W (POSITION SCALED FROM BP) MAR--4/86, S- CONFIRMED WOODEN HULL AT CHARTED ì POSITION POSING NO DANGER TO NAVIGATION. (UPDATED M SAME AS MAR 4/86, NO POSITION OBTAINED.(UP SRB 8/89) MAR--3/87, S-E211-HFP-86; METAL, WOOD AN FEET IN LAT 38-19-38.03N, LONG 76-27-09.4W (POSITION SOUTHEAST OFFSHORE CORNER OF WK). ì (UPD HFP-87; PARTIALLY SUBMERGED METAL, WOOD AND ì FOAM OBSTRUCTION FOUND; BELIEVED TO BE T FLOATING PIER AND NOT A WRECK; NORTH END LOCATED IN LAT ì 38-19-38.73N, LONG 76-27-09.63W, BA LOCATED IN LAT 38-19-37.95N, LONG 76-27-09.51W, BARING 3 FT. ì MLLW; EVALUATOR RECOMMENDS DE AND ì CHARTING PIER RUINS AS SHOWN ON THE PRESENT SURVEY. (UPDATED MSM ì 9/88)
3995	UNKNOWN	12284	E	0067	0	HISTORY CL1555/79--USPS; 10/21/79;150 FT BARGE REPORTED STRANDED AT PA ì LAT 38-19-58.2N, LONG FROM CHART). ì (ENTERED 12/18/84 MSM) MAR--4/86, S-E211-HFP-86; VISUAL SEACH CONFIRMED WOOD OF DBN 8 IN CHARTED POSITION. (UPDATED MSM 9/86) FE280/86,S-E211-HFP-86; VISIBLE WOODEN BARG POSITION OBTAINED, RETAIN AS CHARTED. (UP SRB 8/86) FE297/87--S-E211-HFP-87; WRECK FALLS WITH AND SUBMERGED HULLS, PILES, WOOD, CONCRETE, AND ì METAL DEBRIS THAT STRETCHES TO SHORI AREA ì SWEPT WITH CHAIN DRAG TO VERIFY FOUL LIMITS; EVALUATOR ì RECOMMENDED DELETING CH PIER RUINS AND ì REVISING CHARTED FOUL LIMITS TO REFLECT THE LIMITS SHOWN ON ì PRESENT SUR AND 4357. (UPDATED MSM ì 9/88)
3996	UNKNOWN	12284	E	0067	0	HISTORY CL921/73--USPS; 4/28/73; VISIBLE WK REPORTED AT PA LAT 38-19-59.5N, LONG ì 76-27-35W (PO! (ENTERED 12/18/84 MSM) MAR--4/86, S-E211-HFP-86; VISUAL SEARCH CONFIRMED PARTIALLY SUBM WK PILOT HOUSE VISIBLE AT MHW. (UPDATED MSM 9/86) FE280/86,S-E211-HFP-86; SAME AS MAR 4/86. NO P FE297/87--S-E211-HFP-87; THIS WRECK FALLS WITHIN AN AREA FOUL ì WITH EXPOSED AND SUBMERGEI CONCRETE, AND METAL ì DEBRIS THAT STRETCHES TO SHORE; AREA OFFSHORE OF FOUL AREA SWEF FOUL AREA LIMITS; EVALUATOR RECOMMENDED ì DELETING CHARTED WRECKS AND CHARTED PIER R FOUL LIMITS TO REFLECT THE LIMITS SHOWN ON PRESENT ì SURVEY; ALSO REF. ITEMS 3995, 4356, AN[
3997	OBSTRUCTION	12284	E	0067	15	HISTORY H6966/44--1:5,000 SCALE SURVEY; SEXTANT CONTROL; PILING LOCATED WITH SW END ì AT LAT AND RUNNING NE TO LAT 38-19-37.74N LONG ì 76-27-01.47W; CHARTED AS SERIES OF SEVEN PILE SYMB POSITIONS SCALED FROM SURVEY. CL1809/75--USPS;9/20-27/75; REPORT THAT PILES CHARTED ARE WE OF IRREGULARILY DISTRIBUTED PILES IN AREA; PA ADDED TO CHART. ì (ENTERED 12/18/84 MSM) CL110! 12284 BY PEIRCE; 7/23/84; PILES NOT ì VISIBLE AT CHART DATUM; REVISED TO SUBM PILES PA. (UPDAT HFP-87; CHAIN DRAG AND FATHOMETER SEARH; THREE ì OBSTRUCTIONS SNAGGED; ROTTEN WOOD AN CHAIN WHEN IT ì WAS HAULED IN; UNCORRECTED LEAST DEPTH OF 13.5 FT. (UPDATED MSM 9/87) FE29 INVESTIGATION INVOLVING DRAGGING OTTER ì BOARDS BEHIND LAUNCH REVEALED SNAG IN LAT 38-19- LEAST DEPTH OF 15 FT. (LEADLINE); FURTHER ì INVESTIGATION REVEALED TWO OTHER OBSTRUCTIONS EVALUATOR RECOMMENDED DELETING THE CHARTED SUBMERGED ì PILINGS AND CHARTING THE SUB SURVEY ì POSITIONS. (UPDATED MSM 9/88)
3998	UNKNOWN	12284	E	0100	0	HISTORY T8542/42-43--1:10,000 SCALE SURVEY; VISIBLE WK LOCATED AT LAT 38-19-17.8N, ì LONG 76-25-3 CHART) BP89276/74--OPR-512-AHP-74; CHART DEFICIENCIES INVESTIGATION; WK REVISED TO ì SUBM. (E S-E211-HFP-87; CHAIN DRAG LOCATED AN OBSTR AT LAT 38-19-15.8N, ì LONG 76-25-28.9W WITH UNCORR SCATTERED DEBRIS ì OBSERVED INSHORE OF THIS POSITION. (UPDATED MSM 9/87) FE297/87--S-E211-H MR. ADRION JOY, A ì LOCAL RESIDENT, WAS INVESTIGATED WITH CHAIN DRAG; OBSTRUCTION ì FOUND CHARTED POSITION WITH GOOD VISIBILITY ì OF BOTTOM BUT NO OBSERVABLE WRECKAGE; EVALUATO DID NOT COVER CHARTED POSITION AND SEARCH WAS INADEQUATE TO CONFIRM THAT ì ITEM FOUND \ EVALUATOR RECOMMENDED RETAINING ì WRECK AS CHARTED AND CHARTING OBSTRUCTION AS SHO\ 9/88)

3999	UNKNOWN	12284	E	0100	1	HISTORY H6966/44--1:5,000 SCALE SURVEY; SEXTANT CONTROL; VISIBLE WK LOCATED IN LAT ì 38-19-46.(COMMENTED THAT CHARTING MAY BE ì UNIMPORTANT BECAUSE OF NEARNESS OF WK TO SHORE; PO: BP89276/74--OPR-512-AHP-74; CHART DEFICIENCIES INVESTIGATION; REVISED WK TO ì SUBM. (ENTERED HFP-86; VISUAL SEARCH CONFIRMED WOODEN DEBRIS, PROBABLY ì BOAT RIBBING, WITH LD OF 2.8 FT POSITION. ì (UPDATED MSM 9/86) FE280/86,S-E211-HFP-86; SAME AS MAR 4/86, CORRECTED LD 1.6 FT.(U HFP-87; ROTTED KEEL AND RIBS OF WOOD HULL VISIBLE AT LAT ì 38-19-47.11N, LONG 76-26-35.42W; UNC FT. (UPDATED ì MSM 9/87) FE297/87--S-E211-HFP-87; REMAINS OF WOODEN HULL LOCATED AT LAT ì 38-1 ENTIRE STRUCTURE IS SCATTERED IN ì 4M RADIUS WITH ROTTED KEEL AND RIBS VISIBLE ON THE BOTT EVALUATOR RECOMMENDED CHARTING AS SOUNDING ON ì WRECK WITH A DANGER CURVE IN SURVEY CHARTED ì WRECK. (UPDATED MSM 9/88)
4000	UNKNOWN	12284	E	0100	5	HISTORY H6966/44--1:5,000 SCALE SURVEY; SEXTANT CONTROL; VISIBLE WK LOCATED IN LAT ì 38-19-57.(COMMENTED THAT CHARTING MAY BE ì UNIMPORTANT BECAUSE OF NEARNESS OF WK TO SHORE; PO: BP89276/74--OPR-512-AHP-74; CHART DEFICIENCIES INVESTIGATION; REVISED WK TO ì SUBM. (ENTERED HFP-87; FATHOMETER SEARCH AND CHAIN DRAG LOCATED WRECK AT ì LAT 38-19-56.66N, LONG 76-26-2(DEPTH OF 5.1 FT. ì (UPDATED MSM 9/87) FE297/87--S-E211-HFP-87; FATHOMETER AND CHAIN DRAG ì INVI WRECK IN LAT 38-19-56.61N, LONG ì 76-26-28.00W; LEADLINE LEAST DEPTH OF 5 FT.; EVALUATOR ì RECO ON A WRECK IN SURVEY LOCATION ì AND DELETING CHARTED WRECK. (UPDATED MSM 9/88)
4001	UNKNOWN	12284	E	0100	0	HISTORY H6876/44--1:10,000 SCALE SURVEY; THREE POINT FIXES ON SHORE SIGNALS FOR ì CONTROL; \ 5571N LONG 76-29-1432W (SCALED FROM ì SMOOTH SHEET). CL1551/74--USPS; WK REVISED TO SUBM. (I 85;S-E211-HFP-85; AREA OF CHARTED POSITION OF WRECKS REPEATEDLY ì CIRCLED AND VISUAL SEAF WATER; NEGATIVE ì RESULTS. (ENTERED MSM 4/86) H10195/85--S-E211-HFP; VISUAL SEARCH WITH GOO NO CHAIN DRAG INVESTIGATION; EVALUATOR RECOMMENDED ì DELETING FROM CHART. (UPDATED MS FULL--VERIFY BY VISUAL SEARCH AT CHART DATUM. IF FOUND, ELEVATION AND POSITION ARE REQUIR FOR DISPROVAL (25M MINIMUM RADIUS). ASSIGNED--S-E211-HFP-85
4002	OBSTRUCTION	12284	E	0067	0	04002 HISTORY H6876/44--1:10,000 SCALE SURVEY; THREE POINT FIXES ON SHORE SIGNALS FOR CONTR 35.24N LONG 76-26-25.09W (SCALED FROM SMOOTH SHEET); SIGNAL HUT. BP89276/74--OPR-512-AHP-74; INVESTIGATION; PILES REVISED TO SUBM. (ENTERED 12/17/84 MSM) SURVEY REQUIREMENTS FULL--VE SEARCH AT CHART DATUM.IF NOT VISIBLE, A SSS, BOTTOM DRAG OR DIVER INVESTIGAIION IS REQUIRE FOUND, LEAST DEPTH AND POSITION ARE REQUIRED. ASSIGNED: S-E211-HFP-86
4003	OBSTRUCTION	12284	E	0067	0	04003 HISTORY L167/65--USN; 12/24/64; TWO PILES WERE ERECTED IN 15 FT OF WATER, 5 FT APART AT L FT ABOVE WATER; POSITION SCALED FROM CHART. CL1016/74--OPR-512-AHP-74; CHART DEFICIENCIES TO SUBM; NO LONGER VISIBLE. (ENTERED 12/17/84 MSM) SURVEY REQUIREMENTS FULL--VERIFY OR DI CHART DATUM.IF NOT VISIBLE, A SSS, BOTTOM DRAG OR DIVER INVESTIGAIION IS REQUIRED (50M MINIM DEPTH AND POSITION ARE REQUIRED. ASSIGNED: S-E211-HFP-86
4004	UNKNOWN	12284	E	0100	0	HISTORY BP89276/74--OPR-512-AHP-74; CHART DEFICIENCIES INVESTIGATION; VISIBLE ì WRECK IN LAT 3ε (POSITION SCALED FROM CHART). CL1703/78--USPS; 10/14/78; WK REVISED TO SUBM. (ENTERED 12/17/8 VISUAL SEARCH ONLY; EVALUATOR DID NOT ì CONSIDER SEARCH ADEQUATE FOR DISPROVAL; RECOM CHARTED. (UPDATED MSD 6/91) SURVEY REQUIREMENTS FULL--VERIFY BY VISUAL SEARCH AT CHART I AND POSITION ARE REQUIRED. CHAIN DRAG IS REQUIRED FOR DISPROVAL ì (25M MINIMUM RADIUS). AS
4006	UNKNOWN	12284	E	0100	0	HISTORY CL1282/65--COE; 9/20/65; REMAINS OF SUBM VESSEL INVESTIGATED BY COE ì IN PA LAT 38-19- BOTTOM IN 3-5 FT (MLW) WITH ì 0.7 FT (MLW) OVER HIGHEST POINT; NOT CONSIDERED HAZARD SO WAS VISIBLE WK. CL1551/74--USPS; WK REVISED TO SUBM. (ENTERED 12/17/84 MSM) H10195/85--S-E211-HFP- VISIBILITY ì WITH NEGATIVE RESULTS; EVALUATOR DOES NOT CONSIDER THE SEARCH ì ADEQUATE FOI RETAINING AS CHARTED. ì (UPDATED MSD 6/91) SURVEY REQUIREMENTS FULL--VERIFY BY VISUAL SEAI ELEVATION ì AND POSITION ARE REQUIRED. CHAIN DRAG IS REQUIRED FOR DISPROVAL (25M ì MINIMUM 85
4007	UNKNOWN	12	E	0100	32	HISTORY H6876/43-44--1:10,000 SCALE SURVEY; THREE POINT FIXES ON SHORE SIGNALS FOR CONTROL SOUNDED FOR SEVERAL HOURS; 27 FT BY FATHOMETER; SHOALEST DEPTH BY LEADLINE WAS 32 FT; L 76-25-01.57W; POSITION SCALED FROM SURVEY. (ENTERED 12/17/84 MSM) BP89276/74--OPR-512-AHP-74; ECHO SOUNDER DEVELOP- MENT CONFIRMED WRECKAGE AT 34 FT; RETAINED AS CHARTED. (ENTERE HFP-84; WRECKAGE CONFIRMED BY LOCAL KNOWLEDGE AT CHARTED POSITION; LEAST DEPTH OF 32 F 85--S-E211-HFP-85; WRECK LOCATED IN LAT 38-18-44.91N,LONG 76-25-00.60W (29.2M SOUTHEAST OF CHA LEAST DEPTH OF 34 FT.; THIS IS SHOALEST DEPTH OBTAINED BUT SHOULD NOT BE CONSIDERED THE L RECOMMENDED TO OBTAIN LEAST DEPTH AND DETERMINE EXTENT OF ì WRECK/WRECKAGE. (UPDATEI 42 - CHES. BAY - PATUXENT RIVER - DRUM POINT - WRECK REPORT; BARGE REPORTED SUNK APROX. 5 LIGHT, 38/19N-76/25W 17 BERMAN, B.D., 1972, ENCYCLOPEDIA OF AMERICAN SHIPWRECKS, #906, CITES SOUTH-SOUTHEAST OF DRUM POINT LIGHT ON THE PATUXENT RIVER, CARGO, 359 GT, SUNK 12/16/1942, NO.4817; "COLUMBIA", CARGO, 359 GT,SUNK 3/15/43 BY MARINE CASUALTY; POSITION ACCURACY 3-5 MI NAVY REPORT 38/00/00.00, 076/30/00.00 PLOTS ON LAND, SEE AWOIS 1013 61 (UP DAS 10/99)
4008	OBSTRUCTION	12284	E	0067	10	HISTORY H6876/43-44--1:10,000 SCALE SURVEY; THREE POINT FIXES ON SHORE SIGNALS FOR ì CONTRO AT LAT 38-19-04.2N LONG 76-28-24W; LEAST ì DEPTH OF 11 1/2 FT; THERE ARE DOLPHINS NORTH AND SO LAT 38-19-04.6N LONG 76-28-24.4W AND LAT 38-19-03.5N LONG 76-28-24.4W; ì POSITIONS SCALED FROM S 74; CHART DEFICIENCIES INVESTIGATION; DEPTH OVER ì OBSTR REVISED TO 10 FT; DOLPHINS REVISED MSM) MAR--3/86; S-E211-HFP-86; METAL AND CONCRETE OBSTR, (20 FT HIGH, 22 FT ì LONG, 3 FT WIDE) C LONG 76-28-24W; 8.4 FT LEAST ì DEPTH; INVESTIGATED BY SIDE SCAN SONAR AND DIVER INVESTIGATIO CHARTED DOLPHINS. (UPDATED MSM 4/86) H10195/85--S-E211-HFP-85; SAME INFORMATION AS IN MAR A CORRECTED LEAST DEPTH IS 10 FT; EVALUATOR RECOMMENDED ì CHARTING OBSTRUCTION AS SHOW CHARTED ì DOLPHINS. (UPDATED MSD 6/91) SURVEY REQUIREMENTS FULL--VERIFY BY ECHO SOUNDER DEPTH AND ì POSITION ARE REQUIRED. CHAIN DRAG IS REQUIRED FOR DISPROVAL (50M MINIMUM ì RAC
4009	UNKNOWN	12261	E	0100	0	04009 HISTORY CL473/29--8/20/29; REPORTED BY US M.V. NATOMA; WK OF SCHOONER WITH TWO MAST WATER; CHARTED AS SUBM DANG WK IN LAT 38-18-14.76N LONG 76-10-55.76W; POSITION SCALED FROM SURVEY REQUIREMENTS NOT ASSIGNED
4010	UNKNOWN	12284	E	0100	9	HISTORY NM44/59--BARGE BROKEN IN TWO PARTS SUNK IN 10 FT WATER AT LAT 38-19-50.5N ì LONG 76-: 26-56.5W; 4 FT WATER OVER EACH PART. NM25/60--6/18/60; BARGE REMOVED EXCEPT FOR BOTTOM PO FT OVER BOTTOM SECTION; CHARTED AS SUBM DANG WK WITH LEGEND (9 FT REP). ì (ENTERED 12/14/8 INADEQUATE INVESTIGATION, RETAIN AS CHARTED. (UP SRB 8/89) MAR--4/87, S-E211-HFP-87; CHAIN DRA STAR PATTERN ì DEVELOPMENT OVER POSITION OF SNAGS TO CONFIRM LEAST DEPTHS. (UPDATED M: CHAIN DRAG OVER CHARTED POSITION ì RESULTED IN TWO SNAGS; ONE SNAG WAS IN LAT 38-19-51.02N DEPTH OF 14 FT.; 14.9M NORTH OF ITEM;(ALSO ì REF. 1519); EVALUATOR RECOMMENDED CHARTING WF LEAST DEPTH WAS BY FATHOMETER AND MAY NOT BE THE ì LEAST DEPTH, EVALUATOR RECOMMENDI (UPDATED MSM 9/88)

4011	OBSTRUCTION	12264	E	0067	0	04011 HISTORY NM36/51--9/8/51 DMA;5 FT X 5 FT CONCRETE BLOCK COVERED 2 1/2 FT REP IN PA IN PA L CHARTED AS OBSTR PA (2 1/2 FT REP). (ENTERED 12/14/84 MSM) SURVEY REQUIREMENTS NOT ASSIGN
4012	UNKNOWN	12261	E	0098	0	04012 HISTORY CL223/60--COE; 3/8/60; 3 VISIBLE WKS REP IN LAT 38-15-46N LONG 76-10-28W, LAT LONG 7 10-02W; REST ON BOTTOM OF WATERWAY; PROJECT 15 FT ABOVE MHW; POSITIONS SCALED FROM CH SURVEY REQUIREMENTS NOT ASSIGNED
4013	DRAGONET	12264	E	0102	95	HISTORY CL1112/61--C.O. AND DIRECTOR, DAVID TAYLOR MODEL BASIN (USN) TO COE (BALT.) USS DRAC DURING UNDERWATER EXPLOSION TEST AT LAT LAT 38-20-30N LONG 76-18-15W HEADING 240 DEG T. IN STRUCTURE; 95 FT WATER OVER APPURTENANCE OF MAIN STRUCTURE (SIX PIPE FLAGSTAFFS ERECTI CHARTED AS SUBM NONDANG WK PA WITH LEGEND 95 FT REP (ENTERED 12/14/84 MSM) MAR--4/86, S-E SONAR OVER CHARTED AND CONTACT AREAS; ECHO SOUNDER LEAST DEPTH; NO SIGNIFICANT SHADC CHARTED WITH CORRECTED LEAST DEPTH. (UPDATED MSM 9/86) FE280/86,S-E211-HFP-86; WK LOCATED 16.91W WITH AN ECHOSOUNDER DEPTH OF 137 FT (NOT A LD). RECOMMENDED CHARTING AS NONDAN(8/89) DESCRIPTION 180 SUBMARINE DRAGONET (SS-293) DISPLACEMENT 1.526; LENGTH, 311 FT., 8 IN.; B IN.; SPEED, 20 KTS.; COMPLEMENT, 66; ARMAMENT, ONE 4 IN. GUN; 10 21 IN. TORPEDO TUBES; CLASS "
4014	OBSTRUCTION	12264	E	0067	0	04014 HISTORY LNM27/72--7/5/72 5TH CGD; SUBM OBSTR REP IN PA LAT 38-18-00N LONG 76-16-22W; BELI VESSEL; PORTIONS OF OBSTR MAY BE VISIBLE; CHARTED AS OBSTR REP PA. LNM30/72--7/25/72 5TH CG 05N LONG 76-14-46W; WK BUOY ESTABLISHED 20 YDS W OF OBSTR. LNM30/77--7/26/77 5TH CGD; WK BU(FAILED TO LOCATE REMAINS OF WK IN LAT 38-18-06N LONG 76-14-48W; CHARTED LEGEND REVISED TO 84 MSM) MAR--4/86, S-E211-HFP-86; STAR PATTERN FATHOMETER SEARCH IN R/R MODE WITH NEGATIVE SOUNDER LINES ALSO RUN WITH NEGATIVE RESULTS. (UPDATED MSM 9/86) FE280/86,S-E211-HFP-86; IN, RETAIN AS CHARTED. (UP SRB 8/89) SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE. VISUAL SEA VISIBLE, A SSS, BOTTOM DRAG OR DIVER INVESTIGATION IS REQUIRED (1000M MINIMUM RADIUS). IF FO ARE REQUIRED.
4016	SNDG	12264	E	0127	0	HISTORY LNM25/77--5TH CGD; 6/21/77; SHOALING TO 14 FT HAS BEEN REPORTED IN LAT 38-24-03N, LONG MSM) MAR--4/86, S-E211-HFP-86; R/AZ HYDROGRAPHY CONDUCTED WITH 25 METER LINE SPACING; LEAS MSM 9/86) FE280/86,S-E211-HFP-86; SHOALING VERIFIED, 9 FT LOCATED IN LAT.38-24-01.7N, LONG 76-23-
4017	OBSTRUCTION	12264	E	0067	0	HISTORY CL444/78--COE;3/9/78; 4 FT X 10 FT SUBM SCIENTIFIC PLATFORM EXTENDING 2 FT OFF BOTTOM; ACADEMY OF SCIENCES; IN PA LAT 38-23-58.46 LONG 76-23-46.57W; POSITION SCALED FROM CHART. (E 86,S-E211-HFP-86; INADEQUATE INVESTIGATION, RETAIN AS CHARTED. (UP SRB 8/89)
4018	OBSTRUCTION	12264	E	0094	0	04018 HISTORY BP89279/74--OPR-512-AHP-74; CHART DEFICIENCIES INVESTIGATION; ROCK AWASH LOCA 23-17.2W, POSITION SCALED FROM CHART. (ENTERED 12/31/84 MSM) SURVEY REQUIREMENTS FULL--VE SEARCH AT CHART DATUM.IF NOT VISIBLE, A SSS, BOTTOM DRAG OR DIVER INVESTIGATION IS REQUIRE FOUND, LEAST DEPTH AND POSITION ARE REQUIRED. ASSIGNED: S-E211-HFP-86
4019	OBSTRUCTION	12264	E	0067	0	04019 HISTORY H7092/46--CS-287; 1:10,000 SCALE SURVEY; SEXTANT FIXES ON SHORE SIGNALS FOR CO LAT 38-16-46.22W LONG 76-23-04.32W; CHARTED AS A PILE; SIGNAL NET; POSITION SCALED FROM SURV CHART DEFICIENCIES INVESTIGATION; FISH STAKE REP GONE; REVISED ON CHART TO SUBM PILE. (ENT REQUIREMENTS FULL--VERIFY OR DISPROVE. VISUAL SEARCH AT CHART DATUM.IF NOT VISIBLE, A SSS INVESTIGATION IS REQUIRED (50M MINIMUM RADIUS). IF FOUND, LEAST DEPTH AND POSITION ARE REQU
4020	OBSTRUCTION	12264	E	0067	0	04020 HISTORY H7092/46--CS-287; 1:10,000 SCALE SURVEY; SEXTANT FIXES ON SHORE SIGNALS FOR CO PILINGS IN AREA BOUNDED BY LAT 38-15-45.39N LONG 76-23-48.74W, LAT 38-15-52.82N LONG 76-23-48.84V 52.84W AND LAT 38-15-45.31N LONG 76-23-52.53W; POSITIONS SCALED FROM SURVEY. BP89279/74--OPR- INVESTIGATION; PILINGS REP GONE REVISE ON CHART TO SUBM PILING. (ENTERED 12/31/84 MSM) SURV OR DISPROVE. VISUAL SEARCH AT CHART DATUM.IF NOT VISIBLE, A SSS, BOTTOM DRAG OR DIVER INVE MINIMUM RADIUS). IF FOUND, LEAST DEPTH AND POSITION ARE REQUIRED. ASSIGNED: S-E211-HFP-86
4021	OBSTRUCTION	12264	E	0067	0	04021 HISTORY H7092/46--CS287; 1:10,000 SCALE SURVEY; SEXTANT FIXES ON SHORE SIGNALS FOR CON 38-15-25.83N LONG 76-23-32.63W; SIGNAL DOL; POSITION SCALED FROM SURVEY. BP89279/74--OPR-512-A INVESTIGATION; DOL REP GONE; REVISED ON CHART TO SUBM. (ENTERED 12/31/84 MSM) SURVEY REQU DISPROVE. VISUAL SEARCH AT CHART DATUM.IF NOT VISIBLE, A SSS, BOTTOM DRAG OR DIVER INVEST MINIMUM RADIUS). IF FOUND, LEAST DEPTH AND POSITION ARE REQUIRED. ASSIGNED: S-E211-HFP-86
4022	OBSTRUCTION	12284	E	0085	0	HISTORY CL646/51--COE PERMIT; TWO 10 IN PILINGS LOCATED IN LAT 38-19-32.5N LONG ì 76-27-23.9W ANI 23.1W; OUTERMOST PILING 100 FT ì FROM HWL; POSITIONS SCALED FROM CHART. BP89276/74--OPR-512 INVESTIGATION: PILES REP ì GONE;REVISED ON CHART TO SUBM. (ENTERED 12/31/84 MSM) MAR--33/87, LOCATED TWO ROTTEN WOODEN PILES; ì ONE AT WATERLINE AND THE OTHER 1 METER OFFSHORE; AI FAILED TO REVEAL ADDITIONAL OBSTRUCTIONS. (UPDATED MSM 9/87) FE297/87--S-E211-HFP-87; TWO P BARING 1 ì FT. AND THE OTHER AWASH, AT LAT 38-19-32.80N, LONG 76-27-23.69W; ì EVALUATOR RECOMI AS SHOWN ON PRESENT ì SURVEY. (UPDATED MSM 9/88)
4023	OBSTRUCTION	12284	E	0085	0	HISTORY H6966/44--1:5,000 SCALE SURVEY; SEXTANT FIXES ON SHORE SIGNALS FOR CONTROL; ì PILE L 76-27-30.21W; POSITION SCALED FROM ì SURVEY. BP89276/74--OPR-512-AHP-74; CHART DEFICIENCIES IN REVISED ON CHART TO SUBM. (ENTERED 12/31/84 MSM) MAR--4/87, S-E211-HFP-87; VISIBLE PILE LOCATE 27-30.24W; TWO CHARTED PILES IN THIS VICINITY WERE NOT VISIBLE; CHAIN ì DRAG, FIVE LINES, 10 MET RESULTS. (UPDATED MSM 9/87) FE297/87--S-E211-HFP-87; A PILE WAS OBSERVED AT LAT 38-19-32.64N, ì MHW; CHAIN DRAG INVESTIGATION ì OVER AREA OF CHARTED SUBMERGED PILE WITH NEGATIVE RESU RECOMMENDED CHARTING PILE AT SURVEY POSITION AND ì REVISING TWO CHARTED PILES AT LAT 38- LAT 38-19-32.1N, LONG 76-27-29.6W TO SUBMERGED. (UPDATED MSM ì 9/88)
4046	OBSTRUCTION	12284	E	0067	0	HISTORY H6876/43-44--1:10,000 SCALE SURVEY; THREE POINT FIXES ON SHORE SIGNALS FOR ì CONTRO LAT 38-19-22.37N LONG 76-28-26.75W; CHARTED ì AS PILE; POSITION SCALED FROM SURVEY. CL1010/67- LONGER EXISTING; REVISED TO SUBM ì PILING. BP89276/74--OPR-512-AHP-74; CHART DEFICIENCIES INVE GONE; NO CORR TO CHART (ENTERED 12/28/84 MSM) MAR--3/85, S-E211-HFP-85; AREA WAS SEARCHED \ BOTTOM WITH NEGATIVE RESULTS; AREA WAS VERY SHALLOW AND OBSERVERS WERE IN ì THE WATE 85--S-E211-HFP-85; VISUAL SEARCH WITH GOOD VISIBILITY ì WITH NEGATIVE RESULTS; EVALUATOR CON FOR DISPROVAL AND RECOMMENDS RETAINING AS CHARTED. (UPDATED MSD ì 6/91) SURVEY REQUIRE SEARCH AT CHART DATUM. IF FOUND, ELEVATION ì AND POSITION ARE REQUIRED. CHAIN DRAG IS REQ MINIMUM RADIUS). ASSIGNED--S-E211-HFP-85
4047	OBSTRUCTION	12284	E	0067	0	HISTORY H6876/43-44--1:10,000 SCALE SURVEY; THREE POINT FIXES ON SHORE SIGNALS FOR ì CONTRO LAT 38-19-19.39N LONG 76-28-27.85W; CHARTED ì AS PILE; POSITION SCALED FROM SURVEY. CL1010/67- LONGER EXISTING; REVISED TO SUBM ì PILING. BP89276/74--OPR-512-AHP-74; CHART DEFICIENCIES INVE GONE; NO CORR TO CHART (ENTERED 12/28/84 MSM) MAR--3/85, S-E211-HFP-85; AREA WAS SEARCHED \ BOTTOM WITH NEGATIVE RESULTS; AREA WAS VERY SHALLOW AND OBSERVERS WERE IN THE ì WATE

						85–S-E211-HFP-85; VISUAL SEARCH WITH GOOD BOTTOM VISIBILITY ì WITH NEGATIVE RESULTS; EVALUA ADEQUATE ì FOR DISPROVAL AND RECOMMENDED RETAINING AS CHARTED. (UPDATED MSD ì 6/91) SUF VERIFY BY VISUAL SEARCH AT CHART DATUM. IF FOUND, ELEVATION ì AND POSITION ARE REQUIRED. C DISPROVAL (50M ì MINIMUM RADIUS). ASSIGNED–S-E211-HFP-85
4048	OBSTRUCTION	12284	E	0067	0	HISTORY H6876/43-44–1:10,000 SCALE SURVEY; THREE POINT FIXES ON SHORE SIGNALS FOR ì CONTRO LAT 38-19-17.54N LONG 76-28-28.69W; CHARTED ì AS PILE; POSITION SCALED FROM SURVEY. CL1010/67- LONGER EXISTING; REVISED TO SUBM ì PILING. BP89276/74–OPR-512-AHP-74; CHART DEFICIENCIES INVE GONE; NO CORR TO CHART (ENTERED 12/28/84 MSM) MAR–3/85, S-E211-HFP-85; AREA WAS SEARCHED \ BOTTOM WITH NEGATIVE RESULTS; AREA WAS VERY SHALLOW AND OBSERVERS WERE IN ì THE WATE 85–S-E211-HFP-85; VISUAL SEARCH WITH GOOD BOTTOM ì VISIBILITY WITH NEGATIVE RESULTS; EVALUA SEARCH ADEQUATE FOR DISPROVAL AND RECOMMENDED RETAINING AS ì CHARTED. (UPDATED MSD 6 FULL–VERIFY BY VISUAL SEARCH AT CHART DATUM. IF FOUND, ELEVATION ì AND POSITION ARE REQUI FOR DISPROVAL (50M ì MINIMUM RADIUS). ASSIGNED–S-E211-HFP-85
4049	OBSTRUCTION	12284	E	0067	0	HISTORY H6876/43-44–1:10,000 SCALE SURVEY; THREE POINT FIXES ON SHORE SIGNALS FOR ì CONTRO LAT 38-19-15.68N LONG 76-28-29.58W; CHARTED ì AS PILE; POSITION SCALED FROM SURVEY. CL1010/67- LONGER EXISTING; REVISED TO SUBM ì PILING. BP89276/74–OPR-512-AHP-74; CHART DEFICIENCIES INVE GONE; NO CORR TO CHART (ENTERED 12/28/84 MSM) MAR–3/85, S-E211-HFP-85; AREA WAS SEARCHED \ BOTTOM WITH NEGATIVE RESULTS; AREA WAS VERY SHALLOW AND OBSERVERS WERE IN THE ì WATE 85–S-E211-HFP-85; VISUAL SEARCH WITH GOOD BOTTOM ì VISIBILITY WITH NEGATIVE RESULTS; EVALUA SEARCH ADEQUATE FOR DISPROVAL AND RECOMMENDED RETAINING AS ì CHARTED. (UPDATED MSD 6 FULL–VERIFY BY VISUAL SEARCH AT CHART DATUM. IF FOUND, ELEVATION ì AND POSITION ARE REQUI FOR DISPROVAL (50M ì MINIMUM RADIUS). ASSIGNED–S-E211-HFP-85
4050	OBSTRUCTION	12284	E	0067	0	HISTORY H6876/43-44–1:10,000 SCALE SURVEY; THREE POINT FIXES ON SHORE SIGNALS FOR ì CONTRO LAT 38-19-13.82N LONG 76-28-30.02W; CHARTED ì AS PILE; POSITION SCALED FROM SURVEY. CL1010/67- LONGER EXISTING; REVISED TO SUBM ì PILING. BP89276/74–OPR-512-AHP-74; CHART DEFICIENCIES INVE GONE; NO CORR TO CHART (ENTERED 12/28/84 MSM) MAR–3/85, S-E211-HFP-85; AREA VISUALLY SEARC EXCELLENT VISIBILITY OF BOTTOM; EXTREMELY SHALLOW; NEGATIVE RESULTS. ì (UPDATED MSM 9/86) SEARCH WITH GOOD BOTTOM ì VISIBILITY WITH NEGATIVE RESULTS; EVALUATOR DOES NOT CONSIDER DISPROVAL AND RECOMMENDED RETAINING AS ì CHARTED. (UPDATED MSD 6/91) SURVEY REQUIREME SEARCH AT CHART DATUM. IF FOUND, ELEVATION AND ì POSITION ARE REQUIRED. CHAIN DRAG IS REQ MINIMUM ì RADIUS). ASSIGNED--S-E211-HFP-85
4051	OBSTRUCTION	12284	E	0067	0	HISTORY H6876/43-44–1:10,000 SCALE SURVEY; THREE POINT FIXES ON SHORE SIGNALS FOR ì CONTRO LAT 38-19-11.88N LONG 76-28-31.26W; CHARTED ì AS PILE; POSITION SCALED FROM SURVEY. CL1010/67- LONGER EXISTING; REVISED TO SUBM ì PILING. BP89276/74–OPR-512-AHP-74; CHART DEFICIENCIES INVE GONE; NO CORR TO CHART (ENTERED 12/28/84 MSM) MAR–3/85,S-E211-HFP-85; AREA VISUALLY SEARCH EXCELLENT VISIBILITY OF BOTTOM; EXTREMELY SHALLOW; NEGATIVE RESULTS. ì (UPDATED MSM 9/86) SEARCH WITH GOOD BOTTOM ì VISIBILITY WITH NEGATIVE RESULTS; EVALUATOR DOES NOT CONSIDER DISPROVAL AND RECOMMENDED RETAINING AS ì CHARTED. (UPDATED MSD 6/91) SURVEY REQUIREME SEARCH AT CHART DATUM. IF FOUND, ELEVATION ì AND POSITION ARE REQUIRED. CHAIN DRAG IS REQ MINIMUM RADIUS). ASSIGNED–S-E211-HFP-85
4052	OBSTRUCTION	12284	E	0067	0	HISTORY H6876/43-44–1:10,000 SCALE SURVEY; THREE POINT FIXES ON SHORE SIGNALS FOR ì CONTRO LAT 38-19-09.90N LONG 76-28-32.20W; CHARTED ì AS PILE; POSITION SCALED FROM SURVEY. CL1010/67- LONGER EXISTING; REVISED TO SUBM ì PILING. BP89276/74–OPR-512-AHP-74; CHART DEFICIENCIES INVE GONE; NO CORR TO CHART (ENTERED 12/28/84 MSM) H10195/85–S-E211-HFP-85; VISUAL SEARCH WITH G NEGATIVE RESULTS; EVALUATOR DOES NOT CONSIDER THE ì SEARCH ADEQUATE FOR DISPROVAL AND CHARTED. (UPDATED MSD 6/91) SURVEY REQUIREMENTS FULL–VERIFY BY VISUAL SEARCH AT CHART D AND POSITION ARE REQUIRED. CHAIN DRAG IS REQUIRED FOR DISPROVAL (50M ì MINIMUM RADIUS). AS
4054	OBSTRUCTION	12284	E	0067	0	HISTORY H6876/43-44–1:10,000 SCALE SURVEY; THREE POINT FIXES ON SHORE SIGNALS FOR ì CONTRO LAT 38-19-04.33N LONG 76-28-34.77W; CHARTED ì AS PILE; POSITION SCALED FROM SURVEY. CL1010/67- LONGER EXISTING; REVISED TO SUBM ì PILING. BP89276/74–OPR-512-AHP-74; CHART DEFICIENCIES INVE GONE; NO CORR TO CHART (ENTERED 12/28/84 MSM) MAR–3/86, S-E211-HFP-85; AREA VISUALLY SEARC WATER VISIBILITY AND EXTREMELY SHALLOW; NEGATIVE RESULTS. (UPDATED MSM 9/86) H10195/85--S- GOOD BOTTOM ì VISIBILITY WITH NEGATIVE RESULTS; EVALUATOR DOES NOT CONSIDER THE ì SEARCH RECOMMENDED RETAINING AS ì CHARTED. (UPDATED MSD 6/91) SURVEY REQUIREMENTS FULL--VERIF DATUM. IF FOUND, ELEVATION ì AND POSITION ARE REQUIRED. CHAIN DRAG IS REQUIRED FOR DISPRO ASSIGNED–S-E211-HFP-85
4071	OBSTRUCTION	12284	E	0067	0	HISTORY CL829/76–COE PERMIT; PIER ESTABLISHED IN LAT 38-19-21.9N, LONG 76-28-55.8W ì (OUTERMOS CHART AT 1:10,000. CL1703/78-USPS; 4/9/77; PIER REPORTED NO LONGER IN EXISTENCE. (ENTERED MSM VISUAL SEARCH WITH GOOD BOTTOM ì VISIBILITY; EVALUATOR DOES NOT CONSIDER THE ITEM DISPRO DID NOT ACQUIRE POSITIONAL DATA; EVALUATOR ì RECOMMENDED RETAINING AS CHARTED. (UPDATED REQUIREMENTS FULL–VERIFY BY VISUAL SEARCH AT CHART DATUM. IF FOUND, ELEVATION AND ì POSI IS REQUIRED FOR DISPROVAL (50M MINIMUM ì RADIUS). ASSIGNED–S-E211-HFP-85
4072	OBSTRUCTION	12284	E	0067	0	HISTORY CL1703/68–USPS; 4/9/77; L-SHAPED PIER REPORTED IN LAT 38-19-22.1N, LONG ì 76-28-59.2W (C SCALED FROM CHART AT 1:10,000. BP111021/80–1979 NANCI SOURCE; PIER REVISED TO RUINS. (ENTER HFP-85; VISUAL SEARCH WITH GOOD BOTTOM ì VISIBILITY; EVALUATOR CONSIDERS SEARCH INADEQUA EVALUATOR RECOMMENDED CHARTING SUBMERGED PIER RUINS AS ì SHOWN ON PRESENT SURVEY. (REQUIREMENTS FULL–VERIFY BY VISUAL SEARCH AT CHART DATUM. IF FOUND, ELEVATION AND ì POSI IS REQUIRED FOR DISPROVAL (75M MINIMUM ì RADIUS). ASSIGNED–S-E211-HFP-85
4073	OBSTRUCTION	12284	E	0067	0	HISTORY BP98461/67–CGS; 1965 AIR PHOTO REVISIONS; PIER LOCATED IN LAT 38-19-20.9N, ì LONG 76-29 POSITION SCALED FROM SOURCE AT 1:10,000. BP100504/77–1976 NANCI SOURCE; PIER REVISED TO RU 85–S-E211-HFP-85; VISUAL SEARCH WITH GOOD BOTTOM ì VISIBILITY; EVALUATOR CONSIDERED SEARC ITEM AND RECOMMENDED REVISING TO SUBMERGED PIER RUINS AS ì SHOWN ON PRESENT SURVEY. (REQUIREMENTS FULL–VERIFY BY VISUAL SEARCH AT CHART DATUM. IF FOUND, ELEVATION ì AND POSI IS REQUIRED FOR DISPROVAL (25M ì MINIMUM RADIUS). ASSIGNED–S-E211-HFP-85
4074	OBSTRUCTION	12284	E	0067	0	HISTORY BP62710/61–RS-745; CGS; NATURAL OYSTER BARS MAP; 1934-61 TOPO SOURCES; ì PIER LOCA 28-47.9W (OUTERMOST END); POSITION ì SCALED FROM CHART AT 1:10,000. BP111021/80–1979 NANCI SC (ENTERED 6/85 MSM) H10195/85–S-E211-HFP-85; DUE TO DISPARITIES BETWEEN ì HYDROGRAPHER COM AND IN THE SOUNDING ì VOLUME, EVALUATOR DETERMINED THAT HYDROGRAPHER DID NOT SEARCH T RECOMMENDED RETAIN AS CHARTED. (UPDATED MSD 6/91) SURVEY REQUIREMENTS FULL–VERIFY BY DATUM. IF FOUND, ELEVATION AND ì POSITION ARE REQUIRED. CHAIN DRAG IS REQUIRED FOR DISPRO ASSIGNED–S-E211-HFP-85

4076	OBSTRUCTION	12284	E	0067	0	HISTORY BP100504/77--1976 NANCI SOURCE; T-SHAPED PIER LOCATED IN LAT 38-19-01.3N, ì LONG 76-29-(END); POSITION SCALED FROM CHART AT ì 1:10,000. BP111021/80--1979 NANCI SOURCE; PIER REVISED T MAR--9/85; S-E211-HFP-85; VISUAL SEARCH CONFIRMED PIER IN RUINS IN CHARTED ì POSITION. (ENTERI HFP-85; DUE TO DISPARITIES BETWEEN ì HYDROGRAPHER COMMENTS IN THE DESCRIPTIVE REPORT AI ITEM IS CONSIDERED NEITHER VERIFIED NOR DISPROVED; ì EVALUATOR RECOMMENDED CHARTING AS MSD 6/91) SURVEY REQUIREMENTS FULL--VERIFY BY VISUAL SEARCH AT CHART DATUM. IF FOUND, ELE REQUIRED. CHAIN DRAG IS REQUIRED FOR DISPROVAL (25M MINIMUM ì RADIUS). ASSIGNED--S-E211-HFI
4077	OBSTRUCTION	12284	E	0067	0	HISTORY BP62710/61--RS-745; CGS; NATURAL OYSTER BARS MAP; 1934-61 TOPO SOURCES; ì PIER LOCA 27-43.1W (OUTERMOST END); POSITION ì SCALED FROM CHART AT 1:10,000. BP111021/80--1979 NANCI SC (ENTERED 6/85 MSM) MAR--8/85; S-E211-HFP-85; PIER OBSERVED TO BE FULLY INTACT, NOT IN RUINS, ì I 43.0W; (UPDATED MSM 11/85) H10195/85--S-E211-HFP-85; A CHARTED PIER VERIFIED 13M NORTH OF ì AW NOT LOCATED; ITEM CONSIDERED ì NEITHER VERIFIED NOT DISPROVED; EVALUATOR RECOMMENDED F SUBMERGED PIER RUINS. (UPDATED MSD 6/91) SURVEY REQUIREMENTS FULL--VERIFY BY VISUAL SEAI ELEVATION AND ì POSITION ARE REQUIRED. CHAIN DRAG IS REQUIRED FOR DISPROVAL (25M MINIMUM ì 85
4084	OBSTRUCTION	12284	E	0067	0	HISTORY BP62710/61--RS-745; CGS; NATURAL OYSTER BARS MAP; 1934-61 TOPO SOURCES; ì PIER LOCA 27-26.2W (OUTERMOST END); POSITION ì SCALED FROM CHART AT 1:10,000. BP100504/77--1976 NANCI SC (ENTERED 6/85 MSM)ì MAR--8/85, S-E211-HFP-85; L-SHAPED WOOD PIER LOCATED IN LAT 38-19-04.8N, ì L SURVEY POSITION. (UPDATED MSM 11/85) H10195/85--S-E211-HFP-85; PIPE BARING 2 FT FOUND IN SAME BE THE MOST SEAWARD PART OF RUINS; NOT ì CONSIDERED DIEPROVED; EVALUATOR RECOMMENDEI RUINS. (UPDATED MSD 6/91) SURVEY REQUIREMENTS FULL--VERIFY BY VISUAL SEARCH AT CHART DAT POSITION ARE REQUIRED. CHAIN DRAG IS REQUIRED FOR DISPROVAL (25M MINIMUM ì RADIUS). ASSIGN
4088	OBSTRUCTION	12284	E	0067	0	HISTORY BP62710/61--RS-745; CGS; NATURAL OYSTER BARS MAP; 1934-61 TOPO SOURCES; ì PIER LOCA 27-22.9W (OUTERMOST END); POSITION ì SCALED FROM CHART AT 1:10,000. BP100504/77--1976 NANCI SC ENTERED 6/85 MSM) MAR--8/85, S-E211-HFP-85; WOOD PIER LOCATED IN LAT 38-18-59.5N, LONG ì 76-27-2 H10195/85--S-E211-HFP-85; LOCATED A CHARTED PIER 15M NORTH OF ì ITEM POSITION BUT PROVIDED N RUINS; NOT ì CONSIDERED DISPROVED; EVALUATOR RECOMMENDED RETAINING AS CHARTED. ì (UPDA REQUIREMENTS FULL--VERIFY BY VISUAL SEARCH AT CHART DATUM. IF FOUND, ELEVATION AND ì POSI IS REQUIRED FOR DISPROVAL (25M MINIMUM ì RADIUS). ASSIGNED--S-E211-HFP-85
4094	OBSTRUCTION	12284	E	0067	0	HISTORY BP62710/61--RS-745; CGS; NATURAL OYSTER BARS MAP; 1934-61 TOPO SOURCES; ì PIER LOCA 29-03.9W (OUTERMOST END); POSITION ì SCALED FROM CHART AT 1:10,000. BP100504/77--1976 NANCI SC (ENTERED 6/85 MSM) MAR--9/85; S-E211-HFP-85; VISUAL SEARCH OF AREA WITH NEGATIVE RESULTS; ì F MSM 5/86) H10195/85--S-E211-HFP-85; VISUAL SEARCH WITH NEGATIVE RESULTS; ì NO CHAIN DRAG CON POSITION TAKEN TO CONFIRM WHERE ì HYDROGRAPHER SEARCHED; ITEM NOT CONSIDERED DISPROV REVISING TO SUBMERGED PIER RUINS. (UPDATED MSD 6/91) SURVEY REQUIREMENTS FULL--VERIFY BY DATUM. IF FOUND, ELEVATION AND ì POSITION ARE REQUIRED. CHAIN DRAG IS REQUIRED FOR DISPRO ASSIGNED--S-E211-HFP-85
4096	OBSTRUCTION	12284	E	0067	0	HISTORY BP62710/61--RS-745; CGS; NATURAL OYSTER BARS MAP; 1934-61 TOPO SOURCES; ì PIER LOCA 29-10.4W (OUTERMOST END); POSITION ì SCALED FROM CHART AT 1:10,000. BP100504/77--1976 NANCI SC (ENTERED 6/85 MSM) MAR--9/85;S-E211-HFP-86; VISUAL SEARCH FOR RUINS WITH NEGATIVE RESULTS; ì MSM 5/86) H10195/85--S-E211-HFP-85; VISUAL SEARCH WITH NEGATIVE RESULTS; ì NO CHAIN DRAG CON POSITION TAKEN TO ì CONFIRM WHERE THE HYDROGRAPHER WAS SEARCHING; ITEM NOT CONSIDEREI RECOMMENDED REVISING TO SUBMERGED PIER ì RUINS. (UPDATED MSD 6/91) SURVEY REQUIREMENT SEARCH AT CHART DATUM. IF FOUND, ELEVATION AND ì POSITION ARE REQUIRED. CHAIN DRAG IS REQ MINIMUM ì RADIUS). ASSIGNED--S-E211-HFP-85
4097	OBSTRUCTION	12284	E	0067	0	HISTORY BP62710/61--RS-745; CGS; NATURAL OYSTER BARS MAP; 1934-61 TOPO SOURCES; ì PIER LOCA 28-45.5W (OUTERMOST END); POSITION ì SCALED FROM CHART AT 1:10,000. BP100504/77--1976 NANCI SC (ENTERED 6/85 MSM) H10195/85--S-E211-HFP-85; VISUAL SEARCH WITH NEGATIVE RESULTS; ì NO CHAIN DETACHED POSITION TAKEN TO ì CONFIRM WHERE THE HYDROGRAPHER WAS SEARCHING; ITEM NOT C EVALUATOR RECOMMENDED REVISING TO SUBMERGED PIER ì RUINS. (UPDATED MSD 6/91) SURVEY RE VISUAL SEARCH AT CHART DATUM. IF FOUND, ELEVATION AND ì POSITION ARE REQUIRED. CHAIN DRAG (25M MINIMUM ì RADIUS). ASSIGNED--S-E211-HFP-85
4100	OBSTRUCTION	12284	E	0067	0	HISTORY BP62710/61--CGS; NATURAL OYSTER BARS MAP; 1934-61 TOPO SOURCE; PIER ì LOCATED IN LA (OUTERMOST END); POSITION ì SCALED FROM CHART AT 1:10,000. BP100504/77--1976 NANCI SOURCE; PI MSM 5/85) H10195/85--S-E211-HFP-85; VISUAL SEARCH WITH NEGATIVE RESULTS; ì NO CHAIN DRAG CON POSITION TAKEN TO ì CONFIRM WHERE THE HYDROGRAPHER WAS SEARCHING; ITEM NOT CONSIDEREI RECOMMENDED REVISING TO SUBMERGED PIER ì RUINS. (UPDATED MSD 6/91) SURVEY REQUIREMENT SEARCH AT CHART DATUM. IF FOUND, ELEVATION AND ì POSITION ARE REQUIRED. CHAIN DRAG IS REQ MINIMUM ì RADIUS). ASSIGNED--S-E211-HFP-85
4101	OBSTRUCTION	12284	E	0067	0	HISTORY BP62710/61--CGS; NATURAL OYSTER BARS MAP; 1934-61 TOPO SOURCES; PIER ì LOCATED IN L (OUTERMOST END); POSITION SCALED ì FROM CHART AT 1:10,000. BP100504/77--1976 NANCI SOURCE; PI MSM 5/85) H10195/85--S-E211-HFP-85; VISUAL SEARCH WITH NEGATIVE RESULTS; ì NO CHAIN DRAG CON POSITION TAKEN TO ì CONFIRM WHERE HYDROGRAPHER WAS SEARCHING; ITEM NOT CONSIDERED ì DI RECOMMENDED REVISING TO SUBMERGED PIER ì RUINS. (UPDATED MSD 6/91) SURVEY REQUIREMENT SEARCH AT CHART DATUM. IF FOUND, ELEVATION AND ì POSITION ARE REQUIRED. CHAIN DRAG IS REQ MINIMUM ì RADIUS). ASSIGNED--S-E211-HFP-85
4102	OBSTRUCTION	12284	E	0067	1	HISTORY BP62710/61--CGS; NATURAL OYSTER BARS MAP; 1934-61 TOPO SOURCES; PIER ì LOCATED IN L (OUTERMOST END); POSITION ì SCALED FROM CHART AT 1:10,000. BP100504/77-- 1976 NANCI SOURCE; P MSM 5/85) MAR--8/85, S-E211-HFP-85; PARTIALLY SUBMERGED METAL OBSTRUCTION, 3M LONG, ì EXTEN LAT 38-19-19.4N, LONG 76-29-12.9W. ì (UPDATED MSM 11/85) H10195/85--S-E211-HFP-85; METAL OBSTRUCT LAT 38-19-19.98N, LONG 76-29-12.90W; NO PIER RUINS FOUND ; ì EVALUATOR RECOMMENDED DELETING OBSTRUCTION AS SHOWN ON SURVEY. (UPDATED MSD 6/91) SURVEY REQUIREMENTS FULL--VERIFY BY DATUM. IF FOUND, ELEVATION AND ì POSITION ARE REQUIRED. CHAIN DRAG IS REQUIRED FOR DISPRO ASSIGNED--S-E211-HFP-85
4103	OBSTRUCTION	12284	E	0067	0	HISTORY BP62710/61--CGS; NATURAL OYSTER BARS MAP; 1934-61 TOPO SOURCES; PIER ì LOCATED IN L (OUTERMOST END); POSITION ì SCALED FROM CHART AT 1:10,000. BP100504/77--1976 NANCI SOURCE; PI MSM 5/85) H10195/85--S-E211-HFP-85; VISUAL SEARCH WITH NEGATIVE RESULTS; ì NO CHAIN DRAG CON POSITION TAKEN TO ì CONFIRM WHERE HYDROGRAPHER WAS SEARCHING; ITEM NOT CONSIDERED ì DI RECOMMENDED REVISING TO SUBMERGED PIER RUINS. ì (UPDATED MSD 6/91) SURVEY REQUIREMENT SEARCH AT CHART DATUM. IF FOUND, ELEVATION AND ì POSITION ARE REQUIRED. CHAIN DRAG IS REQ MINIMUM ì RADIUS). ASSIGNED--S-E211-HFP-85

4105	OBSTRUCTION	12284	E	0067	0	HISTORY BP98461/67--CGS; 1965 AIR PHOTO REVISIONS; PIER LOCATED N LAT 38-19-06.1N, ì LONG 76-29- POSITION SCALED FROM SOURCE AT 1:10,000. BP100504/77--1976 NANCI SOURCE; PIER REVISED TO RU 85--S-E211-HFP-85; VISUAL SEARCH WITH NEGATIVE RESULTS; ì NO CHAIN DRAG CONDUCTED NOR WAS ì CONFIRM WHERE THE HYDROGRAPHER WAS SEARCHING; ITEM NOT CONSIDERED ì DISPROVED; EVAL TO SUBMERGED PIER ì RUINS. (UPDATED MSD 6/91) SURVEY REQUIREMENTS FULL--VERIFY BY VISUAL FOUND, ELEVATION AND ì POSITION ARE REQUIRED. CHAIN DRAG IS REQUIRED FOR DISPROVAL (50M M E211-HFP-85
4111	OBSTRUCTION	12284	E	0085	0	HISTORY CL578/69--USPS; NUMEROUS DOLPHINS REPORTED IN LAT 38-19-17.0N, LONG ì 76-28-59.0W; PO 1:10,000. (ENTERED MSM 5/85) H10195/85--S-E211-HFP-85; LOCAL CONTACTS STATE DOLPHINS NEVER ì E NO DOLPHINS BUT DID FIND PILING IN ì THE SAME AREA; EVALUATOR RECOMMENDED REVISING NOTAT MSD 6/91) SURVEY REQUIREMENTS FULL--VERIFY BY VISUAL SEARCH AT CHART DATUM. IF FOUND, ELE REQUIRED. CHAIN DRAG IS REQUIRED FOR DISPROVAL (100M MINIMUM ì RADIUS). ASSIGNED--S-E211-HF
4113	OBSTRUCTION	12284	E	0085	0	HISTORY CL1703/78--USPS; CENTER PILING OF THREE REPORTED IN LAT 38-19-00.8N LONG ì 76-28-46.9W; IN LAT 38-19-01.6N LONG 76-28-47.1W; ì AND LAT 38-19-00.2N LONG 76-28-46.6W; POSITIONS SCALED FRO MSM 5/85) H10195/85--S-E211-HFP-85; VISUAL SEARCH WITH NEGATIVE RESULTS; ì NO CHAIN DRAG CON POSITION TAKEN TO ì CONFIRM WHERE HYDROGRAPHER WAS SEARCHING; ITEM NOT CONSIDERED ì DI RECOMMENDED REVISING TO SUBMERGED PILES. ì (UPDATED MSD 6/91) SURVEY REQUIREMENTS FUL CHART DATUM. IF FOUND, ELEVATION AND ì POSITION ARE REQUIRED. CHAIN DRAG IS REQUIRED FOR D RADIUS). ASSIGNED--S-E211-HFP-85
4118	SOUNDING	12284	E	0127	0	HISTORY BP85451/71--CL192/73; COE PERMIT AND DEPT OF NAVY DREDGING PLANS FOR ì 6FT COVE; 1:6 53.5N, LONG 76-28-16.0W. ì (ENTERED MSM 6/85) MAR--9/85; S-E211-HFP-85; AREA FOUND TO BE 5 FT DE ENTRANCE. (ENTERED MSM 5/86) H10195/85--S-E211-HFP-85; SINGLE LINE OF HYDROGRAPHY RUN WITH STATES INVESTIGATION NOT ADEQUATE TO ì DISPROVE CHARTED DEPTH; RECOMMENDED RETAINING SURVEY REQUIREMENTS FULL--VERIFY DEPTHS BY ECHO SOUNDER INVESTIGATION. ASSIGNED--S-E21
4121	OBSTRUCTION	12284	E	0085	0	HISTORY BP89276/74--OPR-512-AHP-74; CHART DEFICIENCIES SURVEY; PILE LOCATED AT LAT ì 38-18-29. SCALED FROM CHART AT 1:10,000 SCALE). ì (ENTERED MSM 6/85) H10195/85--S-E211-HFP-85; VISUAL SEA SNAG (TREE LIMB) 112M SOUTH OF AWOIS POSITION BUT NO SIGN OF ì PILE; NOT CONSIDERED DISPRO ì RETAINING AS CHARTED. (UPDATED MSD 6/91) SURVEY REQUIREMENTS FULL--VERIFY BY VISUAL SEA ELEVATION AND ì POSITION ARE REQUIRED. CHAIN DRAG IS REQUIRED FOR DISPROVAL (50M MINIMUM ì 85
4132	OBSTRUCTION	12284	E	0085	0	HISTORY BP89276/74--OPR-512-AHP-74; CHART DEFICIENCIES SURVEY; PILE LOCATED AT LAT ì 38-18-46. SCALED FROM CHART AT 1:10,000 SCALE). ì (ENTERED MSM 6/85) MAR--8/85, S-E211-HFP-85; SEE ITEM 4 WHEN SURVEY ì IS VERIFIED. (UPDATED MSM 11/85) H10195/85--S-E211-HFP-85; VISUAL SEARCH FOUND POSITION, BUT EVALUATOR DOESN'T CONSIDER THIS THE SAME PILE; ì CHARTED PILE NOT CONSIDERE RECOMMENDED ì CHARTING AS SUBMERGED PILE. (UPDATED MSD 6/91) SURVEY REQUIREMENTS FULL CHART DATUM. IF FOUND, ELEVATION AND ì POSITION ARE REQUIRED. CHAIN DRAG IS REQUIRED FOR D RADIUS). ASSIGNED--S-E211-HFP-85
4136	OBSTRUCTION	12264	E	0094	0	HISTORY UNKNOWN SOURCE--ROCK AWASH CHARTED IN LAT 38-17-57.0N, LONG 76-22-09.4W; POSITION 1:40,000. (ENTERED MSM 6/85) MAR--10/85; S-E211-HFP-85; LAUNCH DRIFTED ONTO RIP RAP THAT EXTEN ROCK BREAKWATER AROUND ABANDONED LIGHTHOUSE; LEADING EDGE OF SUBM RIP RAP IN LAT 38-1 (ENTERED MSM 5/86) H10193/85--S-E211-HFP-85; ROCK AWASH WAS LOCATED 35.2M SOUTH OF CHARTE LONG 76-22-08.51W; BARES 1 FT.; EVALUATOR RECOMMENDS DELETING CHARTED ROCK AND APPLY T (UPDATED MSM 1/88)
4352	OBSTRUCTION	12284	E	0067	3	HISTORY CL1809/75--USPS; PILING EXTENDING FROM PIER, APPROX. AT SOLOMONS ISLAND WHARF LIG 00.3N, LONG 76-27-06.0W; CHARTED AS 3 PILES PA. CL1403/82--USPS; PILES REPORTED TO NO LONGER PA. (ENTERED MSM 2/86) MAR--4/87, S-E211-HFP-87; VISUAL SEARCH AND CHAIN DRAG REVEALED ON V PILES IN THE VICINITY OF THE PIER. (UPDATED MSM 9/87) FE297/87--S-E211-HFP-87; CHAIN DRAG AND V SUBMERGED PILES IN 38-19-01.37N, LONG 76-27-05.8W (8 IN. ì DIAMETER WITH LEAST DEPTH OF 6 FT.) A 06.01W (8 IN. DIAMETER WITH LEAST DEPTH OF 3 FT.); ALSO ì FOUND A PILE, BARING 15 FT, AT LAT 38-1 EVALUATOR RECOMMENDED CHARTING AS SHOWN ON SURVEY. ì (UPDATED MSM 9/88)
4353	OBSTRUCTION	12284	E	0067	0	04353 HISTORY LNM38/73--5TH CGD; EMPRESS MOORING BUOY B HAS BEEN ESTABLISHED IN LAT 38-19- WITH BLUE HORIZONTAL BANDS; EXPECTED TO REMAIN ON STATION UNTIL 11/1/84. CL1109/84--NOS; INS PEIRCE; NAVY REPORTS BUOY TO BE SUNK; CONFIRMED BY SSS; CHARTED AS OBSTR (SUBM BUOY). S-E211-HFP-86; REPEATED PASSES OVER CHARTED AREA WITH SIDE SCAN SONAR AND ECHO SOUND LAT 38-19-37.4N, LONG 76-28-54.7W. (UPDATED MSM 9/86) FE280/86,S-E211-HFP-86; SUBM BUOY LOCATE 50.3W WITH AN ECHOSOUNDER DEPTH OF 37 FT (NOT A LD). RECOMMENDED CHARTING AS SUBM BUO SURVEY REQUIREMENTS A DIVER OR FULL ECHOSOUNDER INVESTIGATION IS REQUIRED FOR LD DETE
4354	SOUNDING	12284	E	0127	0	HISTORY CL1653/81--USPS; SHOAL CONSISTING OF HARD BOTTOM AND OYSTER SHELLS REPORTED ì IN CHARTED AS LEGEND "SHL REP 1981". THIS ITEM ì WILL APPEAR ON THE 12TH EDITION OF CHART 12284 S-E211-HFP-87; FULL ECHO SOUNDER DEVELOPMENT WITH 10M ARCS TO ì SHORE WITH NO SIGN OF S FE297/87--S-E211-HFP-87; FULL ECHO SOUNDER DEVELOPMENT USING ì ARCS TO SHORE, 10M APART, NEGATIVE ì RESULTS; EVALUATOR RECOMMENDED DELETING SHOALING NOTE AND ì CHARTING AS SH (UPDATED MSM 9/88)
4355	OBSTRUCTION	12284	E	999	0	HISTORY T8543/42-43--TWO DOLPHINS LOCATED IN LAT 38-19-55.5N, LONG 76-27-31.7W AND ì 38-19-55.6N, A DRY DOCK AND MARINE RAILWAY. UNKNOWN SOURCE--PILE ADDED TO LAT 38-19-55.0N, LONG 76-27- OF CHART 12284 BY PEIRCE; PILES AT CALVERT ì MARINA NOT VISIBLE; OWNER REPORTS THAT PILES SUBM PILES (ENTERED MSM 2/86) FE297/87--S-E211-HFP-87; SEARCHED FOR BY FIELD UNIT WITH ì NEG EXAMINATION OF FIELD RECORDS DURING ì OFFICE PROCESSING LEADS TO THE CONCLUSION THAT TH LONGER PRESENT; EVALUATOR RECOMMENDED REMOVING PILES ì FROM THE CHART. (UPDATED MSM
4356	OBSTR	12284	E	0067	0	HISTORY BP89276/74--OPR-512-AHP-74; CHART DEFICIENCIES INVESTIGATION; VISIBLE WRECK ì LOCATE 34.5W (POSITION SCALED FROM CHART AT ì 1:10,000). (ENTERED MSM 2/86) MAR--4/86, S-E211-HFP-86; V VISIBLE WRECK INSHORE OF A GROUP OF PILES IN CHARTED POSITION. (UPDATED MSM 9/86) FE280/86 86, NO POSITION OBTAINED.(UP SRB 8/89) FE297/87--S-E211-HFP-87; WRECK FALLS WITHIN AN AREA FO SUBMERGED HULLS, PILES, WOOD, CONCRETE, AND METAL ì DEBRIS THAT STRETCHES TO SHORE; AR SWEPT ì WITH CHAIN DRAG TO VERIFY FOUL AREA LIMITS; EVALUATOR RECOMMENDED ì DELETING CH PIER RUINS AND REVISING ì CHARTED FOUL LIMITS TO REFLECT THE LIMITS SHOWN ON PRESENT ì SUR AND 4357. (UPDATED MSM 9/88)
						HISTORY BP89276/74--OPR-512-AHP-74; CHART DEFICIENCIES INVESTIGATION; VISIBLE WRECK ì LOCATE 34.5W (POSITION SCALED FROM CHART AT ì 1:10,OOO). (ENTERED MSM 2/86) MAR--4/86, S-E211-HFP-86; VISIBLE WRECK INSHORE OF A GROUP OF PILES IN CHARTED POSITION. (UPDATED MSM 9/86) FE280/86

4357	OBSTR	12284	E	0067	0	86, NO POSITION OBTAINED.(UP SRB 8/89) FE297/87--S-E211-HFP-87; WRECK FALLS WITHIN AN AREA FOL SUBMERGED HULLS, PILES, WOOD, CONCRETE, AND METAL ì DEBRIS THAT STRETCHES TO SHORE; AR SWEPT ì WITH CHAIN DRAG TO VERIFY FOUL LIMITS; EVALUATOR RECOMMENDED ì DELETING CHARTEI RUINS AND REVISING ì CHARTED FOUL LIMITS TO REFLECT THE LIMITS SHOWN ON PRESENT ì SURVEY; 4356. (UPDATED MSM 9/88)
4358	UNKNOWN	12284	E	0100	0	HISTORY CL1555/79--USPS; TWO SUNKEN CRUISERS, 20 AND 30 FT, VISIBLE IN ì LAT 38-20-10N, LONG 76- CHART AT 1:10,000). CL1402/82--USPS; WK NOT VISIBLE, (ENTERED MSM 2/86) MAR--4/86, S-E211-HFP-86; WITH EXCELLENT ì VISIBILITY; NEGATIVE RESULTS; WK ABOVE MHW ON NORTH SIDE OF COVE BUT SHC (UPDATED MSM 9/86) FE280/86,S-E211-HFP-86; SAME AS MAR 4/86. (UP SRB 8/89) MAR--3/87, S-E211-HFP SPACING; NO SIGN OF WRECKAGE; ì CONDITIONS WERE CALM WITH EXCELLENT VISIBILITY. (UPDATED I CHAIN DRAG RUNNING ARCS, 10M APART, ì WITH NEGATIVE RESULTS; EVALUATOR RECOMMENDED DEI CHART. (UPDATED MSM 9/88)
4359	UNKNOWN	12284	E	0100	0	HISTORY CL1402/82--USPS; THREE WKS ON SHORE WITH STERNS BELOW MHW IN LAT 38-20-16N, ì LONG FROM CHART AT 1:10,000). CHARTED AS WKS ì PA WITH LEADER; THIS ITEM WILL BE PRINTED ON 12TH E (ENTERED MSM 2/86) MAR--4/86, S-E211-HFP-86; VISUAL SEARCH CONFIRMED FOUR WKS ON SHORE WI (UPDATED MSM 9/86) FE280/86,S-E211-HFP-86; SAME AS MAR 4/86. NO POSITION OBTAINED.(UP SRB 8/8 VISUAL SEARCH VERIFIED THREE WKS AND TWO ì ADDITIONAL; ALL WKS VISIBLE AT MHW AND BARE 1- 87--S-E211-HFP-87; POSITION OBTAINED AT LAT 38-20-16.17N, ì LONG 76-27-31.12W ON THE MOST OFFSH GROUP OF FIVE VISIBLE WRECKS; EVALUATOR RECOMMENDED CHARTING AS ì DANGER CURVE WITH SHOWN ON THE ì PRESENT SURVEY. (UPDATED MSM 9/88)
4360	UNKNOWN	12284	E	0100	0	HISTORY T8543/42-43--VISIBLE WRECK LOCATED IN LAT 38-20-23.52N, LONG 76-27-50.21W ì (POSITION SC UNKNOWN SOURCE--WK REVISED TO SUBM. (ENTERED MSM 2/86) MAR--4/86, S-E211-HFP-86; VISUAL SE VISIBILITY ì OF BOTTOM; WK OF 24 FT CABIN CRUISER CONFIRMED IN PA LAT 38-20-21.8N, LONG ì 76-27-5 STARBOARD TO SHORE AND POSING NO DANGER TO ì NAVIGATION. (UPDATED MSM 9/86) FE280/86,S-E (UP SRB 8/89) MAR--3/87, S-E211-HFP-87; VISUAL SEARCH; MAX 2FT DEPTHS; EXCELLENT ì VISIBILITY; NC OBSERVED AT LAT 38-20-20.51N, ì LONG 76-27-51.55W PORTIONS OF THEIR HULLS VISIBLE AT ALL STAGE FE297/87--S-E211-HFP-87; VISUAL SEARCH WITH EXCELLENT ì VISIBILITY WITH NEGATIVE RESULTS; TWO SOUTH ì OF CHARTED POSITION (REF. ITEM 6878); MR. HARVEY WOOD, A LOCAL ì RESIDENT, AND MR. C COUNTY MARINE, ì PROVIDED INFORMATION AND DOCUMENTATION TO VERIFY THAT THE CHARTED ì WR REMOVED AND DESTROYED; EVALUATOR ì RECOMMENDED DELETING WRECK FROM THE CHART. (UPD
4361	UNKNOWN	12284	E	0100	0	HISTORY CL921/73--USPS; 4/28/73; TWO WKS WITH PORTION OF HULLS ABOVE WATER AT ALL ì TIMES, IN 29.2W; AND LAT 38-20-25.6N, LONG ì 76-27-28.3W (POSITIONS SCALED FROM CHART AT 1:10,000). MAR--4/ 24 FT WOODEN CABIN CRUISER CONFIRMED ì BY VISUAL SEARCH AT CHARTED POSITION. (UPDATED M SAME AS MAR 4/86. (UP SRB 8/89) MAR--3/87, S-E211-HFP-87; CHAIN DRAG AND VISUAL SEARCH WITH E NEGATIVE RESULTS DETACHED POSITIONS TAKEN ON PIERS WHICH OUTLINE ì AREA; IN 1986 OWNER R OUT OF WATER AND PLANNED TO ì ALSO SALVAGE 4361; NO TRACE OF EITHER WK IN 1987. FE297/87--S SWEEP OF CHARTED LOCATION WITH ì NEGATIVE RESULTS; VISUAL SEARCH FOR ANY SIGN OF WRECI WITH NEGATIVE RESULTS; EVALUATOR RECOMMENDED DELETING ì WRECK FROM CHART. (UPDATED M IS MR. DICK JOHNSON OF DOW PT MD 20626 PER HIS NEIGHBOR MR W.H. ì BEAN.
4362	UNKNOWN	12284	E	0100	0	HISTORY CL921/73--USPS; 4/28/73; TWO WKS WITH PORTION OF HULLS ABOVE WATER AT ALL ì TIMES, IN 28.3W, AND LAT 38-20-24.2N, LONG ì 76-27-29.2W (POSITIONS SCALED FROM CHART AT 1:10,000). MAR--4/ INFORMATION FROM MR W.H. BEAN OF DOW PT MD ì 20626 REPORTED WK WAS PULLED FROM CREEK. E211-HFP-86; SAME AS MAR 4/86. (UP SRB 8/89) MAR--3/87, S-E211-HFP-87; CHAIN DRAG AND VISUAL SE VISIBILITY; NEGATIVE RESULTS DETACHED POSITIONS TAKEN ON PIERS WHICH OUTLINE ì AREA; IN 198 PULLED 4362 OUT OF WATER AND PLANNED TO ì ALSO SALVAGE 4361; NO TRACE OF EITHER WK IN 198 S-E211-HFP-87; CHAIN DRAG OVER CHARTED POSITION WITH NEGATIVE ì RESULTS; VISUAL SEARCH FO NEGATIVE RESULTS; ì EVALUATOR RECOMMENDED DELETING WRECK FROM CHART. (UPDATED MSM 9 MR DICK JOHNSON OF DOW PT, MD 20626 PER HIS NEIGHBOR, MR W.H. ì BEAN.
4363	UNKNOWN	12284	E	0100	0	HISTORY T8542/42-43--WRECK LOCATED IN LAT 38-20-28.23N, LONG 76-25-49.16W ì (POSITION SCALED FR 86,S-E211-HFP-86; VISUAL SEARCH WITH NEGATIVE RESULTS, RETAIN AS CHARTED. (UP SRB 8/89) MAR- SEARCH WITH NEGATIVE RESULTS; MR TOWNSEND ì (SEE BELOW) STATED A SMALL, STEEL HULL VESS POSITION ì PRIOR TO SUMMER OF 1985; OWNER REMOVED WK IN ORDER TO CONSTRUCT A NEW ì BULI 87) FE297/87--S-E211-HFP-87; VISUAL SEARCH FROM PIER, OFFSHORE OF ì CHARTED POSITION OF WRE VISIBILITY AND ì NEGATIVE RESULTS; CHAIN DRAG NOT ATTEMPTED DUE TO CLOSENESS OF ì PIERS AN LOCAL RESIDENT (SEE ABOVE) ì CONFIRMED THAT WRECK HAD BEEN REMOVED; EVALUATOR RECOMN FROM CHART. (UPDATED MSM 9/88) DESCRIPTION **** MR. JOHN TOWNSEND, SRI BOX 328A, LUSBY, MD
4364	UNKNOWN	12284	E	0100	0	HISTORY T8543/42-43--VISIBLE WRECK LOCATED IN LAT 38-20-29.05N, LONG 76-27-28.53W ì (POSITION SC UNKNOWN SOURCE--WK REVISED TO SUBM. (ENTERED MSM 2/86) MAR--4/86, S-E211-HFP-86; VISUAL SE DANGEROUS WK IN ì CHARTED POSITION WITH PORTION OF WOODEN HULL ABOVE MHW AT ALL TIMES PRESENTS NO HAZARD TO NAVIGATION. (UPDATED MSM 9/86) FE280/86,S-E211-HFP-86; SAME AS MAR 4 SRB 8/89) MAR--3/87, S-E211-HFP-87; 2 HULLS AGROUND IN SHALLOW WATER AND BARING ì AT MHW AN WOOD HULL WERE LOCATED IN VICINITY OF ì AWOIS ITEMS; WOOD HULL COMPLETELY REMOVED FROI CONFIRMED THIS INFO. (UPDATED MSM 9/87) FE297/87--S-E211- AT THE TIME OF THIS INVESTIGATION THI THE REMAINS WERE OBSERVED ON SHORE ABOVE THE ì MHW LINE; MR. OWENS JOHNSON, ONE OF TI 3812) ì OWNS THE PROPERTY ON WHICH THE DISMANTLED WRECK IS LOCATED; HE STATED THAT ì HE I WOODEN HULL FROM THE WATER; ì EVALUATOR RECOMMENDED DELETING THE WRECK FROM THE CH
4365	UNKNOWN	12284	E	0098	0	HISTORY T8543/42-43--VISIBLE WRECK LOCATED IN LAT 38-20-30.12N, LONG 76-27-27.05W ì (POSITION SC UNKNOWN SOURCE--WK REVISED TO SUBM. (ENTERED MSM 2/86) MAR--4/86, S-E211-HFP-86; VISUAL SE DANGEROUS WK IN ì CHARTED POSITION WITH PORTION OF WOODEN HULL ABOVE MHW AT ALL TIMES PRESENTS NO HAZARD TO NAVIGATION. (UPDATED MSM 9/86) FE280/86,S-E211-HFP-86; SAME AS MAR 4 E211-HFP-87; 2 HULLS AGROUND IN SHALLOW WATER AND BARING AT ì MHW AND DEBRIS FROM A SAL LOCATED IN VICINITY OF AWOIS ì ITEMS; WOOD HULL COMPLETELY REMOVED FROM WATER; LOCAL CC (UPDATED MSM 9/87) FE297/87--S-E211-HFP-87; AT THE TIME OF THIS INVESTIGATION THIS ì WRECK WAS DISMANTLED BY MR. JONATHAN ì SMITH AND MR. OWENS JOHNSON; THEY HAD BEEN HIRED BY MR. CA DOWELL, MD. 20629, TEL. NO. 301-326-2983; ì MR. WATSON STATED THAT THE HULL OF THIS ITEM WAS T YEARS AGO TO ITS PRESENT LOCATION FROM A NEARBY LOCATION; ì HULL IS AGROUND IN SHALLOW EVALUATOR RECOMMENDED ì DELETING WRECK FROM CHART. (UPDATED MSM 9/88)
4366	UNKNOWN	12284	E	0098	0	HISTORY CL1402/82--USPS; WRECK ON SHORE WITH STERN BELOW MHW IN LAT 38-20-31N, LONG ì 76-27 CHART AT 1:10,000); THIS ITEM WILL APPEAR ì ON THE 12TH EDITION OF CHART 12284. (ENTERED MSM 2 VISUAL SEARCH CONFIRMED NON DANGEROUS WK IN ì CHARTED POSITION WITH PORTION OF WOODE WK WAS ì TOWED TO SHORE AND PRESENTS NO HAZARD TO NAVIGATION. (UPDATED MSM 9/86) FE280 4/86. NO POSITION PROVIDED.(UP SRB 8/89) MAR--3/87, S-E211-HFP-87; 2 HULLS AGROUND IN SHALLOW AND DEBRIS FROM A SALVAGED WOOD HULL WERE LOCATED IN VICINITY OF ì AWOIS ITEMS; WOOD HL

						WATER; LOCAL CONTACTS ì CONFIRMED THIS INFO. (UPDATED MSM 9/87) FE297/87--S-E211-HFP-87; MR. RESIDENT, ì STATED THAT THE REMAINS OF A 30 FT. FIBERGLASS HULL WAS TOWED ì INTACT FROM A I PRESENT POSITION ON THE ì PROPERTY OF MR. VINCENT JOHNSON; EVALUATOR RECOMMENDED CHAI BARING 4 FT., AT LAT 38-20-31.77N, LONG ì 76-27-25.17W (SCALED FROM SURVEY). (UPDATED MSM 9/88)
4367	OBSTR	12284	E	0067	0	HISTORY T8542/42-43--VISIBLE WRECK LOCATED IN LAT 38-20-33.84N, LONG 76-25-49.89W ì (POSITION SC UNKNOWN SOURCE--WK REVISED TO SUBM. (ENTERED MSM 2/86) MAR--4/86, S-E211-HFP-86; VISUAL SE CHARTED POSITION; ì MARKED BY STAKE BARING 4 FEET WHICH IS MOUNTED AT NORTHERN END OF W 86,S-E211-HFP-86; SAME AS MAR 4/86, NO POSITION OBTAINED.(UP SRB 8/89) MAR--3/87, S-E211-HFP-87; SUBM OBSTR WITH ì UNCORRECTED LEAST DEPTH OF 0.8FT; BOTTOM VISIBLE; OBSTR IS 6 METERS LON WOOD STRUCTURE; HYDROGRAPHER BELIEVES IT IS REMAINS OF A ì BULKHEAD NOT A WK. (UPDATED 87; WOODEN OBSTRUCTION, 6M LONG AND 8IN. ì WIDE, LOCATED AWASH IN LAT 38-20-34.15N, LONG 76- RECOMMENDED REPLACING CHARTED WRECK WITH OBSTRUCTION AS SHOWN ì ON SURVEY. (UPDATE
4368	UNKNOWN	12284	E	0098	0	HISTORY CL1653/81--USPS; WK IN WATER AT SHORELINE; 25 FT LONG; 4 FT ABOVE WATER; IN ì LAT 38-2 POSITION SCALED FROM CHART AT 1:10,000; ì THIS ITEM WILL APPEAR ON THE 12TH EDITION OF CHART FE280/86,S-E211-HFP-68; VERIFIED FOUR WOODEN HULLS LOCATED AT ì CHARTED POSITION (LAT 38-20- POSITION ì OBTAINED. (UP SRB 8/89) MAR--3/87, S-E211-HFP-87; POSITIONS OBTAINED ON OFFSHORE CO FOUR EXPOSED WOOD HULLS GROUNDED NEAR SHORE; WKS TOWED TO THIS ì LOCATION BY PROPER SALVAGED; SOME OF SURROUNDING ì AREA IS FOUL WITH WOOD AND DEBRIS. (UPDATED MSM 9/87) FI INVESTIGATION OF CHARTED LOCATION REVEALED ì A GROUP OF FOUR VISIBLE WRECKS THAT ARE GF NORTHEAST AND SOUTHEAST OFFSHORE CORNERS ARE LOCATED IN LAT 38-20-37.10N, ì LONG 76-26-56 76-26-56.12W, RESPECTIVELY; ì OFFSHORE OF OBSERVED POSITIONS WAS VISUALLY SEARCHED FOR ì NEGATIVE RESULTS; EVALUATOR ì RECOMMENDED CHARTED WRECKS AND NOTATION BE DELETED FR CURVE WITH NOTATION "WKS" BE ADDED AT THE SURVEY ì POSITIONS.(UPDATED MSM 9/88) DESCRIPTI OWNED BY MR JOSEPH HUTCHINS, P.O. BOX 64, CURTIS RD, ì DOWELL, MD PHONE (301) 326-3746.
4369	UNKNOWN	12284	E	0100	0	HISTORY T8542/42-43--VISIBLE WRECK LOCATED IN LAT 38-20-39.70N, LONG 76-25-39.37W ì (POSITION SC CL921/73--USPS; WK REPORTED REMOVED; REVISED TO SUBM. (ENTERED MSM 2/86) ì FE280/86,S-E211- BOTTOM VISIBILTY, NEGATIVE RESULTS. (UP SRB 8/89) MAR--4/87, S-E211-HFP-87; VISUAL SEARCH IN 2-3 RESULTS; MARINA OWNER (SEE BELOW) STATED THAT HE HAD HAD NO REPORTS OF ì GROUNDINGS O ALSO STATED THAT USPS AND USCGAUX ì HAD CONDUCTED EXTENSIVE SOUNDING OVER AREA WITH N MSM 9/87) FE297/87--S-E211-HFP-87; VERIFIED REPORT OF ABOVE INFORMATION; ì EVALUATOR RECOMM WRECK TO "ED". (UPDATED ì MSM 9/88) DESCRIPTION **** OWNER OF PINE COVE MARINA IS MR KEN HIL 20657 PHONE (301) 326-2817.
4370	UNKNOWN	12284	E	0098	0	HISTORY BP89276/74--OPR-512-AHP-74; CHART DEFICIENCIES INVESTIGATION; VISIBLE WRECK ì LOCATE 34.0W. (POSITION SCALED FROM ì CHART AT 1:10,000) (ENTERED MSM 2/86) MAR--4/86, S-E211-HFP-86; V CHARTED POSITION; ì NOT A HAZARD TO NAVIGATION. (UPDATED MSM 9/86) FE280/86,S-E211-HFP-86;SAI OBTAINED.(UP SRB 8/89) MAR--4/87, S-E211-HFP-87; VISUAL SEARCH VERIFIED REMAINS OF STEEL-HULL MHW; MARINA OWNER STATES WK HAS BEEN IN POSITION ì FOR A NUMBER OF YEARS AND FUTURE PI EXPANSION ì OF MARINA. (UPDATED MSM 9/87) FE297/87--S-E211-HFP-87; VERIFIED ABOVE DATA; EVALU RETAINING AS CHARTED. (UPDATED MSM 9/88) DESCRIPTION **** PINE COVE MARINA OWNER IS MR KEN LUSBY, MD 20657. PHONE (301) 326-2817.
4435	UNKNOWN	12284	E	0098	0	04435 HISTORY MAR--9/85; S-E211-HFP-86; 3 PARTIALLY SUBM WKS WERE FOUND AT LAT 38-17-57.5N, L(WOODEN CABIN CRUISERS. (ENTERED MSM 5/86) SURVEY REQUIREMENTS NOT ASSIGNED
4468	UNKNOWN	12266	E	0100	58.4	HISTORY LNM27/72--30 FT. CABIN CRUISER REP. SUNK IN 50 FT. IN APPROX. POS. LAT. 38-31-00N, LONG. 5 GALLON JUG. FE308/87SS--OPR-E609-RU/HE-87; WK LOCATED IN LAT 38-30-26.85N, LONG 76-23-35.75W FOUND WITH DIVER PNEUMATIC DEPTH GAUGE. EVALUATOR RECOMMENDS CHARTING AS 58FT WK. LO 27498.6X, 42365.6Y, 58836Z. (UPDATE 4/89 LQ) DESCRIPTION **** FROM FE308/87SS--DECAYING WOODEN AND PARTIALLY BURIED IN SILT BOTTOM.
4690	UNKNOWN	12266	E	0100	27	HISTORY LNM47/73--32 FT. SAILBOAT REPORTED SUNK IN APPROX. LAT. 38-34-27N, LONG. 76-22-25W, IN EXERCISE CAUTION WHEN TRANSITING AREA. LNM50/73--LITTLE CHOPTANK ENTRANCE BUOY 4 TEMP. R 38-34-37.5N (SIC), LONG. 76-22-25W AND RENUMBERED WR4 TO MARK POS. OF WRECK. BLACK AND REI WAS TEMP. EST. HAS BEEN REMOVED. LNM4/74--LITTLE CHOPTANK RIVER ENTRANCE BUOY WR4 TEMF LAT. 38-34-28N, LONG. 76-22-26W. PORTIONS OF WRECK REMAIN VISIBLE ABOVE WATER. FE306/87SS; O FOUND BY SIDE SCAN SONAR. HEAVILY ENCRUSTED AND DECAYED REMAINS OF WOODEN SAILBOAT A BY DIVERS. BOAT LIES IN A NORTH-SOUTH DIRECTION WITH A PORT LIST. LEAST DEPTH BY PNEUMATIC MAST WHICH IS BROKEN APPROX. 20FT ABOVE THE REMAINS OF THE HULL IS 27FT. RECOMMEND 27-FT SURROUNDED BY DANGER CURVE BE CHARTED. POSITION: LAT 38-34-30.65N, LONG 76-22-24.21W. LORA 27505.5X, 42416.0Y, 58860.9Z. (UPDATE 3/89 GM)
4691	UNKNOWN	12266	E	0100	0	HISTORY LNM24/72--28 FT. VESSEL REPORTED SUNK IN APPROX. LAT. 38-35-00.0N, LONG. 76-28-43.0W, IN RU/HE-87--REQUIRED 200 PERCENT SIDE SCAN SONAR COVERAGE FOR ASSIGNED 1 NAUTICAL MILE AC CONCENTRATIONS OF MARINE LIFE OBSCURED SIDE SCAN SONAR RETURNS. CONSEQUENTLY NUMER(BOTTOM TRACKING WAS LOST AND SONAR GRAMS WERE BLANK. ADDITIONAL WORK NEEDED WHEN L NOT HAVE HIGH CONCENTRATIONS OF FISH. EVALUATOR RECOMMENDS DANGEROUS SUBM WK, PA BE DOUBTFUL AT CHARTED POSITION LAT 38-35-00N, LONG 76-28-43W. (UPDATE 3/89 GM)
4695	UNKNOWN	12264	E	100	39	HISTORY LNM3/78-- (1/17/78); CHESAPEAKE CHANNEL - AID TEMPORARILY ì ESTABLISHED; CHESAPEAKE (LLNR 2741.43), ì BLACK, QK FL G, RAREF, RANGE 3 MILES, TEMPORARILY ESTABLISHED IN ì 47 FEET, 33 SUBMERGED WRECK. LEAST DEPTH ì OVER WRECK ESTIMATED TO BE 37 FEET IN LAT. 38-25-28.8N, LON ORIGINAL CHARTING SOURCE FOR BOTH THE ì WRECK BUOY AND THE WRECK IT MARKS. LNM22/78-- (5/ PERMANENT. ALL OTHER ì DATA REMAIN THE SAME. CL1382/80-- MAR, 9/19/78; OPR-E609-RU/HE-78; ITEM DANGEROUS WRECK IN LAT. 38-25.46N (27.6"), LONG. ì 76-23.40W (24.0") IN 47 FEET WITH A LD OF ABOUT WAS ESTABLISHED ENE OF THIS WRECK, MORE PRECISE ì INFORMATION WAS REQUESTED BY THE CC FATHOMETER TRACE WAS OBTAINED ON THE BARGE AND MARKERS WERE ì DEPLOYED. DIVERS COUL VISIBILITY. ITEM ì HUNG AT 34.5 FEET ON 8/10/78 AND CLEARED IN TWO DIRECTIONS BY ì 33.5 FEET AND LOCATED IN LAT. ì 38-25.43N (25.8"), LONG. 76-23.49W (29.4"). NO DIVER LD OBTAINED. ì RECOMMENDED (DEPTH AS SURVEYED. THIS ì POSITION IS APPROXIMATELY 400 FEET, 250 DEG. T. FROM BUOY. LNM35/7 COVE POINT - WRECK/AID ì POSITION INFORMATION; SUBMERGED WRECK LOCATED IN LAT. ì 38-28-28.8I DETERMINED TO BE IN LAT. ì 38-25.43N, LONG. 76-23.49W WITH A LD OF 33 FEET. CHESAPEAKE ì CHANN 2741.43) MARKS OBSTRUCTION AND ì HAS BEEN DETERMINED TO BE IN LAT. 38-25.46N, LONG. 76-23.40W CHESAPEAKE BAY - CHESAPEAKE CHANNEL - AID ì RELOCATED; RELOCATE CHESAPEAKE CHANNEL LI TO LAT. 38-25-27.2N, LONG. 76-23-25W. SUNKEN BARGE LIES ì 200 FEET, 230 DEG. T. FROM BUOY. BARGI PLASTIC FLOATS. CL411/81-- THIS NOS CHART LETTER TRACES THE HISTORY OF THE ì SUNKEN BARGE F ALSO CONTAINS THE ì RESULTS OF THE BARGE UNDERWATER DEMOLITION REQUESTED BY CGD5. THE INC.) REMOVED PART OF THE CARGO OF COAL ì PLUS LOOSE DECK TIMBERS BY DERRICK BARGE. OTH UNDERWATER BURNING. MATERIAL REMOVED WAS DEPOSITED IN SCOUR ì TRENCHES ON EITHER SIDI

						WAS COMPLETED ì ON 9/12/79. THE COE SURVEY BOAT "LINTHICUM" WAS USED TO DETERMINE ì IF COI BEEN REACHED. AFTER TWO HOURS OF ì FATHO. OPS. IT WAS DETERMINED THAT THE CONDITIONS OF (IE. 42-FOOT CLEAR DEPTH AT MLW). LETTER FROM CHIEF ì OPS. DIV. COE TO COMMANDER (MPS) CGD! COE NO LONGER CONSIDERS SUNKEN BARGE TO BE A DANGER TO NAVIGATION ì AND WRECK BUOY M 11/79); CHESAPEAKE BAY - CHESAPEAKE CHANNEL - ì AID DISCONTINUED; DELELTE WRECK BUOY "WF LOWERED TO 42 FEET AT MLW. IN LAT. 38-25-27.2N, LONG. 76-23-25W. NM21/81-- (5/23/81); DELETE SWEF 25-25.8N, LONG. 76-23-29.4W. ADD DANGEROUS WRECK (42 FT REP ì 1979) IN LONG. 38-25-26N, LONG. 76 12/13/80). (UP 2/2/96, SJV) FE424SS/96-- S-E902-AHP (CT-BOAT); LOCATED BY SIDE SCAN SONAR. ì ECHO .(12.1 METERS), REAL TIDES; ì LOCATED IN LAT. 38-25-26.32N, LONG. 76-23-27.23W. HYDROGRAPHER ì THI A RETURN FROM FISH AND RECOMMENDS ì RETAINING WRECK AS CHARTED. EVALUATOR DOES NOT C REVISING TO A 39 WK AS SURVEYED. (UP 1/22/97, SJV)
6875	OBSTRUCTION	12284	E	0067	16	HISTORY FE297/87--S-E211-HFP-87; WHILE INVESTIGATING ITEM 3997, THREE ì OBSTRUCTIONS WERE FO ONE SNAG WAS ì FOUND IN LAT 38-19-37.02N, LONG 76-27-01.14W WITH A CORRECTED ì FATHOMETER LI OBSTRUCTION WAS NOT IDENTIFIED ì OR INVESTIGATED; ALSO REF. ITEMS 3997 AND 6876; EVALUATOR CHARTED SUBMERGED PILINGS FROM THE CHART AND ì ADDING OBSTRUCTIONS AS SHOWN ON PRESI
6876	OBSTRUCTION	12284	E	0067	13	HISTORY FE297/87--S-E211-HFP-87; WHILE INVESTIGATING ITEM 3997, THREE ì OBSTRUCTIONS WERE FO SNAG WAS LOCATED ì IN LAT 38-19-39.06N, LONG 76-27-00.12W WITH FATHOMETER LEAST ì DEPTH OF 1: IDENTIFIED OR INVESTIGATED; ì ALSO REF. ITEMS 3997 AND 6875; EVALUATOR RECOMMENDED DELETIN CHART AND ADDING OBSTRUCTIONS AS SHOWN ON PRESENT SURVEY. ì (ENTERED MSM 9/88)
6877	OBSTRUCTION	12284	E	0067	7	HISTORY FE297/87--S-E211-HFP-87; WHILE SEARCHING FOR ITEM 3998, AN ì UNIDENTIFIED OBSTRUCTION 74M FROM CHARTED ì LOCATION OF WRECK, IN LAT 38-19-15.8N, LONG 76-25-28.89W BY CHAIN DRAG; ì L INSHORE OF THIS POSITION CONTAINED SCATTERED ì DEBRIS THAT STOPS 5M SHORT OF SHORELINE; I CHARTING ì "7 OBSTR" AND DEBRIS LIMITS AS SHOWN ON PRESENT SURVEY. (ENTERED MSM 9/88)
6878	UNKNOWN	12284	E	0100	0	HISTORY FE297/87--S-E211-HFP-87; WHILE INVESTIGATING ITEM 4360, TWO ì WRECKS WERE OBSERVED 51.55W; BOTH ì WRECKS WERE ALWAYS PARTIALLY SUBMERGED; EVALUATOR RECOMMENDED ì CHAF OBSERVED POSITION FOUND BY THIS ì SURVEY. (ENTERED MSM 9/88)
7193	OBSTRUCTION	12216	D	0284	0	CL1546/74--4SPS; OBSTRUCTION REPORTED AT APPROX. POS. LAT. 38-35-09N, LONG. 75-16-23W. D23--OF NOT INVESTIGATED BY RECON SURVEY. BASIC SURVEY IN PROJECT AREA RECOMMENDED. (ENTERED
7196	UNKNOWN	12216	D	0100	0	HISTORY CL2152/77--USPS; DANGEROUS SUBM WK REPORTED IN APPROX. POS. LAT 38-33-40N, LONG 7! DANGEROUS WK NOT INVESTIGATED BY RECON SURVEY. BASIC SURVEY IN PROJECT AREA RECOMME
7216	OBSTRUCTION	12266	E	0067	0	HISTORY FE306/87SS; OPR-E309-RU/HE-87--SUSPICIOUS SONAR TARGET AT LAT 38-34-24N, LONG 76-22-(VERIFIER. HEIGHT OF TARGET COMPUTED TO BE 2 1/2 FT WHICH RESULTS AS A SHOALEST DEPTH NEA REMOMMENDED DANGEROUS SUBMERGED OBSTRUCTION BY EVALUATOR. (ENTERED 3/89 GM)
7331	OBSTRUCTION	12233	E	0067	0	HISTORY CL1382/67-USCG; CO, USCG CONIFER REPORTED TARGET PLATFORM FOR BOMBING RUNS LO(19-00W (CENTER OF PROHIBITED AREA ONE MILE IN DIA) NOT IN AGREEMENT WITH CHARTED PILES. INT COULD NOT TIE DOWN PILES, AS RESULT LABEL "SUBM OBSTRS" CHARTED. CL1382/80--SHIPS RU/HE AI OBSTRS HUNG BY WIRE DRAG AT LAT 38-13-04N, LONG 76-18-51W AND LAT 38-12-59N, LONG 76-18-58W W IDENTIFIED AS FORMER BOMBING TARGETS. DIVER INVESTIGATION NOT CONDUCTED DUE TO EXTENT A SUBSURFACE WATER COLUMN CONTAINS LUMBER, STEEL, AND CONCRETE, CONSIDERED HAZARD TO I E404-84; FIVE(5) FIXED TARGETS LOCATED BY TRACKING THEODOLITES OF PATUXENT RIVER NAVAL AIR PROHIBITED AREA. DIRECTOR OF PATUXENT RIVER AIR TEST CENTER TARGET SUPPORT GROUP FORW ON CONDITION OF TARGETS REMOVED AT OR BELOW 6 FEET FROM BOTTOM. NO POSITIONS GIVEN. EV RETENTION OF PROHIBITED AREA ON CHART. (ENT 5/89 GM)
9658	OBSTRUCTION	12264	E	0067	0	HISTORY LNM22/93-- DANGEROUS SUBMERGED OBSTRUCTION REPORTED IN APPROX. ì POSITION LAT. 3 9/96, SJV) FE424SS/96-- S-E902-AHP (CT-BOAT); 200% SIDE SCAN SONAR SEARCH ì NEGATIVE; EVALUAT FROM CHART. (UP 1/22/97, ì SJV)
9659	OBSTRUCTION	12264	E	0067	30	HISTORY F00424/96-- S-E902-AHP; THE PRECAST BRIDGE SECTIONS AS DESCRIBED WERE FOUND 601 M THE USACE POSITION. ECHO SOUNDER INVESTIGATION OBTAINED A 27.9-FOOT (8.5 METER) LD IN LAT. 3 BP160208/96-- USACE; CONDITION SURVEY.43.1-FOOT DEPTH LOCATED IN LAT. 38-25-08.6N, LONG. 76-23- CONDUCTED SUBSEQUENT TO REMOVAL OPERATIONS PERFORMED BY THE MCLEAN CONTRACTING CC WAY, BLEN BURNIE, MD 21060-6480; POC FRANK ZELECHOWSKI. REMOVAL OPS WERE SCHEDULED NO 96. MATERIAL REMOVED (CONCRETE BRIDGE SEGMENTS) TO BE TRANSPORTED AND OFF LOADED AT TI REEF SITE. (UP 11/1/01, SJV) DESCRIPTION **** MEMO FROM COE (JEFFREY MCKEE, BALT. DIST. TO NOS HYDRO. AND SIDE SCAN SONAR SURVEYS OF CHARTED SUNKEN WRECK, CHARTED OBSTRUCTION CL(WHERE CONCRETE BRIDGE SECTIONS WERE LOST. CONCRETE SECTIONS WERE LOCATED BY COE VE LAT. 38-25.09N, LONG. 76-22.73W IN 48 FEET WITH A LD OF 30 FEET (SURVEY METHODS AND EQUIPMENT MEMO). THIS LOCATION WAS REPORTED TO THE COAST GUARD ON 4/29/93 ACCORDING TO THIS MEMO. PIECES OF CONCRETE ROADBED WERE LOST OVERBOARD IN APPROX. POSITION LAT. 38-25.5N, LONG. WATER. DESCRIBED AS 40FT X 18FT X 9FT. MARINERS SHOULD PROCEED WITH EXTREME CAUTION WHE OWNER, RECCHI AMERICA INC., 1820 N. DUPONT HWY, MIDDLETON, DE 19709. AGENT, CAPT. JOHN CHRI MARINE, 804-722-6000. (ENT 2/9/96, SJV)
9857	OBSTRUCTION	12266	E	0100	0	HISTORY CL1015/88-- CHART CORRECTION LETTER DATED 8/31/88 FROM HSB ì (N/MOA232X1) TO JAMES D COMPLETION. THE MARYLAND DNR - FISHERIES DIV. C/O JOHN FOSTER, ì TIDEWATER ADMINISTRATION ANNAPOLIS, ì MARYLAND 21401 HAS REPORTED THE COMPLETION OF PROJECT IN MAY, ì 1987. ARTIFICI "FISH AGGREGATING DEVICES" ì (FAD'S). THERE ARE 30 DEVICES SUSPENDED IN THE WATER COLUMN BUOYED BY SUBSURFACE, FOAM-FILLED ì PLASTIC FLOATS. THESE FLOATS ARE SUSPENDED 15 FEET UNITS (FAD'S, LINE, AND FLOAT) ARE ANCHORED TO THE ì BOTTOM BY A 235 LB. CONCRETE BLOCK. CEI 33-57N, LONG. 76-24-25W (LISTED G.P.). PROJECT SIZE IS 1300 ì YARDS X 300 YARDS. TOTAL REEF LENG STRUCTURES SET UP IN A TROLLING LINE. LNM 7/89-- ADD BLACK DOTTED LINES AND LABEL: OBSTN FIS NOTE: DELETE ALL DEPTHS WITHIN ENCLOSED AREA. ì LINES CONNECT THE FOLLOWING POINTS: LAT. : 38-34-16N, LONG. 76-24-18W; LAT. 38-33-38N, LONG. ì 76-24-18W; LAT. 38-33-38N, LONG. 76-24-31W; AND LA (ENT 1/3/97, SJV)
9861	OBSTRUCTION	12264	E	0067	41	HISTORY FE424SS/96-- S-E902-AHP (CT-BOAT); UNCHARTED OBSTRUCTION ì LOCATED BUT NOT DISCUSS IN LAT. ì 33-25-40.63N, LONG. 76-23-45.57W WITH AN ECHO SOUNDER DEPTH OF 41 ì FEET (12.5 METERS). CHARTING A 41 OBSTN AS ì SURVEYED. (ENT 1/22/97, SJV)
9862	OBSTRUCTION	12264	E	0067	43	HISTORY FE424SS/96-- S-E902-AHP (CT-BOAT); UNCHARTED OBSTRUCTION WAS ì LOCATED BUT NOT DIS LOCATED IN LAT. ì 33-24-54.74N, LONG. 76-23-01.69W WITH AN ECHO SOUNDER DEPTH OF 43 ì FEET (13.1 RECOMMENDS CHARTING A 43 OBSTN AS ì SURVEYED. (ENT 1/22/96, SJV)

50830	UNKNOWN	18654	L	0098	0	HISTORY CL1258/74--USPS; PARTIALLY SUBMERGED BARGE REPORTED IN LAT 38-13-54N, LONG 122-37-2 OPR-511-DA-77, ITEM 11; VISIBLE WK WAS LOCATED VISUALLY, RECOMMENDS RETAIN AT LAT 38-13-50N BARGE 25FT BY 65FT, SE CORNER OF WK BARES 2FT AT HW BASED ON APPARENT HIGH WATER MARK 85, OPR-L123-PHP-85; (H10182); PENDING REVIEW. (UPDATED 8/86 RWD) H10182/85-86--OPR-L123-PHP-85 AT MHW) WAS LOCATED IN LAT 38-13-51.41N, LONG 122-37-27.64W. CHART PRESENT SURVEY DATA. (UPI
50831	OBSTRUCTION	18654	L	0085	0	HISTORY CL1844/72--USPS; DOLPHIN, MARKS SEWER LINE END, SCALED AT 1:40000 (CHART 18654 INSET 20.8W. (ENTERED 1/85 RWD) MAR--11/85, OPR-L123-PHP-85, (H10182); PENDING REVIEW. (UPDATED 8/86 I PHP-85; 2 PILES , BARE 7FT AT MHW, MARK SEWER OUTFALL IN LAT 38-13-46.54N, LONG 122-37-19.14W. PRESENT SURVEY. (UPDATED 8/88 RWD).
50832	OBSTRUCTION	18654	L	0085	0	HISTORY CL1258/74--USPS; PILES (PA), VISIBLE PILES ALONG SOUTH SHORE OF PETALUMA RIVER CEN 18654-INSET) IN LAT 38-13-44.5N, LONG 122-36-56.0N. (ENTERED 1/85 RWD) MAR--11/85, OPR-L123-PHP-85 (UPDATED 8/86 RWD) H10182/85-86--OPR-L123-PHP-85; ROW OF PILES, EASTERN MOST PILE BARES 25FT LAT 38-13-43.84N, LONG 122-37-00.78W. CHART PRESENT SURVEY DATA. (UPDATED 8/88 RWD).
50853	SOUNDING	18654	L	0127	0	HISTORY BP81154--6/71, COE, CONDITION SURVEY; SHL REP 1971, SCALED IN LAT 38-13-26.20N LONG 122 (1:40000). COND. SURVEY SHOWS 4.8FT MID-CHANNEL, SURVEYED AT 1:1200. BP120009--4/83, COE, CON AREA ADDED TO CHART, SHL REP 1971 NOTE DELETED. (ENTERED 2/85 RWD). MAR--2/86, OPR-L123-PHP- (UPDATED 8/86 RWD) H10182/85-86--OPR-L123-PHP-85; 5FT DEPTH FOUND IN VICINITY ON BASIC SOUNDIN DEVELOPMENT FOR LEAST DEPTH. RETAIN CHARTED NOTE. (UP 8/88 RWD).
51685	UNKNOWN	18654	L	0098	0	HISTORY H10182/85-86--OPR-L123-PHP-85; VISIBLE WK (UNCOVS 7FT AT MLLW) POSITION ì GIVEN IN LAT (ENT 8/88 RWD).
51686	UNKNOWN	18654	L	0098	0	HISTORY H10182/85-86--OPR-L123-PHP-85; VISIBLE WK (BARES 10FT AT MHW) POSITION ì GIVEN IN LAT 38 (ENT 8/88 RWD).
51687	UNKNOWN	18654	L	0098	0	HISTORY H10182/85-86--OPR-L123-PHP-85; VISIBLE WK (UNCOVS 8FT AT MLLW) POSITION ì GIVEN IN LAT (ENT 8/88 RWD).
51688	UNKNOWN	18654	L	0098	0	HISTORY H10182/85-86--OPR-L123-PHP-85; VISIBLE WK, BARGE (UNCOVS 6FT AT MLLW) ì POSITION SCAL 37-51.00W. (ENT 8/88 RWD).
51971	UNKNOWN	18643	L	0098	0	HISTORY H8354/57--VISIBLE WK, POSITION SCALED FROM SURVEY IN ì LAT 38-13-50.2N, LONG 122-57-38. DM10148/91--REV-CLASS III; WK NOT SHOWN. (UPDATED 6/93 RWD) H10512/93--WRECK DISPROVED BY V OWNERS VERIFIED THAT A WOODEN LANDING BARGE WAS DESTROYED IN THE ì LATE 1950'S AND HAS RWD)
52200	UNKNOWN	18662	L	0098	0	HISTORY H10447/92-- VIS WRECK (UNCOVERS 1.2M AT MLLW), POSITION SCALED ì IN LAT 38-15-22.8N, LC (ENTERED 3/95 RWD)
52201	UNKNOWN	18662	L	0098	0	HISTORY H10477/92-- VIS WRECK (BARES 1.8M AT MHW), POSITION SCALED IN ì LAT 38-15-20.4N, LONG 1 RWD)
10399	UNKNOWN	12214	D	0102	93.2	HISTORY H10931/99-- OPR-D392-WH; CONTACT MADE DURING MAIN SCHEME SIDE SCAN SONAR OPS. DI AND SAW A LARGE WOODEN WRECK ANOTHER 10-15 FEET BELOW. DIVE ABORTED DUE LARGE NUMBI ECHO-SOOUNDER LD OF 28.4 METERS (93.2 FEET) IN LAT. 38-30-09.114N, LONG. 74-43-46.188W. EVALUAT CHARTED DANGEROUS SUBMERGED WRECK, PA (20 FT REP) AND CHARTING A 93 WK AS SURVEYED. (TELCON, 6/14/99, S. VERRY (N/CS31) WITH CAPT. DAVID POTTER, DELBAY & RIVER PILOT (302-934-8463); LAT. 38/30/12N, LONG. 74/43/48W; LOCAN-C TDS (9960 CHAIN): X = 26994.6, Y= 42452.1; WRECK IN 110 FEE (5 FEET RELIEF); GOOD SIZE WOODEN WRECKAGE - SIGNIFICANT SCOUR. CHARTED AS A DANGEROUS REP) THROUGH LNM 25/85. THIS WRECK HAS BEEN CONFUSED WITH THE "SARA LARANCE" SIC.; SEE A
10657	UNKNOWN	12214	D	0100	84.8	HISTORY H10931/99-- OPR-D392-WH; CONTACT FOUND DURING MAIN SCHEME SIDE SCAN SONAR OPS. E METERS (84.8 FEET) IN LAT. 38-31-26.881N, LONG. 74-47-27.971W. EVALUATOR RECOMMENDS CHARTING 00, SJV)
10682	OBSTRUCTION	12214	D	0067	75	HISTORY H10854/99-- OPR-D392-WH; EVALUATOR STATES THAT AN OBSTRUCTION WAS FOUND BY THE F METERS) LOCATED IN LAT. 38-35-08.89N, LONG. 74-52-17.56W. EVALUATOR RECOMMENDS CHARTING AN 21/00, SJV)
11132	UNKNOWN	12264	E	100		
11133	OBSTRUCTION	12264	E	067		
11877	UNKNOWN	12264	E	100	64	HISTORY CL1950/01-- DTON (H11088, S-E906-BH) FROM NOAA VESSEL "BAY HYDROGRAPHER" SURVEY D INVESTIGATION LOCATED AN UNCHARTED SUBMERGED WRECK APPROX. 150 FEET LONG AND 31 FEET FEET OBTAINED IN LAT. 38-23-02.742N, LONG. 76-20-20.235W. SIDE SCAN IMAGE RESEMBLES A MENHAD CIRCA 1912. PRESENTLY CHARTED AS A DANGEROUS SUBMERGED WRECK COVERED 64 FEET AS SUR 01 (12/18/01)-- MARYLAND-CHESAPEAKEBAY-PATUXENT RIVER AND VICINITY; DELETE 90-FOOT SOUNDIN 20-20.200W AND ADD A 64-FOOT SOUNDING WITH DOTTED DANGER CURVE, BLUE TINT, AND LABEL: WK 20-20.200W. (UP 9/17/03, SJV)
11895	OBSTRUCTION	12284	E	067		
11896	OBSTRUCTION	12284	E	085		
11935	UNKNOWN	12264	E	100		
11970	OBSTRUCTION	12284	E	067	7	DESCRIPTION **** MEMO DATED 9/10/03 FROM AHB TO CHIEF, NDB; WHILE CONDUCTING A SEARCH FOR WAS LOCATED WITH SWMB AND SIDE SCAN SONAR IN LAT. 38-19-28.59N, LONG. 76-27-21.99W. ELEVATE WITH A LD OF 7 FEET (2.35 METERS). POSITION AND DEPTH DETERMINED FROM SWMB. HYDROGRAPHE OBSTN AS SURVEYED. AHB CONCURS. (ENT 10/1/03, SJV)
11971	OBSTRUCTION	12284	E	067	13	DESCRIPTION **** MEMO DATED 9/10/03 FROM AHB TO CHIEF, NDB; WHILE SEARCHING FOR AWOIS ITEM IDENTIFIED WITH SWMB IN LAT. 38-19-28.81N, LONG. 76-27-23.63W. ELEVATED .3 METERS OFF THE BOTT (3.98 METERS). THE HYDROGRAPHER RECOMMENDS CHARTING A 13 OBSTN AS SURVEYED. AHB CONC
12024	OBSTRUCTION	12214	C	067	37	H11104/02--OPR-C303-KR; FOUND OBSTRUCTIONS IN LAT. 38/33/37.15N, LONG. 074/51/24.86W (NAD83) WIT

						MLLW. (ENTERED 12/03 BY MBH)

POPLAR ISLAND, MARYLAND
AWOIS FILES

Record #	Vessel Name	Chart #	Area	Cartocode	Depth	History
1133	J.R. WILLIAMS	12214	D	0100	12.9	HISTORY CL-485/49-- CS-326-PBS-49; PBS TO USC & GS; "TOUCHED AND CLEARED" ì WRECK OF THE BARG WILLIAMS AT 40.5 FEET (PREDICTED) IN LAT. ì 38-45-08.40N, LONG. 74-54-25.80W. NM36/49-- J.R. WILLIAMS L IN LAT. 38-36-59N, LONG. ì 74-55-52W. CLEARED DEPTH OF 36 FEET OVER IT. (ENT 4/15/92, SJV) H10444/92-- D168-WH; (FE-385/93; THIS FE NO. WAS RESCINDED; ì ALL DATA ARE INCORPORATED IN H-10444/92-93). DANGEROUS SUBMERGED ì WRECK LOCATED BY ECHO SOUNDER IN LAT. 38-45-09.30N, LONG. ì 74-54-23.5 OF 12.9 METERS (42 FEET, PNEUMATIC DEPTH GAUGE). ì IN 14.9 - 15.5 METERS. DIVERS DESCRIBE SCATT WRECKAGE; STEEL ì HULL; EVIDENCE OF FIBERGLASS (BLUE AND WHITE) ON FOC'SLE. LD ì OBTAINED ON FRAMING (POSSIBLY BOW OF WRECK). EVALUATOR ì RECOMMENDS DELETING 13.7 WRECK (A) AND CHAI 12.9 WK AS ì SURVEYED. LORAN-C RATES (9960 CHAIN): W = 15773.8; X - 27085.1; Y ì = 42612.4; Z = 59241.1. 28/93, SJV) H10989/00-- OPR-D392-WH; 200% SIDE SCAN SONAR IDENTIFIED 4 SMALL CONTACTS. SWMB SC OBTAINED A LD OF 44 FEET IN LAT.38-45-09.572N ,LONG. 74-54-24.029W. EVALUATOR RECOMMENDS DELET CHARTED 42-FOOT WRECK AND CHARTING A 44 WK AS SURVEYED. (UP 7/11/02, SJV) DESCRIPTION 24 NO. TUG, 396 GT; SUNK 6/24/42 BY MARINE CASUALTY; POSITION ACCURACY 1 MILE. WD CLEARED TO 40 FEET LOCATED 1950.
1134	UNKNOWN	12214	D	0999	0	01134 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52117.0,9930Z-70299.7=9960W-15678.2,9960Z-5 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1135	OBSTRUCTION	12214	D	0067	0	DESCRIPTION 19 FISHING OBSTR. OLD LORAN-C RATES, 9930 CHAIN, 52319.8Y, 70220.4Z; 9960 CHAIN, 1581 59212.8Z. NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS.
1136	OBSTRUCTION	12214	D	0067	0	HISTORY H9294/70WD-- OPR-480-RU/HE-70; HANG AT 46 FEET, CLEARED AT 44 ì FEET. POSITION SCALED F CHART 12214 IN LAT. 38-45-54.0N, LONG. ì 74-45-06.0W (NAD83). (ENT 6/30/92, SJV) H10533/94-- OPR-D368-WH SCAN SONAR CONTACT. DIVERS ì DESCRIBE THE REMAINS OF A WOODEN AND METAL WRECK. HULL INTA WITH SOME RIBS SHOWING. 175 FEET LONG, 15 FEET WIDE, AND 4 FEET ì HIGH. PNEUMO LD OF 14.3 MET FEET) OBTAINED ON RUDDER POST ì IN LAT. 38-45-54.739N, LONG. 74-45-11.740W. EVALUATOR RECOMMEN DELETING THE 44-FOOT OBSTRUCTION AND CHARTING A WRECK, 47 FEET, ì AS SURVEYED (SEE AWOIS N (UP 8/29/95, SJV) DESCRIPTION 19 FISHING OBSTR. OLD LORAN-C RATES 9930 CHAIN, 52201.5Y, 70265.6Z; 9 CHAIN, 15736.2W, 59272.1Z. NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS.
1137	OBSTRUCTION	12214	D	0067	0	HISTORY H10444/92-- OPR-D168-WH; 200% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMI NOT CHARTING. (UP 10/28/93, SJV) DESCRIPTION 19 FISHING OBSTR. OLD LORAN-C RATES, 9930 CHAIN, 52 70243.0Z; 9960 CHAIN, 15768.4W, 59250.9Z. NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS.
1138	CITY OF GEORGETOWN	12214	D	0100	0	SURVEY REQUIREMENT COMMENTS INVESTIGATION NOT REQUIRED OUTSIDE PROJECT LIMITS. SUBSEQU PROJECT WILL COMPLETE SEARCH, IF NECESSARY. HISTORY NM7/13-- MASTER OF AMERICAN STEAMER "MANNA-HATA" REPORTS THE ì WRECK OF A 4-MASTED SCHOONER 1.5 MILES, 117 DEGS. FROM ì FIVE-FA BANK LIGHT VESSEL. MASTS PROJECTING 25 FEET ABOVE ì WATER'S SURFACE. NM8/13-- FIVE-FATHOM E LIGHT VESSEL - WRECK SOUTHEASTWARD- ì GAS BUOY ESTABLISHED; BUOY EST., R/B HOR. BANDS, INTERMITTENT RED ì LIGHT, MARKS WRECK OF CITY OF GEORGETOWN. BUOY IS 165 YARDS, 353 ì DEGS. FROM WRECK. APPROX. POSITION OF BUOY LAT. ì 38-47-04N, LONG. 74-33-49W. (UP 4/14/92, SJV) H10439/9 D368-WH; SIGNIFICANT SIDE SCAN SONAR CONTACT ì FOUND DURING OFFICE PROCESSING IN LAT. 38-47- LONG. ì 74-35-07.63W WITH AN ESTIMATED DEPTH OF 17.3 METERS (56 FEET). ì EVALUATOR RECOMMEND ADDITIONAL WORK IN THE 1993 SURVEY SEASON ì AND RETAIN ITEM AS CHARTED. (UP 6/22/93, SJV) H104 OPR-D368-WH; 200% MAINSCHEME SIDE SCAN SONAR ì LOCATED WRECK. ECHO SOUNDER LD OF 29.8 ME 30.5 - 31.0 ì METERS IN LAT. 38-46-33.89N, LONG. 74-33-37.57W. EVALUATOR ì RECOMMENDS DELETING CH 59-FOOT CLEARED DEPTH AND CHARTING A ì 29.8 WK AS SURVEYED. (UP 12/13/93, SJV) DESCRIPTION 17 GEORGETOWN, SCHOONER, 599 TONS, BUILT 1902; COLLIDED WITH GERMAN STEAMSHIP "PRINZ OSKAR" DELAWARE CAPES ON FEBRUARY 2, 1913. 20 59 FT OVER WRECK; POS.38-47-06N, 74-33-48W. 24 NO.3940; POSITION ACCURACY WITHIN 1 MILE 216 SHIPWRECKS OF DELAWARE AND MARYLAND, GARY GENTILE; G GENTILE PRODUCTIONS, P.O. BOX 57137, PHILADELPHIA, PA 19111, 1990, 200 PAGES. WOODEN 4-MASTED SCHOONER, 168 X 36 X 12 FEET. 599 GT, BUILT 1902, BATH, MAINE; SANK 2/2/13.ì COLLISION WITH S.S PRIN WRECK HARDLY RECOGNIZABLE. WOODEN BEAMS AND RIBS PROTRUDING NO MORE THAN 5 FEET OFF E WRECK IS HEAVILY FISHED. LORAN-C RATES (9960 CHAIN): X= 26979.6; Y= 42621.0.
4694	LEVIN J MARVEL	12270	E	0100	16	HISTORY NM36/55--HERRING BAY WRECK LIGHTED BUOY WR1 EST. IN 22 FT. ABOUT 3,050 YDS., 45 DEG. F PARKER ISLAND SHOAL LIGHT TO MARK DANGEROUS WRECK OF SCHOONER LEVIN J MARVEL WHICH LIE ABOUT 100 YDS., 270 DEG. FROM BUOY. POSITION OF BUOY IS APPROX. LAT. 38-45-30N, LONG. 76-31-20W. 56--COE (BALTIMORE DIST.) TO USC&GS; COE INVESTIGATION ON 3/15/56 REVEALS WRECK HAS BROKEN 16 FT. IS OVER WRECK AT MLW. WRECK NOT CONSIDERED AN "UNREASONABLE" MENACE TO GENERAL NAVIGATION AND REMOVAL IN THE INTERESTS OF NAVIGATION NOT CONSIDERED NECESSARY. WRECK L 045 DEG. TRUE, 3,050 YDS. FROM PARKER ISLAND SHOAL LIGHT. NM15/56--HERRING BAY WRECK LIGHTED WR1 DISCONTINUED. FE307/87SS--OPR-E609-RU/HE-87; WK LOCATED IN LAT 38-45-23.28N; LONG 76-31-26.2 LEAST DEPTH OF 16FT BY DIVER PNEUMATIC DEPTH GAUGE. VESSEL FOUND TO BE IN LATTER STAGES C DECOMPOSITION BUT INTERIOR BULKHEAD REMAINS ARE 6-8FT ABOVE THE BOTTOM. RECOMMEND CHAF A 16FT SOUNDING WITH LABEL WK AND SURROUNDED BY DANGER CURVE. LORAN-C RATES: 9960-CHAIN; 16123.8W, 27580.5X, 42539.6Y, 58874.4Z (UPDATE 3/89 LQ) H10790/98-- OPR-E346AHP; ITEM LOCATED WITH 2 SIDE SCAN SONAR WITH AN APPERANT HEIGHT OF 2 METERS. ECHO-SOUNDER DEVELOPMENT USING 5-M LINE SPACING. OBTAINED A LD OF 17 FEET (5.1 METERS) IN LAT. 38-45-23.30N, LONG. 76-31-26.27W. EVALU RECOMMENDS DELETING THE CHARTED 16 WK AND CHARTING A 17 WK AS SURVEYED. (UP 6/28/99, SJV) DESCRIPTION **** REPORT OF MARINE BOARD OF INVESTIGATION (BALTIMORE, MD; USCG DATED 24 JANU 1956); LEVIN J. MARVEL, 3 MASTED, BALDHEADED SCHOONER (TOPMASTS NOT RIGGED, RAM-TYPE HULL FEET LONG, WOODEN HULL, 183 GT, BUILT 1891 AT BETHEL, DE, REBUILT IN 1919 AND 1926. NO WATERTIGI BULKHEADS AT TIME OF SINKING. OWNED BY CHESAPEAKE WINDJAMMER VACATION, ANNAPOLIS, MD. J HENRY MECKLING, 3 STATE CIRCLE, ANNAPOLIS, MD, MASTER AND PART OWNER (31/64); JOHN THOMAS DUNCANSVILLE, PA (31/64); ESTATE OF BERTRAM ASHMEAD, PHILADELPHIA, PA (2/64). VESSEL ANCHORE 0900 HRS., 12 AUGUST, 1955, 1.5 MILES EAST OF FAIRHAVEN, MD IN 26 FT. WITH 200 FT. OF CHAIN TO STBI ANCHOR. (WIND NE, 25-40 MPH WITH HIGHER GUSTS; PASSAGE OF HURRICANE "CONNIE"). AT 1300 HRS. S ANCHOR DRAGGING, PORT ANCHOR LET GO WITH 100 FT. OF CHAIN WHICH HELD VESSEL TO WIND AND S ABOUT 1430, VESSEL ROLLED AND LAY OVER ON HER STBD. SIDE. VESSEL LAY ON BOTTOM IN ABOUT 22 APPROX. POS. LAT. 38-45-30N LONG. 76-31-20W. 14 PASSENGERS DROWNED. PORTIONS OF WRECKAGE V WERE RECOVERED INDICATED AN "EXCESSIVE AMOUNT" OF ROT IN STRUCTURAL MEMBERS OF VESSEL. EFFORTS BY LOCAL SCUBA DIVERS UNABLE TO LOCATE WRECKAGE IN 1986 (ESP. MR. ERNIE LIVINGSTO PHONE 770-3000 (W), 869-3379 (H).
						HISTORY LNM28/73--41 FT. YACHT REPORTED SUNK IN LAT. 38-46-33N, LONG. 76-29-24W IN 30 FT. SUBMER

4696	UNKNOWN	12270	E	0100	0	WRECK MARKED WITH A WOODEN STAKE WITH RED FLAGS ATTACHED. MARINERS ADVISED TO TRANSIT WITH CAUTION. FE222WD/78-- OPR-E609-RU/HE; MODIFIED EVALUATION REPORT; ì UNASSIGNED CHARTED CLEARED IN ONE DIRECTION BY 23 FEET AND ì THE OPPOSITE DIRECTION BY 22 FEET. NOT HUNG. PRIOR (H-5501) OF 28 FEET IN AREA. EVALUATOR RECOMMENDS RETAINING WRECK ì AND ADDING (CLEARED 22 PRESENTLY CHARTED AS A 22-FOOT DEPTH ì WITH A "BASKET". (UP 12/30/96, SJV) H10790/98-- OPR-E346-SIGNIFICANT CONTACTS LOCATED AT THE CHARTED POSITION. A SIGNIFICANT SIDE SCAN SONAR CONTAC RESEMBLING A WRECK WAS LOCATED APPROX. 900 METERS SW OF SCHARTED POSITION.. ECHO-SOUN DEVELOPMENT WITH 5-METER LINE SPACING OBTAINED A LD 25 FEET (7.7 METERS) IN LAT. 38-46-05.97N, 76-29-36.26W. EVALUATER RECOMMENDS DELETING THE CHARTED 22-FOOT CLEARED WRECK AND CHAR 25 WK AS SURVEYED. (UP 6/28/99, SJV)
8132	SARAH W. LAWRENCE	12216	D	100	0	HISTORY CL208/85-- WRECK OF THE SARA LARANCE (SIC) COVERED 20 FEET ì LOCATED IN APPROX. POS. 30-13N, LONG. 74-43-48W, IN 110 ì FEET. INFORMATION GIVEN TO JIM GRAHAM (NOAA, N/CG2233) BY GENE HASTINGS, OLD INLET DIVE SHOP, 2204 HIGHWAY ONE, REHOBOTH, DE ì 19971, TEL. (302) 227-0999, (302) 6 (OFF SEASON). OCEAN ì CITY BOAT SHOW, MARCH 1984. LORAN-C RATES (9960 CHAIN): 15724.54W, ì 2699 42452.1Y, AND 59203.66Z. LNM25/85-- ADD A DANGEROUS WRECK SYMBOL, BLUE TINT, PA, AND ì LABEL 2 IN LAT. 38-30-13N, LONG. 74-43-48W. NM25/85-- REPEATS LNM ABOVE. (ENT 9/23/91, SJV) H10931/99-- OPR-CL208/85 INCORRECTLY LOCATED THIS ITEM IN LAT. 38-30-13N, LONG. 74-43-48W. FIELD UNIT PERFORMED DISPROVAL INVESTIGATION AT THIS COORDINATE AND A CONTACT WAS MADE DURING MAIN SCHEME SI SONAR OPS. DIVERS DESCENDED TO 95 FEET AND SAW A LARGE WOODEN WRECK ANOTHER 10-15 FEE BELOW. DIVE ABORTED DUE LARGE NUMBER OF "SAND TIGER SHARKS". ECHO-SOUNDER LD OF 28.4 ME (93.2 FEET) IN LAT. 38-30-09.114N, LONG. 74-43-46.188W. EVALUATOR RECOMMENDS DELETING CHARTED DANGEROUS SUBMERGED WRECK, PA (20 FT REP) AND CHARTING A 93 WK AS SURVEYED. (UP 1/17/02, F00467/00-- OPR-D392-WH; 200% SIDE SCAN SONAR INVESTIGATION WAS CONDUCTED AROUND THE GIVE POSITION. SEARCH NEGATIVE. THIS POSITION WAS INCORRECT AND THE SEARCH SHOULD HAVE BEEN A THE LORAN TDS. THE LORAN POSITION PUTS THE WRECK IN SHOAL WATER WHICH WAS CONSIDERED U FOR LAUNCH OPERATIONS. EVALUATOR RECOMMENDS CHARTING A SUBMERGED DANGEROUS WRECK, LAT. 38-45-43N, LONG. 75-03-54W (LORAN LOCATION). FURTHER INVESTIGATION RECOMMENDED. (UP 2/25/ DESCRIPTION **** 220 NOTEBOOK ON SHIPWRECKS MARYLAND DELAWARE COAST, H. RICHARD MOALE, COPYRIGHT 1990, FAMILY LINE PUBLICATIONS,REAR 63 EAST MAIN STREET WESTMINSTER, MARYLAND 21 SCHOONER, REGISTERED NO. 116106; CALL LETTERS KDLM; BUILT 1886, BATH, MAINE BY NEW ENGLAND SHIPBUILDING COMPANY; SUNK ON FEBRUARY 10, 1909; REPORTED TO HAVE SUNK ON "HEN AND CHICK SHOAL", 1000 YARDS NORTHWEST OF C "3" BUOY; N 38/44/40, W 75/03/06; 3/4 MILE OFFSHORE, DUE EAST CONCRETE WATCH TOWER, DOWN FROM CAPE HENLOPEN; CARGO OF COAL AT TIME OF SINKING;HOME FALL RIVER MASSACHUSETTS; SAILED FROM NEWPORTNEWS, VIRGINIA, BOUND FOR BOSTON MASSACH PHOTO OF VESSEL AT MARINERS MUSEUM #PK6442;WOODEN CONSTRUCTION, 1,369.76 GT, 1,301.28 NT; LENGTH 217.0, BREADTH 45.2, DEPTH 19.8; WRECK IS REALLY BROKEN UP AND SCATTERED; LIES IN 30 F WATER ON A SANDY BOTTOM; EXTENDS OFF BOTTOM 5 FEET; THREE 1/2-FOOT RIBS AND SOME PLANCK VISIBLE; CAPTAIN ROBERT BYRE OF CHARTER BOAT "ADIE MAE" AND CAPTAIN BILL TATTERSAL OF CHAR BOAT "MR. IKE" KNOW EXACT LOCATION. NOTE: CL208/85 APPEARS TO BE IN ERROR. TELEPHONE CONVE WITH CAPT. DAVID POTTER, DELBAY AND RIVER PILOTS, CONFIRMS LOCATION, NAME, AND DESCRIPTION AS(GIVEN IN DOCUMENT NO. 220 (6/15/99, SJV) **** TELCON; 1/17/02; STEVE CORRADO (MATE, CHARTER B "ADIE MAY" AND STEVE VERRY (NOS); FOLLOWING LORAN-C RATES GIVEN FOR "SARAH W. LAWRENCE" CHAIN; X = 27139.0, Y = 42612.2 (LAT. 38-45- 44.667N, LONG. 75-03-53.663W.)
8234	OBSTRUCTION	12214	D	0067	0	HISTORY H9294/70WD-- OPR-480-R/H-70; CLEARED DEPTH TO 52 FEET IN LAT. ì 38-45-39N, LONG. 74-33-59W 13/92, SJV) H10464/93-- OPR-D368-WH; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS D FROM CHART. (UP 12/13/93, SJV)
8235	OBSTRUCTION	12214	D	0067	0	HISTORY H9294/70WD-- OPR-480-R/H-70; CLEARED DEPTH TO 52 FEET LOCATED ì IN LAT. 38-45-48N, LONG. 53W. (ENT 4/13/92, SJV) H10464/93-- OPR-D368-WH; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 12/13/93, SJV)
8241	OBSTRUCTION	12214	D	0067	0	HISTORY H9294/70WD-- OPR-480-R/H-70; OBSTRUCTION CLEARED TO 44 FEET IN ì LAT. 38-45-54N, LONG. 74- (ENT 4/15/92, SJV) H10533/94-- OPR-D368-WH; SIDE SCAN SONAR CONTACT. DIVERS ì DESCRIBE THE REMA WOODEN AND METAL WRECK. PNEUMO LD ì OBTAINED ON RUDDER POST OF 14.3 METERS (47 FEET) IN L 45-54.739N, 74-45-11.740W. HULL INTACT WITH SOME RIBS SHOWING. ì 175 FEET LONG, 15 FEET WIDE, 4 FE HIGH. AVERAGE DEPTH ì SURROUNDING THE AREA WAS 16.3 METERS. EVALUATOR RECOMMENDS ì DELE THE CHARTED 44-FOOT OBSTRUCTION AND CHARTING A WRECK (47 ì FT) AS SURVEYED. HYDROGRAPHE CONSIDERS AWOIS NOS. 1136 & 8241 TO ì BE THE SAME ITEM. (SEE AWOIS NO. 9564 FOR WRECK ENTRY) 29/95, SJV)
8243	OBSTRUCTION	12214	D	0067	0	HISTORY H9173/70WD-- OPR-480-R/H-70; CLEARED PRIOR 47-FOOT CLEARED ì DEPTH TO 49 FEET IN LAT. 3 36.0N, LONG. 74-48-36.0W. H9723/77-- OPR-516-PE-77; ECHO SOUNDER INVESTIGATION OBTAINED ì LD OF 5 AREA. (ENT 4/15/92, SJV) H10533/94-- OPR-D368-WH; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING THE 50-FOOT OBSTRUCTION FROM THE ì CHART. (UP 8/29/95, SJV)
8244	OBSTRUCTION	12214	D	0067	0	HISTORY H9173/70WD-- OPR-480-R/H-70; CLEARED PRIOR 48-FOOT CLEARED ì DEPTH TO 49 FEET IN LAT. 3 18.0N, LONG. 74-47-48.0W. H9723/77-- OPR-516-PE-77; ECHO SOUNDER INVESTIGATION OBTAINED ì LD OF 5 AREA. (ENT 4/15/92, SJV) H10533/94-- OPR-D368-WH; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING THE 55-FOOT OBSTRUCTION FROM THE ì CHART. (UP 8/29/95, SJV)
8975	UNKNOWN	12214	D	100	57	HISTORY H10446/92-93-- OPR-D368-WH; (FE-386SS RESCINDED); SIDE SCAN ì SONAR CONTACT (1992) INVES BT WHITING IN 1993. UNCHARTED ì SUBMERGED WRECK LOCATED IN LAT. 38-46-24.20N, LONG. 74-58-40.20 OF 16.8 METERS (55 FEET) (PNEUMATIC DEPTH GAUGE) IN 18.4-19.1 ì METERS. WOODEN DEBRIS AND SO PRESENT. 1.5-1.8 METERS OFF ì BOTTOM AND TAPERS INTO SAND ON EAST END. CHAIN LINK ON WEST E WRECK POSSIBLY ANCHOR CHAIN AND SEVERAL BOTTLES (THREE BROUGHT ì TO THE SURFACE). EVALU RECOMMENDS CHARTING A WRECK COVERED ì 16.8 METERS (55 FEET) AS SURVEYED. (PRINTING ON BO BOTTLES ì "BRISTOL H. BRICKETTS & CO. GLASSWORKS".) CONCRETE ITEM ì ("BOULDER"), 4 FEET IN DIA., OFF BOTTOM, AT EAST END OF ì WRECK. (ENT 7/20/94, SJV) F00467/00-- OPR-D392-WH; CONTACT RESEMB WRECK LOCATED BY SWMB. LD OF 57 FEET IN LAT. 38-46-24.11N, LONG. 74-58-40.50W. EVALUATOR RECO DELETING CHARTED 55WK AND CHARTING A 57WK AS SURVEYED.
8979	OBSTRUCTION	12214	D	0067	67	HISTORY H10446/92-93-- OPR-D368-WH; (FE-386SS RESCINDED); SUBMERGED ì OBSTRUCTION LOCATED IN 46-39.43N, LONG. 75-01-09.82W. LD ì OF 20.5 METERS (67 FEET, PNEUMATIC DEPTH GAUGE) IN 22-24 METE DESCRIBED AS 2 LONG SECTIONS OF PIPE LAYING SIDE BY SIDE NW-SE ì ORIENTATION. 1.8-METER DIA. FRACTURED METAL TANK EXTENDS APPROX. ì 3.0 METERS OFF THE BOTTOM AT 45 DEG. ANGLE. POSSIB REMNANTS OF ì DREDGE PIPE ASSEMBLY. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. ì (ENT SJV)
						HISTORY H10446/92-93-- OPR-D368-WH; (FE-386SS RESCINDED); SUBMERGED ì OBSTRUCTION LOCATED IN 46-11.47N, LONG. 75-02-44.95W. LD ì OF 19.0 METERS (62 FEET, PNEUMATIC DEPTH GAUGE) IN 19.3-21.8 ì M

8983	OBSTRUCTION	12214	D	0067	62	DESCRIBED AS 2 LARGE CONCRETE BLOCKS, EACH 1.2 X 1.2 X ì 1.2 METERS, PLACED NEARLY END TO EN SEVERAL OTHER SMALLER ì BLOCKS IN VICINITY WITHIN A 6 METER RADIUS. EVALUATOR RECOMMENDS CHARTING AS SURVEYED. (ENT 7/20/94, SJV)
9295	OBSTRUCTION	12214	D	0067	64	HISTORY H10475/93-- OPR-D368-WH; OBSTRUCTION LOCATED BY SIDE SCAN ì SONAR. DIVERS DESCRIBE A ANCHOR BLOCK, 4X4 FEET IN LAT. ì 38-45-20.42N, LONG. 74-48-08.62. BLOCK PROTRUDES 2.5 FEET OFF THE BOTTOM IN 72 FEET. LORAN-C RATES (9960 CHAIN): W= 15748.4, X= ì 27050.3, Y= 42618.O, Z= 59261.1. PNEU OF 19.5 METERS (64 ì FEET). VISIBILITY 8 FEET. EVALUATOR RECOMMENDS CHARTING A 19.5 ì OBSTR AS SURVEYED. (ENT 10/27/94, SJV)
9296	OBSTRUCTION	12214	D	0067	66	HISTORY H10475/93-- OPR-D368-WH; OBSTRUCTION LOCATED BY SIDE SCAN ì SONAR. DIVERS DESCRIBE A ANCHOR BLOCK, 6X6 FEET IN LAT. ì 38-45-32.89N, LONG. 74-42-57.87W. PNEUMO LD OF 20.3 METERS (66 ì F 72 FEET PROTRUDING 2 FEET OFF THE BOTTOM. BLOCK HAD A ì PAD EYE AT THE TOP CENTER. VISIBILITY LORAN-C RATES (9960 ì CHAIN): W= 15727.0, X= 27021.4, Y= 42623.4, Z= 59277.6. EVALUATOR ì RECOMMENI CHARTING A 20.3 OBSTR AS SURVEYED. (ENT 10/27/94, SJV)
9564	UNKNOWN	12214	D	0100	47	HISTORY H10533/94-- OPR-D368-WH; DANGEROUS SUBM WRECK LOCATED WHILE ì SEARCHING FOR AWO 1136 & 8241. PNEUMO LD OF 14.3 METERS (47 ì FEET) LOCATED IN LAT. 38-45-54.739N, LONG. 74-45-11.740W DIVERS ì DESCRIBE A THE REMAINS OF A WOODEN AND METAL WRECK. HULL INTACT ì WITH SOME RIBS SHOWING. 175 FEET LONG, 15 FEET WIDE, 4 FEET HIGH. ì LD OBTAINED ON RUDDER POST. SURROUNDING WERE 16.3 METERS. ì EVALUATOR RECOMMENDS DELETING THE CHARTED 44-FOOT OBSTRUCTION AND ì CHARTING A WRECK (47 FT) WITH DANGER CURVE. (ENT 8/29/95, SJV)
9565	OBSTRUCTION	12214	D	0067	55	HISTORY H10533/94-- OPR-D368-WH; SIDE SCAN SONAR CONTACT. DIVERS ì DESCRIBE A RECTANGULAR M OBSTRUCTION 80 FEET LONG, 3 FEET ì WIDE, AND 2 FEET HIGH. PNEUMO LD OBTAINED ON EASTERN END WRECKAGE OF 16.9 METERS (55 FEET) IN LAT. 38-46-00.403N, LONG. ì 74-44-56.225W. EVALUATOR RECOMI CHARTING AN OBSTRUCTION (55 ì FT) WITH A DANGER CURVE AS SURVEYED AND AS CHARTING SCALE ì I (UP 8/29/95, SJV)
9566	OBSTRUCTION	12214	D	0067	56	HISTORY H10533/94-- OPR-D368-WH; SIDE SCAN SONAR CONTACT. DIVERS ì DESCRIBE A LARGE PIECE OF MEASURING 70 FEET LONG, 4 FEET ì WIDE, AND 3 FEET HIGH ORIENTED E-W. PNEUMO LD OBTAINED OF 1 METERS (56 FEET) IN LAT. 38-46-10.843N, LONG. 74-44-44.659W. ì AVERAGE SURROUNDING DEPTHS WERE METERS. EVALUATOR RECOMMENDS ì CHARTING AN OBSTRUCTION (56 FT) AND DANGER CURVE AS SUR' (ENT 8/29/95, SJV)
9567	UNKNOWN	12214	D	0100	63	HISTORY H10533/94-- OPR-D368-WH; SIDE SCAN SONAR CONTACT. DIVERS ì DESCRIBE A TWIN-SCREW, W AND FIBERGLASS WRECK ORIENTED ì NE-SW. PNEOMO LD OBTAINED ON WRECK'S TRANSOM AT SW ENI ì METERS (63 FEET). PORTIONS OF STERN AND HULL WERE INTACT BUT MOST ì OF THE BOW WAS MISSIN WRECK MEASURED 45 FEET LONG, 15 FEET ì WIDE. FUEL TANKS WERE LOCATED TO THE EAST EXTENDIN FEET OFF THE BOTTOM. AVERAGE DEPTHS SURROUNDING WRECK WERE ì 21.3 METERS. EVALUATOR RECOMMENDS CHARTING A WRECK (63 FT) WITH A ì DANGER CURVE AS SURVEYED. (ENT 8/29/95, SJV)
9568	UNKNOWN	12214	D	0100	62	HISTORY H10533/94-- OPR-D368-WH; SIDE SCAN SONAR CONTACT. DIVERS ì DSECRIBE A WOOD AND MET/ WRECK MEASURING APPROX. 70 FEET LONG, ì 15 FEET WIDE POINTING WEST. PNEUMO LD OBTAINED ON EAST END ì (STERN) OF THE WRECK OF 19.1 METERS (62 FEET) IN LAT. ì 38-46-19.734N, LONG. 74-44-33.782 METAL PIECE EXTENDING 3 ì FEET OFF THE BOTTOM WAS FOUND 20 FEET TO THE WEST OF THE WRECK. AVERAGE DEPTH IN SURROUNDING AREA WAS 20.5 METERS. EVALUATOR ì RECOMMENDS CHARTING A V (62 FT) WITH DANGER CURVE AS ì SURVEYED. (ENT 8/29/95, SJV)
9569	OBSTRUCTION	12214	D	0067	56	HISTORY H10533/94-- OPR-D368-94; SIDE SCAN SONAR CONTACT. DIVERS ì DESCRIBE A METAL OBSTRUCT MEASURING 25 FEET LONG X 3 FEET WIDE ì WITH A "T" SECTION ATTACHED TO ONE END. PNEUMO LD WA OBTAINED ON ì THIS "T" OF 17.0 METERS (56 FEET) IN LAT. 38-46-32.470N, LONG. ì 74-44-22.721W. "T" SECTIO MEASURED 6 FEET WIDE AND 5 FEET HIGH. ì AVERAGE DEPTH SURROUNDING AREA WAS 18.2 METERS. ì EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION (56 FT) WITH DANGER ì CURVE AS SURVEYED AI CHARTING SCALE PERMITS. (ENT 8/29/95, ì SJV)
9570	OBSTRUCTION	12214	D	0067	52	HISTORY H10533/94-- OPR-D368-WH; SIDE SCAN SONAR CONTACT. DIVERS ì DESCRIBE A BUCKET FROM A SHOVEL EXCAVATOR ORIENTED NNE-SSW. ì MEASURED 10 FEET LONG, 6 FEET WIDE, AND 5 FEET HIGH. I LD ON ì THE BUCKET'S TEETH OF 16.0 METERS (52 FEET) IN LAT. ì 38-46-33.703N, LONG. 74-44-23.934W. AVE DEPTH IN SURROUNDING ì AREA WAS 17.4 METERS). EVALUATOR RECOMMENDS CHARTING AN ì OBSTRU (52 FT) WITH DANGER CURVE AS SURVEYED. (ENT 8/29/95, ì SJV)
9841	OBSTRUCTION	12270	E	0067	0	HISTORY CL325/64-- USPS; CHART CORRECTION LETTER; SUBMERGED OBSTRUCTION ì HIT IN APPROX. PO 38-46.2N, LONG. 76-30.5W. POSITION ì DERIVED FROM BEARINGS TAKEN ON VISIBLE BUOYS. DRAFT OF VE WAS ì 4.5 FEET AT TIME OF INCIDENT (9/1/63). CHARTED AS AN OBSTR (4 FT ì REP) PA. NM16/64-- CL1387/78 RU/HE TO AMC, 8/23/78; ITEM 5; WHILE SEARCHING ì FOR OBSTRUCTION ABOVE, REMAINS OF 2 FISH POU WERE LOCATED (SEE ì AWOIS NOS. 9842 AND 9843). OBSTRUCTION ABOVE WAS DISPROVED AND ì REMC FROM ALL AFFECTED CHARTS. (ENT 12/19/96, SJV)
9849	UNKNOWN	12266	E	0100	0	HISTORY CL896/63-- COE TO USC&GS DATED 8/19/63; 32-FOOT CABIN CRUISER ì BURNED AND SANK IN THE CHESAPEAKE BAY NEAR THE MOUTH OF HERRING ì BAY, MD ON AUGUST 15, 1963. COE INVESTIGATION C ì DISCLOSED THAT VESSEL BURNEDTO WITHIN 4 INCHES OF THE WATER LINE ì AND SANK IN 20 FEET OF W LOCATED IN APPROX. LAT. 38-44-54N, ì LONG. 76-31-00W AND HAS 17 FEET OF WATER OVER ITS HIGHEST F POINT. COE DOES NOT CONSIDER THIS SUNKEN VESSEL TO BE A HAZARD TO ì GENERAL NAVIGATION AN REMOVAL IS NOT CONTEMPLATED BY COE. NM37/63-- CHESAPEAKE BAY-HERRING BAY-WRECK INFORMA 32-FOOT CABIN CRUISER HAS BEEN REPORTED SUNK NEAR THE MOUTH OF ì HERRING BAY IN 20 FEET IN POS. LAT. 38-44-54N, LONG. ì 76-31-00W. REPORTED TO BE COVERED BY 17 FEET AT MLW. (ENT ì 12/31/96, H10790/98-- OPR-E346-AHP; 200% SIDE SCAN SONAR LOCATED NO SIGNIFICANT CONTACTS WITHIN THE 50(SEARCH RADIUS. A LARGE CONTACT RESEMBLING A WRECK WAS LOCATED APPROX. 650 METERS WEST CHARTED POSITION. ECHO-SOUNDER OBTAINED A LD OF 18 FEET (5.6 METERS) IN LAT. 38-45-04.75N, LONG 21.78W. EVALUATOR RECOMMENDS DELETING CHARTED DANGEROUS SUBMERGED WRECK, PA, (17 FEE 1963) AND CHARTING AN 18 WK AS SURVEYED. (UP 6/28/99, SJV)
9852	UNKNOWN	12270	E	0100	0	HISTORY LNM34/70-- MARYLAND-CHESAPEAKE BAY-WEST SIDE-HERRING BAY-WRECK ì INFORMATION; A : CABIN CRUISER HAS BEEN REPORTED BURNED AND ì SUNK IN 6 FEET OF WATER AT APPROX. POS. LAT. : 49N, LONG. ì 76-32-01W. MARKED BY THREE BUOYS, ONE PAINTED ORANGE, THE OTHER ì TWO WHITE. M/ ARE ADVISED TO EXERCISE CAUTION WHEN ì TRANSITING THE AREA. (ENT 12/31/96, SJV)
9855	UNKNOWN	12270	E	0100	0	HISTORY NM51/68-- POPLAR ISLAND WRECK LIGHTED BUOY (BARREL TYPE) ì ESTABLISHED IN 18 FEET OF IN APPROX. LAT. 38-45.3N, LONG. ì 76-24.8W TO MARK THE WRECK OF A 48-FOOT OYSTER BOAT. MAST VIS MHW. NM2/69-- CHESAPEAKE BAY-CHESAPEAKE CHANNEL-POPLAR ISLAND-WRECK ì INFORMATION; POP ISLAND WRECK LIGHTED BUOY PREVIOUSLY ì ESTABLISHED IN LAT. 38-45.0N, LONG. 76-24.8W TO MARK W

						OF A ì 48-FOOT OYSTER BOAT HAS BEEN MOVED TO APPROX. LAT. 38-45.3N, ì LONG. 76-23.3W. SUPERCEI NM51/68. NM29/69– WRECK OF 48-FOOT OYSTER BOAT PARTLY SALVAGED. HULL ì LOCATED IN APPROX. I LAT. 38-45.3N, LONG. 76-23.3W. WRECK BUOY ì DISCONTINUED. (ENT 1/2/97, SJV)
10394	OBSTRUCTION	12270	E	0067	33	H10790/98- OPR-E346-AHP; 200% SIDE SCAN SONAR SEARCH LOCATED A SIGNIFICANT CONTACT WITH AN APPARENT HEIGHT OF 1.9 METERS. THERE APPEARED TO BE SCATTERED DEBRIS IN THE AREA OF THE C ECHO-SOUNDER DEVELOPMENT WITH 5-METER LINE SPACING OBTAINED A LD OF 33 FEET (10.2 METERS 38-45-34.26N, LONG. 76-27/33.23. SURROUNDING DEPTHS OF 38 FEET. NO DIVE OPS CONDUCTED. EVALUA RECOMMENDS CHARTING A 33 OBSTR AS SURVEYED. (ENT 6/28/99, SJV)
10396	UNKNOWN	12270	E	0100	66	H10790/98– OPR-E346-AHP; 200% SIDE SCAN SONAR LOCATED A SIGNIFICANT CONTACT RESEMBLING A W WITH AN APPARENT HEIGHT OF 1,2 METERS. ECHO-SOUNDER DEVELOPMENT WITH 5-METER LINE SPACIN OBTAINED A LD OF 66 FEET (20.3 METERS) IN SURROUNDING DEPTHS OF 70-71 FEET. NO DIVE OPS CONDI EVALUATOR RECOMMENDED CHARTING A NON-DANGEROUS 66 WK AS SURVEYED.

POOLES ISLAND OPEN WATER SITE EXPANSION, MARYLAND
AWOIS FILES

Record #	Vessel Name	Chart #	Area	Cartocode	Depth	History
1307	UNKNOWN	12318	C	100	0	NM9/70--02/28/70, USN; REPORTS A WRECK REPORTED IN LNM 5/70, CG NEW YORK, 01/29/70, IN LAT 39/16.1 WATER OVER THE WRECK. 19 FISHING OBSTR. OLD LORAN A 3H4-3824.0, 3H5-3167.0=LORAN C 9960W-1565: 20.30W NAD 27) (UPDATED BY PSH, 01/02)
1308	UNKNOWN	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. THIS ITEM IS, MOST LIKELY, THE SAME AS PROPRIETARY FIELD FOR HISTORY.
1309	DARIEN	12318	C	100	39.5	F00093/50--FORMERLY FE NO. 2, 1951; ITEM 68 - WRECK LOCATED IN LAT 39/17/32N, LONG 074/21/21W (NAD FEET MLW. A FATHOMETER DEPTH OF 39.5 FEET WAS OBTAINED. THE HYDROGRAPHER NOTED THAT THE (UPDATED BY MBH, 01/02) DESCRIPTION 24 NO.581; BARGE, 924 GT,SUNK 5/2/48; POSITION ACCURACY WITI
1310	UNKNOWN	12318	C	0100	38	NM26/55--06/25/55, USN; THE WRECK OF A 40 FOOT FISHING VESSEL HAS BEEN REPORTED SUNK IN 43 FEI ABOUT 9000 YARDS 100° FROM LOOKOUT TOWER AT LONGPORT. APPROXIMATE POSITION: LAT 39/17/30N, DESCRIPTION 24 NO.1 635; TRAWLER, SUNK 1955, POS. ACCURACY WITHIN 1 MILE, LEAST DEPTH 38 FT. (SC
1311	AMELIA	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. SEE THE PROPRIETARY FIELD FOR HISTO
1312	C.F. YOUNG	12318	C	0999	0	ITEM NOT CHARTED. ITEM PROVIDED AS AN INFORMATION ITEM. SEE THE PROPRIETARY FIELD FOR HISTO
1313	BONITA	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. SEE THE PROPRIETARY FIELD FOR HISTO
1314	LEMUEL BURROWS	12318	C	100	40	NM13/42--03/20/42, USN; ON MARCH 18, 1942 A LIGHTED GONG BUOY, PAINTED IN RED AND BLACK HORIZON FLASHING RED LIGHT, QUICK FLASHES FOR 4 SECONDS, ECLIPSE 4 SECONDS OF 120 CANDLE POWER, 16 FEET OF WATER ABOUT 7¼ MILES 139° FROM THE HOTEL, BRIGANTINE BEACH, TO MARK A WRECK. THE THE BUOY. APPROXIMATE POSITION LAT 39/18/25.00N, LONG 074/16/03.00W (NAD 27). NM51/43--USN; THE WI 16/03.00W (NAD 27) HAS BEEN REPORTED DISPERSED TO A DEPTH OF 36 FEET. F00094/50--07/21/50; THIS V 54.00 (NAD 27) IN GENERAL DEPTHS OF ABOUT 71 FEET. A FATHOMETER SOUNDING OF 41 FEET WAS OBT/ EFFECTIVE DEPTH OF 42 FEET HUNG THE WRECK. A WIRE DRAG SET AT AN EFFECTIVE DEPTH OF 40 FEE DESCRIPTION 24 NO.332; CARGO, 7610 GT; SUNK 3/23/42 BY MARINE, LOCATED 1950 (SOURCE UNK) POSITI 1950) REPORTED DEMOLISHED (SOURCE UNK) 178 ANTHONY VRAIM, DIVER, OBSERVED LORAN-C 9960-X-26 56.21W. NAME; LEMUEL BURROUGHS. 27 NO.232; 4787 NT, SUNK 3/23/42. CLEARED TO LD OF 36 FT. 200 ED WK., OBSERVED LORAN-C LOCATED IN 90FT DEPTHS. **** LORAN-C RATES PROVIDED BY MR. RICHARD TAI 622-8007; 9960-X 26928.2, 9960-Y42991.1. (ENTERED MSM 6/89)
2716	UNKNOWN	12304	D	0098	0	HISTORY NM28/51--OLD BOAT HULL, APPROX. 40FT. LONG, WAS REP. SUNK IN THE MOUTH OF NANTUXENT 25W. PRESENTLY CHARTED AS DANGEROUS SUBM. WK.(CHART 12304, 28TH ED). (REVISED, 1/25/84, MJF) N NEGATIVE RESULTS; MR JOHN POLLINO OWNER OF POLLINO MARINA (609-447-4103) SAID WK WAS ACROS THERE FOR YRS; HE STATED IT CAN BE SEEN AT EXTREME LOW TIDE AND WAS NOT A HAZARD TO NAVIG/ FEW PLANKS. (UPDATED MSM 9/87) D81/87--OPR-D219-HFP-87; VISIBLE WK (KEEL BOARD AND PLANKS), LC 89 SRB)
2718	UNKNOWN	12304	D	0100	0	HISTORY NM21/58--42FT OYSTER BOAT SUNK ABOUT 2050 YDS, 285 DEG, FROM NANTUXENT PT. LT. WITH A APPROX. POS. LAT.39-16-57N, LONG.75-16-00W. PRESENTLY CHARTED AS DANGEROUS SUBM. WK.(9FT REI MFJ) MAR--7/87, OPR-D219-HFP-87; BOTTOM DRAG FOR 1/3 MILE AND SSS INVESTIGATION AT 20 M LINE SPA NEGATIVE RESULTS; LOCAL CONTACT (SEE BELOW) DOESN'T RECALL A WK EVER BEING AT THIS POSITIOI PARTIAL BOTTOM DRAG INVESTIGATION INADEQUATE. SSS INVESTIGATION INADEQUATE (IMPROPERLY TU DESCRIPTION **** LOCAL CONTACT IS MR JOHN POLLINS, OWNER OF POLLINS MARINA, PHONE (609) 447-41 DISPROVE BY BOTTOM DRAG INVESTIGATION WITH A 1/2NM MINIMUM RADIUS. A DIVER LD IS REQUIRED IF DOCUMENTATION.
3247	OBSTRUCTION	12304	D	067	9.91	H1544/1882--1FT SNDG,ACCOMPANIED BY A HRD BOTTOM CHARACTERISTIC,LOCATED LAT.39-16-38N, LONG TO A ROCK COVERED AT LOW WATER IN THE SAME POS. PRESENTLY CHARTED AS A ROCK COVERED AT 25/84, MJF). D81/87--OPR-D219-HFP-87; NOT DISPROVED,ECHOSOUNDER/50-100M LINE SPACING INVESTIGA SRB) H11022/01--OPR-D307-KR; OBSTRUCTION FOUND IN LAT. 39/16/31.24N, LONG 075/18/04.65W (NAD83) WI 04 BY MBH)
3483	UNKNOWN	12304	D	0098	0	03483 HISTORY BP122249(TP00050)/1969-72-81--TOPO REVISION PRINT; UNCHARTED VISIBLE WK. WAS ORIG LAT.39-17-20N, LONG.75-25-55W. SUBSEQUENT 1982 NOS AERIAL PHOTO. DID NOT REVEAL THE WK. AT THI THE CLASS III SHORELINE MAP. A DANGEROUS SUBM. WK. WILL BE APPLIED TO THE NEXT EDITION OF CH/ D219-HFP-87; 200% SSS FOR 250M RADIUS WAS CONDUCTED OVER CHARTED POSITION WITH NEGATIVE F SEARCH HAD NEGATIVE RESULTS; LOCAL CONTACT (SEE BELOW) WHO HAS CRAB POTS IN THE AREA ST/ (UPDATED MSM 9/87) D81/87--OPR-D219-HFP-87; SAME AS MAR, EXCEPT SSS INVESTIGATION INADEQUATE RETAINED ON SURVEY. (UP 6/89 SRB) DESCRIPTION **** LOCAL CONTACT IS MR. DANIEL FOX, RD4, DOVER, REQUIREMENTS FULL--VERIFY OR DISPROVE BY BOTTOM DRAG INVEST. WITH A 250M MINIMUM SEARCH R MAY BE OBTAINED BY SALVAGE DOCUMENTATION.
3484	SNDG	12304	D	0127	0	03484 HISTORY BP122249(TP00050)/1969-72-81--TOPO REVISION PRINT; UNCHARTED SHOAL WAS ORIGINALL IN LAT.39-17-45N, LONG.75-25-55W. THE POS. WAS SCALED FROM THE CLASS III SHORELINE MAP. THE SHO NOS AERIAL PHOTO. AT THE POS. LISTED ABOVE. THE SHOAL AREA WILL BE DELINEATED ON THE NEXT EI -7/87, OPR-D219-HFP-87; SHOAL CONFIRMED THROUGH FATHOMETER SEARCH INSIDE 3 FT CONTOUR; UNC CONSIDERED A HAZARD TO NAVIGATION. (UPDATED MSM 9/87) D81/87--OPR-D219-HFP-87; SHOAL VERIFIED MINUS 3 FT.(UP 6/89 SRB)
3488	UNKNOWN	12304	D	0098	0	HISTORY BP95491 (TP00122)/1970-76--NOS SHORELINE MANUSCRIPT (CLASS III). (ENTERED, 5/8/84, MJF). BP1 (CLASS III). (ENTERED, 5/8/84, MJF). BP122251 (TP00122)/1970-76-83--TOPO REVISION PRINT; UNCHARTED VI AERIAL PHOTO. IN LAT.39-17-53N, LONG.75-15-11W. THE POS. WAS SCALED FROM THE CLASS III SHORELIN NEXT EDITION OF CHART 12304. (ENTERED, 5/8/84, MJF). MAR--7/87, OPR-D219-HFP-87; WOOD AND METAL B DETACHED POSITION TAKEN (UPDATED MSM 9/87) D81/87--OPR-D219-HFP-87; VISIBLE WK VERIFIED, WOOD LONG BY 12M WIDE. LOCATED IN LAT.39-17-53.13N, LONG. 75-15-11.47W. (UP 6/89 SRB)
3489	OBSTRUCTION	12304	D	0085	0	03489 HISTORY BP95492(TP00123)/1970-76--NOS SHORELINE MANUSCRIPT(CLASS III). (ENTERED, 5/8/84 MJF) PRINT(CLASS III). (ENTERED, 5/8/84, MJF) BP122252(TP00123)/1970-76-83--TOPO REVISION PRINT; PRESENTL 17-53N, LONG 75-14-53W, WERE NOT LOCATED ON SUBSEQUENT 1982 NOS AERIAL PHOTO. AT THE POS. LI RUINS ON THE NEXT EDITION OF CHART 12304.(ENTERED. 5/8/84 MFJ) D81/87--OPR-D219-HFP-87; VERIFIED F 89 SRB)

3490	OBSTRUCTION	12304	D	0085	0	03490 HISTORY BP95492(TPOO123)/1970-76--NOS SHORELINE MANUSCRIPT(CLASS III). (ENTERED,5/8/84,MJF PRINT(CLASS III). (ENTERED,5/8/84, MJF). BP122252(TP00123)/1970-76-83--TOPO REVISION PRINT; UNCHARTE LONG.75-14-59W, WERE ORIGINALLY LOCATED ON 1970 NOS AERIAL PHOTO. PIERS COULD NOT BE LOCAT THE POS. LISTED ABOVE. THE POS. WAS SCALED FROM THE CLASS III SHORELINE MAP. THE PIERS WILL E CHART 12304. (ENTERED, 5/8/84, MJF). D81/87--OPR-D219-HFP-87; VERIFIED, TWO VISIBLE PIERS. (UP 6/89 S
3491	OBSTRUCTION	12304	D	0085	0	03491 HISTORY BP95492(TP00123)/1970-76--NOS SHORELINE MANUSCRIPT(CLASS III). (ENTERED,5/8/84,MJF). PRINT(CLASS III). (ENTERED,5/8/84,MJF). BP122252(TP00123)/1970-76-83--TOPO REVISION PRINT; PRESENTLY 39-17-05N, LONG. 75-14-13W, WERE ORIGINALLY LOCATED ON 1970 AERIAL PHOTO. THEY WERE NOT LOCA POS. LISTED ABOVE. THE POS. WAS SCALED FROM CLASS III SHORELINE MAP. THE PIERS WILL BE REVISE (ENTERED 5/8/84, MJF). MAR--7/87, OPR-D219-HFP-87; PIER, PIER RUINS AND PILINGS OBSERVED AT CHART D219-HFP-87;VERIFIED, FLOATING FINGER PIERS. (UP 6/89 SRB) ì ì
4058	OBSTRUCTION	12278	E	0067	0	
7449	OBSTRUCTION	12304	D	0284	0	HISTORY D81/87--OPR-D219-HFP-87; UNIDENTIFIED OBSTR, AWASH 4FT AT MLLW BASED ON ACTUAL TIDES OBSTR HUNG DURING BOTTOM DRAG INVESTIGATION, POLE SDG LD, NOT IDENTIFIED DUE TO POOR VISIBIL 89 SRB)
9527	OBSTRUCTION	12281	E	0067	9	HISTORY CL1581/73 (NOT AVAILABLE)-- OBSTRUCTION, 9 FEET REPORTED PA IN ì LAT. 39-16.07N, LONG. 76- LOCATED CLOSE EASTWARD OF PIER AT U.S. NAVAL RESERVE STATION AT ì FORT MC HENRY. A DESTRO 514-AHP; OBSTRUCTION FOUND WAS NOT ITEM ì SOUGHT. OBSTRUCTION LOCATED IN LAT. 39-16-04.2N, LO OBSTRUCTION CHARTED IN LAT. ì 39-16.07N, LONG. 76-34.79W. (ENT 8/23/95, SJV) H10632/95-- OPR-E346-AHF LONG. 75-34-45.137W. FATHOMETER DEPTH OF 17 FEET ì (5.2 METERS). IS NOT CONSIDERED TO BE AWOIS FOOT OBSTRUCTION AS CHARTED. DELETE SUBM. ì PILE IN LAT. 39-16-03.6N, LONG. 76-34-44.6W AND CHAR AWOIS #9934). (UP 5/23/97, SJV)
9539	OBSTRUCTION	12281	E	0067	0	HISTORY UNKNOWN SOURCE-- FIRST CHARTED IN 1983. LAT. 39-17-02.0N, LONG. ì 76-36-27.0W. SCALED FRC E346-AHP; EVALUATOR CONSIDERS ITEM NOT ì DISPROVED. RETAIN AS CHARTED. (UP 5/23/97, SJV)
9540	OBSTRUCTION	12281	E	0067	23	HISTORY UNKNOWN SOURCE-- FIRST CHARTED IN 1983. LAT. 39-17-03.4N, LONG. ì 76-36-30.0W. SCALED FRC E346-AHP; OBSTRUCTION LOCATED BY SIDE SCAN ì SONAR IN LAT. 39-17-02.789N, LONG. 76-36-30.281W (PIL RECOMMENDS CHARTING A 23-FOOT ì OBSTN AS SURVEYED AND DELETING THE TWO CHARTED SUBM. PI
9744	OBSTRUCTION	12278	E	0067	0	HISTORY CL1730/78-- USPS; SUBMERGED HAZARD TO NAVIGATION IN 18 FEET OF ì WATER APPROX. 2 FEE LONG. 76-13-30W. (ENT 4/24/96, SJV) H10703/96-98--OPR-E346-AHP; 200% SIDE SCAN SONAR SEARCH NEGA 22/99, SJV)
9925	SHERRY M	12278	E	0100	0	HISTORY LNM44/73-- CHESAPEAKE BAY-UPPER CHESAPEAKE CHANNEL-POOLES ì ISLAND-WRECK; THE 3 REPORTED SUNK IN APPROX. POSITION LAT. 39-16-08N, LOMG. ì 76-16-23W. A CAN BUOY PAINTED BLACK " WRECK. MARINERS ARE ADVISED TO EXERCISE CAUTION WHEN ì TRANSITING THE AREA. (ENT 4/14/97, SJ SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 10/22/99, SJV)
9926	OBSTRUCTION	12278	E	0067	0	HISTORY CL1549/78-- USPS; LARGE ROCKS REPORTED AWASH "A GOOD DISTANCE ì OUT OF THE NM COR LIGHTHOUSE TOWER IN APPROX. POSITION LAT. 39-17.4N, LONG. ì 76-15.9W. (ENT 4/14/97, SJV) H10703/96-9 PIECES OF CONCRETE ALONG SHORE, SMALL ROCKS WERE FOUND SCATTERED OVER THE BOTTOM AND EXTEND NO MORE THAN 0.1 METER OFF THE BOTTOM. EVALUATOR RECOMMENDS REVISING CHARTED N SURVEYED. (UP 10/22/99, SJV)
9927	OBSTRUCTION	12278	E		0	HISTORY CL1298/70-- USPS; SHOALING REPORTED "ON CAN BUOY NO. 1" WEST OF ì POOLES ISLAND LOCA 00W (SCALED FRPM CHART 12278, NAD83). REPORTED HITTING ì BOTTOM WITH A 3-FOOT DRAFT. (ENT 4/14 SOUNDER DEVELOPMENT, 40-METER LINE SPACING (E-W) SPLITTING MAIN SCHEME HYDRO. AND 70-METE METER, 200 METERS NNE OF BUOY "1". EVALUATOR RECOMMENDS DELETING NOTE "SHL REP 1970" AND
9928	UNKNOWN	12278	E	0100	0	HISTORY NM43/66-- CHESAPEAKE BAY-CHESAPEAKE CHANNEL-POOLES ISLAND; A ì 25-FOOT BOAT HAS B APPROX. POSITION LAT. 39-17-16N, LONG. 76-16-02W. WRECK IS NOT ì MARKED. (ENT 4/14/97, SJV) H10703/ VISIBLE CONDUCTED FROM NEAR SHORE OUT TO ONE METER DEPTH NEGATIVE, EVALUATOR RECOMMEN
9929	UNKNOWN	12278	E	0100	0	HISTORY LNM31/81-- MARYLAND-CHESAPEAKE BAY-UPPER CHESAPEAKE ì CHANNEL-SUNKEN HAZARD; A (SIC) OF POOLES ISLAND IN 7 FEET OF WATER IN APPROX. POSITION LAT. ì 39-17-00N, LONG. 76-16-30W MA RED FLAG. MARINERS ARE ADVISED TO TRANSIT THE AREA WITH ì CAUTION. (ENT 4/14/97, SJV) H10703/96- SHALLOW FOR SIDE SCAN OPS. ECHO SOUNDER DEVELOPMENT AT 10-METER LINE SPACING ALTERNATI NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 10/22/99, SJV)
9934	OBSTRUCTION	12281	E	0067	17	HISTORY H10632/97-- OPR-E346-AHP; OBSTRUCTION LOCATED WHILE SEARCHING ì FOR AWOIS #9527. A SU FEET (5.2 METERS) WAS LOCATED IN LAT. 39-16-03.517N, LONG. ì 76-34-45.137W. EVALUATOR RECOMMEND 5/23/97, SJV)
10456	OBSTRUCTION	12281	E	0067		
10465	OBSTRUCTION	12278	E	0067	12	HISTORY H10703/96-98--OPR-E346-AHP; UNCHARTED OBSTRUCTION LOCATED LOCATED DURNG SIDE SCAN TO BE A METAL TANK-LIKE STRUCTURE IN LAT. 39-18-06.79W, LONG. 76-12-07.87W. LD OF 12 FEET. (ENT 10/
10731	OBSTRUCTION	12304	D	067		
11206	UNKNOWN	12318	C	100		
11210	FISH HAVEN	12318	C	067		
11653	UNKNOWN	12318	C	098		
11732	PILES	12316	C	085		
11733	SUBM PILES	12316	C	284		
11986	OBSTRUCTION	12304	D	067	41	H11070/01--OPR-D307-KR; LOCATED AN OBSTRUCTION IN LAT. 39/18/07.56N, LONG. 075/23/06.45W (NAD83) W 03 BY MBH)
11987	OBSTRUCTION	12304	D	067	21	H11070/01--OPR-D307-KR; LOCATED AN OBSTRUCTION IN LAT. 39/17/20.77N, LONG. 075/21/19.42W (NAD83) W 03 BY MBH)

11988	OBSTRUCTION	12304	D	067	10	H11070/01--OPR-D307-KR; LOCATED AN OBSTRUCTION IN LAT. 39/17/58.44N, LONG. 075/19/55.17W (NAD83) W 03 BY MBH)
11989	OBSTRUCTION	12304	D	067	23	H11070/01--OPR-D307-KR; LOCATED AN OBSTRUCTION IN LAT. 39/16/15.29N, LONG. 075/21/43.21W (NAD83) W OBSTRUCTION IS IN A CHARTED FISH HAVEN (AWOIS ITEM 10731) WHICH HAS AN AUTHORIZED MINIMUM DE NOT RECOMMENDED TO BE CHARTED. (ENTERED 10/03 BY MBH)
12274	UNKNOWN	12304	D	100	24	H11022/01--OPR-D307-KR; A WRECK WAS FOUND IN LAT. 39/15/54.22N, LONG. 075/20/50.58W (NAD83) WITH A NOTED AS EXTENDING 10.7 FEET OFF THE BOTTOM. (ENTERED 3/04 BY MBH)
12283	OBSTRUCTION	12304	D	067	15.78	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/16/40.03N, LONG. 075/19/45.21W (NAD83 (ENTERED 3/04 BY MBH)
12284	OBSTRUCTION	12304	D	067	10.3	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/15/59.41N, LONG. 075/17/18.42W (NAD83 (ENTERED 3/04 BY MBH)
12285	OBSTRUCTION	12304	D	067	16.04	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/16/06.08N, LONG. 075/19/42.21W (NAD83 (ENTERED 3/04 BY MBH)
12294	OBSTRUCTION	12304	D	067	29.53	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/15/56.04N, LONG. 075/21/09.70W (NAD83 OBSTRUCTION IS WITHIN A CHARTED FISH HAVEN WITH AN AUTHORIZED MINIMUM DEPTH OF 15 FEET MLLW
12323	OBSTRUCTION	12304	D	067	15	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/16/44.00N, LONG. 075/16/55.20W (NAD83 3/04 BY MBH)
12324	OBSTRUCTION	12304	D	067	45	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/16/01.40N, LONG. 075/20/38.20W (NAD83 3/04 BY MBH)
12338	UNKNOWN	12304	D	100	28	H11022/01--OPR-D307-KR; A WRECK WAS FOUND IN LAT. 39/15/57.50N, LONG. 075/21/23.30W (NAD83) WITH A OBSTRUCTION IS WITHIN A CHARTED FISH HAVEN WITH AN AUTHORIZED MINIMUM DEPTH OF 15 FEET MLLW
12339	OBSTRUCTION	12304	D	067	11	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/17/31.15N, LONG. 075/19/10.08W (NAD83 3/04 BY MBH)

SHORELINE RESTORATION – LOWER BAY, VIRGINIA
AWOIS FILES

Record #	Vessel Name	Chart #	Area	Cartocode	Depth	History
433	UNKNOWN	12264	E	0100	33	00433 HISTORY FE260/84--OPR-E609-RU/HE-85; STEEL BARGE LIKE STRUCTURE LOCATED IN LAT 37-19-47.21N LONG 76-08-33.06W; 48FT LOA WITH 11FT BEAM; DECK OF WESTERN END IS FORCED UPWARD; LEAST DEPTH AT THIS POINT WAS 33FT (USING PNEUMOFATHOMETER); HYDROGRAPHER AND EVALUATOR RECOMMEND CHARTING A SUBM DANG WK; LORAN C RATES OVER THIS WRECK WERE 9960-W 15972, X27256.2, Y 41538.7, Z 58585.4. (ENTERED MSM 5/86) SURVEY REQUIREMENTS FULL--NOT ASSIGNED
964	UNKNOWN	12200	D	0999	0	00964 HISTORY NM DATED 9/6/45 DESCRIPTION 24 NO.664; POSITION ACCURACY 1-3 MILES SURVEY REQUIREMENTS NOT DETERMINED
965	UNKNOWN	12200	D	****	0	00965 DESCRIPTION 24 NO.315; REPORTED SCATTERED WRECKAGE; POSITION ACCURACY 1-3 MILES; REPORTED THROUGH CGS SURVEY, DATED 1950 SURVEY REQUIREMENTS INFORMATION
966	OBSTRUCTION	12200	D	****	0	00966 DESCRIPTION 18 AIRPLANE; IN 20 FATHOMS, HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN C,OBSERVED RATES:9960X-26951.30MS,9960Y-41629.7MS(APPROX. 1979) SURVEY REQUIREMENTS INFORMATION ASSIGNED: OPR-D103, ITEM 966
967	UNKNOWN	12200	D	0100	0	00967 HISTORY NM18/48--A MEDIUM SIZE LANDING CRAFT WITH SMALLER LANDING CRAFT NESTED IN CARGO WELL, HAS BEEN REPORTED 5.5 MILES SOUTH OF WOLF TRAP LIGHT AT POSITION LAT.37-23-24N, LONG.76-11-24W. H7960/52 NOT FOUND W/100-M DEVELOPMENT; RECOMMENDED WIRE DRAG. SURVEY REQUIREMENTS FULL; POSSIBLE WD, EVALUATE SOURCE FOR VESSEL TYPE.
968	PACIFIC	12221	D	0102	0	00968 HISTORY H9980/81--OPR-D103-MI/PE-81, ITEM 59 NON-DANGEROUS WK IN LAT 37-18-52N, LONG 75-36-30W NOT DISPROVED WITH 100M LINE SPACING (ENTERED 12/84 RWD). DESCRIPTION 24 NO. 1002 BARGE SUNK 1925 POSITION ACCURACY 3-5 MILES REPORTED THROUGH H.O. FILES, DATED 9/2/25 SURVEY REQUIREMENTS NOT ASSIGNED
969	UNKNOWN	12221	D	0102	0	00969 HISTORY H9980/81--OPR-D103-MI/PE-81, ITEM 58; NON-DANGEROUS WK IN LAT 37-19-40N, LONG 75-40-54W NOT DISPROVED WITH 100M LINE SPACING. (ENTERED 12/84 RWD). DESCRIPTION 24 NO. 1327; SCHOONER; SUNK 1916; POSITION ACCURACY WITHIN 1 MILE SURVEY REQUIREMENTS NOT ASSIGNED
971	YC 843	12200	E	0999	0	00971 HISTORY NM DATED 6/20/55 DESCRIPTION 24 NO.2322; POSITION ACCURACY WITHIN 1 MILE; LOCATED 2/21/54 (SOURCE UNK.), SUBSEQUENTLY REPORTED REMOVED SURVEY REQUIREMENTS NOT DETERMINED
972	W C MAY	13003	D	0999	0	00972 DESCRIPTION 01.1920 24 NO.8809; SCHOONER; 710 GT; SUNK 6/21/20 BY MARINE CASUALTY SURVEY REQUIREMENTS NOT DETERMINED
973	ONEIDA USA	13003	D	0999	0	00973 DESCRIPTION 24 NO.4770; CARGO, 2664 GT; SUNK 5/4/43 BY MARINE CASUALTY; POS. ACCURACY 1-3 MILES 62 DATED 2/5/46 SURVEY REQUIREMENTS NOT DETERMINED
974	HATIE DUNN	12200	D	0102	0	00974 DESCRIPTION 24 NO.121; SCHOONER, 435 GT, SUNK 5/25/18 BY SUBMARINE; POSITION ACCURACY 1-3 MILES 63 4/1/23 SURVEY REQUIREMENTS INFORMATION ASSIGNED: OPR-D103, ITEM 974
975	HAUPPAUGE	12200	D	0102	0	DESCRIPTION 24 NO.1404; CARGO, 1446 GT; SUNK 5/25/18 BY SUBMARINE; POS. ACCU. 3-5 MILES 60 4/1/23 SURVEY REQUIREMENTS INFORMATION ASSIGNED: OPR-D103, ITEM 975
977	CHRIS F	12200	D	****	0	00977 DESCRIPTION 18 IN 34 1/2 FATHOMS, HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN C, OBSERVED RATES:9960X-26851.1MS,9960X-41791.1MS(APPROX. 1979) SURVEY REQUIREMENTS INFORMATION
978	OBSTRUCTION	12200	D	0999	0	00978 DESCRIPTION 18 AIRPLANE; HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN C, OBSERVED RATES:9960X-26823.0MS,9960Y-41807.3MS(APPROX. 1979) SURVEY REQUIREMENTS NOT DETERMINED
979	SAMOA	13003	D	0999	0	00979 DESCRIPTION 24 NO.4771; SCHOONER, 1137 GT; SUNK 6/14/18; POSITION ACCURACY 3-5 MILES 74 SURVEY REQUIREMENTS NOT DETERMINED
980	SWIFTSCOWT	12200	D	0999	0	00980 DESCRIPTION 24 NO.4775; CARGO, 8300 GT; SUNK 4/18/45 BY SUBMARINE; POS. ACCU. 3-5 MILES 67 DATED 12/30/50 SURVEY REQUIREMENTS NOT DETERMINED
981	EDNA	12200	D	0102	0	DESCRIPTION 24 NO.130; SCHOONER, 325 GT,SUNK 5/25/18 BY SUBMARINE; POS. ACCURACY ì 1-3 MILES 60 4/1/23 195 LORAN C RATES PROVIDED BY MR. RICHARD TARACKA, GREENWICH, ì CT. POLICE DEPARTMENT, TEL. NO. 203-622-8020; 9960-X 26705.8, ì 9960-Y 43516.0 (EDNA); 9960-X 26629.1, 9960-Y 43514.2 (EDNA'S ì BOTTOM). (ENTERED MSM 4/90)
982	MILDRED SILVA	12200	D	0999	0	00982 DESCRIPTION 24 NO.868; TRAWLER, 87 GT; SUNK 2/1/45 BY MARINE CASUALTY; POSITION ACCUR. 1-3 MILES. 61 DATED 2/1/45 SURVEY REQUIREMENTS NOT DETERMINED
983	CAPTAIN TICK	12200	D	****	0	00983 DESCRIPTION 18 UNKNOWN OBST. HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN C, OBSERVED RATES:9960X-26871.0MS,9960Y-41815.8MS(APPROX. 1979) SURVEY REQUIREMENTS INFORMATION

984	BARNEGAT	12200	D	0370	60	HISTORY CHARTED AS WD CLEAR TO 60 FT, SURVEY NOT DETERMINED NM DATED 7/11/49 DESCRIPTION 24 NO.621; BARGE, 914 GT, SUNK 3/31/42 BY SUBMARINE; POSITION ACCURACY 1 MILE AT 37-32-03N, 75-13-47W; WD CLEARED TO 60 FT. (SOURCE UNK). 27 NO.805; BARGE; SUNK 3/31/42, IN 74 FT., REPORTED THRU ESF 5/20/44. SURVEY REQUIREMENTS INFORMATION ASSIGNED: OPR-D103, ITEM 984
985	OBSTRUCTION	12200	D	****	0	00985 DESCRIPTION 18 AIRPLANE; IN 50 FATHOMS, HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN C,OBSERVED RATES:9960X-26912.8MS,9960Y-41804.2MS(APPROX. 1979) SURVEY REQUIREMENTS INFORMATION ASSIGNED: OPR-D103, ITEM 985
987	ALLEGHANY	12210	D	0370	56	HISTORY CHARTED AS WD CLEAR TO 56 FT, SURVEY NOT DETERMINED H10066/82--OPR-D103-MI-82; ITEM #987; 1:20,000 SCALE SURVEY; ODOM OFFSHORE HYDROTRAC CONTROL; 100M LINE SPACING AND ONE CROSSLINE; LEAST DEPTH OF 69FT FOUND; SURVEY NOT ADEQUATE TO DISPROVE WK; EVALUATOR RECOMMENDED RETAIN AS CHARTED AND ASSIGN TO SSS/WIRE DRAG SURVEY. (ENTERED 10/29/84 MSM) DESCRIPTION 24 NO.433; BARGE, 912 GT. SUNK 3/1/42 BY SUBMARINE; POSITION ACCURACY WITHIN 1 MILE, WD CLEARED TO 56 FT; POS.37-32-14N, 75-24-37W 27 NO.805; BARGE; SUNK 3/31/42, IN 74 FT., REPORTED THRU ESF 5/20/44; POSITION, 37-33-30N, 75-24-15W. SURVEY REQUIREMENTS INFORMATION ASSIGNED: OPR-D103, ITEM 985
2426	OBSTRUCTION	12200	D	0067	0	02426 HISTORY T11691/59-61--VISIBLE RUINS. H9980/81--OPR-D103-MI/PE-81, OBSTRUCTION (POSSIBLE REMAINS OF HOG ISLAND LIGHTHOUSE AS SHOWN ON H5704/34). VISUAL INSP AND TWO SNDG LINES DID NOT VERIFY OBSTR. SHORELINE HAS ERODED APPROX. 500M SINCE 1934. NOT CONSIDERED DISPROVED IN LAT 37-23-46N, LONG 75-42-01W. (ENTERED 11/84 RWD) SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE. DISPROVAL WILL REQUIRE A BOTTOM DRAG EXTENDING A MINIMUM RADIUS OF 100 METERS FROM THE POSITION. REPORT THE CONDITION AND LEAST DEPTH OF ANY REMAINS. ASSIGNED: OPR-D103, ITEM 45 (POSITION COMPLETED)
2427	UNKNOWN	12210	D	0100	0	HISTORY LNM37/71--SALVAGE VESSEL, 125 FT.L, SUNK IN 19 FT. AT POS.37-27-15N, 75-37-47W LNM38/71--TURTLE WRECK LIGHTED BUOY WR(LL2634.10) ESTABLISHED. LNM28/74--BUOY DISCONTINUED. A WIRE SEARCH FAILED TO LOCATE WRECK. H10034/82--OPR-D103-MI-82; (ITEM 44) SUBM SANG WK PD, CHARTED IN LAT 37-27-00N, LONG 75-37-42W. LINE SPACING REDUCED, NOT FOUND. RETAIN AS CHARTED (UPDATED 2/89 SRB)
2428	UNKNOWN	12210	D	0100	0	HISTORY LNM43/72--TRAWLER, 110 FT.L, SUNK IN 3 FT. AT POS.37-28-12N, 75-39-24W. H10034/82--OPR-D103-MI-82; (ITEM 43) SUBM DANG WK PA, CHARTED IN LAT 37-28-12N, LONG 75-39-24W. NOT INVESTIGATED, RETAIN AS CHARTED. (UPDATED 2/89 SRB)
2431	OBSTRUCTION	12200	D	0067	0	02431 HISTORY CL1083/75--NOT AVAILABLE CHARTED AS OBSTR. 43. FT. REPORTED SURVEY REQUIREMENTS INFORMATION ASSIGNED: OPR-D103, ITEM 41
2783	MENOMINEE	12210	D	0370	40	HISTORY NM16/42--BUOY ESTABLISHED 4/9/42 12 FT ABOVE WATER FE70/48WD--HUNG 41FT, CLEARED 40FT IN LAT 37-32-00N, LONG 75-26-OOW. H10034/82--OPR-D103-MI-82; NOT INVESTIGATED, CARRIED FORWARD FROM FE30/48WD. RETAIN AS CHARTED.(UP 2/89 SRB) DESCRIPTION 27 NO.262; TUG, SUNK 3/31/42; THE ALLEGHENEY AND BARNEGAT BARGE SUNK SAME DATE 1/2 MILE FROM MENOMINEE
2784	SAN ALBANO	12210	D	0999	0	SURVEY REQUIREMENTS NOT DETERMINED
2785	MERIDA	12200	D	0999	0	DESCRIPTION 27 NO.773; IN APPROX. 25 FMS. POSITION ESTABLISHED BY 5 ND. SURVEY REQUIREMENTS NOT DETERMINED
2786	MERIDIAN	12221	D	0100	0	HISTORY LHNM6/33--RED BUOY AND WRECK SYMBOL ADDED TO CHART (PER AID PROOF. NM IS UNAVAILABLE); IDENTIFIED ON AID PROOF AS THE MERIDA. --- NOTE ON AID PROOF, FOUR DAYS AFTER NM ADDED, STATES THAT BUOY AND WRECK SHOULD BE DELETED; INCORRECT POSITION. CL347/58--CGS; MEMO FROM CHIEF, CHART DIVISION, ESTABLISHING NEW POLICY CONCERNING CHARTING OF WKS; WK ADDED THROUGH 1957 WRECK LIST. H9969/81--OPR-D103-MI-81; PSR ITEM 63; LIMITED INVESTIGATION WITH REDUCED LINE SPACING AND A STAR PATTERN OVER POSITION WITH A 1000 M RADIUS; NEGATIVE RESULTS; EVALUATOR RECOMMENDS REVISING TO A SUBM DANG WRECK. (ENTERED MSM 8/87) SURVEY REQUIREMENTS NOT DETERMINED
2888	OBSTRUCTION	12210	D	0067	43	02888 HISTORY CL1083/75--OBSTR W/43FT REP CHARTED IN LAT.37-31-54N, LONG.75-21-36W. H10066/82--OPR-D103-MI-82; ITEM #41; 1:20,000 SCALE SURVEY; ODOM OFFSHORE HYDROTRAC CONTROL; LEAST DEPTH OF 42FT WAS FOUND APPROX 500M WEST OF CHARTED POSITION; OBSTR NOT FOUND W/100M LINE SPACING; NOT CONSIDERED DISPROVED. EVALUATOR RECOMMENDED RETAIN AS CHARTED AND ASSIGN TO SSS/ WIRE DRAG SURVEY. (ENTERED 10/29/84 MSM) SURVEY REQUIREMENTS NOT ASSIGNED: NOT COMPLETE
2980	FRANCIS E. POWELL	12220	D	0999	0	HISTORY CHARTING SOURCE NOT DETERMINED--POSSIBLY CLEARED TO 84 FT. DESCRIPTION 24 NO.396; TKR; 7096 GT; SUNK 1/27/42 BY SUBMARINE. LOCATED 5/16/44 BY YP499 AND IDENTIFIED BY DIVERS AS THE BOW OF THE FRANCIS E. POWELL. COVERED 60 FT IN 87 FT, POS. ACCUR. 1 MILE;REPORTED THRU ESF 5/20/44 27 ITEM NO.265; SAME AS DOC.24. 185 ITEM NO.19; TKR,7096 TONS;TORPEDOED 1/27/42 IN 60 FT. POSITION LAT.37-29.8N, LONG.75-16.7W. (NAME FRANCIS POWELL) SURVEY REQUIREMENTS INFORMATION ASSIGNED: OPR-D103, ITEM 976
						HISTORY NM19/74-5/11/74--A DANGEROUS SUBM. WK. WITH A VISIBLE MAST WAS REP. SUNK IN LAT.37-18-12.0N, LONG.76-07-54.0W. IT IS PRESENTLY CHARTED AS A DANGEROUS SUBM. WK. WITH A MAST (CHART 12221, 53RD ED). (ENTERED, 11/22/83, MJF) FE222(20-1-78)--OPR-E609-RU/HE-78; ITEM 3; A HANG WAS ENCOUNTERED AT LAT.37-18-

3181	UNKNOWN	12224	E	0100	0	25.2N, LONG.76-07-47.4W. WITH A MAST. HOWEVER, NO DIVER LD OR CLEARED DEPTH WAS OBTAINED, AS WELL AS NO POSITIVE RESULTS FROM SIDE SCAN SONAR INVEST. THE EFFECTIVE DEPTH WAS APPROX. 34.5FT (ENTERED, 11/22/83, MJF) FE260/84--OPR-E609-RU/HE-84; NO INDICATION OF DANG SUBM WK W/ MASTS OBSERVED; 400 % SSS FOR 1/2 MILE SEARCH RADIUS; EVAL AND HYDROGRAPHER RECOMMEND DELETION FROM CHART. (ENT. MSM 5/85) FE222WD/78--OPR-E609-RU/HE-78; ITEM 3 (MODIFIED EVALUATION REPORT); NOT LOCATED. MAST HUNG (AWOIS NO. 3182) IN LAT 37-18-22.6N, LONG 76-07-46.8W. THIS ITEM (3181) ADEQUATELY DISCUSSED IN EVALUATION REPORT FOR FE260/84 (ABOVE). DESCRIPTION **** TELECON WITH N/MOA 2321 (M. HICKSON, 827-6268) ON 11/8/83 AND 4/16/84 REVEALED THAT ITEM 3, COVERING AWOIS ITEMS 03181,03182, AND 03183, WAS FOUND TO BE INCOMPLETE AT THE PRE-VERIFICATION PROCESSING STAGE. IT WAS RECOMMENDED THAT IT BE REASSIGNED FOR FULL INVESTIGATION. (ENTERED, 11/22/83, MJF) SURVEY REQUIREMENTS
3182	UNKNOWN	12224	E	0100	0	HISTORY CL1960/78--OPR-E609-RU/HE-78; WHILE SEARCHING FOR ITEM 3 A HANG WAS ENCOUNTERED ON DRAG STRIP X-1 WITH WHAT THE CO BELIEVED TO BE A WRECK IN LAT.37-18-25.2N, LONG.76-07-47.4W. THERE WAS NO DIVER LD OR CLEARED DEPTH. CHARTED AS A DANG. SUBM. WK. (CHART 12221, 53RD ED). (ENTERED, 11/22/83, MJF) FE222(20-1-78)--OPR-E609-RU/HE-78; ITEM 3; FURTHER INFO. FROM THIS UNPROCESSED SURVEY IS UNDETERMINED SINCE FIRST REP. IN MONTHLY ACTIVITIES REP. ABOVE (CL1960/78). (ENTERED, 11/22/83, MJF) FE260/84--OPR-E609-RU/HE-84; NO INDICATION OF SUBM DANG WK OBSERVED; 250 M SEARCH AREA W/ 400% SSS; HYDROGRAPHER AND EVAL. RECOMMEND DELETION FROM THE CHARTS. (ENTERED MSM 5/85) FE222WD/78--OPR-E609-RU/HE-78; (MODIFIED EVALUATION REPORT); HUNG AT 34 FEET, NOT CLEARED; IN LAT 37-18-22.6N, LONG 76-07-46.8W. NOT DIVED ON. BROKEN OFF METAL MAST APPROX. 6 INCHES IN DIA. PICKED UP ON GROUND WIRE BUT SLIPPED OFF BEFORE IT COULD BE SECURED. EVALUATOR STATES THIS WAS A "SOLID" HANG FOR OVER 35 MINUTES. ALSO STATES THAT THE CONTACT WOULD BY SONICALLY TRANSPARENT IF IT WAS A FIBERGLASS HULL COMPLETELY FILLED WITH WATER. RECOMMENDS ADDITIONAL WIRE DRAG FOR DISPROVAL. (UPDATED 11/14/88 SJV) SURVEY REQUIREMENTS NOT ASSIGNED
3183	OBSTRUCTION	12264	E	0100	39	HISTORY CL1960/78--OPR-E609-RU/HE-78; MAR; WHILE SEARCHING FOR ITEM 3 A HANG WAS REP. ON DRAG STRIP W-1 IN LAT.37-19-19.8N, LONG.76-08-13.2W. NO DIVER LD OR CLEARED DEPTH WAS OBTAINED. IT IS PRESENTLY CHARTED AS A DANGEROUS SUBM. OBSTR. REP. 1978 (CHART 12221, 53RD ED). (ENTERED, 11/22/83, MJF) FE222WD/78--OPR-E609-RU/HE-78; MODIFIED EVALUATION REPORT; OBSTRUCTION HUNG AT 32 FEET (ESTIMATED) IN LAT 37-19-19.6N, LONG 76-08-09.8W. NOT DIVED ON DUE TO DIVING RESTRICTIONS. SEE FE260/84 FOR CHARTING RECOMMENDATIONS. (UPDATED 11/14/88 SJV) FE260/84--OPR-E609-RU/HE-84; WOOD AND STEEL WK IN THREE SECTIONS LOCATED IN LAT 37-19-20.4N LONG 76-08-12.75W; 39FT LEAST DEPTH BY PNEUMATIC DEPTH FINDER 250M RADIUS 100% SSS SEARCH; THE LORAN C RATES OVER WK WERE 9960-X 27253.9, Y 41534, Z 58585; SEE BELOW FOR CHARTING RECOMMENDATION. (ENT. MSM 5/85) DESCRIPTION **** TELECON WITH N/MOA2321 (MAURICE HICKSON, 827-6268) ON 4/16/84: THE POSITION OF THE OBSTR IN CL1960/78 WAS AN UNVERIFIED FIELD ESTIMATE; THE CORRECT POSITION IS LAT 39-19-19.5N LONG 76-08-09.5W. (ENT. 4/84 MJF) **** TELECON WITH N/MOA2321 (MAURICE HICKSON, 827-6268) ON 5/9/85: THE EVALUATOR'S CHARTING RECOMMENDATION FOR THIS ITEM IN FE260/84 IS INCORRECT. THE HANG IS THE SAME ITEM FOUND IN FE222 AND CL1960/78. HE RECOMMENDED THE OBSTR BE DELETED AND A SUBM DANG WK BE CHARTED IN LAT 37-19-20.4N LONG 76-08-12.75W; FE260/84 RETURNED TO AMC FOR CORRECTION. (ENTERED MSM 5/85) SURVEY REQUIREMENTS FULL--NOT ASSIGNED
3184	OBSTRUCTION	12226	E	0370	3	03184 HISTORY NM36/41--OBSTRUCTIONS CONSISTING OF A HOUSE ON PILING AND SEVERAL DOLPHINS WERE ESTABLISHED WITHIN THE AREA BOUNDED BY LAT.37-24-00N TO LAT.37-24-43N, AND LONG.76-02-50W TO LONG.76-04-10W. (ENTERED,11/22/83, MJF) NM50/41--ON 11/3/41 THE WOLF TRAP MAG. SURVEY RANGE, LOCATED IN LAT.37-24-06N, LONG.76-04-06W, WAS PUT INTO OPERATION. (ENTERED,11/22/83, MJF) CL764/45--NORFOLK NAVY YARD, DEGAUSSING OFFICER; THE DEGAUSSING RANGE AT WOLF TRAP WAS DISCONTINUED. (ENTERED,11/22/83, MFJ) BP40572-10/15-45--AS BUILT PLANS SHOWING CONDITIONS OF DEGAUSSING RANGE (ENTERED, 11/22/83, MJF). CL100/47--DESCRIPTIVE REP. ACCOMP. TOPO. SHEET FIELD NO.A; USN DEGAUSSING STA; C&GS SHIP STIRNI LOCATED OBSTR. LT ON TOP OF ABANDONED US DEGAUSSING STRUCTURE IN LAT.37-24-12.38N, LONG.76-03-39-06W. (ENTERED, 11/22/83, MJF) CL970/55--C&GS NORFOLK DIST. OFFICER; CONDITION REP. OF WOLF TRAP DEGAUSSING STA; ALL BUILDINGS AND STRUCTURES WERE REMOVED EXCEPT THE CONCRETE CASSIONS PROJECTING APPROX. 15FT ABOVE WATER. (ENTERED, 11/22/83, MJF) H8448/58--LOCATED "STACK ON PLATFORM" IN POS. LAT.37-24-12.0N, LONG. 76-03-39.5W. DEPTHS IN THE VICINITY RANGED FROM 33 TO 41 FEET. LNM42/80-5TH CGD--OBSTR. IN VIC. OF WOLF TRAP DEGAUSSING LT BELL BUOY WT2 HAS BEEN REP. 3FT BELOW MLW IN LAT.37-24-12N, LONG.76-03-42W. IT IS PRESENTLY CHARTED AS A SUBM. OBSTR. 3FT REP 1980 (CHART 12225, 40TH ED). (ENTERED, 11/22/83, MJF). FE259WD/84--OPR-E609-RU/HE-84; DEL NORTE POSITIONING; PIPE DRAG AND FATHOMETER SEARCH. ITEM HUNG IN POS. LAT.37-24-13.11N, LONG.76-03-39.19N. CLEARED TO AN EFFECTIVE DEPTH OF 3.0 FT. MLLW. HYDRO. RECOMMENDS CHARTING A FOUL AREA (37-24-13.98N, 76-03-40.48W X 37-24-14.06N, 76-03-38.65W X 37-24-10.11N, 76-03-40.27W X 37-24-09.87N, 76-03-38.60W) WITH AN OBSTRUCTION CHARTED WITHIN THIS AREA IN LAT.37-24-13.11N, LONG.76-03-39.19W WITH A WIRE DRAG CLEARED DEPTH OF 3.0 FT. AT MLLW. REMOVE "SUBM OBSTR (3 FT. REP 1980)" FROM CHART. EVALUATOR RECOMMENDS RETAINING CHARTED SYMBOL AND NOTE "SUBM OBSTR". DELETE NOTE (3 FT REP 1980) AND ADD NOTE (CLEARED 3 FT). NO LEAST DEPTH WAS OBTAINED AT THIS HANG. SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE THROUGH 400% SIDE SCAN SONAR SEARCH OR WIRE SWEEP INVESTIGATION, 100 METER MIN. RADIUS. LD REQUIRED. NOT ASSIGNED.
						03434 HISTORY LNM1/79--8X8X20 FT. CONTAINER REPORTED ADRIFT HAS SUNK 4.5 MILES

3434	OBSTRUCTION	12226	E	0067	0	NNE OF WOLFTRAP LIGHT IN APPROX. POS. LAT.37-27-42N, LONG.76-10-18W, IN 35 FT. OF WATER. TWO RED METAL CANISTERS MARK THE POS.,ANOTHER CONTAINER MAY BE ADRIFT IN SAME AREA. (ENTERED,3/27/84,MCR) SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE BY BOTTOM DRAG INVESTIGATION TO A RADIUS OF 1/2 NM MINIMUM OR BY 400% SIDE SCAN SONAR COVERAGE. ASSIGNED:OPR-E404-PE-84
3435	OBSTRUCTION	12220	E	0067	0	03435 HISTORY FE222(20-1-78)--OPR-E609-RU/HE-78; A HANG ON A SMALL ROCK THAT EXTENDS 1.5 FT OFF THE BOTTOM WAS OBTAINED ON DRAG STRIP Z-1 IN LAT.37-18-33.0N, LONG.76-07- 43.0W. NO DIVER LD OR CLEARANCE WAS OBTAINED. IT IS PRESENTLY AN UNCHARTED FEATURE. (ENTERED, 4/16/84, MJF) DESCRIPTION **** TELECON WITH N/MOA 2321 (M.HICKSON, 827-6268) ON 4/16/84 REVEALED THAT THIS ITEM WAS NOT REP. AS A SIGNIFICANT DANGER BUT WILL BE RECOMMENDED FOR CHARTING. (ENTERED, 4/16/84, MJF) SURVEY REQUIREMENTS INFORMATION
3436	OBSTRUCTION	12220	E	0067	0	03436 HISTORY FE222(20-1-78)--OPR-E609-RU/HE-78; A HANG ON A PIECE OF METAL EXTENDS 2.5 FT OFF THE BOTTOM WAS OBTAINED ON STRIP AE-2 IN LAT.37-18-51.0N, LONG.76-07-58.0 NO DIVER LD OR CLEARANCE WAS OBTAINED. IT IS PRESENTLY AN UNCHARTED FEATURE. (ENTERED, 4/16/84, MJF) DESCRIPTION **** TELECON WITH N/MOA 2321 (M. HICKSON, 827-6268) ON 4/16/84 REVEALED THAT THIS ITEM WAS NOT REP. AS A SIGNIFICANT DANGER BUT WILL BE RECOMMENDED FOR CHARTING. (ENTERED, 4/16/84, MJF). SURVEY REQUIREMENTS INFORMATION
6826	MARY L. LEWIS	12221	D	0100	0	HISTORY LNM19/72--5TH CGD; 88 FT. F/V HAS SUNK 5-6 MILES EAST OF SAND ì SHOAL INLET IN PA LAT 37-17N, LONG 75-40W. H9969/81--OPR-D103-MI-81; PSR ITEM 62; LIMITED INVESTIGATION ì WITH REDUCED LINE SPACING AND STAR PATTERN SEARCH FOR 1000 M ì RADIUS AREA FROM CHARTED POSITION; NEGATIVE RESULTS; EVALUATOR ì RECOMMENDS RETAINING AS CHARTED. (ENTERED MSM 8/87)
6827	GEE-BEE-GEE	12224	D	0100	0	HISTORY NM47/68--37 FT. CABIN CRUISER REPORTED SUNK IN 30 FT. OF WATER ì IN PA LAT 37-17-01N, LONG 75-42-03W; MARKED BY ORANGE 5 GALLON ì CAN. H9969/81--OPR-D103-MI-81; PSR ITEM 61; LIMITED INVESTIGATION ì WITH REDUCED LINE SPACING AND STAR PATTERN FOR 1000 M RADIUS OVER ì REPORTED POSITION; NEGATIVE RESULTS; EVALUATOR RECOMMENDS ì RETAINING AS CHARTED. (ENTERED MSM 8/87)
6828	ALCEE	12224	D	0098	0	HISTORY LNM38/70--5TH CGD; SLOOP REPORTED AGROUND IN 2-3 FT. OF WATER ì AT LAT 37-18-30N, LONG 75-45-30W. H9969/81--OPR-D103-MI-81; PSR ITEM 60; VISIBLE WRECK CONFIRMED ì IN LAT 37-18-07.55N, LONG 75-46-12.09W; EXPOSED AT MOST STAGES OF ì TIDE; TOTALLY SUBMERGED AT VERY HIGH TIDE; EVALUATOR RECOMMENDS ì CHARTING ACCORDING TO SURVEY. (ENTERED MSM 8/87)
7189	OBSTRUCTION	12210	D	0067	0	HISTORY H10034/82--OPR-D103-MI-82; SUBM OBSTRUCTION, LAT 37-29-30N, LONG 75-35-00W. REPORTED BY LOCAL MARINERS (EARL PARKER AND JIM WALLACE, WACHAPREAQUE VA) TO BE A SUNKEN BARGE. NO INVESTIGATION CONDUCTED. (ENTERED 2/89 SRB)
7190	OBSTRUCTION	12210	D	0067	0	HISTORY H10034/82--OPR-D103-MI-82; 58FT OBSTRUCTION, LOCATED IN LAT 37-32-01.69N, LONG 75-26-23.73W. OBSTRUCTION IS A 58FT ECHO SOUNDER DEPTH OBTAINED WHILE CONDUCTING BASIC HYDRO AND WAS NOT FURTHER INVESTIGATED. DESCRIBED AS A WK IN SDG VOLUMES. (ENTERED 2/89 SRB)
50006	CITY OF RIO DE JANEI	18645	L	0999	0	SURVEY REQUIREMENTS INFORMATION
50124	INDEPENDENCE	18680	L	0102	0	50124 DESCRIPTION 24 NO.8584; AIRCRAFT CARRIER; SUNK 1/26/51; POSITION ACCURACY WITHIN 1 MILE; REPORTED DEMOLISHED (SOURCE UNK); REPORTED THRU H.O. FILES DATED 1957 SURVEY REQUIREMENTS INFORMATION
50127	JAMES ROLF	18645	L	0999	0	SURVEY REQUIREMENTS INFORMATION
50145	MOTOR MATES		L	0***	0	50145 DESCRIPTION 24 NO.4779; CARGO, 273 GT; SUNK 3/4/44 BY MARINE CASUALTY; POSITION ACCURACY 3-5 MILES; GP DOUBTFUL 61 SURVEY REQUIREMENTS NOT DETERMINED
50184	OCEANIA	18680	L	0999	0	DESCRIPTION 24 NO.1090; POSITION ACCURACY 1-3 MILES; REPORTED THROUGH OCGR SURVEY REQUIREMENTS INFORMATION
50225	RYDAL HALL	18645	L	0999	0	SURVEY REQUIREMENTS INFORMATION
51002	MORGAN SHELL	18651	L	0100	0	HISTORY CL1218/64--USCGAUX; SUBM WK, PA, REPORTED ABOUT 80YDS DUE SOUTH OF BUOY 9 IN LAT 37-31-57.5N, LONG 122-11-29W. VESSEL EXPOSES AT MLLW, HAS DAMAGED TWO SMALL BOATS. H10102/83-84--OPR-L123-PHP-81; MORGAN SHELL, HYDROGRAPHERS INTERVIEW WITH LOCAL RESIDENTS INDENTIFIED THE WK AS A 60-65FT WOODEN TUG THAT BURNED AND SANK IN THE LATE 50'S. THE WK WAS SALVAGED EXCEPT FOR THE ENGINE BLOCK AND METAL DEBRIS EXTENDING ONE FOOT OUT OF THE MUD, FOR 40FT. (PSR #ITEM 39) DESCRIPTION INTERVIEW WITH THE HYDROGRAPHER INDICATES THAT THE ENGINE HEAD BOLTS THAT REMAIN WILL PROBABLY BE BELOW THE MUD LINE IN 10 YRS CONSIDERING THAT THE VESSEL IS SILTING OVER AND SINKING INTO THE MUD. (ENTERED 11/85 RWD)
						HISTORY NM27/69--VISIBLE WK, 25FT LONG SUNK IN LAT 37-32-00N, LONG 122-11-27W PA, IN 7FT OF WATER WITH 2FT OF VESSEL VISIBLE, JUST EAST OF REDWOOD CREEK LIGHTED BUOY 9. CL1771/80--USCGAUX; NO VISIBLE WK AT CHARTED LOCATION. CHART REVISED TO SUBM. H10102/83-84--OPR-L123-PHP-81; MANANA, P/C. HYDROGRAPHERS INTERVIEW WITH MARINER INDICATES THAT VESSEL EXPLODED AND SANK IN 1969

51003	MANANA	18651	L	0100	0	BECAUSE OF A LEAKY HOMEMADE GAS TANK. WOOD AND METAL DEBRIS PROTRUDING 1FT OUT OF THE MUD UNCOVERS 2FT AT MLLW WITHIN A 5M RADIUS OF THE SURVEYED POSITION OF LAT 37-32-09.9N, LONG 122-11-17.9W. (PSR ITEM 38) DESCRIPTION INTERVIEW WITH HYDROGRAPHER INDICATES THAT NO PORTION OF THE HULL OR CABIN ARE INTACT AND THAT THE WRECK SHOULD BE APPROPRIATELY CHARTED AS WRECKAGE. (ENTERED 11/85 RWD)
51079	UNKNOWN	18651	L	0098	0	HISTORY H10158/84--OPR-L123-PHP-84; VISIBLE WRECK BARES 12FT AT MHW, SCALED IN LAT 37-25-47N, LONG 121-58-47W. WRECK SITS ON HWL. (ENTERED 8/86 RWD)
51080	UNKNOWN	18651	L	0098	0	HISTORY H10158/84-85--OPR-L123-PHP-84; VISIBLE WRECK UNCOVERS 10 FT AT MLLW, WRECK IS OF A STEEL HULL APPROX 15 TO 18 FEET LONG. (ENTERED 8/86 RWD)
51147	OBSTRUCTION	18651	L	0067	28.5	HISTORY H8210/56--DUMBARTON, BRIDGE H10132/84-85--OPR-L123-PHP-81; DUMBARTON BRIDGE WAS IN THE PROCESS OF DEMOLITION DURING COURSE OF SURVEY, THE CENTER SPAN OVER THE CHANNEL HAD BEEN REMOVED. A 26.5 FT OBSTRUCTION ON THE ECHOGRAM HAD NOT BEEN SHOWN ON THE SMOOTH SHEET, IN LAT 37-30-16.7N, LONG 122-07-07-32W. HOWEVER, SUBSEQUENTLY, OBSTRUCTIONS WERE REMOVED BY A PRIVATE CONTRACTOR, THEN RESURVEYED BY THE SAME CONTRACTOR IN LATE 1985 EARLY 1986 AS ADDRESSED IN THE FOLLOWING DOCU- MENT, CHART LETTER 337/86. THE PRESENT SURVEY ALSO ADDRESSES THAT THE NORTH AND SOUTH ENDS OF THE WEST FENDER COMPLETED AFTER THE PRESENT SURVEY REQUIRE POSITIONS, OF THE NEW DUMBARTON BRIDGE. CL337/86--USCG-BRIDGE COMPLETION REPORT; ALL PARTS OF THE BRIDGE (REFERRING TO THE "OLD" DUMBARTON BRIDGE) NOT USED IN THE FISHING PIER WERE REMOVED TO THE NATURAL BOTTOM OF THE WATERWAY. A TELCON WITH MR WAYNE TILL (12/1/86, 8-536-3516), ALL OBSTRUCTIONS WERE REMOVED ON AUG 5, 1985, AND THE CONTRACTOR SURVEYED THE AREA IN LATE 1985 AND EARLY 1986 WITH NEGATIVE RESULTS. HE INDICATED THAT IF NOS WAS IN THE AREA THAT A CHECK SURVEY WOULD SATISFY ANY DOUBT OF REMAINS. (ENTERED 12/86 RWD) FE311/87--OPR-L123-PHP-87; 26.5FT OBSTR IN LAT 37-30-16.7N, LONG 122-07-07.32W WAS DISPROVED AFTER A 100M RADIUS CIRCLE BOTTOM DRAG. A 28.5FT OBSTR (2-WOODEN PILES, AND A MOUND OF SHARP, JAGGED METAL DEBRIS PROTRUDING ABOUT 3-4FT OFF BOTTOM) WAS LOCATED IN LAT 37-30-17.35N, LONG 122-07-06.84W APPROX 25M AWAY BY A BOTTOM WIRE DRAG. DIVERS USED A PNEUMATIC GAGE IN 0-FT WATER VISIBILITY TO DETERMINE LEAST DEPTH. AN ADDITIONAL OBSTRUCTION, BEING A GROUP OF PILES AND DOLPHIN (BRIDGE RUINS), COVERED 30.5FT AND PROTRUDING 6 OR 7FT OFF THE BOTTOM WAS LOCATED BY A HANG IN LAT 37-30-22.82N, LONG 122-06-59.94W. DIVERS DETERMINED THE LEAST DEPTH BY PNEUMATIC GAGE. THIS OBSTRUCTION IS APPROX 25M EAST OF THE DUMBARTON BRIDGE EAST FENDER. A LETTER ATTACHED TO THE DESCRIPTIVE REPORT (SURVEY REQUEST FORM) FROM CALIFORNIA DEPT. OF TRANSPORTION (CALTRANS) DATED 4/13/88 REQUESTS THAT ADDITIONAL SURVEY WORK BY NOS UPON COMPLETION OF RECOVERY OF SUBMERGED DEBRIS IN THE VICINITY OF THE OLD BRIDGE TO ENSURE THAT ALL DEBRIS HAS BEEN CLEARED TO THE MUDLINE BE CONDUCTED. (UPDATED 5/89 RWD) DESCRIPTION TELCON WITH MR ROBERT GUINN (415) 557-0155 OR 464-0359 ON ì 5/30/89 OF CALTRANS CONFIRMS THAT NO REMOVAL OF DEBRIS HAD BEEN ì ACCOMPLISHED AS OF THIS DATE. HE INFORMED THAT THEY WILL FORWARD ANY DATA ì PROVIDED THEM BY THE CONTRACTOR, OF REMOVED DEBRIS, TO THIS OFFICE. (UPDATED ì 5/89 RWD) SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE. DISPROVE THE POSSIBLE EXISTENCE OF AN OBSTRUCTION AT THE GP GIVEN ABOVE FOR A MINIMUM RADIUS OF 75M BY WIRE DRAG. IF ANY NOTE- WORTHY OBSTRUCTION IS FOUND, A DIVER LEAST DEPTH AND GP IS REQUIRED, PLUS THE ENTIRE AREA WILL BE WIRE DRAGGED COMMON IN AREA TO THE POSITION OF THE OLD DUMBARTON BRIDGE THAT WAS DEMOLISHED TO ENSURE THAT ALL DEBRIS HAD BEEN REMOVED. DP'S AND LD'S REQUIRED ON ALL OBSTRUCTIONS NOTED.

SHORELINE RESTORATION-MID BAY, MARYLAND
AWOIS FILES

Record #	Vessel Name	Chart #	Area	Cartocode	Depth	History
735	UNKNOWN	12200	D	0100	0	00735 HISTORY LNM37/80--PLEASURE CRAFT, 42 FT L, SUNK W/APPROX 2 FT OF BOW EXPOSED SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE. DISPROVE BY SIDE SCAN (400%), OR WIRE DRAG FOR 500 METER MINIMUM RADIUS, OR BY SALVAGE DOCUMENTATION.
763	BETH DRYDOCK NO. 5	12214	C	0100	0	00763 HISTORY CL537/85--VESSEL SUNK IN APPROX. 125 FT. WITH A CLEARANCE OF 71 FT. FROM TOP OF VESSEL TO SURFACE. IN LAT. 38-30.39N, LONG. 74-31.49W. SUNK ON 5/23/85 BY BETHLEHEM STEEL CORP. DESCRIBED AS ONE SECTION OF A SIX SECTION DRYDOCK, 133 FT. X 96 FT. X 54 FT. SUNK APPROX. 27 MILES DUE EAST OF INDIAN RIVER INLET, DE. LORAN-C COORDINATES (9960 CHAIN) 26927.O-X, 42464.4-Y. SUNK IN COMPLIANCE WITH MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT, 40 CFR PART 229.3. CONTACT IS WILLIAM J. HOFFMAN, CHIEF, WETLANDS AND MARINE POLICY SECTION, EPA REGION III (PHILADELPHIA, PA). SEE AWOIS NUMBERS 00764, 00765. SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE THROUGH 400% SIDE SCAN SONAR SEARCH OR WIRE SWEEP INVESTIGATION, 1 MILE MIN. RADIUS. NOT ASSIGNED.
764	BETH DRYDOCK NO. 5	12214	C	0100	0	00764 HISTORY CL537/85--VESSEL SUNK IN APPROX. 125 FT. WITH A CLEARANCE OF 71 FT. FROM TOP OF VESSEL TO SURFACE IN LAT. 38-30.91N, LONG. 74-31.58W. SUNK ON 5/20/85 BY BETHLEHEM STEEL CORP. DESCRIBED AS ONE SECTION OF A SIX SECTION DRYDOCK, 133 FT. X 96 FT. X 54 FT. SUNK APPROX. 27 MILES DUE EAST OF INDIAN RIVER INLET, DE. LORAN-C COORDINATES (9960 CHAIN) 26928.4-X, 42470.9-Y. SUNK IN COMPLIANCE WITH MARINE PROTECTION, RESEARCH, AND SANCTUARIES ACT, 40 CFR PART 229.3. CONTACT IS WILLIAM J. HOFFMAN CHIEF, WETLANDS AND MARINE POLICY SECTION, EPA REGION III (PHILADELPHIA, PA). SEE AWOIS NUMBERS 00763, 00765. SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE THROUGH 400% SIDE SCAN SONAR SEARCH OR WIRE SWEEP INVESTIGATION, 1 MILE MIN. RADIUS. NOT ASSIGNED.
765	BETH DRYDOCK NO. 5	12214	C	0100	0	00765 HISTORY CL537/85--VESSEL SUNK IN 117 FT. WITH A CLEARANCE RECORDED FROM TOP OF VESSEL TO SURFACE OF 78.5 FT. IN LAT. 38-31.05N, LONG. 74-31.60W. SUNK ON 4/ 28/85 BY BETHLEHEM STEEL CORP. DESCRIBED AS ONE SECTION OF A SIX SECTION DRYDOCK, 133 FT. X 96 FT. X 54FT. SUNK APPROX. 26.0 MILES DUE EAST OF INDIAN RIVER INLET, DE. SUNK IN COMPLIANCE WITH MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT, 40 CFR PART 229.3. CONTACT IS WILLIAM J. HOFFMAN, CHIEF, WETLANDS AND MARINE POLICY SECTION, EPA REGION III (PHILADELPHIA, PA). SEE AWOIS NUMBERS 00763, 00764. SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE THROUGH 400% SIDE SCAN SONAR SEARCH OR WIRE SWEEP INVESTIGATION, 1 MILE MIN. RADIUS. NOT ASSIGNED.
1051	UNKNOWN	12200	D	0999	0	01051 DESCRIPTION 19 FISHING OBSTR. OLD LORAN A 3H4-3153.5, 3H5-1227.0=LORAN C,9960W-15759.4 ,9960Z-5132.0 , (1980 COMPUTED VALUE) NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1052	UNKNOWN	12200	D	0999	0	01052 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52426.9,9930Z-70420.6=9960W-15730.7,9960-59158.6 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1053	CARPENDER	12200	D	0999	0	01053 HISTORY NM DATED 4/11/34 DESCRIPTION 24 NO.3925; POSITION ACCURACY WITHIN 1 MILE; REPORTED DEMOLISHED (SOURCE UNK) SURVEY REQUIREMENTS NOT DETERMINED
1054	UNKNOWN	12200	D	0999	0	01054 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52495.2,9930Z-70384.8=9960W-15779.9,9960Z-59123.3 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1055	SEA SKIP	12200	D	0999	0	01055 DESCRIPTION 18 IN 42 FATHOMS, HUNG BY TRAWL FISHERMAN, NAD27 GP CONVERTED FROM LORAN C, OBSERVED RATES;9960X-26655.8MS,9960Y-42436.5MS(APPROX. 1979) SURVEY REQUIREMENTS NOT DETERMINED
1056	UNKNOWN	12200	D	0999	0	01056 DESCRIPTION 19 FISHING OBSTR. OLD LORAN A 3H4-3240.0, 3H5-3093.0=LORAN C,9960W-15714.9,9960Z-59183.4, (1980 COMPUTED VALUE) NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1057	ELIZABTH PAL	12200	D	0999	0	HISTORY NM DATED 9/6/49 DESCRIPTION 24 NO. 613; SCHOONER; SUNK 1915; POSITION ACCURACY WITHIN 1 MILE; LOCATED 3/7/15 (SOURCE UNK); WD CLEARED TO 54 FT. (SOURCE UNK); REPORTED DEMOLISHED (SOURCE UNK) SURVEY REQUIREMENTS NOT DETERMINED
1058	HVOSLEF	12200	D	0999	0	DESCRIPTION 24 NO.871; CARGO, 1630 GT, SUNK 3/11/42 BY SUBMARINE; POSITION ACCURACY 1-3 MILES 61 3/11/42 SURVEY REQUIREMENTS NOT DETERMINED
1059	W.L. STEED	12200	D	0999	0	DESCRIPTION 27 NO. 248; TANKER, 3798 NT; SUNK 2/2/42, REPORTED THROUGH 4TH NAVAL DISTRICT HEADQUARTERS SURVEY REQUIREMENTS NOT DETERMINED
1060	UNKNOWN	12200	D	0999	0	01060 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52246.0,9930Z-70443.9=9960W-15639.6,9960Z-59244.9 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1061	W L STEED	12200	D	0370	57	HISTORY NM DATED 9/6/49 DESCRIPTION 24 NO.390; TANKER; 6182 GT; SUNK 2/2/42 BY SUBMARINE; POSITION ACCURACY 1-3 MILES; WD CLEARED TO 57 FT. (SOURCE UNK.) SURVEY REQUIREMENTS NOT DETERMINED

1062	UNKNOWN	12200	D	0999	0	01062 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52460.5,9930Z-70369.1=9960W-15775.9,9960Z-59140.8 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1063	UNKNOWN	12200	D	0999	0	01063 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52389.0,9930Z-70394.9=9960W-15731.4,9960Z-59177.3 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1064	UNKNOWN	12200	D	0999	0	01064 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52389.3,9930Z-70394.7=9960W-15731.6,9960Z-59177.2 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1065	T.J. HOOPER	12200	D	0999	0	DESCRIPTION 24 NO. 389; SUNK 1935; POSITION ACCURACY WITHIN 1 MILE; 2197 GT; WRECK REPORTED STANDING 38 FT. HIGH IN 135 FT. THROUGH FOURTH NAVAL DISTRICT HEADQUARTERS SURVEY 1/10/45; PREVIOUSLY REPORTED IN LAT. 38-28-0000N LONG. 074-26-0000W THROUGH OLD COAST GUARD RECORDS; SUBSEQUENTLY FAILED TO LOCATE (SOURCE UNKNOWN) 27 NO.246; 2197 NT, SUNK BEFORE WWII. STANDS 38 FT HIGH IN 135 FT OF WATER. PREVIOUSLY REPORTED AT POS. LAT.38-28N, LONG.74-26W. SURVEY REQUIREMENTS NOT DETERMINED
1066	UNKNOWN	12200	D	0999	0	01066 DESCRIPTION 27 NO.807; 7000 NT; AN OLD WRECK WAS LOCATED IN THIS POSITION. FROM THE CONDITION OF THE METAL AND AMOUNT OF MARINE GROWTH, IT IS BELIEVED THE VESSEL HAS BEEN SUNK AT LEAST 10 OR MORE YEARS. THE WRECK LIES BOTTOM UP. REPORTED THROUGH EASTERN SEA FRONTIER 6/13/44 SURVEY REQUIREMENTS NOT DETERMINED
1067	UNKNOWN	12200	D	0999	0	01067 HISTORY NM DATED 8/29/49 DESCRIPTION 24 NO.3918; TRAWLER; POSITION ACCURACY WITHIN 1 MILE; SUBSEQUENTLY FAILED TO LOCATE SURVEY REQUIREMENTS NOT DETERMINED
1068	RELIANCE	12200	D	0999	0	HISTORY LNM DATED 2/28/51 DESCRIPTION 24 NO.1141; SCHOONER; SUNK 8/17/44; POSITION ACCURACY 1-3 MILES SURVEY REQUIREMENTS NOT DETERMINED
1069	UNKNOWN	12214	D	0370	6	DESCRIPTION 24 NO 418; LOCATED BY CGS IN 1929; WD CLEARED TO 6 FT(SOURCE UNK). 27 NO.530; LOCATED BY U.S.C. &G.S., SURVEY OF 1929. SURVEY REQUIREMENTS NOT DETERMINED
1070	UNKNOWN	12260	E	0100	8	01070 DESCRIPTION 24 NO.1234; POS. ACCURACY WITHIN 1 MILE; LEAST DEPTH 8 FT. (SOURCE UNK.); REPORTED THROUGH H.O. CHART RECORDS SURVEY REQUIREMENTS NOT DETERMINED
1071	WASHINGTONIAN	12200	D	0370	62	DESCRIPTION 24 NO.434; CARGO; 7000 GT; SUNK 1915; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 62 FT. (SOURCE UNK.) SURVEY REQUIREMENTS NOT DETERMINED
1072	UNKNOWN	12200	D	0999	0	DESCRIPTION 27 NO. 531; SUNK BEFORE WWII, LOCATED BY CGS, 1929 SURVEY REQUIREMENTS NOT DETERMINED
1073	UNKNOWN	12214	D	0999	0	01073 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52328.2,9930Z-70398.7=9960W-15704.0,9960Z-59207.1 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1074	UNKNOWN	12200	D	0999	0	01074 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52431.8,9930Z-70361.2=9960W-15769.5,9960Z-59155.4 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1075	UNKNOWN	12200	D	0999	0	01075 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52392.2,9930Z-70375.8=9960W-15744.7,9960Z-59175.6 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1076	JOSEPH E. HOOPER	12200	D	0999	0	HISTORY NM DATED 8/8/49 DESCRIPTION 24 NO.612; BARGE, 2233 GT; SUNK 7/15/43; POSITION ACCURACY WITHIN 1 MILE SURVEY REQUIREMENTS NOT DETERMINED
1077	UNKNOWN	12200	D	0999	0	01077 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52449.2,9930Z-70351.4=9960W-15782.3,9960Z-59146.3 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1078	UNKNOWN	12214	D	0100	90	01078 HISTORY NM DATED 11/17/43 DESCRIPTION 24 NO.3921; POSITION ACCURACY WITHIN 1 MILE; LD 90 FT.(SOURCE UNK) SURVEY REQUIREMENTS NOT DETERMINED
1079	MOONSTONE	12214	D	0370	77	HISTORY NM45/43--YACHT AT POS.38-28-50N, 74-31-48W W/90 FT OF WATER OVER IT DESCRIPTION 24 NO.427; PATROL, 379 GT; SUNK 10/16/43 BY MARINE CASUALTY; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 77 FT (SOURCE UNK); LOCATED 1950 AT POS.38-29-30N, 74-33-18W STANDING ABOUT 48 FT HIGH IN 124 FT OF WATER W/POS. ACCURACY OF 1 MILE; EARLIER REPORT THRU 4TH ND HQ 1/10/45 27 NO.766; YACHT, SUNK 10/15/43, STANDS 38 FT HIGH IN 124 FT. PREVIOUSLY REPORTED AT LAT.38-28-50N, LONG.74-31-48W. LD OF 90 FT. SURVEY REQUIREMENTS NOT DETERMINED
1080	UNKNOWN	12214	D	0999	0	01080 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52274.8,9930Z-70403.0=9960W-15678.8,9960Z-59232.6 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1081	UNKNOWN	12214	D	0999	0	01081 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52317.0,9930Z-70383.0=9960W-15709.3,9960Z-59212.7 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED

1082	UNKNOWN	12214	D	0102	0	HISTORY H10931/99 OPR-D392-WH; CHARTED SUNKEN WRECK, NOT DANGEROUS TO SURFACE NAVIGATION IN LAT. 38-30-06N, LONG. 74-46-57W. NEITHER DISCUSSED, VERIFIED, NOR DISPROVED. EVALUATOR RECOMMENDS RETAINING AS CHARTED. ADDITIONAL WORK IS RECOMMENDED TO VERIFY OR DISPROVE WRECK. (UP 7/19/00, SJV) F00467/OPR-D392-WH; 200% SIDE SCAN SONAR SEARCH NEGATIVE. SWMB OPS OVER CONTACTS IDENTIFIED BY H10931 YEILDED NO SIGNIFICANT OBJECTS. EVALUATOR RECOMMENDS DELETING WRECK. (UP 2/25/02, SJV) DESCRIPTION 24 NO.3935; BARGE; LEAST DEPTH 63 FT, REPORTED SILTED OVER; POSITION ACCURA WITHIN 1 MILE; REPORTED THROUGH H.O. CHART RECORDS
1083	UNKNOWN	12214	D	0999	0	01083 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52314.0,9930Z-70376.0=9960W-15712.6,9960Z-59214.2 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1084	NINA	12214	D	100	62	HISTORY F00453/99--OPR-D392-WH; SIDE SCAN SONAR INVESTIGATION LOCATED THE REMAINS OF A WRECK IN LAT. 38-30-31.56N, LONG. 74-50-32.56W. HYDROGRAPHER RECOMMENDS ADDITIONAL WORK IN ORDER TO OBTAIN LD AND POSITION. (UP 7/18/00, SJV) F00467/00-- OPR-D392-WH; CONTACT RESEMBLING A WRECK WAS LOCATED WITH A LD OF 62 FEET IN LAT. 38-30-31.79N, LONG. 74-50-32.31W. EVALUATOR RECOMMENDS DELETING CHARTED WRECK, PA AND CHARTING A 63 WK AS SURVEYED. (UP 2/25/02, SJV) DESCRIPTION **** 19 FISHING OBSTRUCTION; OLD LORAN-C TDS (9930 CHAIN): Y = 52374.6, Z = 70353.8; (9960 CHAIN): W = 15751.3, Z= 59184.4. NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. **** TELCON. 6/15/99, S. VERRY (N/CS31) WITH CAPT. DAVID POTTER (DELBAY & RIVER PILOT); WRECK IS THE NAVY SALVAGE TUG "NINA" IN 80 FEET OF WATER. LORAN-C TD'S (9960 CHAIN): X = 27032.3, Y = 42450.7; LAT. 38/30/30N, LONG. 74/50/30W. 216 SHIPWRECKS OF DELAWARE AND MARYLAND BY GARY GENTILE, COPYRIGHT 1990, GARY GENTILE PRODUCTIONS, P.O. BOX 57137, PHILADELPHIA, PA 19111; IRON-HULLED TUG, LENGTH 137 FEET, BEAM 26 FEET, DRAFT 9 FEET; 420 GT; COAL-FIRED STEAM, BUILDER REANEY, SON, AND ARCHIBOLD, CHESTER, PA; OWNED BY THE U.S. NAVY AND DESIGNATED AS A FOURTH-CLASS SCREW STEAMER. SUNK FEBRUARY 6, 1910 IN 80 FEET; LORAN-C TD'S (9960 CHAIN): X = 27032.3, Y = 42450.7. WRECK LIES N-S AND SITS UPRIGHT; THE WRECKAGE OF THE BRIDGE LIES IN THE SAND TO THE PORT OF THE MAIN HULL. THE BOW IS FAIRLY INTACT. THE DECK IS GONE BUT THE BEAMS STILL SPAN THE GUNWALES. FIFTY FEET AFT, JUST FORWARD OF WHERE THE SUPERSTRUCTURE USED TO BE, IS A BIG WINDLASS. AMIDSHIPS, PLATES HAVE COLLAPSED OUTWARD. STACK LIES TO STARBOARD. STERN LOW TO THE SAND BUT STILL RECOGNIZABLE. LARGE TOWING BITT VISIBLE. (UP 6/30/99, SJV)
1085	UNKNOWN	12214	D	0999	0	01085 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52326.5,9930Z-70370.0=9960W-15721.5,9960Z-59208.2 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1086	UNKNOWN	12214	D	0370	73	01086 DESCRIPTION 24 NO 440; LOCATED BY USCG GENTIAN AT LAT. 38-31-30N, LONG. 74-31-54W ON 10/25/44, STANDING 37 FT HIGH IN 124 FT OF WATER; SUBSEQUENTLY WD CLEARED TO 73 FT(SOURCE UNK); POS. ACCURACY 1 MILE. SURVEY REQUIREMENTS NOT DETERMINED
1087	UNKNOWN	12214	D	0999	0	01087 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52249.6,9930Z-70394.0=9960W-15673.8,9960Z-59244.7 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1088	UNKNOWN	12214	D	0999	0	01088 DESCRIPTION 19 FISHING OBSTR. OLD LORAN C 9930Y-52258.0,9930Z-70383.0=9960W-15684.6,9960Z-59241.0 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS. SURVEY REQUIREMENTS NOT DETERMINED
1089	UNKNOWN	12200	D	0370	104	01089 DESCRIPTION 24 NO.611; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 104 FT. (SOURCE UNK.); REPORTED THROUGH H.O. CHART RECORDS, DATED 1949 SURVEY REQUIREMENTS NOT DETERMINED
3336	UNKNOWN	12264	E	098	0	HISTORY LNM37/80--5TH CGD; A SUNKEN 42 FT PLEASURE CRAFT HAS BEEN REPORTED TIED TO A TREE APPROX. 10 FT OFFSHORE IN PA LAT 38-21-45N, LONG 76-23-12W. (ENTERED MSM 2/86)
3681	OBSTRUCTION	12266	E	0100	44.6	HISTORY NM29/66--COE REPORTS SUBMERGED OBSTRUCTION WEST OF JAMES ISLAND COVERED 38 FEET MLW IN POS. LAT. 38-30-42N, LONG. 76-23-27W. CL784/66--COE TO NOS. COE INVESTIGATION OF OBSTRUCTION IN LAT. 38-30-42N, LONG. 76-23-27W. IN 59 FT. 38 FT. LD MLW. NOT CONSIDERED HAZARD TO NAVIGATION, NO PLANS TO REMOVE. FE308/87SS--OPR-E609-RU/HE-87; WK LOCATED IN LAT 38-30-26,85N; LONG 76-23-35.70W WITH A LEAST DEPTH OF 44.6FT FOUND BY DIVER PNEUMATIC DEPTH GUAGE. RECOMMEND CHARTING AS 44FT WK WITH DANGER CURVE. LORAN-C RATES: 9960-CHAIN; 27499.2X, 42368.7Y, 58837.6Z (UPDATE 4/89 LQ) DESCRIPTION **** FROM FE308/87SS--STEEL BARGE 125 X 22 EXTENDS 20 FT OFF THE BOTTOM BUT LIES IN SCOUR APPROX 7FT DEEP.
4016	SNDG	12264	E	0127	0	HISTORY LNM25/77--5TH CGD; 6/21/77; SHOALING TO 14 FT HAS BEEN REPORTED IN LAT 38-24-03N, LONG 76-23-13W. (ENTERED 12/31/84 MSM) MAR--4/86, S-E211-HFP-86; R/AZ HYDROGRAPHY CONDUCTED WITH 25 METER LINE SPACING; LEAST DEPTH OF 10.6 FT. (UPDATED MSM 9/86) FE280/86,S-E211-HFP-86; SHOALING VERIFIED, 9 FT LOCATED IN LAT.38-24-01.7N, LONG 76-23-16.3W.(UP SRB 8/89)
4017	OBSTRUCTION	12264	E	0067	0	HISTORY CL444/78--COE;3/9/78; 4 FT X 10 FT SUBM SCIENTIFIC PLATFORM EXTENDING 2 FT OFF BOTTOM; PLACED BY THE PHILADELPHIA ACADEMY OF SCIENCES; IN PA LAT 38-23-58.46 LONG 76-23-46.57W; POSITION SCALED FROM CHART. (ENTERED 12/31/84 MSM) FE280/86,S-E211-HFP-86; INADEQUATE INVESTIGATION, RETAIN AS CHARTED. (UP SRB 8/89)
						04018 HISTORY BP89279/74--OPR-512-AHP-74; CHART DEFICIENCIES INVESTIGATION; ROCK AWASH LOCATED IN LAT 38-21-58.4N, LONG 76-23-17.2W, POSITION SCALED FROM CHART.

4018	OBSTRUCTION	12264	E	0094	0	(ENTERED 12/31/84 MSM) SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE. VISUAL SEARCH AT CHART DATUM.IF NOT VISIBLE, A SSS, BOTTOM DRAG OR DIVER INVESTIGATION IS REQUIRED (25M MINIMUM RADIUS). IF FOUND, LEAST DEPTH AND POSITION ARE REQUIRED. ASSIGNED: S-E211-HFP-86
4468	UNKNOWN	12266	E	0100	58.4	HISTORY LNM27/72--30 FT. CABIN CRUISER REP. SUNK IN 50 FT. IN APPROX. POS. LAT. 38-31-00N, LONG. 76-23-00W. MARKED BY A PLASTIC 5 GALLON JUG. FE308/87SS--OPR-E609-RU/HE-87; WK LOCATED IN LAT 38-30-26.85N, LONG 76-23-35.75W WITH A LEAST DEPTH OF 58.4FT FOUND WITH DIVER PNEUMATIC DEPTH GAUGE. EVALUATOR RECOMMENDS CHARTING AS 58FT WK. LORAN-C RATES: 9960-CHAIN; 27498.6X, 42365.6Y, 58836Z. (UPDATE 4/89 LQ) DESCRIPTION **** FROM FE308/87SS--DECAYING WOODEN CABIN CRUISER BROKEN IN TWO AND PARTIALLY BURIED IN SILT BOTTOM.
4695	UNKNOWN	12264	E	100	39	HISTORY LNM3/78-- (1/17/78); CHESAPEAKE CHANNEL - AID TEMPORARILY ì ESTABLISHED; CHESAPEAKE CHANNEL LIGHTED BUOY WR63 (LLNR 2741.43), ì BLACK, QK FL G, RAREF, RANGE 3 MILES, TEMPORARILY ESTABLISHED IN ì 47 FEET, 33 YARDS, 070 DEG T. FROM SUBMERGED WRECK. LEAST DEPTH ì OVER WRECK ESTIMATED TO BE 37 FEET IN LAT. 38-25-28.8N, LONG. ì 76-23-26W. THIS LNM IS THE ORIGINAL CHARTING SOURCE FOR BOTH THE ì WRECK BUOY AND THE WRECK IT MARKS. LNM22/78-- (5/30/78); BUOY "WR63" MADE PERMANENT. ALL OTHER ì DATA REMAIN THE SAME. CL1382/80-- MAR, 9/19/78; OPR-E609-RU/HE-78; ITEM NO. 7; ì SUBMERGED DANGEROUS WRECK IN LAT. 38-25.46N (27.6"), LONG. ì 76-23.40W (24.0") IN 47 FEET WITH A LD OF ABOUT 37 FEET. ALTHOUGH ì A BUOY WAS ESTABLISHED ENE OF THIS WRECK, MORE PRECISE ì INFORMATION WAS REQUESTED BY THE COAST GUARD. ON 8/8/78 A ì FATHOMETER TRACE WAS OBTAINED ON THE BARGE AND MARKERS WERE ì DEPLOYED. DIVERS COULD NOT FIND BARGE DUE TO LOW VISIBILITY. ITEM ì HUNG AT 34.5 FEET ON 8/10/78 AND CLEARED IN TWO DIRECTIONS BY ì 33.5 FEET AND 33.0 FEET ON 8/14/78. ITEM LOCATED IN LAT. ì 38-25.43N (25.8"), LONG. 76-23.49W (29.4"). NO DIVER LD OBTAINED. ì RECOMMENDED CHARTING A CLEARED 33-FOOT DEPTH AS SURVEYED. THIS ì POSITION IS APPROXIMATELY 400 FEET, 250 DEG. T. FROM BUOY. LNM35/78-- (8/29/78); CHESAPEAKE BAY - COVE POINT - WRECK/AID ì POSITION INFORMATION; SUBMERGED WRECK LOCATED IN LAT. ì 38-28-28.8N, LONG. 76-23-26W HAS BEEN DETERMINED TO BE IN LAT. ì 38-25.43N, LONG. 76-23.49W WITH A LD OF 33 FEET. CHESAPEAKE ì CHANNEL LIGHT BUOY "WR63" (LLNR 2741.43) MARKS OBSTRUCTION AND ì HAS BEEN DETERMINED TO BE IN LAT. 38-25.46N, LONG. 76-23.40W. LNM33/79-- (8/14/79); CHESAPEAKE BAY - CHESAPEAKE CHANNEL - AID ì RELOCATED; RELOCATE CHESAPEAKE CHANNEL LIGHT BUOY "WR63" (LLNR ì 2741.43) TO LAT. 38-25-27.2N, LONG. 76-23-25W. SUNKEN BARGE LIES ì 200 FEET, 230 DEG. T. FROM BUOY. BARGE MARKED AT EITHER END BY ì PLASTIC FLOATS. CL411/81-- THIS NOS CHART LETTER TRACES THE HISTORY OF THE ì SUNKEN BARGE FROM LNM3/78 TO LNM50/79. IT ALSO CONTAINS THE ì RESULTS OF THE BARGE UNDERWATER DEMOLITION REQUESTED BY CGD5. THE ì CONTRACTOR (SMITH BROS., INC.) REMOVED PART OF THE CARGO OF COAL ì PLUS LOOSE DECK TIMBERS BY DERRICK BARGE. OTHER WORK WAS DONE BY ì UNDERWATER BURNING. MATERIAL REMOVED WAS DEPOSITED IN SCOUR ì TRENCHES ON EITHER SIDE OF THE SUNKEN WRECK. WORK WAS COMPLETED ì ON 9/12/79. THE COE SURVEY BOAT "LINTHICUM" WAS USED TO DETERMINE ì IF CONTRACT DEPTH OF 42 FEET HAD BEEN REACHED. AFTER TWO HOURS OF ì FATHO. OPS. IT WAS DETERMINED THAT THE CONDITIONS OF THE CONTRACT ì HAD BEEN MET. (IE. 42-FOOT CLEAR DEPTH AT MLW). LETTER FROM CHIEF ì OPS. DIV. COE TO COMMANDER (MPS) CGD5 DATED 9/24/79 STATES THAT ì COE NO LONGER CONSIDERS SUNKEN BARGE TO BE A DANGER TO NAVIGATION ì AND WRECK BUOY MAY BE REMOVED. LNM50/79-- (12/11/79); CHESAPEAKE BAY - CHESAPEAKE CHANNEL - ì AID DISCONTINUED; DELELTE WRECK BUOY "WR63". SUBMERGED WRECK ì LOWERED TO 42 FEET AT MLW. IN LAT. 38-25-27.2N, LONG. 76-23-25W. NM21/81-- (5/23/81); DELETE SWEPT DEPTH 33 FEET WK IN LAT. ì 38-25-25.8N, LONG. 76-23-29.4W. ADD DANGEROUS WRECK (42 FT REP ì 1979) IN LONG. 38-25-26N, LONG. 76-23-31W. (SUPERCEDES NM50/80, ì 12/13/80). (UP 2/2/96, SJV) FE424SS/96-- S-E902-AHP (CT-BOAT); LOCATED BY SIDE SCAN SONAR. ì ECHO SOUNDER DEPTH OF 39.7 FEET (12.1 METERS), REAL TIDES; ì LOCATED IN LAT. 38-25-26.32N, LONG. 76-23-27.23W. HYDROGRAPHER ì THIS ECHO SOUNDER DEPTH MAY BE A RETURN FROM FISH AND RECOMMENDS ì RETAINING WRECK AS CHARTED. EVALUATOR DOES NOT CONCUR AND ì RECOMMENDS REVISING TO A 39 WK AS SURVEYED. (UP 1/22/97, SJV)
9658	OBSTRUCTION	12264	E	0067	0	HISTORY LNM22/93-- DANGEROUS SUBMERGED OBSTRUCTION REPORTED IN APPROX. ì POSITION LAT. 38-25-30N, LONG. 76-23-24W. (ENT 2/9/96, SJV) FE424SS/96-- S-E902-AHP (CT-BOAT); 200% SIDE SCAN SONAR SEARCH ì NEGATIVE; EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 1/22/97, ì SJV)
9659	OBSTRUCTION	12264	E	0067	30	HISTORY F00424/96-- S-E902-AHP; THE PRECAST BRIDGE SECTIONS AS DESCRIBED WERE FOUND 601 METERS WEST NORTH WEST OF THE USACE POSITION. ECHO SOUNDER INVESTIGATION OBTAINED A 27.9-FOOT (8.5 METER) LD IN LAT. 38-25-08.9N, LONG. 76-23-10.0W. BP160208/96-- USACE; CONDITION SURVEY.43.1-FOOT DEPTH LOCATED IN LAT. 38-25-08.6N, LONG. 76-23-10.0W. NOTE: THIS SURVEY WAS CONDUCTED SUBSEQUENT TO REMOVAL OPERATIONS PERFORMED BY THE MCLEAN CONTRACTING CORPORATION, 6700 MCCLEAN WAY, BLEN BURNIE, MD 21060-6480; POC FRANK ZELECHOWSKI. REMOVAL OPS WERE SCHEDULED NO LATER THAN THE WEEK OF 11/11/96. MATERIAL REMOVED (CONCRETE BRIDGE SEGMENTS) TO BE TRANSPORTED AND OFF LOADED AT THE POINT-NO-POINT ARTIFICIAL REEF SITE. (UP 11/1/01, SJV) DESCRIPTION **** MEMO FROM COE (JEFFREY MCKEE, BALT. DIST. TO NOS) DATED 1/30/96; REQUESTS HYDRO. AND SIDE SCAN SONAR SURVEYS OF CHARTED SUNKEN WRECK, CHARTED OBSTRUCTION CLOSE NORTHEAST, AND AREA WHERE CONCRETE BRIDGE SECTIONS WERE LOST. CONCRETE SECTIONS WERE LOCATED BY COE VESSEL "LINTHICUM" ON 4/28/93 IN LAT. 38-25.09N, LONG. 76-22.73W IN 48 FEET WITH A LD OF 30 FEET (SURVEY METHODS AND EQUIPMENT NOT DOCUMENTED IN THIS MEMO). THIS LOCATION WAS REPORTED TO THE COAST GUARD ON 4/29/93 ACCORDING TO THIS MEMO. BNM-0205-93 REPORTED THAT 14 PIECES OF CONCRETE ROADBED WERE LOST OVERBOARD IN APPROX. POSITION LAT. 38-25.5N, LONG. 76-23.4W IN APPROX. 47 FEET OF WATER. DESCRIBED AS 40FT X 18FT X 9FT. MARINERS SHOULD PROCEED WITH EXTREME CAUTION WHEN TRANSITING THIS AREA. OWNER, RECCHI AMERICA INC., 1820 N. DUPONT HWY, MIDDLETON, DE 19709. AGENT, CAPT. JOHN CHRISTIANSEN, CHRISTIANSEN MARINE, 804-722-6000. (ENT 2/9/96, SJV)

9861	OBSTRUCTION	12264	E	0067	41	HISTORY FE424SS/96-- S-E902-AHP (CT-BOAT); UNCHARTED OBSTRUCTION ì LOCATED BUT NOT DISCUSSED BY THE FIELD UNIT. LOCATED IN LAT. ì 33-25-40.63N, LONG. 76-23-45.57W WITH AN ECHO SOUNDER DEPTH OF 41 ì FEET (12.5 METERS). EVALUATOR RECOMMENDS CHARTING A 41 OBSTN AS ì SURVEYED. (ENT 1/22/97, SJV)
9862	OBSTRUCTION	12264	E	0067	43	HISTORY FE424SS/96-- S-E902-AHP (CT-BOAT); UNCHARTED OBSTRUCTION WAS ì LOCATED BUT NOT DISCUSSED BY THE FIELD UNIT. LOCATED IN LAT. ì 33-24-54.74N, LONG. 76-23-01.69W WITH AN ECHO SOUNDER DEPTH OF 43 ì FEET (13.1 METERS); EVALUATOR RECOMMENDS CHARTING A 43 OBSTN AS ì SURVEYED. (ENT 1/22/96, SJV)
10399	UNKNOWN	12214	D	0102	93.2	HISTORY H10931/99-- OPR-D392-WH; CONTACT MADE DURING MAIN SCHEME SIDE SCAN SONAR OPS. DIVERS DESCENDED TO 95 FEET AND SAW A LARGE WOODEN WRECK ANOTHER 10-15 FEET BELOW. DIVE ABORTED DUE LARGE NUMBER OF "SAND TIGER SHARKS". ECHO-SOOUNDER LD OF 28.4 METERS (93.2 FEET) IN LAT. 38-30-09.114N, LONG. 74-43-46.188W. EVALUATOR RECOMMENDS DELETING CHARTED DANGEROUS SUBMERGED WRECK, PA (20 FT REP) AND CHARTING A 93 WK AS SURVEYED. (UP 6/27/00, SJV) DESCRIPTION **** TELCON, 6/14/99, S. VERRY (N/CS31) WITH CAPT. DAVID POTTER, DELBAY & RIVER PILOT (302-934-8463); "PATTY'S PITCHER WRECK", IN LAT. 38/30/12N, LONG. 74/43/48W; LOCAN-C TDS (9960 CHAIN): X = 26994.6, Y= 42452.1; WRECK IN 110 FEET OF WATER, COVERED 105 FEET (5 FEET RELIEF); GOOD SIZE WOODEN WRECKAGE - SIGNIFICANT SCOUR. CHARTED AS A DANGEROUS SUBMERGED WRECK, PA, (20 FT REP) THROUGH LNM 25/85. THIS WRECK HAS BEEN CONFUSED WITH THE "SARA LARANCE" SIC.; SEE AWOIS NO. 8132. (ENT SJV, 6/30/99)
10657	UNKNOWN	12214	D	0100	84.8	HISTORY H10931/99-- OPR-D392-WH; CONTACT FOUND DURING MAIN SCHEME SIDE SCAN SONAR OPS. ECHO-SOUNDER LD OF 25.8 METERS (84.8 FEET) IN LAT. 38-31-26.881N, LONG. 74-47-27.971W. EVALUATOR RECOMMENDS CHARTING A 85WK AS SURVEYED. (UP 6/27/00, SJV)
11132	UNKNOWN	12264	E	100		
11133	OBSTRUCTION	12264	E	067		
11877	UNKNOWN	12264	E	100	64	HISTORY CL1950/01-- DTON (H11088, S-E906-BH) FROM NOAA VESSEL "BAY HYDROGRAPHER" SURVEY DATED 11/28/01; SIDE SCAN SONAR INVESTIGATION LOCATED AN UNCHARTED SUBMERGED WRECK APPROX. 150 FEET LONG AND 31 FEET WIDE. ECHO SOUNDER LD OF 64 FEET OBTAINED IN LAT. 38-23-02.742N, LONG. 76-20-20.235W. SIDE SCAN IMAGE RESEMBLES A MENHADEN TRAWLER OF THE TYPE BUILT CIRCA 1912. PRESENTLY CHARTED AS A DANGEROUS SUBMERGED WRECK COVERED 64 FEET AS SURVEYED. (ENT 5/20/03, SJV) LNM51/01 (12/18/01)-- MARYLAND-CHESAPEAKEBAY-PATUXENT RIVER AND VICINITY; DELETE 90-FOOT SOUNDING AT LAT. 38-23-02.700N, LONG. 76-20-20.200W AND ADD A 64-FOOT SOUNDING WITH DOTTED DANGER CURVE, BLUE TINT, AND LABEL: WK AT LAT. 38-23-02.700N, LONG. 76-20-20.200W. (UP 9/17/03, SJV)
11935	UNKNOWN	12264	E	100		

SHORELINE RESTORATION-UPPER BAY, MARYLAND
AWOIS FILES

Record #	Vessel Name	Chart #	Area	Cartocode	Depth	History
1273	UNKNOWN	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. 19 FISHING OBSTR. OLD LORAN A 3H4-3696.0, 3H5-3177.0=LORAN C,9960W-15701.8,9960Z-59405.4, (1980 COMPUTED VALUE) NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS.
1275	BELL WRECK	12318	C	100	45	F00093/50-- WRECK LOCATED IN LAT 39/08/42N, LONG 074/33/17W (NAD27). A SHORAN FIX AND AN ECHO SOUNDING OF 47 1/2 FEET MLW WAS OBTAINED ON THE WRECK. THE WRECK WAS HUNG BY AN EFFECTIVE DEPTH OF 51 FEET AND THEN CLEARED BY AN EFFECTIVE DEPTH OF 45 FEET. (UPDATED 1/02 BY MBH) ***THE FOLLOWING DESCRIPTIONS ON THIS WRECK WERE TAKEN FROM AWOIS ITEMS 1274 AND 1276 WHICH HAVE BEEN DELETED FROM AWOIS*** 27 NO.837; SMALL WRECK OR WRECKAGE WAS LOCATED IN THE LISTED POSITION BY U.S.C.G. GENTIAN 11/8/44, STANDS ABOUT 11 FT HIGH IN 61 FT OF WATER. REPORTED THROUGH 4TH NAVAL DISTRICT SURVEY 1/10/45. 24 NO 379; REPORTED BY USCG GENTIAN, 11/8/44, AS SMALL WK STANDING ABOUT 11 FT HIGH IN 271 FT OF WATER AT LAT. 39-08-36N, LONG. 74-33-18W; SUBSEQUENTLY WD CLEARED TO 45 FT (SOURCE UNK); POS. ACCURACY 1 MILE
1277	UNKNOWN	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. 19 FISHING OBSTR. OLD LORAN C 9930Y-51873.5,9930Z-70167.6-9960W-15657.3,59434.5 NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS.
1278	UNKNOWN	12260	E	0100	0	01278 HISTORY CL920/62--COE REPORTED A 40-FT L CRUISER SUNK 8/26/62 AT APPROX. POS. ABOVE, AN EXTENSIVE SEARCH PROVED NEGATIVE. LNM57/62--SAME AS CL920/62 H9562/75--OPR-514-AHP-75, ITEM 4; SEARCHED FOR WITH ECHO SOUNDER AND BOTTOM DRAG WITH NEGATIVE RESULT, HOWEVER DRAG DID NOT COVER CHARTED POSITION. SURVEY REQUIREMENTS LIMITED; 550-METER RADIUS, OTHER OBSTRUCTIONS MAY EXIST IN AREA REQUIRING THAT SUSPECTED WK. REMAINS BE VERIFIED.
1279	OBSTRUCTION	12278	E	0067	0	HISTORY H9562/75-- OPR-514-AHP-75; UNIDENTIFIED FEATURE PROJECTING ì ABOUT 2 FEET OFF THE BOTTOM IN LAT. 39-09-15.60N, LONG. ì 76-27-06.00W. RECOMMEND CHARTING AS AN OBSTRUCTION. (UP 2/28/95, ì SJV)
1280	OBSTRUCTION	12260	E	0999	0	01280 HISTORY H9562/75--OPR-514-AHP-75, UNIDENTIFIED FEATURE PROTRUDING ABOUT 2 FT. OFF THIS BOTTOM. RECOMMENDED TO CHART AS OBSTR. SURVEY REQUIREMENTS FULL; 50-METER RADIUS MINIMUM SEARCH, DISPROVAL WILL REQUIRE USE OF BOTTOM DRAG.
1281	OBSTRUCTION	12260	E	0999	0	01281 HISTORY H9562/75--OPR-514-AHP-75; UNIDENTIFIED FEATURE PROTRUDING ABOUT 2 FT. OFF TH BOTTOM. RECOMMENDED TO CHART AS OBSTR. SURVEY REQUIREMENTS FULL; 50-METER RADIUS MINIMUM SEARCH, DISPROVAL WILL REQUIRE BOTTOM DRAG.
1282	UNKNOWN	12318	C	0999	0	ITEM NOT CHARTED. ITEM ASSIGNED AS AN INFORMATION ITEM. 19 FISHING OBSTR. OLD LORAN A 3H4-3741.0, 3H5-3163.0=LORAN C,9960W-15673.0,9960Z-59429.2, (1980 COMPUTED VALUE) NAD-27 GP CONVERTED FROM ORIGINAL DATA USING 1980 CORRECTIONS.
2946	UNKNOWN	12304	D	0100	14.17	NM28/62--VESSEL REPORTED SUNK IN 32 FT COVERED BY 28 FT. WRECK BEARS 168 DEG. AND 4400 YDS. FROM ELBOW OF CROSS LEDGE LIGHT. APPROX. POS. OF THE LIGHT IS LAT.39-10-56N, LONG.75-16-07W. (REF. LNM33/62). PRESENTLY CHARTED AS A DANGEROUS SUBM. WK. (CHART 12304, 28TH ED) (REVISED, 1/25/84 MJF) MAR--5/83, OPR-D219-PE-83; CHAIN DRAG WAS 50% COMPLETE IN 1983. HYDROGRAPHER RECOMMENDS ADDITIONAL WORK IN 1984. REASSIGNED TO OPR-D219-PE-84. (REVISED, 1/25/84, MJF). H10084/83--OPR-D219-PD-83; CONFIRMS INFO IN MAR 5/83 ABOVE. (UPDATED MSM 6/86) H11022/01--OPR-D307-KR; WRECK FOUND IN LAT. 39/08/28.06N, LONG 075/15/37.07W (NAD83) WITH A LEAST DEPTH OF 14.17 FEET MLLW. (UPDATED 3/04 BY MBH)
3338	OBSTRUCTION	12304	D	0067	0	HISTORY LNM9/83--3RD CGD; MAURICE R. ENT. LT. 1 WAS DESTROYED BY ICE IN 1981. SURROUND ING AREA WAS SEARCHED FOR WITH A GRAPNEL TWICE WITH NEG. RESULTS. THIS LIGHT WAS SUBSEQUENTLY REVISED TO A SUBM PILE ON CHART 12304. A BLACK LTD. BUOY, FL G 4 SEC 1, REPLACES THE LIGHT. (ENTERED, 2/9/84, MJF). MAR--12/84; OPR-D219-PE-84; PILING HUNG IN LAT 39-09-42.2N, LONG 75-06-17.3W DURING CHAIN DRAG FOR ITEM; REPORTED TO CG; WATER TEMP AND POOR VISIBILITY PRECLUDED ACQUIRING LEAST DEPTH; SWIMMER INVESTIGATION FOUND 12 IN DIAMETER PILING; HYDROGRAPHER RECOMMENDED CHARTING SUBM PILE IN NEW POSITION. (ENTERED MSM 7/85) H10167/84--OPR-D219-PE-84; ABOVE INFORMATION REITERATED BUT POSITION REVISED TO LAT 39-08-42.45N, LONG 75-06-19.07W; SECOND PILING FOUND DURING VERIFICATION AT LAT 39-08-41.96N, LONG 75-

						06-17.75W; CG STATED ONLY ONE PILE EXIST, THE REMAINS OF LT 1; POSITION OF THIS STRUCTURE WAS OBTAINED FROM MR JOE DOBARRO, N.J. BUREAU OF SHELLFISHERIES; POSITION PLOTTED 100 M FROM HANG; CHAIN DRAG OVER THIS POSITION WITH NO HANG; ADDITIONAL WORK RECOMMENDED TO DETERMINE NUMBER OF PILES. (UPDATED MSM 11/86) FE290/86-87--OPR-D219-HFP-86-87; BOTH PILES DISPROVED BY CHAIN DRAG INVEST. (UP 7/89 SRB) DESCRIPTION **** PER TELECON WITH REOBER HILL, AMC, 4/30/86, REVISE GP IN MAR 12/84 ENTRY TO LAT 39-08-42.2N, LONG 75-06-17.3W. (UPDATED MSM 4/30/86) **** POINT OF CONTACT TO CHECK FOR REMOVAL OF PILING IS BMCM ADAMS, ANT HORNBEAM; PHONE (609) 884-8451 EXT. 501 (ENTERED MSM 8/86)
7465	OBSTRUCTION	12304	D	0067	0	AWOIS ITEM 7465 HISTORY FE290/86-87--OPR-D219-HFP-86/87; 7FT OBSTRUCTION, LOCATED IN LAT 39-08-48.57N, LONG 75-06-17.05W. ORIGINATES WITH SPIKE ON FATHOGRAM, DETECTED DURING PROCESSING. (ENT 7/89 SRB)
7466	OBSTRUCTION	12304	D	0067	0	AWOIS ITEM 7466 HISTORY FE290/86-87--OPR-D219-HFP-86/87; SUBM OBSTRUCTION 7FT. REPORTED (CONCRETE BLOCK) LOCATED IN LAT 39-08-33.56N, LONG 75-06-17.19W. LD INFO IN CONFLICT, ACCURATE LD REQUIRED. (ENT 7/89 SRB)
8673	UNKNOWN	12272	E	0100	0	SURVEY REQUIREMENT COMMENTS SEARCH ONLY TO SEAWARD WITHIN THE SEARCH RADIUS HISTORY BP-89197--1974 NOS TOPO. REVISION; VISIBLE WRECK. CL1178/86--USPS TO NOS; REPORTS THE WRECK NOT VISIBLE (REPORTED ì BY MARY HAMMOND, DUNDALK SQUADRON, ON 7/12/86). CHART UPDATED TO SUNKEN WRECK, PA. POSITION SCALED FROM GRAPHIC. (ENTERED 8/2/93 MBH) H10518/93--S-E909; FOUND WRECKAGE CONSISTING OF LOW-LYING ì TIMBERS WHICH COVER 0.2 METERS MLLW AND EXTEND OUT FROM SHORE ì INTO THE WATER. (ENTERED 6/95 BY MBH)
8674	SOUNDING	12272	E	0127	0	SURVEY REQUIREMENTS COMMENT DEVELOP WITHIN THE NAVIGABLE AREA FOR SHOALEST SOUNDING. HISTORY CL1648/84--USCG AUX. TO NOS; NOTED THAT THE AREA WAS DREDGED TO ì 7 FT. MLW IN 1982 BY SO. MD. DREDGING CO. FOR SAILING EMPORIUM ì MARINA (MGR. ART WILLIS). POSITION SCALED FROM GRAPHIC. BP-143746--1990 C. OF E. CONDITION SURVEY; SHOWS DEPTHS AS ì SHOAL AS 4.9 FT. MLW WITHIN THE NAVIGABLE AREA. (ENTERED 8/2/93 ì MBH) H10518/93--S-E909; SOUNDINGS WITHIN THE SEARCH AREA RANGE ì BETWEEN 1.8-3.0 M WITH MOST SOUNDINGS WITHIN THE NAVIGABLE AREA ì BETWEEN THE MARINA PIERS BEING GREATER THAN 2.0 M. THE 1.8 M ì SOUNDING WAS LOCATED IN LAT. 39/07/57.34, LONG. 076/14/28.73 THE ì 7-FT REPORTED SOUNDING WAS RECOMMENDED TO BE DELETED AND REPLACED ì BY PRESENT SURVEY SOUNDINGS. THIS ITEM IS CONSIDERED DISPROVED. ì (ENTERED 7/12/95 MBH)
8675	SOUNDING	12272	E	0127	0	SURVEY REQUIREMENTS COMMENT DEVELOP WITHIN THE NAVIGABLE AREAS. HISTORY CL343/85--C. OF E. PERMIT #81-0558 ISSUED 5/12/82 AND NOS ì FOLLOW-UP QUESTIONAIRE; DREDGING TO A DEPTH OF 7 FT. MLW WAS ì REQUESTED AND APPROVED; THE PROJECT WAS COMPLETED ON 4/15/83 ì (REPORTED BY W. A. WILLIS, SAILING EMPORIUM INC., ROCK HALL, MD). ì POSITION SCALED FROM GRAPHIC. (ENTERED 8/2/93 MBH) H10518/93--S-E909; SOUNDINGS WITHIN THE SEARCH AREA RANGE ì BETWEEN 1.9-3.1 METERS WITH THE MAJORITY BEING GREATER THAN 2.5 ì METERS. IT WAS RECOMMENDED THAT THE 7-FT. REPORTED SOUNDING BE ì DELETED AND REPLACED BY PRESENT SURVEY SOUNDINGS. THIS ITEM IS ì CONSIDERED DISPROVED. (ENTERED 7/12/95 MBH)
8676	OBSTRUCTION	12272	E	0067	0	SURVEY REQUIREMENTS COMMENT SEARCH ONLY THE NAVIGABLE AREA WITHIN THE SEARCH RADIUS. HISTORY CL1648/84--USCG AUX. TO NOS; REPORTS AN OBSTRUCTION (BUMP) ì SUBMERGED 4 FT. BELOW MLW. NOTED AS PREVIOUSLY BEING REPORTED IN ì 1982 AND 1983 (REPORTED BY G. HADORN ON 10/18/84). LNM 38/86--5TH CGD; ADD DANGER CURVE AND LABEL: OBSTN REP 1986 ì (THE LISTED G.P. IS INCORRECT) LNM 8/87--5TH CGD; REPEATS THE INFO OF LNM 38/86 BUT WITH THE ì CORRECT G.P. BP-143746--1990 C. OF E. CONDITION SURVEY; THE OBSTRUCTION ì WAS NOT INVESTIGATED AND FALLS BETWEEN SOUNDING LINES. DEPTHS IN ì THE AREA ARE APPROX. 9.3 FT. MLW. (ENTERED 8/2/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY ECHO ì SOUNDER SEARCH. NO OBSTRUCTIONS WERE FOUND. THE ITEM IS ì CONSIDERED DISPROVED AND IT WAS RECOMMENDED THAT PRESENT SURVEY ì SOUNDINGS BE CHARTED IN THE AREA. (ENTERED 7/12/95 MBH)
8677	MISS JEAN	12272	E	0098	0	SURVEY REQUIREMENTS COMMENT SEARCH ONLY TO SEAWARD WITHIN THE SEARCH RADIUS. HISTORY CL1648/84--USCG AUX. TO NOS; REPORTS A WRECK AWASH; APPROX. 25 ì FT. CABIN CRUISER (REPORTED BY G. HADORN ON 10/18/84). POSITION ì SCALED FROM GRAPHIC. H10518/93--S-E909; THE WRECK ORIGINALLY SOUGHT WAS THE WRECK OF ì THE VESSEL "MISS JEAN" WHICH WAS TOWED TO ITS CURRENT LOCATION OF ì 39/07/52.91N, 076/14/22.46W IN 1985. THE "MISS JEAN" BARES 1.6 ì METERS AT MHW. A VISIBLE WRECK OF A 25-FT BOAT ì IN 39/07/50.91N, 076/14/39.20W WAS FOUND DURING THIS ì

						INVESTIGATION. MARINA PERSONNEL REPORTS THAT THIS VESSEL WAS ì TOWED AND SUNK IN THIS LOCATION IN 1985 AND THAT THE VESSEL ì ACTUALLY IS NOT ABANDONED BUT IS SOMETIMES REFLOATED. THIS NEW ì WRECK HAS BEEN ASSIGNED ITEM #9516. (ENTERED 7/12/95 MBH) ì PRACT
8678	OBSTRUCTION	12272	E	0085	0	HISTORY BP-112697--C. OF E. SURVEY OF 1980; VISIBLE PILE SHOWN ON THIS ì SURVEY. POSITION SCALED FROM GRAPHICS. (ENTERED 8/2/93 MBH) H10518/ 93--S-E909; THE ITEM WAS FOUND TO BE A SINGLE 12-INCH ì DIAMETER PILE BARE 2.0 METERS AT MHW. ALSO A PILE BARE 2.2 ì METERS AT MHW IN 39/07/ 59.36N, 076/14/48.60W AND A PILE BARE 1.6 ì METERS AT MHW IN 39/07/59.95N, 076/14/46.61W WERE FOUND. THE ITEM ì IS CONSIDERED COMPLETE. (ENTERED 7/12/95 MBH)
8679	SOUNDING	12272	E	0127	0	SURVEY REQUIREMENTS COMMENT DEVELOP WITHIN THE NAVIGABLE AREA FOR SHOALEST SOUNDING. HISTORY CL1001/84--C. OF E. PERMIT #83-0162 ISSUED 4/28/83 AND NOS ì FOLLOW-UP QUESTIONAIRE; DREDGING TO A DEPTH OF 6 FT. MLW WAS ì REQUESTED AND APPROVED; THE PROJECT WAS COMPLETED IN 11/83 ì (REPORTED BY CALVIN KENDALL, WALNUT ST., ROCK HALL, MD). ì (ENTERED 8/2/93 MBH) H10518/93--S-E909; SOUNDINGS WITHIN THE SEARCH AREA RANGE ì BETWEEN 1.6-2.8 METERS. IT WAS RECOMMENDED THAT THE CHARTED ì 6-FT. SOUNDING BE DELETED AND THE PRESENT SURVEY SOUNDINGS BE ì CHARTED. THIS ITEM IS CONSIDERED DISPROVED. (ENTERED 7/12/95 ì MBH)
8680	UNKNOWN	12272	E	0100	0	SURVEY REQUIREMENTS COMMENT SEARCH ONLY TO SEAWARD WITHIN THE SEARCH RADIUS. HISTORY BP-89197--1974 NOS TOPO. REVISION; VISIBLE WRECK ADDED TO THE ì CHART. CL1676/77--USPS TO NOS; REPORTS THAT THE WRECK WAS REMOVED IN ì SPRING OF 1977 (REPORTED BY ROBERT V. RUSSEL, DUNDALK SQUADRON, ì ON 8/13/77). POSITION SCALED FROM GRAPHICS. (ENTERED 8/2/93 MBH) H10518/93--S-E909; THE WRECK WAS REMOVED BY ITS OWNER DURING ì THE MID 1980'S. THE ITEM IS CONSIDERED DISPROVED. (ENTERED ì 7/12/95 MBH)
8681	UNKNOWN	12272	E	0100	0	SURVEY REQUIREMENTS COMMENT SEARCH ONLY TO SEAWARD WITHIN THE SEARCH RADIUS. HISTORY CL610/46--USC&GS SHIP PARIS; REPORTS A VISIBLE WRECK. BP-89197--1974 NOS TOPO. REVISION; WRECK NOT VISIBLE; CHART ì UPDATED TO A SUNKEN WRECK. CL1676/77--USPS TO NOS; REPORTS THAT THE WRECK WAS REMOVED IN ì SPRING OF 1977 (REPORTED BY ROBERT V. RUSSELL, DUNDALK SQUADRON, ì ON 8/13/77). CHART UPDATED TO SUNKEN WRECK, ED. POSITION SCALED ì FROM GRAPHICS. (ENTERED 8/2/93 MBH) H10518/93--S-E909; THE WRECK WAS FOUND AWASH, UNCOVERING 0.2 ì METERS AT MLLW. THE WRECK IS APPROXIMATELY 35 METERS IN LENGTH. ì (ENTERED 7/12/95 MBH)
8682	UNKNOWN	12272	E	0100	0	SURVEY REQUIREMENTS COMMENT SEARCH ONLY TO SEAWARD WITHIN THE SEARCH RADIUS. HISTORY BP-89197--1974 NOS TOPO. REVISION; VISIBLE WRECK ADDED TO THE ì CHART. CL1676/77--USPS TO NOS; REPORTS THAT THE WRECK WAS REMOVED IN ì SPRING OF 1977 (REPORTED BY ROBERT V. RUSSELL, DUNDALK SQUADRON, ì ON 8/13/77). CHART UPDATED TO SUNKEN WRECK, ED. POSITION SCALED ì FROM GRAPHICS. (ENTERED 8/3/93 MBH) H10518/93--SE909; THE WRECK WAS REMOVED DURING THE MID '80S. ì RUINS AND DEBRIS WERE FOUND IN THE AREA THAT WERE AWASH AT THE ì INSHORE END AND COVERING 0.2 METERS AT THE OFFSHORE END. THESE ì WERE DETERMINED TO BE SNAGS THAT FLOAT IN AND COLLECT IN THE ì AREA. THE ITEM IS CONSIDERED DISPROVED. (ENTERED 7/31/95 MBH)
8683	OBSTRUCTION	12272	E	0067	0	HISTORY BP-138065--FROM CRS#001989, NOS PHOTO 10/14/88; THREE ì OBSTRUCTIONS; CHARTED WITH ONE SYMBOL AND LABELED "OBSTNS"; THESE ì OBSTRUCTIONS LIE IN PRIOR SURVEY DEEPTHS OF 4-5 FT.; THEIR G.P.'S ì ARE: LAT. LONG. 39/08/33.5 076/14/59.2 39/08/35.0 076/14/57.5 39/08/35.6 076/14/59.8 POSITIONS SCALED FROM THE SOURCE GRAPHICS. H10518/93--S-E909; THE OBSTRUCTIONS WERE REMOVED DURING ì CONSTRUCTION OF THE OSPREY POINT MARINA. THE ITEM IS CONSIDERED ì DISPROVED. (ENTERED 7/ 31/95)
8684	OBSTRUCTION	12272	E	0067	0	HISTORY BP-138065--FROM CRS#001989, NOS PHOTO 10/14/88; OBSTRUCTION; ì CHARTED AS A SUBMERGED OBSTRUCTION; IN PRIOR SURVEY DEPTHS OF 4-5 ì FT. POSITION SCALED FROM GRAPHIC. (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE OBSTRUCTION WAS IDENTIFIED AS A ì DAYBEACON. THE PRESENT DAYBEACON IS IN 39/08/41.04N, ì 076/14/54.85W AND WAS INSTALLED WHEN THE PREVIOUSLY EXISTING ì DAYBEACON WAS REMOVED IN 1991. THE ITEM IS CONSIDERED DISPROVED. ì (ENTERED 7/31/95)
8685	OBSTRUCTION	12272	E	0067	0	HISTORY BP-138065--FROM CRS#001989, NOS PHOTO 10/14/88; OBSTRUCTION; ì CHARTED AS A SUBMERGED OBSTRUCTION; IN PRIOR SURVEY DEPTHS OF 4-5 ì FT. POSITION SCALED FROM GRAPHIC. (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE OBSTRUCTION WAS IDENTIFIED AS A ì DAYBEACON. THE PRESENT DAYBEACON IS IN 39/08/39.30N, ì 076/14/58.83W AND WAS INSTALLED WHEN THE

						PREVIOUSLY EXISTING ì DAYBEACON WAS REMOVED IN 1991. (ENTERED 7/31/95)
8686	OBSTRUCTION	12272	E	0067	0	HISTORY BP-138065--FROM CRS#001989, NOS PHOTO 10/14/88; OBSTRUCTION; ì CHARTED AS A SUBMERGED OBSTRUCTION; IN PRIOR SURVEY DEPTHS OF 4-5 ì FT. POSITION SCALED FROM GRAPHIC. (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY BOTTOM DRAG ì AND NO OBSTRUCTIONS WERE FOUND. THE ITEM IS CONSIDERED ì DISPROVED. (ENTERED 7/31/95 MBH)
8687	UNKNOWN	12272	E	0100	0	HISTORY CL796/73--USCG AUX. TO NOS; REPORTS A NEW VISIBLE WRECK NOT ON ì THE CHART; NO DESCRIPTION GIVEN; (REPORTED BY WILSON HENRY, USCG ì AUX., ON 2/22/73). IN PRIOR SURVEY DEPTHS OF 1-2 FT. POSITION ì SCALED FROM GRAPHIC. CL1755/75 (BP-93322)--NOAA ATLANTIC HYDROGRAPHIC PARTY, CHART ADEQUACY ì SURVEY; INDICATED ON A CHART SECTION THAT THE WRECK WAS NOT ì VISIBLE. CHART UPDATED TO SUNKEN WRECK. CL1575/79--USPS TO NOS; INDICATED THAT THE WRECK WAS NO LONGER ì IN EXISTENCE (REPORTED BY WILLIAM T. BUCHANAN, USPS, ON ì 10/15/79). CHART UPDATED TO SUNKEN WRECK, ED. (ENTERED 8/3/93 ì MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY A VISUAL ì SEARCH AT LLW. NO WRECKAGE OR OBSTRUCTIONS WERE FOUND. THE ITEM ì IS CONSIDERED DISPROVED. (ENTERED 7/31/95 MBH)
8688	OBSTRUCTION	12272	E	0067	0	HISTORY BP-138065--FROM CRS#001989, NOS PHOTO 10/14/88; OBSTRUCTION; ì CHARTED AS A SUBMERGED OBSTRUCTION; IN PRIOR SURVEY DEPTHS OF 6-7 FT. ì POSITION SCALED FROM GRAPHIC. (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE OBSTRUCTION WAS IDENTIFIED AS A ì DAYBEACON. THE PRESENT DAYBEACON IS IN 39/08/51.34N, ì 076/15/10.21W AND WAS INSTALLED WHEN THE PREVIOUSLY EXISTING ì DAYBEACON WAS REMOVED IN 1990. (ENTERED 7/31/95 MBH)
8689	UNKNOWN	12272	E	0100	0	HISTORY H-6597/40--PROJECT HT-250, VESSELS MITCHELL AND OGDEN; FORMER ì HULK ALL BROKEN UP, ONLY ONE FRAME REMAINS AND PROJECTS ABOUT 1 ì FT. ABOVE THE WATER. A NEW HULK IS ON THE BEACH JUST NW OF THIS ì FORMER HULK. IN DEPTHS OF 1/2-5 FT. CL796/73--USCG AUX. TO NOS; REPORTS THE WRECK NOT VISIBLE ì (REPORTED BY WILSON HENERY, USCG AUX., ON 2/22/73); CHART UPDATED ì TO SUNKEN WRECK. CL1755/75 (BP-93322)--NOAA ATLANTIC HYDROGRAPHIC PARTY, CHART ì ADEQUACY SURVEY; CONFIRMS THAT THE WRECK STILL EXISTS AS A SUNKEN ì WRECK. CL1575/79--USPS TO NOS; INDICATES THAT THE WRECK WAS NO LONGER ì IN EXISTENCE (REPORTED BY WILLIAM T. BUCHANAN, USPS, ON ì 10/15/79). CHART UPDATED TO SUNKEN WRECK, ED. (ENTERED 8/3/93 ì MBH) H10518/93--S-E909; THE SUNKEN WRECK, COVERING 0.1 METERS AT ì MLLW (THE OFFSHORE END) WAS FOUND IN 39/08/52.94N, 076/15/33.15W. ì THE WRECK IS APPROX. 25 METERS LONG AND ORIENTED N-S. BALLAST ì STONES WERE VISIBLE IN THE CENTER OF THE WOODEN WRECK. (ENTERED ì 7/31/95 MBH)
8690	OBSTRUCTION	12272	E	0085	0	HISTORY CL962/79--USPS TO NOS; REPORTS A SNAG (BY RALPH PASS, DUNDALK ì SQUADRON, ON 7/5/79); IN PRIOR SURVEY DEPTHS OF 2-3 FT. (ENTERED ì 8/3/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY VISUAL ì SEARCH AT LLW. NO OBSTRUCTIONS WERE FOUND. THE ITEM IS ì CONSIDERED DISPROVED. (ENTERED 8/1/95 MBH)
8691	UNKNOWN	12272	E	0100	0	HISTORY H-6597/40--PROJECT HT-250, VESSELS MITCHELL AND OGDEN; REPORTS ì A HULK LYING IN 2-5 FT DEPTHS. CHARTED AS A VISIBLE WRECK. UNKNOWN SOURCE--BETWEEN 10/2/52 AND 11/9/53 THE CHART WAS ì UPDATED TO A SUNKEN WRECK. CL1755/75 (BP-93322)--NOAA ATLANTIC HYDROGRAPHIC PARTY, CHART ì ADEQUACY SURVEY; CONFIRMS THAT THE WRECK STILL EXISTS AS A SUNKEN ì WRECK. CL1575/79--USPS TO NOS; INDICATES THAT THE WRECK WAS NO LONGER ì IN EXISTENCE (REPORTED BY WILLIAM BUCHANAN, USPS, ON 10/15/79). ì CHART UPDATED TO SUNKEN WRECK, ED. THE "ED" NOTE WAS ERASED ì DURING A SUBSEQUENT SHORELINE CORRECTION AND HAS BEEN ì OMITTED FROM THE CHART. THE WRECK REMAINS "ED". (ENTERED 8/3/93 ì MBH) H10518/93--S-E909; AN AREA OF WRECKAGE THAT APPEARS TO BE 2 OR ì 3 HULKS WAS FOUND IN 39/08/42.32N, 076/15/49.14W (NE OFFSHORE ì LIMIT) TO 39/08/40.09N, 076/15/49.49W (SE OFFSHORE LIMIT AND THE ì AWOIS POSITION). THE AREA WAS DESCRIBED AS FOUL WITH NO LEAST ì DEPTH INFORMATION BEING PROVIDED.
8692	SOUNDING	12272	E	0127	0	HISTORY CL1040/85--USPS TO NOS; REPORTS THE 9 FT. DEPTH OF CHANNEL ì ABOUT 250 YARDS WEST OF DEEP LDG. HAS SHOALED TO 3 1/2 TO 4 FT. ì DEPTH (REPORTED BY DONALD R. DEUTSCH, DELHIGH SQUADRON, ON ì 9/1/85). (ENTERED 8/3/93 MBH) H10518/93--S-E909; SOUNDINGS WITHIN THE SEARCH AREA RANGE FROM ì 0.4-3.3 METERS. NO EVIDENCE OF AN ISOLATED SHOAL WAS FOUND. IT ì WAS RECOMMENDED THAT THE "3.5 REP 1985" BE REMOVED AND THE ì PRESENT SOUNDINGS BE CHARTED. THE ITEM IS CONSIDERED DISPROVED. ì (ENTERED 8/1/95 MBH)

8693	OBSTRUCTION	12272	E	0067	0	HISTORY CL-1755/75 (BP-93322)--NOAA ATLANTIC HYDROGRAPHIC PARTY, CHART ì ADEQUACY SURVEY; INDICATED ON A CHART SECTION A SUBMERGED PILE; IN ì PRIOR SURVEY DEPTHS OF 3-5 FT. CHARTED AS A SUBMERGED PILE. ì (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY BOTTOM DRAG ì AND NO OBSTRUCTIONS WERE FOUND. THE ITEM IS CONSIDERED ì DISPROVED. (ENTERED 8/1/95 MBH)
8694	OBSTRUCTION	12272	E	0067	0	HISTORY CL778/69--USPS TO USC&GS; REPORTS A SUBMERGED PILING OR STAKE ì APPROX. 6" IN DIAMETER. POSITION WAS DETERMINED BY COMPASS ì BRGS. AND WAS ESTIMATED TO BE 180 YARDS FROM THE SUNOCO DOCK AT ì GRATITUDE (REPORTED BY C. DANE ALDEN, SCHUYLKILL RIVER SQUADRON, ì ON 5/31/69). THIS OBSTRUCTION LIES IN PRIOR SURVEY DEPTHS OF ì 9-10 FEET. (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY BOTTOM DRAG ì AND NO OBSTRUCTIONS WERE FOUND. TWO SMALL 1-METER DIAMETER ì SHELL AND CLAY MOUNDS WHICH RISE LESS THAN 0.2 METERS OFF THE ì BOTTOM WERE FOUND. THESE MOUNDS WERE CONSIDERED INSIGNIFICANT. ì THE ITEM IS CONSIDERED DISPROVED. (ENTERED 8/1/95 MBH)
8695	UNKNOWN	12272	E	0098	0	HISTORY CL1130/70--USPS TO USC&GS; REPORTS A NEW VISIBLE WRECK ì (7/17/70) OF A 60 FT. CABIN FISHING BOAT LYING HALF ABOVE THE ì WATER (IN PRIOR SURVEY DEPTHS OF 1 FT.) ABOUT 20 YARDS FROM THE ì BULKHEAD OF GRATITUDE YACHT HARBOR. ALSO NOTED IS AN OLD WRECK ì THAT IS NOT CHARTED ON THE ROCKPILE THAT IS FURTHER INSHORE ì (REPORTED BY CALVIN C. YAEGER, DELAWARE RIVER SQUADRON, ON ì 7/18/70). (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY VISUAL ì SEARCH. THE ONLY ITEM FOUND WAS AWOIS ITEM 9432, THE WRECK OF ì THE SCHOONER "CHASE". THE ITEM IS CONSIDERED DISPROVED. ì (ENTERED 8/1/95 MBH)
8696	OBSTRUCTION	12272	E	0085	0	HISTORY CL962/79--USPS TO NOS; REPORTS PILES ALONG THE SOUTH SIDE OF ì WRECK (SEE AWOIS #8695) AT GRATITUDE (REPORTED BY RALPH PASS, ì DUNDALK SQUADRON, ON 6/15/79). PRIOR SURVEY DEPTHS IN THIS AREA ì ARE 1 FT. (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY VISUAL ì SEARCH. THE SINGLE ROW OF PILES WERE FOUND. THE PILES EXTEND ì FROM 39/08/24.62N, 076/15/45.65W TO 39/08/25.38N, 076/15/45.69W ì (THE AWOIS POSITION). THE OFFSHORE PILES UNCOVER 0.8 METERS ì (MLLW) AND THE INSHORE PILES UNCOVER 1.0 METER (MLLW).
8697	OBSTRUCTION	12272	E	0085	0	HISTORY CL1552/80--USCG AUX. TO NOS; REPORTS FIVE (VISIBLE) PILES ì (REPORTED BY LYNN PASS, DUNDALK SQUADRON, ON 10/3/80). IN PRIOR ì SURVEY DEPTHS OF 3-5 FT. (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY VISUAL ì SEARCH AND BOTTOM DRAG. EIGHT PILES WERE FOUND IN 39/09/33.75N, ì 076/15/26.86W UNCOVERING FROM 0.7-2.0 METERS AT THE TIME OF THE ì INVESTIGATION. THE ITEM IS CONSIDERED COMPLETE. (ENTERED 8/1/95 ì MBH)
9432	CHASE	12272	W	098	0	HISTORY H10518/93--S-E909; THE WRECK OF THE 124' USCG TRAINING ì SCHOONER CHASE WAS FOUND WHILE SEARCHING FOR AWOIS ITEM 8695. ì THE SCHOONER WAS BEACHED TO PROVIDE A BREAKWATER FOR A NEARBY ì MARINA. THE WRECK UNCOVERS 1.5 M ON THE INSHORE END AND IS AWASH ì MLLW ON THE OFFSHORE END. THE WRECK LIES IN AN EAST-WEST ì ORIENTATION AND HAS A BEAM OF APPROX. 8 M. (ENTERED 6/95 BY MBH)
9433	OBSTRUCTION	12272	W	067	0	HISTORY H10518/93--S-E909; A SUBMERGED OBSTRUCTION IDENTIFIED AS A ì BALLIST STONE WAS FOUND COVERING 0.2 M MLLW. (ENTERED 6/95 BY ì MBH)
9516	UNKNOWN	12272	E	098	0	HISTORY H10518/93--S-E909; WHILE SEARCHING FOR AWOIS #8677 DISCOVERED ì A VISIBLE WRECK. MARINA PERSONNEL CLAIM THAT THIS WRECK WAS ì TOWED AND SUNK IN ITS LOCATION IN 1985 AND THAT IT IS NOT ì ABANDONED BUT IS PERIODICALLY REFLOATED.
9517	UNKNOWN	12272	E	098	0	HISTORY H10518/93--S-E909; FOUND THE VISIBLE WRECK OF AN 8-METER CABIN ì CRUISER BARE 2.2 METERS AT MHW WITH A 1980 REGISTRATION STICKER # ì MD7561G. THE STATE OF MARYLAND HAS IDENTIFIED THIS VESSEL AS A ì 1963 26-FT. CHRIS CRAFT CABIN CRUISER LAST REGISTERED IN 1981 TO ì MR. FRED A. TERRY, 4036 HILTON RD., BALTIMORE, MD 21215. ì (ENTERED 7/12/95 MBH)
9726	OBSTRUCTION	12278	E	0067	0	HISTORY LNM21/92-- ADD AN OBSTRUCTION PARTIALLY SUBMERGED IN APPROX. ì LAT. 39-09-00N, LONG. 76-19-54W. (ENT 4/24/96, SJV)
9742	UNKNOWN	12278	E	0100	0	HISTORY LNM24/72-- A 25-FOOT CABIN CRUISER HAS BEEN REPORTED SUNK IN 21 ì FEET IN APPROX. POSITION LAT. 39-07-55N, LONG. 76-23-10W. (ENT ì 4/24/96, SJV) H11026/01-02-- OPR-E346-BH; 200% SIDE SCAN SONAR SEARCH NEGATIVE. EVALUATOR RECOMMENDS DELETING FROM CHART. (UP 7/3/03, SJV)
						HISTORY LNM37/72-- CHESAPEAKE BAY - UPPER CHESAPEAKE CHANNEL - VESSEL ì SUNK; A 25-FOOT WORK BOAT HAS BEEN REPORTED SUNK APPROX.

9743	UNKNOWN	12278	E	0100	0	400 ì YDS. SOUTHWEST OF BREWERTON CHANNEL EAST EXTENSION LIGHT BUOY "7" ì (LLNR 2810) IN APPROX. POSITION LAT. 39-09-44N, LONG. 76-23-37W. ì (ENT 4/24/96, SJV)
9748	UNKNOWN	12278	E	0100	0	HISTORY UNKNOWN SOURCE-- FIRST CHARTED IN 1983. (ENT 4/24/96, SJV)
9749	UNKNOWN	12278	E	0100	0	HISTORY NM45/48-- CHESAPEAKE BAY - BALTIMORE HARBOR APPROACHES - WRECK ì - BUOYS ESTABLISHED; 1. RHODE WRECK LIGHT BELL BUOY "4A" (RED, QK ì FL R) ESTABLISHED 25 YDS., 201 DEG. FROM WRECK WHICH IS LOCATED ì 5,440 YDS., 137 DEG. FROM CRAIGHILL CHANNEL RANGE FRONT LIGHT ì (LAT. 39-11-18N, LONG. 76-23-40W). STERN AND PILOT HOUSE SHOW ì ABOVE WATER. POSITION OF WRECK SCALED FROM CHART 12278 IN APPROX. ì LAT. 39-09-20N, LONG. 76-21-20W. 2. RHODE WRECK BUOY (SECOND ì CLASS NUN) R/B HOR. BANDS, ESTABLISHED 25 YDS., 111 DEG. FROM ì WRECK, ABOVE. 3. COLUMBIA WRECK LIGHTED BELL BUOY (RED, QK FL ì R) ESTABLISHED 33 YDS., 330 DEG. FROM WRECK WHICH IS LOCATED ì 4,480 YDS., 54 DEG. FROM CRAIGHILL CHANNEL RANGE FRONT LIGHT. ì MAST AND TOP OF WRECK SHOWS ABOVE WATER. THIS WRECK IS NO LONGER ì CHARTED. (ENT 4/24/96, SJV)
9750	UNKNOWN	12278	E	0100	0	HISTORY UNKNOWN SOURCE-- FIRST CHARTED IN 1954. (ENT 4/24/96, SJV)
10738	OBSTRUCTION	12304	D	085		
10739	OBSTRUCTION	12304	D	085		
10740	OBSTRUCTION	12304	D	085		
10741	OBSTRUCTION	12304	D	085		
10742	OBSTRUCTION	12304	D	085		
10743	OBSTRUCTION	12304	D	085		
10744	OBSTRUCTION	12304	D	085		
10745	OBSTRUCTION	12304	D	085		
11649	UNKNOWN	12318	C	100		
12275	OBSTRUCTION	12304	D	067	14	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/08/51.02N, LONG. 075/16/02.22W (NAD83) WITH A LEAST DEPTH OF 14 FEET MLLW. THE OBSTRUCTION WAS NOTED AS EXTENDING 18 FEET OFF THE BOTTOM. (ENTERED 3/04 BY MBH)
12286	OBSTRUCTION	12304	D	067	17.65	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/09/15.13N, LONG. 075/17/09.07W (NAD83) WITH A LEAST DEPTH OF 17.65 FEET MLLW. (ENTERED 3/04 BY MBH)
12289	OBSTRUCTION	12304	D	067	17.68	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/09/40.85N, LONG. 075/17/48.08W (NAD83) WITH A LEAST DEPTH OF 17.68 FEET MLLW. (ENTERED 3/04 BY MBH)
12301	OBSTRUCTION	12304	D	067	14	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/09/40.10N, LONG. 075/17/28.05W (NAD83) WITH A LEAST DEPTH OF 14 FEET MLLW. (ENTERED 3/04 BY MBH)
12305	OBSTRUCTION	12304	D	067	31	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. N, LONG. W (NAD83) WITH A LEAST DEPTH OF 31 FEET MLLW. (ENTERED 3/04 BY MBH)
12343	OBSTRUCTION	12304	D	067	14	H11022/01--OPR-D307-KR; AN OBSTRUCTION WAS FOUND IN LAT. 39/08/51.02N, LONG. 075/16/02.22W (NAD83) WITH A LEAST DEPTH OF 14 FEET MLLW. (ENTERED 3/04 BY MBH)

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Vessel Name	Chart #	Area	Cartocode	Depth	Latitude*	Longitude*	History
UNKNOWN	12238	E	100	47	37/14/13.71	076/25/16.65	HISTORY NO REGISTRY NUMBER ASSIGNED; S-E604-RU-02; HLSPROJECT REPORT; SIDE SCAN SONAR CONTACT. SONAR IMAGING DESCRIBES A WRECK. SWMB LD OF 47 FEET IN LAT. 37-14-13.712N, LONG. 76-25-16.654W. EVALUATOR RECOMMENDS CHARTING A 47 WK AS SURVEYED. (ENT 4/2/04, SJV)
OBSTRUCTION	12238	E	067	37	37/14/08.72	076/30/05.37	HISTORY NO REGISTRY NUMBER ASSIGNED-- S-E604-RU-02; HLS PROJECT REPORT; SIDE SCAN SONAR CONTACT. SWMB LD OF 37 FEET IN LAT. 37-14-08.722N, LONG. 76-30-05.369W. SONAR IMAGERY DESCRIBES SUBMERGED PILING. EVALUATOR RECOMMENDS CHARTING A 37 OBSTN AS SURVEYED. (ENT 4/2/04, SJV)

OBSTRUCTION	12238	E	067	34	37/14/11.47	076/28/49.13	HISTORY NO REGISTRY NUMBER ASSIGNED; S-E604-RU-02; HLS PROJECT REPORT; SIDE SCAN SONAR CONTACT. SWMB LD OF 34 FEET IN LAT. 37-14-11.470N, LONG. 76-28-49.132W. EVALUATOR RECOMMENDS CHARTING A 34 OBSTN AS SURVEYED. (ENT 4/3/04, SJV)
OBSTRUCTION	12238	E	067	49	37/14/02.98	076/26/21.23	HISTORY NO REGISTRY NUMBER ASSIGNED-- S-E604-R0-02; HLS PROJECT REPORT; SIDE SCAN SONAR CONTACT. SWMB LD OF 49 FEET IN LAT. 37-14-02.981N, LONG. 76-26-21.234W. SONAR IMAGERY DESCRIBES SUBMERGED PILING. EVALUATOR RECOMMENDS CHARTING A 49 OBSTN AS SURVEYED. (ENT 4/3/04, SJV)
0BSTRUCTION	12238	E	067		37/11/32.71	076/10/58.88	HISTORY F00222/78-- OPR-E609-RU/HE; EVALUATOR STATES THAT A PRESENT SURVEY HANG OCCURRED AT 29 FEET IN LAT. 37-11-32.2N, LONG. 76-11-00.1W. NOT CLEARED. IDENTIFIED AS A DREDGE PIPE, 400 FEET LONG (NO ORIENTATION GIVEN). 3 FEET IN DIAMETER EXTENDING 1.5 FEET OFF THE BOTTOM. LIES IN PRIOR DEPTHS OF 32 FEET. RECOMMENDED THAT THIS HANG BE CHARTED AS A SUBMERGED OBSTRUCTION WITH THE LABEL (29 FEET REP) AS SURVEYED. ADDITIONAL FIELD WORK RECOMMENDED TO DETERMINE LD, LIMITS, AND ORIENTATION. (ENT 2/27/03, SJV)
OBSTRUCTION	12238	E	370	27	37/13/09.50	076/10/25.78	HISTORY H07677/47-48-- CS-313/326-PBS; ITEM NO. 25; WEST OBSTRUCTION HUNG AT 29 FEET AND CLEARED AT 27 FEET IN LAT. 37-13.15N, LONG. 76-10.45W. CHARTED AS AN OBSTN CLEARED AT 27 FEET AS SURVEYED. NATURE OF OBSTRUCTION NOT DETERMINED. (ENT 2/27/03, SJV)
							HISTORY NM12/60--3/19/60; DANGER AREA - A PALLET CONTAINING HIGH EXPLOSIVES IN TRANSPORT BOXES HAS BEEN REPORTED TO HAVE SUNK ABOUT 4,000 YARDS, 272°30'

OBSTRUCTION	12238	E	067		37/12/40.01	076/17/43.66	FROM YORK SPIT LIGHT. THE POSITION IS MARKED BY THREE RED ELLIPTICAL FLOATS SPREAD OVER AN AREA OF 15 FEET RADIUS. NM19/60--5/7/60; DANGER AREA - THE HIGH EXPLOSIVES IN TRANSPORT BOXES PREVIOUSLY REPORTED TO HAVE SUNK ABOUT 4,000 YARDS, 272°30' FROM YORK SPIT LIGHT HAVE BEEN RECOVERED WITH THE EXCEPTION OF ONE EXPLOSIVE CHARGE. THE US NAVY ADVISES THAT FURTHER SALVAGE OPERATIONS HAVE BEEN ABANDONED. THE NOTE "DANGER - EXPLOSIVE REPORTED (1960)" WILL BE CHARTED AT THE LOCATION. THE THREE FLOATS HAVE BEEN REMOVED. (ENTERED 2/02 BY MBH)
UNKNOWN	12238	D	0098	0	37/08/26.31	076/21/55.80	00952 HISTORY H7954/52-53 A HALF-SUBM WK AT END OF A MARINE RR SURVEY REQUIREMENTS FULL; LOW PRIORITY

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Vessel Name	Chart #	Area	Cartocode	Depth	Latitude*	Longitude*	History
OBSTRUCTION	12272	E	0067	0	39/08/35.09	076/14/57.63	HISTORY BP-138065--FROM CRS#001989, NOS PHOTO 10/14/88; THREE ì OBSTRUCTIONS; CHARTED WITH ONE SYMBOL AND LABELED "OBSTNS"; THESE ì OBSTRUCTIONS LIE IN PRIOR SURVEY DEEPTHS OF 4-5 FT.; THEIR G.P.'S ì ARE: LAT. LONG. 39/08/33.5 076/14/59.2 39/08/35.0 076/ 14/57.5 39/08/35.6 076/14/59.8 POSITIONS SCALED FROM THE SOURCE GRAPHICS. H10518/93--S-E909; THE OBSTRUCTIONS WERE REMOVED DURING ì CONSTRUCTION OF THE OSPREY POINT MARINA. THE ITEM IS CONSIDERED ì DISPROVED. (ENTERED 7/31/95)
							SURVEY REQUIREMENT COMMENTS SEARCH ONLY TO SEAWARD WITHIN THE SEARCH RADIUS HISTORY BP-89197--1974 NOS TOPO. REVISION; VISIBLE WRECK. CL1178/86--USPS TO NOS; REPORTS THE WRECK NOT VISIBLE (REPORTED ì BY MARY

UNKNOWN	12272	E	0100	0	39/07/53.20	076/14/23.60	HAMMOND, DUNDALK SQUADRON, ON 7/12/86). CHART UPDATED TO SUNKEN WRECK, PA. POSITION SCALED FROM GRAPHIC. (ENTERED 8/2/93 MBH) H10518/93--S-E909; FOUND WRECKAGE CONSISTING OF LOW-LYING ì TIMBERS WHICH COVER 0.2 METERS MLLW AND EXTEND OUT FROM SHORE ì INTO THE WATER. (ENTERED 6/95 BY MBH)
SOUNDING	12272	E	0127	0	39/08/36.39	076/15/46.83	HISTORY CL1040/85--USPS TO NOS; REPORTS THE 9 FT. DEPTH OF CHANNEL ì ABOUT 250 YARDS WEST OF DEEP LDG. HAS SHOALED TO 3 1/2 TO 4 FT. ì DEPTH (REPORTED BY DONALD R. DEUTSCH, DELHIGH SQUADRON, ON ì 9/1/85). (ENTERED 8/3/93 MBH) H10518/93--S-E909; SOUNDINGS WITHIN THE SEARCH AREA RANGE FROM ì 0.4-3.3 METERS. NO EVIDENCE OF AN ISOLATED SHOAL WAS FOUND. IT ì WAS RECOMMENDED THAT THE "3.5 REP 1985" BE REMOVED AND THE ì PRESENT SOUNDINGS BE CHARTED. THE ITEM IS CONSIDERED DISPROVED. ì (ENTERED 8/1/95 MBH)
UNKNOWN	12272	E	0100	0	39/08/40.09	076/15/49.49	HISTORY H-6597/40--PROJECT HT-250, VESSELS MITCHELL AND OGDEN; REPORTS ì A HULK LYING IN 2-5 FT DEPTHS. CHARTED AS A VISIBLE WRECK. UNKNOWN SOURCE--BETWEEN 10/2/52 AND 11/9/53 THE CHART WAS ì UPDATED TO A SUNKEN WRECK. CL1755/75 (BP-93322)--NOAA ATLANTIC HYDROGRAPHIC PARTY, CHART ì ADEQUACY SURVEY; CONFIRMS THAT THE WRECK STILL EXISTS AS A SUNKEN ì WRECK. CL1575/79--USPS TO NOS; INDICATES THAT THE WRECK WAS NO LONGER ì IN EXISTENCE (REPORTED BY WILLIAM BUCHANAN, USPS, ON 10/15/79). ì CHART UPDATED TO SUNKEN WRECK, ED. THE "ED" NOTE WAS ERASED ì DURING A SUBSEQUENT SHORELINE CORRECTION AND HAS BEEN ì OMITTED FROM THE CHART. THE WRECK REMAINS "ED". (ENTERED 8/3/93 ì MBH) H10518/93--S-E909; AN AREA OF WRECKAGE THAT APPEARS TO BE 2 OR ì 3 HULKS WAS FOUND IN 39/08/42.32N, 076/15/49.14W (NE OFFSHORE ì LIMIT) TO 39/08/40.09N, 076/15/49.49W (SE OFFSHORE LIMIT AND THE ì AWOIS POSITION). THE AREA WAS DESCRIBED AS FOUL WITH NO LEAST ì DEPTH INFORMATION BEING PROVIDED.

OBSTRUCTION	12272	E	0085	0	39/08/48.39	076/15/43.83	HISTORY CL962/79--USPS TO NOS; REPORTS A SNAG (BY RALPH PASS, DUNDALK ì SQUADRON, ON 7/5/79); IN PRIOR SURVEY DEPTHS OF 2-3 FT. (ENTERED ì 8/3/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY VISUAL ì SEARCH AT LLW. NO OBSTRUCTIONS WERE FOUND. THE ITEM IS ì CONSIDERED DISPROVED. (ENTERED 8/1/95 MBH)
UNKNOWN	12272	E	0100	0	39/08/52.94	076/15/33.15	HISTORY H-6597/40--PROJECT HT-250, VESSELS MITCHELL AND OGDEN; FORMER ì HULK ALL BROKEN UP, ONLY ONE FRAME REMAINS AND PROJECTS ABOUT 1 ì FT. ABOVE THE WATER. A NEW HULK IS ON THE BEACH JUST NW OF THIS ì FORMER HULK. IN DEPTHS OF 1/2-5 FT. CL796/73--USCG AUX. TO NOS; REPORTS THE WRECK NOT VISIBLE ì (REPORTED BY WILSON HENERY, USCG AUX., ON 2/22/73); CHART UPDATED ì TO SUNKEN WRECK. CL1755/75 (BP-93322)--NOAA ATLANTIC HYDROGRAPHIC PARTY, CHART ì ADEQUACY SURVEY; CONFIRMS THAT THE WRECK STILL EXISTS AS A SUNKEN ì WRECK. CL1575/79--USPS TO NOS; INDICATES THAT THE WRECK WAS NO LONGER ì IN EXISTENCE (REPORTED BY WILLIAM T. BUCHANAN, USPS, ON ì 10/15/79). CHART UPDATED TO SUNKEN WRECK, ED. (ENTERED 8/3/93 ì MBH) H10518/93--S-E909; THE SUNKEN WRECK, COVERING 0.1 METERS AT ì MLLW (THE OFFSHORE END) WAS FOUND IN 39/08/52.94N, 076/15/33.15W. ì THE WRECK IS APPROX. 25 METERS LONG AND ORIENTED N-S. BALLAST ì STONES WERE VISIBLE IN THE CENTER OF THE WOODEN WRECK. (ENTERED ì 7/31/95 MBH)
OBSTRUCTION	12272	E	0067	0	39/08/52.20	076/15/10.60	HISTORY BP-138065--FROM CRS#001989, NOS PHOTO 10/14/88; OBSTRUCTION; ì CHARTED AS A SUBMERGED OBSTRUCTION; IN PRIOR SURVEY DEPTHS OF 6-7 FT. ì POSITION SCALED FROM GRAPHIC. (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE OBSTRUCTION WAS IDENTIFIED AS A ì DAYBEACON. THE PRESENT DAYBEACON IS IN 39/08/51.34N, ì 076/15/10.21W AND WAS INSTALLED WHEN THE PREVIOUSLY EXISTING ì DAYBEACON WAS REMOVED IN 1990. (ENTERED 7/31/95 MBH)
							HISTORY CL796/73--USCG AUX. TO NOS; REPORTS A NEW VISIBLE

UNKNOWN	12272	E	0100	0	39/08/47.40	076/15/01.60	WRECK NOT ON ì THE CHART; NO DESCRIPTION GIVEN; (REPORTED BY WILSON HENRY, USCG ì AUX., ON 2/22/73). IN PRIOR SURVEY DEPTHS OF 1-2 FT. POSITION ì SCALED FROM GRAPHIC. CL1755/75 (BP-93322)--NOAA ATLANTIC HYDROGRAPHIC PARTY, CHART ADEQUACY ì SURVEY; INDICATED ON A CHART SECTION THAT THE WRECK WAS NOT ì VISIBLE. CHART UPDATED TO SUNKEN WRECK. CL1575/79--USPS TO NOS; INDICATED THAT THE WRECK WAS NO LONGER ì IN EXISTENCE (REPORTED BY WILLIAM T. BUCHANAN, USPS, ON ì 10/15/79). CHART UPDATED TO SUNKEN WRECK, ED. (ENTERED 8/3/93 ì MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY A VISUAL ì SEARCH AT LLW. NO WRECKAGE OR OBSTRUCTIONS WERE FOUND. THE ITEM ì IS CONSIDERED DISPROVED. (ENTERED 7/31/95 MBH)
OBSTRUCTION	12272	E	0067	0	39/08/41.50	076/15/02.40	HISTORY BP-138065--FROM CRS#001989, NOS PHOTO 10/14/88; OBSTRUCTION; ì CHARTED AS A SUBMERGED OBSTRUCTION; IN PRIOR SURVEY DEPTHS OF 4-5 ì FT. POSITION SCALED FROM GRAPHIC. (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY BOTTOM DRAG ì AND NO OBSTRUCTIONS WERE FOUND. THE ITEM IS CONSIDERED ì DISPROVED. (ENTERED 7/31/95 MBH)
OBSTRUCTION	12272	E	0067	0	39/08/27.39	076/15/49.83	HISTORY CL778/69--USPS TO USC&GS; REPORTS A SUBMERGED PILING OR STAKE ì APPROX. 6" IN DIAMETER. POSITION WAS DETERMINED BY COMPASS ì BRGS. AND WAS ESTIMATED TO BE 180 YARDS FROM THE SUNOCO DOCK AT ì GRATITUDE (REPORTED BY C. DANE ALDEN, SCHUYLKILL RIVER SQUADRON, ì ON 5/31/69). THIS OBSTRUCTION LIES IN PRIOR SURVEY DEPTHS OF ì 9-10 FEET. (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY BOTTOM DRAG ì AND NO OBSTRUCTIONS WERE FOUND. TWO SMALL 1-METER DIAMETER ì SHELL AND CLAY MOUNDS WHICH RISE LESS THAN 0.2 METERS OFF THE ì BOTTOM WERE FOUND. THESE MOUNDS WERE CONSIDERED INSIGNIFICANT. ì THE ITEM IS CONSIDERED DISPROVED. (ENTERED 8/1/95 MBH)

OBSTRUCTION	12272	E	0067	0	39/08/41.70	076/14/54.60	HISTORY BP-138065--FROM CRS#001989, NOS PHOTO 10/14/88; OBSTRUCTION; ì CHARTED AS A SUBMERGED OBSTRUCTION; IN PRIOR SURVEY DEPTHS OF 4-5 ì FT. POSITION SCALED FROM GRAPHIC. (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE OBSTRUCTION WAS IDENTIFIED AS A ì DAYBEACON. THE PRESENT DAYBEACON IS IN 39/08/ 41.04N, ì 076/14/54.85W AND WAS INSTALLED WHEN THE PREVIOUSLY EXISTING ì DAYBEACON WAS REMOVED IN 1991. THE ITEM IS CONSIDERED DISPROVED. ì (ENTERED 7/31/95)
UNKNOWN	12272	E	0098	0	39/08/24.70	076/15/42.40	HISTORY CL1130/70--USPS TO USC& GS; REPORTS A NEW VISIBLE WRECK ì (7/17/70) OF A 60 FT. CABIN FISHING BOAT LYING HALF ABOVE THE ì WATER (IN PRIOR SURVEY DEPTHS OF 1 FT.) ABOUT 20 YARDS FROM THE ì BULKHEAD OF GRATITUDE YACHT HARBOR. ALSO NOTED IS AN OLD WRECK ì THAT IS NOT CHARTED ON THE ROCKPILE THAT IS FURTHER INSHORE ì (REPORTED BY CALVIN C. YAEGER, DELAWARE RIVER SQUADRON, ON ì 7/18/70). (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY VISUAL ì SEARCH. THE ONLY ITEM FOUND WAS AWOIS ITEM 9432, THE WRECK OF ì THE SCHOONER "CHASE". THE ITEM IS CONSIDERED DISPROVED. ì (ENTERED 8/1/95 MBH)
UNKNOWN	12272	E	0100	0	39/08/36.40	076/14/48.80	SURVEY REQUIREMENTS COMMENT SEARCH ONLY TO SEAWARD WITHIN THE SEARCH RADIUS. HISTORY BP-89197--1974 NOS TOPO. REVISION; VISIBLE WRECK ADDED TO THE ì CHART. CL1676/77--USPS TO NOS; REPORTS THAT THE WRECK WAS REMOVED IN ì SPRING OF 1977 (REPORTED BY ROBERT V. RUSSELL, DUNDALK SQUADRON, ì ON 8/13/77). CHART UPDATED TO SUNKEN WRECK, ED. POSITION SCALED ì FROM GRAPHICS. (ENTERED 8/3/93 MBH) H10518/93--SE909; THE WRECK WAS REMOVED DURING THE MID '80S. ì RUINS AND DEBRIS WERE FOUND IN THE AREA THAT WERE AWASH AT THE ì INSHORE END AND COVERING 0.2 METERS AT THE OFFSHORE END. THESE ì WERE DETERMINED TO BE SNAGS THAT FLOAT IN AND COLLECT IN THE ì AREA. THE ITEM IS CONSIDERED DISPROVED. (ENTERED

							7/31/95 MBH)
UNKNOWN	12272	E	0100	0	39/08/31.60	076/14/49.10	SURVEY REQUIREMENTS COMMENT SEARCH ONLY TO SEAWARD WITHIN THE SEARCH RADIUS. HISTORY CL610/46--USC&GS SHIP PARIS; REPORTS A VISIBLE WRECK. BP-89197--1974 NOS TOPO. REVISION; WRECK NOT VISIBLE; CHART ì UPDATED TO A SUNKEN WRECK. CL1676/77--USPS TO NOS; REPORTS THAT THE WRECK WAS REMOVED IN ì SPRING OF 1977 (REPORTED BY ROBERT V. RUSSELL, DUNDALK SQUADRON, ì ON 8/13/77). CHART UPDATED TO SUNKEN WRECK, ED. POSITION SCALED ì FROM GRAPHICS. (ENTERED 8/2/93 MBH) H10518/93--S-E909; THE WRECK WAS FOUND AWASH, UNCOVERING 0.2 ì METERS AT MLLW. THE WRECK IS APPROXIMATELY 35 METERS IN LENGTH. ì (ENTERED 7/12/95 MBH)
UNKNOWN	12272	E	0100	0	39/08/28.60	076/14/54.30	SURVEY REQUIREMENTS COMMENT SEARCH ONLY TO SEAWARD WITHIN THE SEARCH RADIUS. HISTORY BP-89197--1974 NOS TOPO. REVISION; VISIBLE WRECK ADDED TO THE ì CHART. CL1676/77--USPS TO NOS; REPORTS THAT THE WRECK WAS REMOVED IN ì SPRING OF 1977 (REPORTED BY ROBERT V. RUSSEL, DUNDALK SQUADRON, ì ON 8/13/77). POSITION SCALED FROM GRAPHICS. (ENTERED 8/2/93 MBH) H10518/93--S-E909; THE WRECK WAS REMOVED BY ITS OWNER DURING ì THE MID 1980'S. THE ITEM IS CONSIDERED DISPROVED. (ENTERED ì 7/12/95 MBH)
SOUNDING	12272	E	0127	0	39/07/58.30	076/14/58.00	SURVEY REQUIREMENTS COMMENT DEVELOP WITHIN THE NAVIGABLE AREA FOR SHOALEST SOUNDING. HISTORY CL1001/84--C. OF E. PERMIT #83-0162 ISSUED 4/28/83 AND NOS ì FOLLOW-UP QUESTIONAIRE; DREDGING TO A DEPTH OF 6 FT. MLW WAS ì REQUESTED AND APPROVED; THE PROJECT WAS COMPLETED IN 11/83 ì (REPORTED BY CALVIN KENDALL, WALNUT ST., ROCK HALL, MD). ì (ENTERED 8/2/93 MBH) H10518/93--S-E909; SOUNDINGS WITHIN THE SEARCH AREA RANGE ì BETWEEN 1.6-2.8 METERS. IT WAS RECOMMENDED THAT THE CHARTED ì 6-FT. SOUNDING BE DELETED AND THE PRESENT SURVEY SOUNDINGS BE ì CHARTED. THIS ITEM IS CONSIDERED DISPROVED. (ENTERED 7/12/95 ì MBH)

OBSTRUCTION	12272	E	0085	0	39/07/57.70	076/14/51.00	HISTORY BP-112697--C. OF E. SURVEY OF 1980; VISIBLE PILE SHOWN ON THIS ì SURVEY. POSITION SCALED FROM GRAPHICS. (ENTERED 8/2/93 MBH) H10518/93--S-E909; THE ITEM WAS FOUND TO BE A SINGLE 12-INCH ì DIAMETER PILE BARE 2.0 METERS AT MHW. ALSO A PILE BARE 2.2 ì METERS AT MHW IN 39/07/59.36N, 076/14/ 48.60W AND A PILE BARE 1.6 ì METERS AT MHW IN 39/07/59.95N, 076/ 14/46.61W WERE FOUND. THE ITEM ì IS CONSIDERED COMPLETE. (ENTERED 7/12/95 MBH)
MISS JEAN	12272	E	0098	0	39/07/51.60	076/14/39.70	SURVEY REQUIREMENTS COMMENT SEARCH ONLY TO SEAWARD WITHIN THE SEARCH RADIUS. HISTORY CL1648/84--USCG AUX. TO NOS; REPORTS A WRECK AWASH; APPROX. 25 ì FT. CABIN CRUISER (REPORTED BY G. HADORN ON 10/18/ 84). POSITION ì SCALED FROM GRAPHIC. H10518/93--S-E909; THE WRECK ORIGINALLY SOUGHT WAS THE WRECK OF ì THE VESSEL "MISS JEAN" WHICH WAS TOWED TO ITS CURRENT LOCATION OF ì 39/07/52.91N, 076/14/22.46W IN 1985. THE "MISS JEAN" BARES 1.6 ì METERS AT MHW. A VISIBLE WRECK OF A 25-FT BOAT ì IN 39/07/50.91N, 076/14/39.20W WAS FOUND DURING THIS ì INVESTIGATION. MARINA PERSONNEL REPORTS THAT THIS VESSEL WAS ì TOWED AND SUNK IN THIS LOCATION IN 1985 AND THAT THE VESSEL ì ACTUALLY IS NOT ABANDONED BUT IS SOMETIMES REFLOATED. THIS NEW ì WRECK HAS BEEN ASSIGNED ITEM #9516. (ENTERED 7/12/95 MBH) ì PRACT
OBSTRUCTION	12272	E	0067	0	39/07/57.39	076/14/30.33	SURVEY REQUIREMENTS COMMENT SEARCH ONLY THE NAVIGABLE AREA WITHIN THE SEARCH RADIUS. HISTORY CL1648/84--USCG AUX. TO NOS; REPORTS AN OBSTRUCTION (BUMP) ì SUBMERGED 4 FT. BELOW MLW. NOTED AS PREVIOUSLY BEING REPORTED IN ì 1982 AND 1983 (REPORTED BY G. HADORN ON 10/18/ 84). LNM 38/86--5TH CGD; ADD DANGER CURVE AND LABEL: OBSTN REP 1986 ì (THE LISTED G.P. IS INCORRECT) LNM 8/87--5TH CGD; REPEATS THE INFO OF LNM 38/86 BUT WITH THE ì CORRECT G.P. BP-143746-- 1990 C. OF E. CONDITION SURVEY; THE OBSTRUCTION ì WAS NOT INVESTIGATED AND FALLS BETWEEN SOUNDING LINES. DEPTHS IN ì THE

							AREA ARE APPROX. 9.3 FT. MLW. (ENTERED 8/2/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY ECHO ì SOUNDER SEARCH. NO OBSTRUCTIONS WERE FOUND. THE ITEM IS ì CONSIDERED DISPROVED AND IT WAS RECOMMENDED THAT PRESENT SURVEY ì SOUNDINGS BE CHARTED IN THE AREA. (ENTERED 7/12/95 MBH)
SOUNDING	12272	E	0127	0	39/07/56.00	076/14/32.00	SURVEY REQUIREMENTS COMMENT DEVELOP WITHIN THE NAVIGABLE AREAS. HISTORY CL343/85--C. OF E. PERMIT #81-0558 ISSUED 5/12/82 AND NOS ì FOLLOW-UP QUESTIONAIRE; DREDGING TO A DEPTH OF 7 FT. MLW WAS ì REQUESTED AND APPROVED; THE PROJECT WAS COMPLETED ON 4/15/83 ì (REPORTED BY W. A. WILLIS, SAILING EMPORIUM INC., ROCK HALL, MD). ì POSITION SCALED FROM GRAPHIC. (ENTERED 8/2/93 MBH) H10518/93--S-E909; SOUNDINGS WITHIN THE SEARCH AREA RANGE ì BETWEEN 1.9-3.1 METERS WITH THE MAJORITY BEING GREATER THAN 2.5 ì METERS. IT WAS RECOMMENDED THAT THE 7-FT. REPORTED SOUNDING BE ì DELETED AND REPLACED BY PRESENT SURVEY SOUNDINGS. THIS ITEM IS ì CONSIDERED DISPROVED. (ENTERED 7/12/95 MBH)
SOUNDING	12272	E	0127	0	39/07/55.00	076/14/26.00	SURVEY REQUIREMENTS COMMENT DEVELOP WITHIN THE NAVIGABLE AREA FOR SHOALEST SOUNDING. HISTORY CL1648/84--USCG AUX. TO NOS; NOTED THAT THE AREA WAS DREDGED TO ì 7 FT. MLW IN 1982 BY SO. MD. DREDGING CO. FOR SAILING EMPORIUM ì MARINA (MGR. ART WILLIS). POSITION SCALED FROM GRAPHIC. BP-143746--1990 C. OF E. CONDITION SURVEY; SHOWS DEPTHS AS ì SHOAL AS 4.9 FT. MLW WITHIN THE NAVIGABLE AREA. (ENTERED 8/2/93 ì MBH) H10518/93--S-E909; SOUNDINGS WITHIN THE SEARCH AREA RANGE ì BETWEEN 1.8-3.0 M WITH MOST SOUNDINGS WITHIN THE NAVIGABLE AREA ì BETWEEN THE MARINA PIERS BEING GREATER THAN 2.0 M. THE 1.8 M ì SOUNDING WAS LOCATED IN LAT. 39/07/57.34, LONG. 076/14/28.73 THE ì 7-FT REPORTED SOUNDING WAS RECOMMENDED TO BE DELETED AND REPLACED ì BY PRESENT SURVEY SOUNDINGS. THIS ITEM IS CONSIDERED DISPROVED. ì (ENTERED 7/12/95 MBH)

OBSTRUCTION	12272	E	0067	0	39/08/40.60	076/14/59.20	HISTORY BP-138065--FROM CRS#001989, NOS PHOTO 10/14/88; OBSTRUCTION; ì CHARTED AS A SUBMERGED OBSTRUCTION; IN PRIOR SURVEY DEPTHS OF 4-5 ì FT. POSITION SCALED FROM GRAPHIC. (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE OBSTRUCTION WAS IDENTIFIED AS A ì DAYBEACON. THE PRESENT DAYBEACON IS IN 39/08/ 39.30N, ì 076/14/58.83W AND WAS INSTALLED WHEN THE PREVIOUSLY EXISTING ì DAYBEACON WAS REMOVED IN 1991. (ENTERED 7/31/95)
OBSTRUCTION	12272	E	0067	33	39/04/08.56	076/18/51.63	HISTORY H10859/99-- OPR-E346-BH; UNCHARTED SUBMERGED DANGEROUS OBSTRUCTION LOCATED BY SIDE SCAN SONAR. MULTIBEAM LD OF 33 FEET OBTAINED IN LAT. 39-04-08.56N, LONG. 76-18-51.63W. EVALUATOR RECOMMENDS CHARTING A 33 OBSTN AS SURVEYED. (ENT 11/29/00, SJV)
OBSTRUCTION	12272	E	0067	8	39/01/17.20	076/17/02.20	HISTORY H10859/99-- OPR-E346-BH; UNCHARTED OBSTRUCTIONS LOCATED BY SIDE SCAN SONAR AND DEVELOPED WITH SHALLOW-WATER MULTIBEAM SONAR. DIVERS DESCRIBE ARTIFICIAL OYSYTER MOUNDS AT THESE LOCATIONS (SEE BELOW). THE CONSTRUCTION OF THESE OYSTER MOUNDS WAS PERMITTED BY THE BALTIMORE DISTRICT CORPS OF ENGINEERS TO THE MARYLAND DEPT. OF NATURAL RESOURCES, FISHERIES SERVICE. POC IS GARY SMITH, CHIEF, MAPPING AND ANALYSIS PROJECT, COOPERATIVE OXFORD LABORATORY, 904 S. MORRIS ST. OXFORD, MD 21654-9724. THE OYSTER MOUNDS WERE LOCATED IN THE FOLLOWING POSITIONS: LEAST DEPTH LATITUDE (N) LONGITUDE (W) 8 FEET (2.6 METERS) 39-01-17.2 76-17-08.1 8 FEET (2.6 METERS) 39-01-20.3 76-17-08.1 10 FEET (3.1 METERS) 39-01-21.0 76-17-03.5 10 FEET (3.1 METERS) 39-01-23.1 76-17-08.0 AS RECOMMENDED BY THE MARYLAND DEPARTMENT OF NATURAL RESOURCES AND THE HYDROGRAPHER, THIS AREA IS SHOWN ON THE SMOOTH SHEET WITH A DASHED 500-FOOT RADIUS CIRCLE FROM THE CENTER OF THESE FOUROBSTRUCTIONS. THE EVALUATOR RECOMMENDS CHARTING AN 8-FOOT SOUNDING IN

							LAT. 39-01-17.2N, LONG. 76-17-02.2W AND A 10-FOOT SOUNDING IN LAT. 39-01-23.1N, LONG. 76-17-08.0W. ALSO RECOMMENDS CHARTING A 500-FOOT RADIUS DANGER CURVE CENTERED IN LAT. 39-01-20N, LONG. 76-17-05W WITH THE NOTATION "OYSTER REEF (AUTH MIN 12 FT). (ENT 11/30/00, SJV)
OBSTRUCTION	12272	E	0067	39	39/07/19.63	076/19/12.39	HISTORY H10859/99-- OPR-E346-BH; UNCHARTED DANGEROUS SUBMERGED OBSTRUCTION LOCATED BY SIDE SCAN SONAR. MULTIBEAM LD OF 39 FEET OBTAINED IN LAT. 39-07-19.63N, LONG. 76-19-12.39W. EVALUATOR RECOMMENDS CHARTING A 39 OBSTN AS SURVEYED. (ENT 11/29/00, SJV)
OBSTRUCTION	12272	E	0067	24	39/01/37.68	076/16/27.95	HISTORY H10859/99-- OPR-E346-BH; UNCHARTED DANGEROUS SUBMERGED OBSTRUCTION LOCATED BY SIDE SCAN SONAR. MULTIBEAM LD OF 24 FEET OBTAINED IN LAT. 39-01-37.68N, LONG. 76-16-27.95W. EVALUATOR RECOMMENDS CHARTING A 24 OBSTN AS SURVEYED. (ENT 11/29/00, SJV)
UNKNOWN	12272	E	0100	19	39/04/40.03	076/15/30.62	HISTORY H10859/99-- OPR-E346-BH; UNCHARTED DANGEROUS SUBMERGED WRECK LOCATED BY SIDE SCAN SONAR. MULTIBEAM LD OF 19 FEET IN LAT. 39-04-40.03N, LONG. 76-15-30.62W. EVALUATOR RECOMMENDS CHARTING A 19 WK AS SURVEYED. (ENT 11/29/00, SJV)
OBSTRUCTION	12272	E	0067	21	39/05/24.78	076/17/45.58	HISTORY H10859/99-- OPR-E346-BH; UNCHARTED DANGEROUS SUBMERGED OBSTRUCTION LOCATED BY SIDE SCAN SONAR. MULTIBEAM LD OF 21 FEET LOCATED IN LAT. 39-05-24.78N, LONG. 76-17-45.58W. EVALUATOR RECOMMENDS CHARTING A 21 OBSTN AS SURVEYED. (ENT 11/29/00, SJV)
UNKNOWN	12272	E	0100	25	39/05/41.93	076/17/46.99	HISTORY H10859/99-- OPR-E346-BH; UNCHARTED DANGEROUS SUBMERGED WRECK LOCATED BY SIDE SCAN SONAR. MULTIBEAM LD OF 25 FEET IN LAT. 39-05-41.93N, LONG. 76-17-46.99W. EVALUATOR RECOMMENDS CHARTING A 25 WK AS SURVEYED. (ENT 11/29/00, SJV)
							HISTORY H10859/99-- OPR-E346-BH; UNCHARTED DANGEROUS SUBMERGED OBSTRUCTION LOCATED BY SIDE SCAN SONAR. MULTIBEAM DEPTH OF 21 FEET NOT CONSIDERED THE TRUE LEAST DEPTH BY

OBSTRUCTION	12272	E	0067		39/06/10.16	076/17/29.40	HYDROGRAPHER BECAUSE OF NARROW WIDTH OF PILE. NO DIVE OPS DUE LOW VIS. EVALUATOR RECOMMENDS CHARTING A SUBMERGED PILE WITH THE APPROPRIATE SYMBOL IN LAT. 39-06-10.16N, LONG. 76-17-29.40W. (ENT 11/29/00, SJV)
OBSTRUCTION	12272	E	0067		39/06/12.53	076/17/13.31	HISTORY H10859/99-- OPR-E346-BH; UNCHARTED DANGEROUS SUBMERGED OBSTRUCTION LOCATED BY SIDE SCAN SONAR. HYDROGRAPHER STATES THAT THE TRUE LEAST DEPTH MAY NOT HAVE BEEN ACQUIRED BY THE MULTIBEAM SYSTEM DUE TO THE NARROW WIDTH OF THE PILE. NO DIVE OPS CONDUCTED DUE LOW VIS. EVALUATOR RECOMMENDS CHARTING A SUBMERGED PILE WITH THE APPROPRIATE SYMBOL IN LAT. 39-06-12.53N, LONG. 76-17-13.31W. A MULTIBEAM DEPTH OF 16 FEET WAS OBTAINED ON THIS FEATURE. (ENT 11/29/00, SJV)
OBSTRUCTION	12272	E	0067	0	39/08/27.40	076/15/55.80	HISTORY CL-1755/75 (BP-93322)--NOAA ATLANTIC HYDROGRAPHIC PARTY, CHART ì ADEQUACY SURVEY; INDICATED ON A CHART SECTION A SUBMERGED PILE; IN ì PRIOR SURVEY DEPTHS OF 3-5 FT. CHARTED AS A SUBMERGED PILE. ì (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY BOTTOM DRAG ì AND NO OBSTRUCTIONS WERE FOUND. THE ITEM IS CONSIDERED ì DISPROVED. (ENTERED 8/1/95 MBH)
OBSTRUCTION	12272	E	0067		39/06/45.57	076/17/53.11	HISTORY H10859/99-- OPR-E346-BH; UNCHARTED DANGEROUS SUBMERGED OBSTRUCTION LOCATED BY SIDE SCAN SONAR. MULTIBEAM DEPTH OF 23 FEET OBTAINED IN LAT. 39-06-45.57N, LONG. 76-17-53.11W. HYDROGRAPHER STATES THAT A TRUE LEAST DEPTH MAY NOT HAVE BEEN ACQUIRED BY THE MULTIBEAM SYSTEM DUE TO THE NARROW WIDTH OF THE PILE. DIVE OPS NOT ATTEMPTED DUE POOR VIS. EVALUATOR RECOMMENDS CHARTING A SUBM PILE WITH THE APPROPRIATE SYMBOL IN LAT. 39-06-45.57N, LONG. 76-17-53.11W (NO DEPTH INFORMATION). (ENT 11/29/00, SJV)
							HISTORY H10858/99-- OPR-E346-BH; DURING OFFICE PROCESSING, AN

OBSTRUCTION	12272	E	0067	18	39/02/24.12	076/16/05.20	UNCHARTED 18-FOOT DEPTH WAS FOUND IN LAT. 39-02-24.12N, LONG. 76-16-05.197W. THIS FEATURE WAS NOT ADDRESSED BY THE FIELD UNIT. SURROUNDING DEPTHS RANGE FROM 25-28 FEET. EVALUATOR RECOMMENDS CHARTING 18 OBSTN AS SURVEYED. (ENT 11/30/00, SJV)
OBSTRUCTION	12272	E	0067	36	39/07/25.10	076/18/54.79	HISTORY H10859/99-- OPR-E346-BH; UNCHARTED DANGEROUS SUBMERGED OBSTRUCTION LOCATED BY SIDE SCAN SONAR. MULTIBEAM LD OF 36 FEET LOCATED IN LAT. 39-07-25.10N, LONG. 76-18-54.79W. EVALUATOR FRECOMMENDS CHARTING A 36 OBSTN AS SURVEYED. (ENT 11/29/00, SJV)
UNKNOWN	12272	E	0100	32	39/04/06.54	076/16/14.33	HISTORY H10859/99-- OPR-E346-BH; UNCHARTED DANGEROUS SUBMERGED WRECK LOCATED BY SIDE SCAN SONAR. MULTIBEAM LD OF 32 FEET IN LAT. 39-04-06.54N, LONG. 76-16-14.33W. EVALUATOR RECOMMENDS CHARTING A 32WK AS SURVEYED. (ENT 11/29/00, SJV)
UNKNOWN	12272	E	098	0	39/08/58.06	076/14/49.06	HISTORY H10518/93--S-E909; FOUND THE VISIBLE WRECK OF AN 8-METER CABIN ì CRUISER BARE 2.2 METERS AT MHW WITH A 1980 REGISTRATION STICKER # ì MD7561G. THE STATE OF MARYLAND HAS IDENTIFIED THIS VESSEL AS A ì 1963 26-FT. CHRIS CRAFT CABIN CRUISER LAST REGISTERED IN 1981 TO ì MR. FRED A. TERRY, 4036 HILTON RD., BALTIMORE, MD 21215. ì (ENTERED 7/12/95 MBH)
UNKNOWN	12272	E	098	0	39/07/50.91	076/14/39.20	HISTORY H10518/93--S-E909; WHILE SEARCHING FOR AWOIS #8677 DISCOVERED ì A VISIBLE WRECK. MARINA PERSONNEL CLAIM THAT THIS WRECK WAS ì TOWED AND SUNK IN ITS LOCATION IN 1985 AND THAT IT IS NOT ì ABANDONED BUT IS PERIODICALLY REFLOATED.
OBSTRUCTION	12272	W	067	0	39/08/21.69	076/15/34.92	HISTORY H10518/93--S-E909; A SUBMERGED OBSTRUCTION IDENTIFIED AS A ì BALLIST STONE WAS FOUND COVERING 0.2 M MLLW. (ENTERED 6/95 BY ì MBH)
CHASE	12272	W	098	0	39/08/25.07	076/15/46.02	HISTORY H10518/93--S-E909; THE WRECK OF THE 124' USCG TRAINING ì SCHOONER CHASE WAS FOUND WHILE SEARCHING FOR AWOIS ITEM 8695. ì THE SCHOONER WAS BEACHED TO PROVIDE A BREAKWATER FOR A NEARBY ì MARINA. THE WRECK UNCOVERS 1.5

							M ON THE INSHORE END AND IS AWASH ì MLLW ON THE OFFSHORE END. THE WRECK LIES IN AN EAST-WEST ì ORIENTATION AND HAS A BEAM OF APPROX. 8 M. (ENTERED 6/95 BY MBH)
OBSTRUCTION	12272	E	0085	0	39/09/48.13	076/15/11.65	SURVEY REQUIREMENTS COMMENT SEARCH THE AREA TO 200 M. NW AND 200 M. SE FROM THE LISTED G.P. HISTORY CL168/82--USPS TO NOS; REPORTS A LINE OF SIX TALL PILES ì (REPORTED BY CALVIN C. YAEGER, USPS, ON 9/5/81). PRIOR SURVEY ì DEPTHS IN THE AREA ARE 2-3 FT. POSITION SCALED FROM GRAPHIC. ì (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY VISUAL ì SEARCH. THE SIX PILES WERE FOUND AND RANGED FROM BEING COVERED ì 0.3 METERS (MLLW) TO BEING UNCOVERED 5.0 METERS (MLLW). tHE ì AWOIS POSITION IS THE SOUTHERN-MOST PILE. THE PILES ARE IN: 39/09/48.13N, 076/15/11.65W (THE AWOIS POSITION) 39/09/48.67N, 076/15/12.69W 39/09/49.36N, 076/15/13.28W 39/09/51.20N, 076/15/14.71W 39/09/51.88N, 076/15/15.28W 39/09/51.82N, 076/15/15.23W THE ITEM IS CONSIDERED COMPLETE. (ENTERED 8/1/95 MBH)
OBSTRUCTION	12272	E	0085	0	39/09/33.75	076/15/26.86	HISTORY CL1552/80--USCG AUX. TO NOS; REPORTS FIVE (VISIBLE) PILES ì (REPORTED BY LYNN PASS, DUNDALK SQUADRON, ON 10/3/80). IN PRIOR ì SURVEY DEPTHS OF 3-5 FT. (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY VISUAL ì SEARCH AND BOTTOM DRAG. EIGHT PILES WERE FOUND IN 39/09/33.75N, ì 076/15/26.86W UNCOVERING FROM 0.7-2.0 METERS AT THE TIME OF THE ì INVESTIGATION. THE ITEM IS CONSIDERED COMPLETE. (ENTERED 8/1/95 ì MBH)
OBSTRUCTION	12272	E	0085	0	39/08/25.38	076/15/45.69	HISTORY CL962/79--USPS TO NOS; REPORTS PILES ALONG THE SOUTH SIDE OF ì WRECK (SEE AWOIS #8695) AT GRATITUDE (REPORTED BY RALPH PASS, ì DUNDALK SQUADRON, ON 6/15/79). PRIOR SURVEY DEPTHS IN THIS AREA ì ARE 1 FT. (ENTERED 8/3/93 MBH) H10518/93--S-E909; THE SEARCH AREA WAS COMPLETED BY VISUAL ì SEARCH. THE SINGLE ROW OF PILES WERE FOUND. THE PILES EXTEND ì FROM 39/08/24.62N, 076/15/

							45.65W TO 39/08/25.38N, 076/15/45.69W ì (THE AWOIS POSITION). THE OFFSHORE PILES UNCOVER 0.8 METERS ì (MLLW) AND THE INSHORE PILES UNCOVER 1.0 METER (MLLW).
OBSTRUCTION	12272	E	0067		39/04/16.78	076/17/49.99	HISTORY H10859/99--OPR-E346-BH; UNCHARTED DANGEROUS SUBMERGED OBSTRUCTION LOCATED BY SIDE SCAN SONAR. MULTIBEAM LD OF 22 FEET. HYDROGRAPHER STATES THAT THE MULTIBEAM SYSTEM MAY NOT HAVE ACQUIRED THE TRUE LEAST DEPTH BECAUSE OF THE NARROW WIDTH OF THE PILE. EVALUATOR RECOMMENDS CHARTING A SUBMERGED PILE WITH THE APPROPRIATE SYMBOL IN LAT. 39-04-16.78N, LONG. 76-17-49.99W. DIVE OPS NOT ATTEPTED DUE LOW VIS. (ENT 11/29/00, SJV)

DAM NECK OCEAN OPEN WATER PLACEMENT SITE, AWOIS FILES

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Vessel Name	Chart #	Area	Cartocode	Depth	Latitude*	Longitude*	History
SNDG	12208	D	127	0	36/59/31.32	075/57/07.44	HISTORY H9901/80--OPR-D103-PE-80; 1:10,000 SURVEY SCALE; ARGO (R/R) CONTROL; ECHO SOUNDER; 30FT PEAK IN 35FT WATERS IN PA LAT.36-59-30.8N, LONG.75-57-08.7W; WHEN INVESTIGATED A 27FT SNDG WAS ALSO FOUND IN LAT.36-59-27.2N, LONG.75-57-10.5W. (ENTERED 10/12/84 MSM)
SNDG	12208	D	067	0	37/00/53.52	075/54/23.73	HISTORY H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; 22FT SPIKE IN 28-30FT DEPTHS IN LAT.37-00-53N, LONG.75-54-25W; NOT INVESTIGATED TO ENSURE THAT ITS EXTENT AND LEAST DEPTH HAD BEEN DETERMINED PLOTTED ON HYDRO SMOOTH SHEET AS OBSTR. (ENTERED 10/15/84 MSM) CL1407/84--COMPLIANCE REPORT H-9901; 22-FOOT SPIKE IN DEPTHS OF ì 28-30 FEET IN LAT. 37-00-53N, LONG. 75-54-25W. SHOULD BE INVESTIGATED. (UP 10/3/96, SJV)
OBSTRUCTION	12208	E	067	25	36/59/30.61	075/59/25.10	HISTORY H9901/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO (R/R) ì CONTROL; ECHO SOUNDER; 25-FOOT PROBABLE OBSTRUCTION IN LAT. ì 36-59-30.09N, LONG. 75-59-26.36W; SPIKE AT END OF ONE DEVELOPMENT ì LINE OF HYDRO; RISES 10 FEET OFF BOTTOM IN 35-FOOT DEPTHS; ì SHOALEST DEPTH IN AREA IS 29 FEET; NOT INVESTIGATED TO DETERMINE ì EXTENT OF SHOAL AND ASSURE THE LD WAS OBTAINED. (ENT 10/15/84, ì MSM) CL1407/84--COMPLIANCE REPORT H-9901; A 25-FOOT PROBABLE ì OBSTRUCTION WAS LOCATED IN LAT. 36-59-30-09N, LONG. 75-59-26.36W. ì IN PARAGRAPH 3.c.2 OF THE VERIFICATION REPORT IT IS STATED THAT A ì NOTICE TO MARINERS WAS ISSUED FOR THIS DANGER TO NAVIGATION. ì INTENSIVE RESEARCH FOUND NO EVIDENCE THAT THIS INFOMATION WAS ì SUBMITTED TO THE COAST GUARD FOR PUBLICATION. THIS ITEM FALLS IN ì DEPTHS OF 35 FEET WITH THE SHOALEST DEPTH IH THE VICINITY OF 29 ì FEET. (UP 10/3/96, SJV) H10952/00-- OPR-E350-RU; 200% SIDE SCAN SONAR SEARCH WITH SHALLOW WATER MULTI-BEAM NEGATIVE. EVALUATOR RECOMMENDS DELETING "OBSTN (25 FT REP). (UP 11/7/00, SJV)
OBSTRUCTION	12208	D	0067	0	37/00/28.08	075/55/49.91	HISTORY NM18/55--4/30/55; EST MID GROUND S END OBSTR LT; LT REP DESTROYED IN NM37/55; LT REP DISCONT IN NM4/56; POS SURVEYED BY NAVY IN 1955; CHARTED AS SUBM PILE H9901/80--OPR-D103-PE-80; ITEM #78; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL ECHO SOUNDER; NOT WIRE DRAGGED SINCE AREA IS IRREGULAR AND THERE'S A STRONG CURRENT; SURVEY DEPTHS IN

							AREA ARE 16-20FT; EVALUATOR RECOMMENDED THIS ITEM BE RETAINED AS CHARTED IN LAT.37-00-27.56N, LONG.75-55-51.17W AND BE INVEST BY R/H AND DIVERS IN THE FUTURE. (ENTERED 10/ 11/84 MSM)
SNDG	12208	E	127	17	37/01/23.72	075/56/07.64	HISTORY H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; SEARCH FOR 14FT SNDG IN 21FT DEPTHS; FOUND 17FT LEAST DEPTH; EVALUATOR RECOMMENDED DELETING 14FT SNDG AND ADDING 17FT SNDG IN LAT.37-01-23.2N, LONG.75-56-08.9W. (ENTERED 10/12/84 MSM)
SNDG	12208	D	127	0	37/01/34.62	075/58/44.74	HISTORY H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; SEARCH FOR 14FT SNDG IN 19FT DEPTHS; 14FT SNDG FOUND IN POS. LAT.37-01-34.1N, LONG.75-58-46W; NO SHOALER SNDGS MENTIONED IN DR BUT 12FT 13FT SNDGS ARE PLOTTED ON THE SMOOTH NEXT TO THE 14FT SNDG. (ENTERED 10/12/84 MSM)
OBSTRUCTION	12208	D	067	0	36/50/16.64	075/48/10.71	HISTORY FE354SS/90-- OPR-D111-90; ITEM NO. 4; UNCHARTED OBSTRUCTION ì LOCATED BY WHITING (H-10337) IN LAT. 36-50-16.64N, LONG. ì 75-48-10.71W. ESTIMATED DEPTH OF 14.7 METERS (48 FEET). ALSO ì LOCATED BY HECK ON PRESENT SURVEY WITH AN ESTIMATED DEPTH OF 15 ì METERS (49 FEET). EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION ì WITH AN ESTIMATED DEPTH OF 14.7 METERS AS SHOWN ON H-10337/90. ì FURTHER WORK RECOMMENDED TO OBTAIN LEAST DEPTH. (ENT 6/15/92, ì SJV) DESCRIPTION **** MEMO TO CAPT. DEAN SEIDEL (N/CG24) FROM CDR. CHRISTOPHER LAWRENCE (N/CG244) DATED 9/16/92; RE. EXCHANGE OF INFO. BETWEEN NOS, USCG, AND USACE. ATTACHMENTS DOCUMENT USCG SALVAGE OF THIS ITEM ON 11/13/ 91. ITEM WAS A 18,000 LB. WEIGHT AND 90-FOOT CHAIN RECOVERED BY USCGC COWSLIP IN LAT. 36-50-16.42N, LONG. 75-48-11.96W. BUOY LOST 3/25/90 LOCATED BY NOAAS HECK IN 10/90 AND RECOVERED BY USCGC COWSLIP ON 11/13/91. SUBSEQUENT SSS SURVEY BY USACE ON 8/24/92 NEGATIVE FOR ANY TARGETS IN AN AREA 1300 FEET BY 1100 FEET. (UP 3/17/95, SJV)
SNDG	12208	D	127	0	37/00/17.62	075/55/33.73	HISTORY H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; INVESTIGATED AN 18FT PEAK IN 25FT WATERS IN PA LAT.37-00-17.1N, LONG.75-55-35W; SEVERAL 17FT SNDGS WERE LOCATED ALONG A RIDGE; INVESTIGATED A 15FT SNDG IN PA LAT.37-00-22N, LONG.75-55-28.7W; SEVERAL 15FT SNDGS WERE FOUND IN THE AREA; INVESTIGATIONS CONTINUED TO DEVELOP THE RIDGE. (ENTERED 10/12/84 MSM)
GEMINI	12208	D	100	0	37/03/25.12	075/53/57.53	HISTORY LNM41/38--SHRIMP TRAWLER, BURNED AND SUNK. H6438/ 39WD--OBTAINED 14 FT LD AT LAT.37-03-22.2, LONG.75-54-00, CLEARED TO 11 FT. H8218/54--NOT INVESTIGATED, 14 FT LD CARRIED FORWARD. H9693/77-OPR-516, PSR 50; 7.6 FT FATHO LD AT ABOVE GP, INDICATIONS OF SCOUR ON FATHOGRAM, RECOMMENDATION THAT CHARTS SHOW 7 FT REPORTED.
SNDG	12208	E	127	0	36/59/27.02	075/59/20.34	HISTORY H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; 10FT PEAK IN 35FT WATERS INVESTIGATED IN PA LAT.36-59-26.50N, LONG.75-59-21.6W BUT NO SHOALER DEPTH WERE FOUND; QC REVIEWER COMMENTED ON A 29FT SNDG AND A 25FT SNDG IN PA LAT.36-59-24.7N, LONG.75-59-19W WHICH SHOULD ALSO HAVE BEEN INVESTIGATED. (ENTERED 10/12/84 MSM) H10952/00-- OPR-E350-RU; 200% SIDE SCAN SONAR SEARCH WITH SHALLOW WATER MULTI-BEAM NEGATIVE FOR 29 AND 30-FOOT SOUNDINGS. EVALUATOR RECOMMENDS DELETING CHARTED 29 AND 30-FOOT SOUNDINGS. (UP 11/7/00, SJV)
UNKNOWN	12208	D	100	0	36/53/54.53	075/58/46.74	HISTORY LNM40/72-10/3/72 (5TH CG)--26 FT. DANGEROUS SUNKEN WRECK PA. (CHART 12221, 2ND ED.) REP. IN APPROX. POS. LAT.36-53-54N, LONG.75-58-48W. MAST POSSIBLY VISIBLE. H9905/80--OPR-D103-MI/PE-80; NOAA SHIP PEIRCE; LIMITED INVESTIGATION CONDUCTED 45 METER DEVELOPMENT, 1000 METER SEARCH RADIUS CENTERED ON APPROX. POS. LISTED ABOVE. SEARCH NEGATIVE. HYDROGRAPHER AND QC INSPECT. RECOMMENDED REVISION TO ED. ITEM 96.
UNKNOWN	12208	E	100	24	37/03/53.31	076/03/24.70	HISTORY H10116/83--OPR-D103-WH-83; 24FT WK, LOCATED IN LAT 37-03-52.80N, LONG 76-03-25.95W. LEAD LINE LD 24FT. RUINS DESCRIBED AS WOODEN KEEL AND KEEL RIBS EXTENDING 4FT OFF THE BOTTOM AND MEASURING 30 X 40 FT. (ENTERED 4/89 SRB)
							HISTORY NM8/31-- COAST GUARD REPORTS F/V BEAUTY SUNK 5.25 MILES, 100 ì DEGS. FROM CAPE HENRY LIGHT HOUSE IN LAT. 36-54-42N, LONG. ì 75-54-00W. H6976WD/45-47-- CS-326-WA/HI; CLEARED IN ONE DIRECTION BY 47 ì FEET WHILE INVESTIGATING ITEM 3 (AWOIS

BEAUTY	12208	D	725	47	36/54/42.53	075/53/58.73	NO. 808). THIS WRECK WAS ì NOT CHARTED AT TIME OF SURVEY. CL347/58-- ITEM CHARTED VIA H.O. WRECK LIST AS A 47-FOOT ì CLEARED DEPTH. H9922/80-- OPR-D103-MI-80; NO WIRE DRAG SURVEY HAS FURTHER ì INVESTIGATED THIS ITEM. H10340/90-- OPR-D111-WH; TWO SIGNIFICANT CONTACTS FOUND WITHIN ì THE 2000-METER SEARCH RADIUS AND SEVERAL CONTACTS WERE FOUND ì OUTSIDE THE RADIUS (WITHIN 700 METERS). APPROX. 10% OF SEARCH ì RADIUS WAS NOT COVERED BY SIDE SCAN SONAR (NORTHEASTERN AREA). ì ADDITIONAL WORK WAS REQUESTED ON ALL SIGNIFICANT CONTACTS. ì EVALUATOR RECOMMENDS THAT THE ITEM BE RETAINED AS CHARTED AND ì THAT FURTHER DISCUSSION AND CHARTING RECOMMENDATION BE DEFERRED ì UNTIL THE COMPLETION OF OFFICE PROCESSING OF SURVEY FE-353SS/90, ì AND A FINAL DISPOSITION OF THE ITEM IS MADE. (UP 10/29/91, SJV) FE353SS/90-- OPR-D111-HE; ITEM NOT DISPROVED. APPROXIMATELY 15% ì OF THE SEARCH RADIUS NOT COMPLETED. EVALUATOR RECOMMENDS ì RETAINING AS CHARTED. SEE AWOIS NOS. 8313, 8314, 8315, AND 8316 ì FOR ADDITIONAL INFO. REGARDING CONTACTS WITHIN SEARCH RADIUS FOR ì THIS ITEM. (UP 7/14/92, SJV) FE412SS/95-- OPR-E696-HE; 200% SIDE SCAN SONAR OVER REMAINING ì 15% SEARCH RADIUS NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP ì 2/15/96, SJV) DESCRIPTION 24 NO.1332; POSITION ACCURACY WITHIN 1 MILE
OBSTRUCTION	12208	D	067	0	36/56/32.95	075/55/29.73	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED BY H-10343/90 (WHITING) NOT DISPROVED. IN LAT. ì 36-56-32.95N, LONG. 75-55-29.73W. ESTIMATED DEPTH OF 12 METERS. ì RECOMMEND CHARTING AND ADDITIONAL WORK AT AN OPPORTUNE TIME. (ENT ì 4/20/92, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
UNKNOWN	12208	D	370	54	36/53/04.53	075/46/58.71	HISTORY NM25/14 (6/20/14) -- CHESAPEAKE BAY APPROACH - DEPTH. MASTER OF DUTCH ì STEAMER "WESTERDIJK" REPORTED HIS VESSEL DRAWING 31 FEET 8 INCHES ì TOUCHED BOTTOM IN (APPROX.) LAT. 36-53-05N, LONG. 75-47-00W. ì REFERENCE TO NM17/14 (SEE AWOIS NO. 8225). (UP 4/3/92, SJV) H9871/76WD-- REP. POS. WAS CLEARED TO A DEPTH OF 54 FEET IN ì LAT. 36-53-04N, LONG. 75-47-00W. (ENT 10/84, MJF) H9959/81-- OPR-D103-MI/PE-81; PSR ITEM 106; NON-DANGEROUS SUNKEN WRECK CHARTED IN LAT. 36-53-04N, LONG. 75-47-00W DESCRIBED AS AN UNKNOWN OBSTRUCTION ORIGINATING WITH THE 1957 WRECK LIST, NUMBER 1329. ARGO R/R CONTROL; NO INDICATION ì OF WRECK. DEPTHS RECORDED ARE FROM 55-56 FEET. EVALUATOR ì RECOMMENDS RETAINING THE CHARTED NON-DANGEROUS SUBM. WK. H10341/90-- OPR-D111-WH; INVESTIGATION NEGATIVE WITHIN ì INCOMPLETED SEARCH AREA. FINAL DISPOSITION WILL BE MADE IN ì DESCRIPTIVE REPORT OR THE EVALUATOR'S REPORT FOR FE-355SS(90). ì (UP 12/24/91, SJV) F00355/90-- OPR-D111-HE; H10341/90 RECOMMENDED TWO ITEMS FOR INVESTIGATION. THESE TWO ITEMS WERE INVESTIGATED AND DEEMED INSIGNIFICANT BY THE EVALUATOR ON THE PRESENT SURVEY. HOWEVER, THE SEARCH RADIUS WAS NOT COMPLETED AND THE EVALUATOR RECOMMENDS NO CHANGE IN CHARTING STATUS. (UP3/5/03, SJV) FE412SS/95-- OPR-E696-HE; COMPLETION OF 200% SIDE SCAN SONAR OF ì NORTHERN 50% OF SEARCH RADIUS NEGATIVE. EVALUATOR RECOMMENDS ì DELETING. (UP 2/15/96, SJV) DESCRIPTION 24 NO.1329; POS. ACCURACY OF 1 MILE
SNDG	12208	D	127	13	37/01/28.52	075/59/00.74	HISTORY H9901/80--OPR-D103-PE-80; 1:10,000 SCALE SURVEY; ARGO (R/R) CONTROL; ECHO SOUNDER; INVESTIGATED 12FT SNDG IN 19FT DEPTHS; LEAST DEPTH OF 13FT FOUND IN LAT.37-01-28N, LONG.75-59-02W; SEARCH FOR 14FT SNDG IN 19FT DEPTHS; SEVERAL 14FT SNDGS WERE FOUND. (ENTERED 10/12/84 MSM)
COLUMBIA	12208	D	100	0	37/02/21.52	076/02/01.75	HISTORY LNM40/71--DANGEROUS SUBMERGED WRECK PD, TUG COLUMBIA, 65 FEET LONG, BLACK AND WHITE, LOCATED IN LAT.37-02-21N, LONG.76-02-03W. BUOY TEMPORARILY EST. LNM14/73--COAST GUARD UNABLE TO LOCATE WRECK. TEMPORARY BUOY REMOVED. H9880/80--OPR-D103-PE-80, PSR ITEM 79; UNABLE TO LOCATE WRECK THROUGH ECHO SOUNDER INVESTIGATION, 45 METER LINE SPACING, 1000 METER RADIUS. ARGO CONTROL IN R/R MODE
							HISTORY NM25/42-- WRECK, LIGHTED BUOY ESTABLISHED; LIGHTED BUOY, R/B ì HORIZONTAL BANDS, FL R, ESTABLISHED 8,390 YARDS, 58 DEG. FROM ì CHESAPEAKE BAY ENTRANCE LIGHTED WHISTLE BUOY 2CB TO MARK WRECK. ì BUOY MOORED 150 YDS., 55 DEG. FROM WRECK. APPROX. POSITION OF ì BUOY 36-54-00N, 75-46-30W.

SANTORE	12208	D	100	44	36/53/53.18	075/46/51.07	NM28/42-- 0N JULY 8, 1942, CHESAPEAKE WRECK LIGHTED BUOY ì REPLACED BY LIGHTED BELL BUOY, NO OTHER CHANGE. NM41/43-- BUOY DISCONTINUED; LD OF 40 FEET OVER WRECK. FE77/49WD (FE NO. 3, 1949)-- HUNG WRECK AT 39 FEET, CLEARED AT ì 37 FEET. CL1579/48-- TO DIRECTOR, USC&GS, FROM C.O., PARKER, BOWEN, AND ì STIRNI; RE. WRECK SANTORE; LOCATED IN LAT. 36-53.85N, LONG. ì 75-46.92W. GOOD SONAR CONTACT MADE ON WRECK. HUNG AT 40 FEET, ì CLEARED AT 38 FEET (PREDICTED TIDES). LETTER FROM DIRECTOR, ì USC&GS, TO C.O. PARKER, BOWEN, AND STIRNI, NOTES LATEST POSITION ì .5 NM DIFFERENT FROM PREVIOUSLY REPORTED GP. WRECK REPORTED ì CLEARED BY WIRE DRAG SET TO 42 FEET IN SEPT., 1943 BY USCGC ì GENTIAN. H9871WD/76-- OPR-515-RU/HE; WRECK OF THE SANTORE CLEARED TO 41 ì FEET IN ONE DIRECTION; DID NOT HANG. Q.C. REPORT RECOMMENDS ì CHARTING A 41 FOOT CLEARED DEPTH AT WRECK'S CHARTED POSITION. ì FURTHER WORK CONSIDERED IMPRACTICAL BY Q.C. REPORT. (UP 7/20/92, ì SJV) FE412SS/95-- OPR-E696-HE; WRECK LOCATED BY SIDE SCAN SONAR. ì DIVER LD OF 13.4 METERS (44 FEET) IN LAT. 36-53-53.177N, LONG. ì 75-46-51.071W. EVALUATOR RECOMMENDS DELETING CHARTED WRECK AND ì CHARTING A 44 WK AS SURVEYED. (UP 2/15/96, SJV) DESCRIPTION 24 NO. 399; CARGO, 7117 GT; SUNK 6/17/42 BY NAVY MINE, WD CLEARED TO 38 FEET, POSITION ACCURACY ONE MILE. 27 NO. 274; CARGO, 4498 NT, SUNK 6/17/42. BUOY DICCONTINUED. LD OF 40 FEET.
OBSTRUCTION	12208	D	0370	16	36/55/32.92	076/04/03.55	HISTORY NM DATED 5/23/50 H7028/50WD-- PBS-2150-WD; VISUAL CONTROL; OBSTRUCTION LOCATED ì IN LAT. 36-55-32.5N, LONG. 76-04-05W; HUNG AT 19 FEET; CLEARED BY ì 16 FEET; EVALUATOR RECOMMENDED CHARTING AN OBSTR WITH CLEARED ì DEPTH OF 16 FEET. H9255/71-- OPR-467-RH-71; 1:20,000-SCALE; RADIST (HYBERBOLIC, ì R/R); OBSTRUCTION NOT FOUND; CLEARED IN ONE DIRECTION TO 23 FEET ì BUT WITH INSUFFICIENT OVERLAP FOR A VALID CLEARANCE; EVALUATOR ì RECOMMENDED RETAIN AS CHARTED. H9814/80-- OPR-D103-PE-80; 1:10,000-SCALE; ARGO (R/R), DELNORTE ì (R/A) CONTROL; ECHO SOUNDER; 45 METER LINE SPACING; OBSTRUCTION ì NOT FOUND; EVALUATOR RECOMMENDED RETAIN AS CHARTED IN LAT. ì 36-55-32.4N, LONG. 76-04-04.8W. (ENT 11/19/84, MSM) FE387SS/94-- OPR-E696-HE; 100 % SIDE SCAN SONAR COVERAGE ON 25% ì OF ITEM. TOO SHALLOW FOR HECK. EVALUATOR RECOMMENDS RETAINING AS ì CHARTED AND REASSIGNING FOR ADDITIONAL WORK. (UP 9/12/95, SJV) FE410SS-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/9/96, SJV)
UNKNOWN	12208	E	0100	56	36/56/58.76	076/01/20.20	SURVEY REQUIREMENT COMMENTS INVESTIGATION MAY BE CONSTRAINED BY VESSEL TRAFFIC. SURVEY AT ì COMMANDING OFFICER'S DISCRETION HISTORY NM31/44(2883)-- EXAMINATION VESSEL SUNK AT POSITION 36-57N, ì 76-01-20W. NM36/44(3376)-- WRECK DISPERSED TO A 45-FOOT DEPTH. H7028/45-50WD-- CS 326; CLEARED TO 49 FEET WITHOUT HANG, ì CONSIDERED DISPROVED. CL347/58-- NO. 1308, H.O. WRECK LIST; WRECK SUNK 1944 AT POS. ì 36-57N, 76-01-18W, SUBS. REPORTED SILTED OVER. H9901/80-- OPR-D103-PE-80; 1:10,000-SCALE SURVEY; ARGO R/R ì CONTROL; ECHO SOUNDER; THREE SMALL SCOURS ON FATHOGRAM WHICH MAY ì OR MAY NOT BE THE REMAINS OF WRECK. NOT DEFINITE ENOUGH TO SAFELY ì SAY FOR SURE. 62-65-FOOT SURVEY DEPTHS. H10343/90-- OPR-D111-WH; WRECK LOCATED BY SIDE SCAN SONAR IN ì LAT. 36-56-58.97N, LONG. 76-01-20.87W APPROX. 25 METERS EAST OF ì NAVIGATION BUOY "ITS". DEPTH OF 16.8 METERS IN 19.2 METERS. RADIO ì MEMO TO 5CGD ON 6/6/90. HYDROGRAPHER RECOMMENDS DIVER ì INVESTIGATION AND LD TO FULLY RESOLVE ITEM. H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); FATHOMETER DEPTH ì OF 17.2 METERS OBTAINED. WRECK BROUGHT FORWARD SINCE DEPTH FROM ì H-10343/90 IS SHOALER (16.8 METERS). EVALUATOR RECOMMENDS ì CHARTING WRECK WITH A DEPTH OF 16.8 METERS (55 FEET) AS SHOWN ON ì THE PRESENT SURVEY (UP 4/20/92, SJV) FE412SS/95-- OPR-E696-HE; WRECK LOCATED BY SIDE SCAN SONAR. ì DIVER LD OF 17.1 METERS (56 FEET) IN LAT. 36-56-58.755N, LONG. ì 76-01-20.203W. DIVERS DESCRIBE A PARTIALLY DECOMPOSED WRECK. ì EVALUATOR RECOMMENDS DELETING THE CHARTED WRECK AND CHARTING A 56 ì WK AS SURVEYED. (UP 2/15/95, SJV) DESCRIPTION 24 NO. 1308; SUNK 1944; REPORTED SILTED OVER; POSITION ACCURACY WITHIN ONE MILE.
							HISTORY LNM50/73-- DANGEROUS SUBMERGED WRECK PA; BURNED HULK OF 20-FOOT ì INBOARD/OUTBOARD BOAT. H9880/80--

UNKNOWN	12208	D	100	0	36/59/00.52	076/03/58.75	OPR-D103-PE-80; UNABLE TO LOCATE WRECK THROUGH ECHO ì SOUNDER INVESTIGATION, 45 METER LINE SPACING, 1000 METER RADIUS. ì ARGO CONTROL IN R/R MODE.
OBSTRUCTION	12208	E	370	0	36/59/05.52	076/02/58.75	HISTORY NM DATED 1/31/45 DESCRIPTION 24 NO.1306; POSITION ACCURACY WITHIN 1 MILE, UNKNOWN AUTHORITY REPORTED WRECKAGE SCATTERED.
UNKNOWN	12208	D	370	30	37/00/48.67	076/03/09.00	HISTORY LNM36/70--DERELICT VESSEL REPORTED SUNK IN LATITUDE 37-01-00N, LONGITUDE 76-03-18W. 110 FT LONG, COVERED BY 32 FT AT MLW LNM4/70--WRECK DETERMINED TO BE IN LATITUDE 37-00-46N, LONGITUDE 76-03-12W H9225WD/71--WRECK LOCATED IN LATITUDE 37-00-48.15N, LONGITUDE 76-03-10.25W. LD OBTAINED BY LEADLINE WAS 30 FT. LNM6/73--WRECK REMOVED (SEE AWOIS NO 10792) (UP2/26/03, SJV)
OBSTRUCTION	12208	D	067	0	36/56/12.53	075/54/46.73	HISTORY UNKNOWN SOURCE-- POSSIBLY NM DATED 5/16/40 (FROM 1957 NAVY ì WRECK LIST). H6976/45-47WD-- CS-313 & 326 - WA/HI; LOCATION OF OBSTRUCTION ì CLEARED TO 32 FEET. NOT HUNG. RETAIN AS CHARTED SINCE REQUIREMENT ì FOR BOTTOM CLEARANCE AND SEARCH RADIUS NOT SATISFIED. CL347/58-- REF. NAVY WRECK LIST. SEE DESCRIPTION, BELOW. H9905/80-- OPR-D103-PE; NOT LOCATED. ADDITIONAL WORK ì RECOMMENDED (WIRE DRAG). H10340/90-- OPR-D111-WH; NOT ASSIGNED. FE353SS/HE-- OPR-D111-HE; NOT ASSIGNED. FE412SS/HE-- OPR-E696-HE; 200% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV) DESCRIPTION 24 OBSTRUCTION NO. 1311, FORMERLY CHARTED. NM DATED 5/16/40 (?). LAT. 36-56-12N, LONG. 75-54-48W. ACCURACY WITHIN ONE MILE.
OBSTRUCTION	12208	D	100		37/01/20.52	075/53/33.73	HISTORY NM31/50-- CHESAPEAKE BAY ENTRANCE-WRECK; A SEAPLANE WITH 15 ì FEET OF WATER OVER IT IS SUNK 12,200 YDS., 174 DEG. 18 MIN. FROM ì CAPE CHARLES LIGHT. APPROX. POSITION OF WRECK LAT. 37-01-23N, LONG. ì 75-53-39W. WILL BE MARKED WITH A BUOY. NM33/50-- CHESAPEAKE BAY ENTRANCE-WRECK-INFORMATION; THE ì SEAPLANE PREVIOUSLY REPORTED SUNK 12,200 YDS., 174 DEG. 18 MIN. ì FROM CAPE CHARLES LIGHT HAS BEEN DEMOLISHED AND IS NO LONGER ì CONSIDERED A HAZARD TO NAVIGATION. APPROX. POSITION LAT. ì 37-01-23N, LONG. 75-53-39W. SUPERSEDES NM31/50, ABOVE. (UP ì 4/23/97, SJV) H10745/97--S-E904-BH; 200% SIDE SCAN SONAR NEGATIVE. EVALUATOR ì RECOMMENDS DELETING FROM CHARTS. (UP 12/2/97, SJV)
UNKNOWN	12208	D	100	0	37/05/00.51	075/56/34.74	HISTORY NM31/69 123-FT STEEL BARGE SUNK IN 5 FT OF WATER 6000 YDS 217 DEG FROM CAPE CHARLES LIGHT H9693/77 PSR 48, OPR-516; 4 HOURS SKIFF SOUNDING W/FATHO. 20-METER SPACING, WATER VISIBILITY POOR, GENERAL DEPTHS 4-10 FT., NOTHING FOUND, RECOMMENDS POSITION DOUBTFUL BE CHARTED. H9961/81--OPR-D103-MI/PE-80; PSR ITEM 71; VISUAL INSPECTION AND ì FATHOMETER SEARCH WITH NEGATIVE RESULTS; CONSIDERING NATURE AND ì LOCATION OF ITEM, INVESTIGATION WAS TERMINATED WITH CONCURRENCE ì OF AMC PROCESSING CENTER; EVALUATOR RECOMMENDS RETAINING ON CHART ì WITH DESIGNATOR ED. (ENTERED MSM 8/87)
UNKNOWN	12208	D	100	0	37/02/24.52	075/56/10.74	HISTORY ——ORIGINAL CHARTING SOURCE UNASCERTAINED H6438/39WD CLEARED TO 15 FT. BUT NEVER HUNG H9693/77 ASSIGNED AS PSR 49, OPR-516, 4/21/77; NO INDICATION OF WK. ON REGULAR SYSTEM OF SOUNDING LINES, RECOMMENDED REMAIN AS CHARTED. DESCRIPTION 24 NO.420; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 15 FT. (SOURCE UNK.); LOCATED 1939 BY CGS 27 WRECK SUNK BEFORE WWII. LOCATED BY U.S.C.G.S. IN 1939.
BRAZIL	12208	D	100	0	37/03/18.52	075/51/03.72	HISTORY CHARTED AS WD CLEARED TO 26 FT, SURVEY NOT DETERMINED POSSIBLY INVESTIGATED OPR-D103 DESCRIPTION 24 NO. 631; CARGO, 2388 GT,SUNK 4/9/42 BY MARINE CASUALTY; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 23 FT. IN 1947; REPORTED FROM HO CHART RECORDS.
FRANCIS O BOYLE	12208	D	370	24	37/03/18.52	075/51/16.72	HISTORY NM5/24--BUOY ESTABLISHED 1/19/24 IN APPROX. 4 1/2 FMS, 4.3 MILES, 154 DEG, 30 MIN. FROM CAPE CHARLES LIGHTHOUSE. APPROX. POS. LAT.37-03-30N, LONG.75-52W NM6/24--LOCATED IN 4 3/4 FATHOMS APPROX. 4.8 MILES 148 DEG FROM LIGHTHOUSE. MOORED APPROX. 265 YDS 151 DEG FROM WRECK. NM16/24--REPORTED DESTROYED LEAVING CLEAR DEPTH OF 24 FT. FE3/49--ITEM NO.16; REPORTED 1924, CLEARED DEPTH OF 24 FT. POSSIBLY INVESTIGATED OPR-D103 DESCRIPTION 24 NO.1231; SCH, SUNK 1924; POS. ACCUR. WITHIN 1 MILE; LD 24 FT.(SOURCE UNK) 185 ITEM NO.33, SAME INFO AS DOC. 20.

OBSTRUCTION	12208	E	067	43.5	37/03/21.34	076/04/55.42	HISTORY FE234(1977)WD--OPR-515-RU/HE-77; WHILE SEARCHING FOR ITEM 1A A HANG WAS ENCOUNTERED AT 46FT AND CLEARED TO 44FT. DIVER INVEST. FOUND MUSHROOM ANCHOR PROTRUDING 4FT OFF THE BOTTOM AND RECORDED A 43FT DEPTH BY A PNEUMATIC DEPTH GAUGE. POS. OBTAINED BY RADIST RANGE-RANGE CONTROL IN LAT.37-03-21.2N, LONG.76-04-58.2W. PRESENTLY CHARTED AS A 43FT OBSTR. (CHART 12222, 29TH ED). (ENTERED, 11/10/83, MJF) CL834/77-(WEEKLY ACTIVITY REP)--RUDE AND HECK FIRST REP MUSHROOM ANCHOR FOR NM IN LAT.37-03-20.4N, LONG.76-04-58.2W. NM28/77--INFO. SAME AS ABOVE CL433/82-(MONTHLY ACTIVITY REP)--INFO. SAME AS CL834/77 ABOVE. H10116/83--OPR-D103-WH-83; 46FT ECHOSOUNDER LD OBTAINED ON MUSHROOM ANCHOR IN LAT.37-03-20.82N,LONG.76-04-56.66W, DURING SIDE SCAN SONAR/DIVER INVESTIGATION. POOR VISIBILITY AND SWIFT CURRENTS PREVENTED LD DETERMINATION. EVALUATOR CARRIED FORWARD 43FT LD FROM FE234/77WD AND REVISED POSTION TO AGREE WITH PRESENT SURVEY. (UP 4/89 SRB) CL526/90--COE TO N/CG2211 (JIM DAILY), 5/9/90. 2-TON MUSHROOM ì ANCHOR IN YORK SPIT CHANNEL REMOVED IN JULY 1988 DURING CHANNEL'S ì DEEPENING TO 50 FEET. PULLED UP BY HOPPER DREDGE SHIP STUYVESANT. ì ANCHOR CONSIDERED TO BE OF SOME HISTORICAL VALUE AND WAS TRUCKED ì TO CRANEY ISLAND. (UP 5/18/90, SJV) DESCRIPTION **** TELECON (COE GEAN BATTY, NORFOLK DREDGE MAINT. BRANCH, FTS 827-3482). DIVER INVEST. WEEK OF 8/29/83 UNABLE TO LOCATE SUBM. OBSTR. AT LISTED POS. COE DESIRES SALVAGE REMOVAL. IF LOCATED CONTACT COE WITHOUT DELAY.
ANGLO AFRICAN	12208	D	100	0	37/03/25.12	075/53/57.53	HISTORY H6438/39WD--OBTAINED 14 FT. LD AT POS. 37-03-22N, 75-45W CLEARED TO 11 FT. H8218/54--14 FT CARRIED FWD AT POS.37-03-23.4N, 75-55-09W H9693/77--7.6 FT FATHO LEAST DEPTH AT ABOVE GP, INDICATIONS OF SCOUR ON FATHOGRAM, ASSIGNED AS PSR 50, OPR-516, RECOMMENDS THAT CHARTS SHOW 7 FT REP. DESCRIPTION 24 NO.632; POSITION ACCURACY WITHIN 1 MILE; WD CLEARED TO 11 FT. (SOURCE UNK.); LOCATED 1947 (SOURCE UNK.); REPORTED THROUGH H.O. CHART RECORDS
OBSTRUCTION	12208	D	067	0	36/51/20.55	075/50/50.87	HISTORY FE354SS/90-- OPR-D111-HE; ITEM NO. 10; UNCHARTED OBSTRUCTION ì LOCATED BY WHITING (H-10337/90) IN LAT. 36-51-20.55N, LONG. ì 75-50-50.87W WITH AN ESTIMATED DEPTH OF 14.3 METERS (47 FEET). ì FOUR SIDE SCAN SONAR CONTACTS WITH DEEPER ESTIMATED DEPTHS WERE ì LOCATED BY THE PRESENT SURVEY. NO LD OBTAINED ON ANY OF THE ì ITEMS. WHITING DEPTH CARRIED FORWARD TO PRESENT SURVEY. EVALUATOR ì RECOMMENDS CHARTING "OBSTRUCTIONS" WITHIN A LIMIT CURVE WITH AN ì ESTIMATED DEPTH OF 14.3 METERS AS SHOWN ON PRESENT SURVEY. ì ADDITIONAL WORK RECOMMENDED TO OBTAIN THE LD ON THE SHOALEST ì OBSTRUCTION WITHIN THE LIMITS. IF CHART SCALE ALLOWS, AN ì ADDITIONAL OBSTRUCTION SHOULD BE CHARTED IN LAT. 36-51-21.93N, ì LONG. 75-50-54.48W AS SHOWN ON H-10337/90 AND BROUGHT FORWARD ON ì FE354SS/90. ESTIMATED DEPTH OF 14.9 METERS. (ENT 6/15/92, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
UNKNOWN	12208	E	999	0	37/01/02.52	076/02/38.75	HISTORY NM DATED 1/31/45 DESCRIPTION 24 NO.1307, REPORTED SCATTERED WRECKAGE; POSITION ACCURACY WITHIN 1 MILE; LOCATED 1944 (SOURCE UNK.)
UNKNOWN	12208	D	100		36-54-16.54	075-42-51.71	HISTORY LNM37/73--09/17/1973, 5TH CGD; A 17 FOOT OUTBOARD BOAT HAS BEEN REPORTED SUNK APPROXIMATELY 100 YARDS WEST OF CHESAPEAKE LIGHT. H09959/81--OPR-D103-MI/PE; DEPTHS ON THE PRESENT SURVEY IN THIS AREA ARE 38 TO 40 FEET. ITEM REQUIRED A LIMITED INVESTIGATION WHICH WAS ACCOMPLISHED USING 90 METER LINE SPACING OVER AN AREA WITH A 1000 METER RADIUS OF THE REPORTED POSITION. THE REDUCED LINE SPACING FAILED TO LOCATE THE WRECK ON THE FATHOGRAMS. SEVERAL SPORT DIVE BOATS WERE SEEN ANCHORED OFF CHESAPEAKE LIGHT DURING THE SURVEY. PEIRCE MADE RADIO CONTACT WITH THEM, INQUIRING AS TO THE EXISTENCE OF ANY WRECK NEAR THE LIGHT. ALL REPLIES FROM THE DIVE BOATS WERE NEGATIVE. IT IS THEREFORE RECOMMENDED THAT THE ITEM BE CHARTED IN LAT. 36-54-16N, LONG. 75-42-52W (NAD 27) AS A NON-DANGEROUS WRECK WITH "EXISTENCE DOUBTFUL". CURRENTLY CHARTED AS SUBMERGED DANGEROUS WRECK PD. (ENT 03/02, PSH)
							HISTORY H10952/00-- OPR-E350-RU; AN UNCHARTED SUBMERGED OBSTRUCTION WAS LOCATED BY SIDE SCAN SONAR SEARCH.

OBSTRUCTION	12208	E	067	50	37/01/03.22	076/02/46.21	DIVER LD OF 50 FEET IN LAT. 37-01-02,9N, LONG. 76-02-46.2W. DIVERS DESCRIBE A LARGE METAL BOX, 30 FEET LONG AND 6 FEET WIDE, OPEN ON TOP WITH 3 EVENLY SPACED COMPARTMENTS. THE NORTH SIDE OF THE BOX WAS BURIED IN SAND AND THE SOUTH SIDE STOOD 3 FEET OFF THE SEA FLOOR. THE HYDROGRAPHER RECOMMENDED CHARTING A 50 OBSTN AS SURVEYED. THE EVALUATOR DID NOT CONCUR. THIS FEATURE WAS FOUND TO BE IN ERROR. DURING OFFICE PROCESSING AN OBSTRUCTION WITH A LD OF 55 FEET (16.8 METERS) WAS LOCATED IN LAT. 37-01-03.22N, LONG. 76-02-45.21 AND IS SHOWN ON THE SMOOTH SHEET. THE EVALUATOR CONSIDERS THIS ITEM INSIGNIFICANT SINCE IT IS LOCATED IN DEPTHS OF 54-55 FEET. EVALUATOR RECOMMENDS NOT CHARTING. N/CS31 (OPERATIONS BRANCH, HYDROGRAPHIC SURVEYS DIVISON) DOES NOT CONCUR WITH EVALUATOR'S RECOMMENDATION. N/CS31 RECOMMENDS CHARTING THE OBSTRUCTION AS FOUND DURING OFFICE PROCESSING AND AS SHOWN ON THE SMOOTH SHEET. (ENT 11/7/00, SJV)
UNKNOWN	12208	D	0100	37	36/58/52.40	076/59/37.70	HISTORY H10952/00-- OPR-E350-RU; UNCHARTED SUBMERGED WRECK FOUND BY SIDE SCAN SONAR. DIVERS OBTAINED A LD OF 37 FEET IN LAT. 36-58-52.4N, LONG. 75-59-37.7W. DESRIBED AS A 30-35-METER WOODEN WRECK WITH THE FRAME AND TWO RAILS COVERED WITH SOFT CORALS. THESE FEATURES STAND 1-2 FEET ABOVE A SANDY BOTTOM. THE EVALUATOR RECOMMENDS CAHRTING A 37WK AS SURVEYED. (ENT 11/7/00, SJV)
OBSTRUCTION	12208	D	067	34	36/55/31.58	075/50/09.44	HISTORY H11027/02-- OPR-D324-WH; CONTACT IDENTIFIED DURING MAINSCHEME SIDE SCAN OPS AND DEVELOPED BY SWMB. LD OF 10.35 METERS (34 FEET) IN LAT. 36-55-31.58N, LONG. 75-50-09.44W. SURROUNDING DEPTHS OF APPROX. 11.3 METERS (37 FEET). EVALUATOR RECOMMENDS CHARTING A 34 OBSTN AS SURVEYED. (ENT 2/25/02, SJV)
KINGSTON CELONITE	12208	D	067		36/49/38.34	075/52/08.33	HISTORY FE00077/49--PBS-WD-4248; THE WRECK OF THE KINGSTON CELONITE WAS LOCATED IN LAT 36° - 49 .63, LONG 75° - 52 .16 (NAD 27) IN GENERAL DEPTHS OF 49-53 FEET MLW. THE WRECK WAS HUNG AT 45 FEET AND CLEARED AT 43 FEET. (ENT 03/02, PSH)
OBSTRUCTION	12208	D	067	60	36/51/49.96	075/47/00.51	HISTORY H10341/90--OPR-D111-WH; SIGNIFICANT CONTACT LOCATED IN LAT. 36-51-49.96N, LONG. 75-47-00.51W (NAD 83). CONTACT WAS APPROXIMATELY 40 - 50 METERS NORTH OF AWOIS ITEM 1608. FE355/90--OPR-D111-HE; OBSTRUCTION ORIGINATING FROM H10341/90 IN LAT. 36-51-49.96N, LONG. 75-47-00.51W (NAD 83) INVESTIGATED BY FIELD UNIT AND CONSIDERED INSIGNIFICANT. EVALUATOR RECOMMENDS DELETING FROM CHARTS. (ENT 03/02, PSH)
OBSTRUCTION	12208	D	067	41	36/56/27.47	075/55/29.86	HISTORY H10372/90-- OPR-D111-HE (FORMERLY FE-356SS); OBSTRUCTION ì LOCATED BY H-10343/90 (WHITING) NOT DISPROVED. IN LAT. ì 36-56-27.59N, LONG. 75-55-29.61W. ESTIMATED DEPTH OF 11.7 METERS. ì RECOMMEND CHARTING AND ADDITIONAL WORK AT AN OPPORTUNE TIME. ì (ENT 4/20/92, SJV) FE412SS/95-- OPR-E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN ì SONAR. ECHO SOUNDER LD OF 12.5 METERS (41 FEET) IN LAT. ì 36-56-27.466N, LONG. 75-55-29.856W. EVALUATOR RECOMMENDS DELETING ì OBSTR REP AND CHARTING A 41 OBSTR AS SURVEYED. (UP 2/15/96, SJV) H11027/01-- OPR-D304-WH; LOCATED DURING MAINSCHEME HYDROGRAPHY. CALCULATED HEIGHT OF OBSTRUCTION APPROX. 1.26 METERS (4.1 FEET) IN SURROUNDING DEPTHS OF 44 TO 45 FEET. THIS IS CONSISTENT WITH CHARTED 41-FOOT LD. DUE TO TIME CONSTRAINTS NO LD WAS DETERMINED. EVALUATOR RECOMMENDS RETAINING AS CHARTED. (UP 2/25/02, SJV)
OBSTRUCTION	12208	D	067		36/50/36.00	075/44/00.00	HISTORY CL1363/59--12/18/59, ACOE TO DIRECTOR, USC&GS DATED 12/18/59; REPORT AND ENCLOSURE TRANSMITTED CONCERNING THE CREATION OF A REEF IN LAT. 36-50.6N, LONG. 75-44.0W. NO PERMIT ISSUED SINCE SITE IS BEYOND THE TERRITORIAL JURISDICTION OF THE CORPS OF ENGINEERS. TIDEWATER ARTIFICIAL REEF DEVELOPMENT ASSOCIATION (TARDA), NORFOLK, VA PLANNEDTO BEGIN THE CREATION OF A REEF IN THE ATLANTIC OCEAN COVERING AN AREA ABOUT ONE MILE IN DIAMETER CENTERED IN LAT. 36-50.6N, LONG. 75-44.0W. TOWING PERMIT (NO. 59-1) GRANTED ON 11/23/59 TO TARDA AUTHORIZING THE ASSOCIATION TO TOW ABOUT 75 TONS OF SCRAP STEEL AND CONCRETE RUBBLE TO THE REEF SITE. NO PUBLIC NOTICE ISSUED. TOWING PERMIT STATED "TO TOW ABOUT 75 TONS OF SCRAP STEEL AND CONCRETE RUBBLE FROM PIER 17, AMPHIBIOUS BASE, LITTLE CREEK, NORFOLK, VA TO THE IMMEDIATE VICINITY OF LAT. 36-50.6N, LONG. 75-44.0W DURING THE PERIOD 11/25/59 TO 5/15/60,

							INCLUSIVE." CHARTED AS AN OBSTN FISH HAVEN. (ENT 03/02, PSH) H09959/81-- OPR-D103-PE; THE CHARTED FISH HAVEN WAS INVESTIGATED WITH 90 METER LINE SPACING. DEPTHS OBTAINED AGREED WITH THE DEPTHS OF THE SURROUNDING AREA (60-75 FEET). NO OBSTRUCTIONS EVIDENT ON ANY OF THE FATHOGRAMS. EVALUATOR RECOMMENDS RETAINING AS CHARTED. (UP 3/6/03, SJV) DESCRIPTION **** TELCON, S. VERRY (N/CS31) AND MIKE MEIER (VIRGINIA MARINE RESOURCES COMMISSION, ARTIFICIAL REEF PROGRAM) 3/6/03, 757-247-2263; SIDE SCAN SONAR SURVEYS NEGATIVE FOR OBSTRUCTIONS WITHIN FISH HAVEN BOUNDARIES. DESIRES REMOVAL OF FISH HAVEN FROM CHARTS. RENEWAL OF PERMIT NOT LIKELY DUE TO PROXIMITY TO ACTIVE SHIPPING LANES.
OBSTRUCTION	12208	E	067	0	37/06/00.00	076/00/30.00	HISTORY LNM48/96-- CHESAPEAKE BAY-NORTH CHANNEL ENTRANCE-HAZARD TO ì NAVIGATION; A YELLOW MOORING APPROX. 4 FEET IN DIAMETER IS ì REPORTED SUBMERGED 1-2 FEET BELOW THE SURFACE IN APPROX. POSITION ì LAT. 37-06-00N, LONG. 76-00-30W. NEAR THE HIGHRISE SECTION OF THE ì CHESAPEAKE BAY BRIDGE-TUNNEL. MARINERS ARE ADVISED TO TRANSIT THE ì AREA WITH EXTREME CAUTION. (ENT 4/25/97, SJV)
OBSTRUCTION	12208	D	067		36/54/04.00	075/45/30.00	HISTORY CL181/91--NOS; UNDER DATE OF JULY 30, 1971 , THE DISTRICT ENGINEER AUTHORIZED THE CONSTRUCTION OF TWO ARTIFICIAL FISHING REEFS IN THE ATLATIC OCEAN. THESE ARTIFICIAL REEFS HAVE BEEN ACTIVELY EXPANDED OVER THE PAST 16 YEARS (SEE CHART LETTERS: 855/70, 1220/71, 1843/71, AND 574/72). THE APPLICANT PROPOSES THAT TOWER REEF CONTINUE TO RECEIVE TIRE-IN-CONCRETE (T.I.C.) UNITS, SMALL STEEL NAVAL VESSELS (LANDING CRAFT, LNADING CRAFT PERSONNEL LIGHTER'S ETC.) AND/OR OTHER SUCH STRUCTURES, VESSELS AND MATERIALS AS MAY BE SPECIFICALLY APPROVED BY THE DISTRICT ENGINEER. IN ADDITION, THE APPLICANT REQUESTS THAT THE EXISTING RECTANGULAR SITE BE CHANGED TO CIRCULAR, WITH A RADIUS OF 2,000 FEET, CENTERED AT LATITUDE 36° 54' 04" NORTH LONGITUDE 75° 43' 30" WEST (NAD 27) WITH AN AUTHORIZED MINIMUM DEPTH CLEARANCE OF 30 FEET AT MEAN LOW WATER. THIS SITE WILL BE MARKED WITH A CENTER BUOY AS PER U.S. COAST GUARD REQUIREMENTS. (ENT 03/02, PSH)
OBSTRUCTION	12208	D	067	37	37/02/32.53	075/46/10.72	HISTORY H09871/76--OPR-515-RU/HE; HANG IN LAT 37°02.52'N, LONG 75°46.21'W (NAD 27), EFFECTIVE HANG DEPTH 39 FEET, EXTENDS 2 FEET OFF BOTTOM, FALLS IN 42-44 FOOT DEPTHS ON H-9919(1980-81). SOME BOTTOM SCOURING HAS TAKEN PLACE BETWEEN 1976 & 1981. RECOMMENDED CHARTING AS 37 OBSTR (DEPTH REP 1976) H09919/80--OPR-D103-MI/PE; AN OBSTRUCTION HUNG AT AN EFFECTIVE DEPTH OF 39 FEET IN LATITUDE 37°02'32", LONGITUDE 75°46'12" (NAD 27), AND NOT CLEARED IS DESCRIBED AS AN OLD STYLE ANCHOR FLUKE. THE PRESENT SURVEY DEPTHS ARE FROM 43 TO 44 FEET IN THIS AREA. CURRENTLY CHARTED AS 37 OBSTN. (ENT 03/02, PSH)
OBSTRUCTION	12208	D	067	37	37/02/05.53	075/47/31.72	HISTORY H09871/76--OPR-515-RU/HE; POSITION OF THIS HANG IN LAT 37°02.09'N, LONG 75°47.55'W (NAD 27), WITH AN ESTIMATED EFFECTIVE HANG DEPTH OF 42 FEET AND NOTED AS EXTENDING 31/2 FEET OFF THE BOTTOM, FALLS IN 41 FOOT DEPTHS ON H-9919(1980-81). RECOMMEND CHARTING AS 37 OBSTR (DEPTH REP 1981). H09919/80--OPR-D103-MI/PE; AN OBSTRUCTION HUNG AT AN EFFECTIVE DEPTH OF 42 FEET(ESTIMATED) IN LATITUDE 37°02'05", LONGITUDE 75°47'33" (NAD 27), AND NOT CLEARED IS DESCRIBED AS AN OLD STYLE ANCHOR FLUKE. THE PRESENT SURVEY DEPTHS ARE FROM 40 TO 42 FEET IN THIS AREA. CURRENTLY CHARTED AS 37 OBSTN. (ENT 03/02, PSH)
OBSTRUCTION	12208	D	067	36	37/02/45.53	075/47/24.72	HISTORY H09871/76--OPR-515-RU/HE; HANG IN LAT 37°02.75'N, LONG 75°47.44'W (NAD 27), ESTIMATED EFFECTIVE HANG DEPTH 37 FEET, EXTENDS 1 FOOT OFF THE BOTTOM, FALLS IN 37 FOOT DEPTHS ON H-9919(1980-81). RECOMMEND CHARTING AS 36 OBSTR (DEPTH REP 1981). H09919/80--OPR-D103-MI/PE; AN OBSTRUCTION HUNG AT AN EFFECTIVE DEPTH OF 37 FEET(ESTIMATED) IN LATITUDE 37°02'45", LONGITUDE 75°47'26" (NAD 27), AND NOT CLEARED IS DESCRIBED AS AN OLD STYLE ANCHOR FLUKE. THE PRESENT SURVEY DEPTHS ARE FROM 37 TO 38 FEET IN THIS AREA. CURRENTLY CHARTED AS 36 OBSTN. (ENT 03/02, PSH)
							HISTORY H09871/76--OPR-515-RU/HE; HANG IN LAT 37°03.11'N, LONG 75°47.20'W (NAD 27), ESTIMATED EFFECTIVE HANG DEPTH 35 FEET, EXTENDS 3 FEET OFF BOTTOM, FALLS IN H-9919(1980-81) DEPTHS OF 36-37 FEET. RECOMMEND CHARTING AS 33 OBSTR (DEPTH REP 1981). H09919/80--OPR-D103-MI/PE; AN OBSTRUCTION HUNG AT AN

OBSTRUCTION	12208	D	067	33	37/03/07.52	075/47/10.72	EFFECTIVE DEPTH OF 35 FEET(ESTIMATED) IN LATITUDE 37°03'07", LONGITUDE 75°47'12" (NAD 27), AND NOT CLEARED IS DESCRIBED AS AN OLD STYLE ANCHOR FLUKE. THE PRESENT SURVEY DEPTHS ARE FROM 36 TO 37 FEET IN THIS AREA. CURRENTLY CHARTED AS 33 OBSTN. (ENT 03/02, PSH)
OBSTRUCTION	12208	D	370	20	36/54/22.53	075/57/45.74	HISTORY NM44/20-- CHESAPEAKE BAY APPROACHES-WRECK-LIGHT BUOY ESTABLISHED- ON OCTOBER 15, 1920 A LIGHT BUOY, HORIZONTALLY STRIPED, WAS ESTABLISHED ABOUT 2.5 MILES, 129 DEGS. FROM CAPE HENRY LIGHTHOUSE IN 4 FATHOMS OF WATER TO MARK THE WRECK OF THE SUNKEN SCHOONER "T.F. POLLARD. THE LIGHT BUOY WHICH IS CONICAL WITH A SKELETON SUPERSTRUCTURE SHOWING AN OCCULTING RED LIGHT EVERY 10 SEC - LIGHT 5 SEC, ECLIPSE 5 SEC - OF 5 CANDLE POWER 11 FEET ABOVE THE WATER, IS MOORED ON THE BEARINGS: VIRGINIA BEACH, TANK 196 DEG. 30 MIN.; CAPE HENRY LIGHTHOUSE 309 DEG. THE WRECK LIES 100 YARDS, 241 DEG. FROM THE LIGHT BUOY WITH 5 FEET OF WATER OVER IT AT LOW TIDE. (REF. NM43 (1370) BUREAU OF LIGHTHOUSES, 1920). NM1/21-- CHESAPEAKE BAY APPROACHES-WRECK NO LONGER A MENACE-LIGHT BUOY WITHDRAWN- ON DECEMBER 11, 1920, THE LIGHT BUOY MOORED TO MARK THE WRECK OF THE SCHOONER "THOMAS F. POLLARD" WAS WITHDRAWN, THE WRECK BEING NO LONGER A MENACE TO NAVIGATION. CL347/58-- FROM CHIEF, USC&GS CHART DIVISION TO "ALL CARTOGRAPHERS"; SUBJECT: NONDANGEROUS WRECKS, CHARTING OF; DATED MAY,8 1958; CHART ALL KNOWN WRECKS (DANGEROUS AS WELL AS THOSE CONSIDERED NON-DANGEROUS) OUT TO THE 300-FATHOM CURVE. (NOTE: THESE WRECKS ORIGINATED WITH THE NAVY WRECK LIST (24) BELOW). H09293WD/ 72-- OPR-467-RH-72; ITEM #16. ("T.F. POLLARD") WIRE DRAG INVESTIGATION NEGATIVE FOR WRECK. HOWEVER, A "METAL CLUMP" WAS HUNG IN LAT. 36-54-22N, LONG. 75-57-47W. COVERED WITH TRAWLER NETS (NOTE ON "A&D PLOT). THE EVALUATOR RECOMMENDS DELETING THE NON-DANGEROUS WRECK ("TF POLLARD") AND CHARTING A DANGEROUS OBSTRUCTION, CLEARED TO 24 FEET AS SURVEYED. CL24/84-- "MINUTE MEMO" DATED JANUARY 10, 1984; FROM DAVE PETERSON (N/CG24X5) TO JEANETTE O'CONNOR ("AREA 2" MCD) RE. FINDINGS OF WIRE DRAG SURVEY H9293; RECOMMENDS CHARTING "ITEM 16", ABOVE AS CLEARED TO 20 FEET VICE 24 FEET. OF THE TWO CLEARANCE STRIPS, 20 FEET WAS THE LEAST EFFECTIVE CLEARED DEPTH. (SEE AWOIS NO. 804) DESCRIPTION 24 NO.1324; SCHOONER; LAT. 36-54-00N, LONG. 55-58-00W. SUNK 1920; POSITION ACCURACY WITHIN 1 MILE. (NOTE: SPELLING IS "TF POLLAND" IN THIS SOURCE). (UP 2/19/04, SJV)
OBSTRUCTION	12208	D	067	58	36/52/03.15	075/44/53.45	HISTORY FE355/90--OPR-D111-HE; WHILE INVESTIGATING AWOIS ITEM 7529, AN OBSTRUCTION WAS LOCATED AND INVESTIGATED BY DIVERS IN LAT. 36-52-03.15N, LONG.75-44-53.45W (NAD 83), WITH AN ESTIMATED DEPTH OF 17.7 METERS (58 FEET). EVALUATOR RECOMMENDS CHARTING A DANGEROUS SUBMERGED OBSTRUCTION AS SURVEYED WITH AN ESTIMATED LD OF 17.7 METERS (58 FEET) (17.7 OBSTN (A)) IF CHART SCALE ALLOWS. PRESENTLY CHARTED AS A 58 OBSTN (REP 1990). (ENT 03/02, PSH)
OBSTRUCTION	12208	E	0067	0	36/52/45.80	075/53/16.81	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN APPROX. LAT. 36-52-45.80N, LONG. 75-53-16.81W. ESTIMATED DEPTH ì OF 14.6 METERS (48 FEET). EVALUATOR RECOMMENDS CHARTING AN OBSTR ì (A) COVERED 48 FEET AS SURVEYED. ADDITIONAL WORK RECOMMENDED. ì (ENT 12/23/94, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
OBSTRUCTION	12208	D	0067	0	36/54/10.52	075/53/50.11	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-54-10.52N, LONG. 75-53-50.11W WITH AN ESTIMATED DEPTH ì OF 16.7 METERS (55 FEET). LOCATED WHILE SEARCHING FOR AWOIS ITEM ì NO. 7522. ADDITIONAL WORK REQUIRED. FE353SS/90-- OPR-D111-HE; ITEM NO. 3. INVESTIGATION NOT ì ADEQUATE TO DETERMINE SIGNIFICANCE. EVALUATOR RECOMMENDS CHARTING ì AN OBSTRUCTION WITH AN ESTIMATED DEPTH OF 16.7 METERS (55 FEET) ì AS SURVEYED ON H-10340/90 (ABOVE). ADDITIONAL WORK RECOMMENDED. ì (ENT 7/14/92, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
							HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-54-58.05N, LONG. 75-53-14.89W. LOCATED WHILE SEARCHING ì FOR AWOIS ITEM NO. 7522.

OBSTRUCTION	12208	D	067	0	36/54/58.12	075/53/15.56	ADDITIONAL WORK RECOMMENDED. FE353SS/90-- OPR-D111-HE; ITEM NO. 14. OBSTRUCTION LOCATED BY ì SIDE SCAN SONAR IN LAT. 36-54-58.12N, LONG. 75-53-15.56W. ì EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH AN ECHO SOUNDER ì DEPTH OF 9.2 METERS (30 FEET) AS SURVEYED. ADDITIONAL WORK ì RECOMMENDED AT AN OPPORTUNE TIME. (ENT 7/14/92, SJV) FE412SS/95-- OPR-E696-95; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
OBSTRUCTION	12208	D	067	0	36/52/34.06	075/53/22.01	HISTORY H10340/90-- OPR-D111-WH; DANGEROUS SUBMERGED OBSTRUCTION ì LOCATED BY SIDE SCAN SONAR IN LAT. 36-52-34.06N, LONG. ì 75-53-22.01W. ESTIMATED DEPTH OF 46 FEET (14.2 METERS). ì ADDITIONAL WORK RECOMMENDED. FE353SS/90-- OPR-D111-HE; ITEM NO. 5. DEEPER ESTIMATED DEPTH ì OBTAINED ON WHITING CONTACT, ABOVE. NO DIVE OPS CONDUCTED. ITEM ì WAS CARRIED FORWARD. EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION ì WITH AN ESTIMATED DEPTH OF 14.2 METERS AS SHOWN ON H-10340/90. ì ADDITIONAL WORK RECOMMENDED. (ENT 7/15/92, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
OBSTRUCTION	12208	D	0067	55	36/54/52.60	075/55/32.61	HISTORY FE353SS/90-- OPR-D111-HE; ITEM NO. 19. OBSTRUCTION LOCATED BY ì SIDE SCAN SONAR IN LAT. 36-54-51.46N, LONG. 75-55-31.86W. ASSUMED ì TO BE A BUOY ANCHOR SINCE SIDE SCAN SONAR IMAGE IS SIMILAR TO ì THAT OBTAINED ON ITEM NO. 17 (BUOY ANCHOR SALVAGED BY THE COAST ì GUARD). EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH AN ECHO ì SOUNDER DEPTH OF 16.9 METERS (55 FEET) AS SURVEYED. (ENT 7/ 15/92, ì SJV) FE412SS/95-- OPR-E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN ì SONAR. ECHO SOUNDER LD OF 16.7 METERS (55 FEET) IN LAT. ì 36-54-52.595N, LONG. 75-55-32.613W. EVALUATOR RECOMMENDS DELETING ì CHARTED OBSTR REP 1990 AND CHARTING A 55 OBSTR AS SURVEYED. (UP ì 2/15/96, SJV)
OBSTRUCTION	12208	D	0067	52	36/54/45.10	075/55/32.47	HISTORY FE353SS/90-- OPR-D111-WH; ITEM NO. 20. OBSTRUCTION LOCATED BY ì SIDE SCAN SONAR IN LAT. 36-54-43.98N, LONG. 75-55-31.28W. ì EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION WITH AN ECHO SOUNDER ì DEPTH OF 16.8 METERS (55 FEET) AS SURVEYED. (ENT 7/17/92, SJV) FE412SS/95-- OPR-E696-HE; OBSTRUCTION LOCATED BY SIDE SCAN ì SONAR. ECHO SOUNDER LD OF 16.0 METERS (52 FEET) IN LAT. ì 36-54-45.097N, LONG. 75-55-32.467W. EVALUATOR RECOMMENDS DELETING ì OBSTR REP 1990 AND CHARTING 52 OBSTR AS SURVEYED. (UP 2/15/96, ì SJV)
OBSTRUCTION	12208	D	067	0	36/55/26.21	075/55/23.44	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-55-26.21N, LONG. 75-55-23.44W WITH AN ESTIMATED DEPTH ì OF 19.7 METERS. ADDITIONAL WORK RECOMMENDED. FE353/90-- OPR-D111-HE; ITEM NO. 21. NOT INVESTIGATED BECAUSE ì ITEM WAS INCORRECTLY SCALED ONTO THE FIELD SHEET. EVALUATOR ì RECOMMENDS CHARTING ACCORDING TO WHITINGS' FINDINGS, ABOVE. ì ADDITIONAL WORK RECOMMENDED. (ENT 7/15/92, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)
UNKNOWN	12208	D	100	40	37/00/47.40	076/03/09.20	HISTORY LNM36/70-- VIRGINIA-CHESAPEAKE BAY-CHESAPEAKE CHANNEL-BUOY RELOCATED TO MARK WRECK; CHESAPEAKE CHANNEL LIGHT BUOY 7 (LLNO 2681) HAS BEEN TEMPORARILY CHANGED TO CHESAPEAKE CHANNEL LIGHT BUOY WR7 (LLNO 2681) SHOWING A QUICK FLASHING GREEN LIGHT AND RELOCATED TO LATITUDE 37-01-00N, LONG. 76-03-17W TO MARK THE 100-FOOT DERELICT VESSEL REPORTED SUNK IN POSITION LATITUDE 37-01-00N, LONGITUDE 76-03-18W WITH APPROXIMATELY 32 FEET OF WATER OVER THE WRECK AT MEAN LOW WATER. LNM40/70-- VIRGINIA-CHESAPEAKE BAY-CHESAPEAKE CHANNEL-WRECK INFORMATION-BUOY RELOCATED; THE 100-FOOT DERELICT VESSEL PREVIOUSLY REPORTED SUNK AT POSITION LATITUDE 37-01-00N, LONGITUDE 76-03-18W HAS BEEN DETERMINED TO BE AT POSITION LATITUDE 37-00-46N, LONGITUDE 76-03-12W. CHESAPEAKE CHANNEL LIGHT BUOY 7 (LLNO 2681) PREVIOUSLY TEMPORARILY CHANGED TO CHESAPEAKE CHANNEL LIGHT BUOY WR7 (LLNR 2681) AND RELOCATED TO MARK THE WRECK HAS BEEN RELOCATED AT POSITION LATITUDE 37-00-48N, LONGITUDE 76-03-08W. H09255WD/71-72-- OPR-467-R/H-71; ITEM NO. 55; CHARTED DANGEROUS SUNKEN WRECK (31 FEET REP) SOURCE IS LNM36/70, ABOVE. EVALUATOR RECOMMENDS REMOVING WRECK FROM CHART. CITES LNM6/73 (SEE BELOW) AS SOURCE FOR REMOVAL. DATA FOR THIS ITEM NOT PROCESSED. LNM6/73-- VIRGINIA-CHESAPEAKE BAY-

							CHESAPEAKE BAY CHANNEL-AID CHANGED; A. CHESAPEAKE CHANNEL LIGHTED BUOY WR7 (LLNO 2681) HAS BEEN RENAMED CHESAPEAKE CHANNEL LIGHTED BUOY 7 (LLNO 2681) . CHANGED TO SHOW A FLASHING WHITE LIGHT EVERY 4 SECONDS WITH A NOMINAL RANGE OF 6 NM AND RELOCATED IN 51 FEET OF WATER AT LATITUDE 37-01-12.6N, LONGITUDE 76-03-07.2W. THE WRECK CHARTED AT 37-00-48 (46)N, 76-03-10.5(12)W HAS BEEN REMOVED. H10952/00-- OPR-E350-RU; UNCHARTED SUBMERGED WRECK LOCATED BY SIDE SCAN SONAR. TWO DIVES CONDUCTED. WRECKAGE CONSISTED OF TWO LARGE METAL BOXES, WOODEN REMAINS OF A SHIP, AND A METAL 3-4 INCH DIA. POLE PROTRUDING OUT OF A SAND BOTTOM. LD OBTAINED ON POLE OF 40 FEET IN LAT. 37-00-47.4N, LONG. 76-03-09.2W. EVALUATOR RECOMMENDS CHARTING A 40 WK AS SURVEYED. SEE AWOIS NO. 909. (ENT 11/7/00, SJV)
OBSTRUCTION	12208	D	0067	42	36/56/01.59	075/54/58.69	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-55-58.55N, LONG. 75-54-56.84W WITH AN ESTIMATED DEPTH ì OF 14.5 METERS. ADDITIONAL WORK RECOMMENDED. FE353SS/90-- OPR-D111-HE; ITEM NO. 28. OBSTRUCTION LOCATED IN ì LAT. 36-55-59.08N, LONG. 75-54-55.19W. DIVERS DESCRIBE AN OLD ì BUOY RISING 1.3 METERS OFF THE BOTTOM. EVALUATOR RECOMMENDS ì CHARTING AN OBSTRUCTION WITH AN ECHO SOUNDER DEPTH OF 12.5 METERS ì (41.0 FEET) AS SURVEYED. FE412SS/95-- OPR-E696-HE; LOCATED BY SIDE SCAN SONAR. EVALUATOR ì RECOMMENDS DELETING OBSTR REP 1990 AND CHARTING A 42 OBSTR (12.9 ì METERS) AS SURVEYED IN LAT. 36-56-01.593N, LONG. 75-54-58.690W. ì (UP 2/15/96, SJV) H11027/01-- OPR-D324-WH; LOCATED DURING MAINSCHEME SIDE SCAN OPS. CALCULATED HEIGHT APPROX. 0.94 METERS (3.1 FEET) IN SURROUNDING DEPTHS OF 44 TO 46 FEET. THIS IS CONSISTENT WITH CHARTED 42-FOOT LD. DUE TO TIME CONSTRAINTS NO LD WAS DETERMINED. EVALUATOR RECOMMENDS RETAINING AS CHARTED. (UP 2/25/02, SJV)
OBSTRUCTION	12208	D			36/56/59.64	075/53/16.08	HISTORY CL1178/99-- FROM MASTER OF VESSEL "FORTHBANK" (ANDREW WEIR SHIPPING LIMITED, TEL. (44) (0) 171 956 1338) TO HYDROGRAPHIC OFFICE DATED JULY 19, 1999; PILOTS ADVISE THERE IS SHOALING IN THE NORTH EXIT CHANNEL BETWEEN BUOYS "NCD" AND "NCC" TO APPROX. 26' DATUM (SIC). THIS IS BETWEEN POSITIONS APPROX. LAT. 36-56.70N, LONG. 75-54.1W AND LAT. 36-57.2N, LONG. 75-52.25W (LISTED POSITION IS CENTERED APPROX. BETWEEN THESE TWO END POINTS). AFFECTED VESSELS ARE ADVISED TO USE THE SOUTH CHANNEL TO Q FL BUOYS AT APPROX. 36-51.8N, LONG. 75-52.5W THEN TURN TO THE NORTH ACROSS THE CHANNEL. SHOALING TO 26 FEET WAS ALSO REPORTED BY CAPT. MIKE MARA, "SS ENERGY ENTERPRISE", IN JULY OF 1999 IN THE OUTBOUND NE TRAFFIC LANE AND RECOMMENDS SURVEYING BOTH THE INBOUND AND OUTBOUND NE TRAFFIC LANES. LNM33/99-- ADD "SHOALING TO 26 FEET REP 1999" BETWEEN LAT. 36-56-42N, LONG. 75-54-06W & LAT. 36-57-12N, LONG. 75-52-15W. H11016/00-- OPR-D324-RU; 100% MULTIBEAM SONAR COVERAGE NEGATIVE FOR REPORTED 26-FOOT SHOALING. EVALUATOR RECOMMENDS DELETING "SHOALING TO 26 FEET REPORTED 1999" AND CHART AREA AS SURVEYED. DEPTHS FROM 33 TO 36 FEET. (UP 9/25/01, SJV)
OBSTRUCTION	12208	E	0067	0	36/54/57.39	075/55/46.96	HISTORY H10340/90-- OPR-D111-WH; SIDE SCAN SONAR CONTACT IDENTIFIED ì DURING OFFICE PROCESSING IN LAT. 36-54-57.39N, LONG. ì 75-55-46.96W. ESTIMATED DEPTH OF 14.4 METERS (47.0 FEET). FE353SS/90-- OPR-D111-HE; DISPROVED. EVALUATOR RECOMMENDS NOT ì CHARTING. (UP 1/17/95, SJV)
OBSTRUCTION	12208	E	067	0	36/56/12.00	075/55/10.50	HISTORY H10340/90-- OPR-D111-HE; SIDE SCAN SONAR CONTACT LOCATED IN ì LAT. 36-56-12N, LONG. 75-55-10.5W. CHARTED AS A 37-FOOT ì OBSTRUCTION REPORTED 1990. (ENT 1/18/95, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATOR RECOMMENDS DELETING. (UP 2/15/96, SJV)ì
OBSTRUCTION	12208	E	067	0	36/54/29.32	075/55/34.22	HISTORY H10340/90-- OPR-D111-WH; SIDE SCAN SONAR CONTACT IDENTIFIED ì DURING OFFICE PROCESSING IN LAT. 36-54-29.32N, LONG. ì 75-55-34.22W. ESTIMATED DEPTH OF 15.4 METERS (50.5 FEET). NOT ì SUBSEQUENTLY INVESTIGATED BY HECK. (ENT 3/17/95, SJV) FE412SS/95-- OPR-E696-HE; 400% SIDE SCAN SONAR SEARCH NEGATIVE. ì EVALUATROR RECOMMENDS DELETING. (UP 2/15/96, SJV)
							HISTORY LNM27/96-- ADD 10-FOOT SHOAL REPORTED 1996 IN LAT. 37-03-31.2N, ì LONG. 75-57-27.0W. DESCRIPTION **** LTR., DANGER TO

SNDNG	12208	E	067	10	37/03/31.20	075/57/27.00	NAVIGATION REPORT; CHIEF, AHB TO CGD5 AND DMAHTC, DATED JUNE 13, 1996. 10-FOOT SOUNDING LOCATED BY NOAAS FERREL DURING OCEO OPS VICINITY NAUTILUS SHOAL IN LAT. 37-03-31.2N, LONG. 75-57-27.0W (UNVERIFIED REAL TIDES). CHARTED DEPTHS OF APPROX. 28 FEET. RECOMMENDS CHARTING A 10-FOOT DEPTH WITH DANGER CURVE AND NOTE "SHL REP 1996". (ENT 8/30/96, SJV)
UNKNOWN	12208	D	100	0	36/49/12.00	075/46/06.00	HISTORY LNM41/96-- 47-FOOT P/C SINK IN VICINITY OF THE "CB" BUOY IN ì APPROX. POSITION LAT. 36-49.2N, LONG. 75-46.1W. MARKED BY A ì LIGHTED WRECK BUOY SHOWING Q F WITH MARKINGS "W CB". MARINERS ARE ì ADVISED TO EXERCISE CAUTION WHEN NAVIGATING IN THE AREA. (ENT ì 4/25/97, SJV)
OBSTRUCTION	12208	D	370	37	36/54/46.53	075/57/41.74	HISTORY H09293/72WD-- OPR-467-RU/HE; TEMPORARY HANG IN LAT. 36-54-46N, LONG. 75-57-43W. EFFECTIVE CLEARED DEPTH OF 23 FEET. NOT INVESTIGATED. H09905/80-- OPR-D103-MI/PE; 24-FOOT DEPTH OBTAINED AT ABOVE LOCATION. 23-FOOT CLEARED DEPTH BROUGHT FORWARD TO PRESENT SURVEY. CL25/84-- MEMO DATED JANUARY 10 1984 FROM DAVE PETERSON (N/CG24X5) TO JEANETTE O'CONNOR (MARINE CHART DIVISION) RE. CHARTING OF ABOVE INFORMATION. RECOMMENDS CHARTING AN OBSTN, (23 REP 1972) AS FOUND ON H09293WD. (NOTE: REVISED TO A 37-FOOT CLEARED DEPTH IN 1990. SOURCE OF THIS REVISION NOT READILY ASCERTAINABLE). (ENT 2/25/04, SJV)
OBSTRUCTION	12208	D	0067	44	36/55/49.23	075/54/50.33	HISTORY H10340/90-- OPR-D111-WH; OBSTRUCTION LOCATED BY SIDE SCAN SONAR ì IN LAT. 36-55-49.64N, LONG. 75-54-50.73W WITH AN ESTIMATED DEPTH ì OF 14.4 METERS. ADDITIONAL WORK RECOMMENDED. FE353SS/90-- OPR-D111-HE; ITEM NO. 26. OBSTRUCTION LOCATED BY ì SIDE SCAN SONAR IN LAT. 36-55-49.12N, LONG. 75-54-50.55W. DIVERS ì DESCRIBE SUNKEN BUOY PARTIALLY BURIED. EVALUATOR RECOMMENDS ì CHARTING AN OBSTRUCTION WITH AN ECHO SOUNDER DEPTH OF 13.8 METERS ì (45 FEET) AS SURVEYED. (7/15/92, SJV) FE412SS/95-- OPR-E696-HE; LOCATED BY SIDE SCAN SONAR. ECHO ì SOUNDER LD OF 13.3 METERS (44 FEET) IN LAT. 36-55-49.234N, LONG. ì 75-54-50.327W. EVALUATOR RECOMMENDS CHARTING A 44 OBSTR AS ì SURVEYED. (UP 2/15/96, SJV) H11027/01-- OPR-D324-WH; LOCATED DURING MAINSCHEME HYDROGRAPHY. CALCULATED HEIGHT OF OBSTRUCTION APPROX. 0.79 METERS (2.6 FEET) IN SURROUNDING DEPTHS OF 47 FEET. THIS IS CONSISTENT WITH THE CHARTED 44-FOOT LD. DUE TO TIME CONSTRAINTS NO LD WAS DETERMINED. EVALUATOR RECOMMENDS RETAINIG AS CHARTED. (UP 2/25/02, SJV)

**NEW OPEN WATER PLACEMENT –
MID BAY, MARYLAND
AWOIS FILES**

Record #	Vessel Name	Chart #	Area	Cartocode	Depth	History
4457	UNKNOWN	12270	E	0100	36	HISTORY LNM34/79-- 24-FOOT SAILBOAT SUNK 116 DEGS. T, 1 NM FROM THOMAS ì SHOAL LIGHT IN 46 FEET. D71/87-- OPR-E609-RU/ HE-AUG/87; WK NOT LOCATED. RECOMMEND ì RETENTION AS CHARTED. (UP 6/18/89, LQ) FE305SS/87-- OPR-E609-RU/HE-87; ITEM FOUND AS DESCRIBED IN LAT. ì 38-53-40.73N, LONG. 76-25-04.50W. LD AT MLLW OF 36 FEET IN 39 ì FEET (PNEUMATIC DEPTH GAUGE). LD TAKEN ON REMAINS OF METAL MAST. ì SAIL STILL ATTACHED. NO IDENTIFYING NUMBERS ON EITHER HULL OR ì SAIL. LORAN-C RATES (9960 CHAIN): X=27578..6, Y=42645.6, ì Z= 58944.6. EVALUATOR RECOMMENDS CHARTING A DANGEROUS SUNKEN WRECK ì WITH A LD OF 36 FEET IN SURVEYED POSITION AND DELETING PRESENTLY ì CHARTED DANGEROUS SUNKEN WRECK. IN ADDITION, ONE OBSTRUCTION AND ì ONE OTHER WRECK WERE FOUND DURING INVESTIGATION OF THIS AWOIS NO. ì THE OBSTRUCTION IS A 30-FOOT LONG OAK TREE TRUNK LOCATED IN LAT. ì 38-53-25.97N, LONG. 76-25-07.12W, EXTENDING APPROX. 3 FEET OFF ì THE BOTTOM (NO LD TAKEN). NOT PRESENTLY CHARTED. EVALUATOR ì RECOMMENDS NO CHARTING ACTION BE TAKEN. SEE AWOIS NO. 7440 FOR ì DISCUSSION OF OTHER WRECK. (UP 5/24/89, SJV) H10691/96-- OPR-E346-AHP; LOCATED BY SIDE SCAN SONAR. NO DIVE ì OPS DUE VIS AND SAFTY CONCERNS. EVALUATOR RECOMMENDS DELETING ì CHARTED 36 FEET 1987 AND CHARTING 40-FOOT WRECK AS SURVEYED. (UP ì 3/31/98, SJV) DESCRIPTION **** TELCON RICK WHITFIELD (N/CS33) AND S. VERRY (N/CS31) 3/31/98; RETAIN LD OF 36 FEET SINCE ITEM NOT DOVE ON. PRIOR DEPTH IS DIVER LD ON MAST. CHART A 36 WK AS SURVEYED. DELETE 36FT 1987.
7438	UNKNOWN	12270	E	0100	59	HISTORY FE305SS/87-- OPR-E609-RU/HE-87; UNCHARTED WRECKAGE OF LARGE ì WOODEN VESSEL LOCATED WHILE SEARCHING FOR AWOIS ITEM 4458 IN LAT. ì 38-53-54.00N, LONG. 76-24-05.11W. LD (PNEUMATIC DEPTH GAUGE) OF ì 59 FEET MLLW TAKEN ON ENCRUSTED DECK MACHINERY ON BROKEN OFF BOW ì (EXTENDS 5 FEET OFF BOTTOM). CLEARED BY 61 FEET IN ONE DIRECTION ì ONLY BY H-8253WD/60. EVALUATOR CONSIDERS PRESENT SURVEY ADEQUATE ì TO SUPERCEDE PRIOR WIRE DRAG AT POSITION OF WRECKAGE AND ì RECOMMENDS CHARTING A 59-FOOT DEPTH WITH DANGER CURVE AND LABEL ì "WRECKAGE" AS SURVEYED. NO ADDITIONAL FIELD WORK RECOMMENDED. ì LORAN-C RATES (9960 CHAIN); W=16110.6, X= 27574.8, Y=42649, ì Z=58950.1 (ENT 5/23/89, SJV) H10691/98-- OPR-E346-AHP; LOCATED BY SIDE SCAN SONAR SEARCH. ì ECHO SOUNDER DEPTH IS 3 FEET DEEPER THAN PRIOR SURVEY DEPTH. ì EVALUATOR RECOMMENDS RETAINING 59-FOOT WRECK IN PRESENT SURVEY ì POSITION OF LAT. 38-53-54.315N, LONG. 76-24-04.650W. (UP 3/31/98, ì SJV)
7439	OBSTRUCTION	12270	E	0067	0	HISTORY FE305SS/87--OPR-E609-RU/HE-87; WHILE SEARCHING FOR AWOIS ITEM 4457 AN UNCHARTED OBSTRUCTION WAS LOCATED IN LAT 38-53-25.97N, LONG 76-25-07.12W. IDENTIFIED AS A LARGE OAK TREE TRUNK, APPROX 30 FEET LONG EXTENDING APPROX 3 FEET OFF BOTTOM. NO LD OBTAINED. EVALUATOR RECOMMENDS NO CHARTING ACTION BE TAKEN AND NO ADDITIONAL FIELD WORK BE ACCOMPLISHED. LORAN-C RATES, (9960 CHAIN) W=16112.9, X=27578.1, Y=42642.6, Z=58943.3. (ENT 5/ 24/89 SJV)
						HISTORY LNM31/84-- DELAWARE BAY - MAIN CHANNEL - SUNKEN BARGE; A ì 300-FOOT BARGE IS SUNK IN APPROX. POSITION LAT. 38-55.4N, LONG. ì 75-06.15W, 100 FEET NW OF DELAWARE BAY MAIN CHANNEL LIGHT 9 (LLNR ì 2099). WRECK LIES PARALLEL TO THE WESTERN EDGE OF SHIPPING ì CHANNEL MARKED BY 3-FOOT SQUARE ORANGE MARKERS ATTACHED TO THE ì CORNERS OF THE BARGE. MOTOR VESSEL "DEL BAY" ON SCENE FOR DIVE ì OPS. AND POLLUTION MONITORING. BUOY

8401	UNKNOWN	12214	D	0100	37	TEMPORARILY ESTABLISHED IN ì APPROX. POSITION LAT. 38-55-24.2N, LONG. 75-05-58.7W IN 41 FEET. ì BLACK WITH GREEN REFLECTIVE MATERIAL, Q F G, 4NM. MAMED DELAWARE ì BAY MAIN CHANNEL WRECK LIGHTED BUOY "WR 11" (LLNR 2100.50). NOTE: IN 1992 LIGHT LIST, PAGE 16, BUOY IS GREEN LIGHTED WRECK ì BUOY "WR 9". (ENT 2/17/93, SJV) H10234/94-- OPR-D368-WH; ADDITIONAL WORK. CHARTED WRECK LOCATED ì IN LAT. 38-55-24.42N, LONG. 75-06-00.73W. DIVER LD 11.5 METERS ì (37 FEET). EXTENDS 6 FEET OFF THE BOTTOM. LORAN-C RATES (9960 ì CHAIN): W=15827.1, X=27175.1, Y=42721.7, Z=59262.8. VISIBILITY ì WAS 1-2 FEET. EVALUATOR RECOMMENDS CHARTING A 37 WK AS SURVEYED. ì (UP 8/28/95, SJV) H10926/99-00-- OPR-D392-WH; 200% SIDE SCAN SONAR SEARCH OBTAINED 27 CONTACTS (ALSO 12 USACE CONTACTS). SWMB LD OF 37 FEET (12.9 METERS) IN LAT. 38-55-24.46N, LONG. 75-06-00.77W. EVALUATOR RECOMMENDS DELETING CHARTED 37WKS AND CHARTING 37OBSTNS AS SURVEYED. (UP 4/15/02, SJV) DESCRIPTION **** COE SIDE SCAN SONAR SURVEYS CONDUCTED IN 1988, 1989, AND 1990 LOCATED SCATTERED DEBRIS.
9572	OBSTRUCTION	12214	D	0067	39	HISTORY H10234/94-- OPR-D368-WH; 2 SIDE SCAN SONAR CONTACTS LOCATED ì WITHIN SEARCH RADIUS FOR AWOIS ITEM NO. 8401 (SUNKEN BARGE). ì DIVERS DESCRIBE 2 OBSTRUCTIONS APPROX. 87 METERS APART BEARING ì 294 - 114 DEG. T. BOTH WERE COVERED WITH MARINE GROWTH AND NO ì RECOGNIZABLE SHAPE COULD BE MADE OUT FOR EITHER OBJECT. ì 12.1-METER (39 FEET) PNEUMO LD ON NORTHERN-MOST ITEM IN LAT. ì 38-55-08.05N, LONG. 75-06-03.07W. 12.3-METER (40 FEET) PNEUMO LD ì ON SOUTHERN-MOST ITEM IN LAT. 38-55-05.46N, LONG.75-06-01.66W. ì EVALUATOR RECOMMENDS CHARTING BOTH OBSTRUCTIONS IF CHART SCALE ì PERMITS. OTHERWISE CHART THE OBSTRUCTION WITH THE SHOALEST LD, ì IE. THE NORTHERN-MOST ITEM. VISIBILITY 2-3 FEET. LORAN-C RATES ì (9960 CHAIN): W=15827.0, X=27174.6, Y=42718.4, Z= 59251.4. (UP ì 8/28/95, SJV) H10917/00-- OPR-D392-WH; 200% SIDE SCAN SONAR NEGATIVE. EVALUATOR RECOMMENDS DELETING. (UP 9/12/01)
9573	OBSTRUCTION	12214	D	0067	12.8	HISTORY H10234/94-- OPR-D368-WH; SIDE SCAN SONAR CONTACT. DIVERS ì DESCRIBE AN ANCHOR BLOCK, 5 X 5 FEET STANDING 2 FEET OFF THE ì BOTTOM. PNEUMO LD OF 12.8 METERS IN LAT. 38-55-26.920, LONG. ì 75-05-58.580W. EVALUATOR RECOMMENDS NOT CHARTING DUE TO CLOSE ì PROXIMITY OF AWOIS ITEM 9574 WITH A LD OF 11.3 METERS (37 FEET). ì (UP 8/28/95, SJV) H10926/99-00-- OPR-D392-WH; 200% SIDE SCAN SONAR SEARCH REVEALED 24 CONTACTS. SEE AWOIS NO. 8401. EVALUATOR RECOMMENDS NO CHANGE IN CHARTING. (UP 4/15/02, SJV)
9574	OBSTRUCTION	12214	D	067	35	HISTORY H10234/94-- OPR-D368-WH; SIDE SCAN SONAR CONTACT. DIVERS ì DESCRIBE A 4-FOOT DIA. BUOY STANDING UPRIGHT APPROX. 10 FEET OFF ì THE BOTTOM. PNEUMO LD OF 11.3 METERS (37 FEET) IN LAT. ì 38-55-33.56N, LONG. 75-06-06.43W. EVALUATOR RECOMMENDS CHARTING ì AS A DANGEROUS SUBM OBSTRUCTION, 37 FT, AS SURVEYED. VISIBILITY 4 ì FEET. (ENT 8/28/95, SJV) H10926/99-00-- OPR-D392-WH; SIDE SCAN SONAR LOCATED AN OBSTRUCTION IN LAT. 38-55-31.92N, LONG. 75/06/05.55W. SWMB LD OF 37 FEET (12.6 METERS). EVALUATOR RECOMMENDS DELETING CHARTED 37-FOOT OBSTN AND CHARTING A 35 OBSTN AS SURVEYED. (UP 4/15/02, SJV)
50358	UNKNOWN	18640	M	0999	0	50358 HISTORY NM DATED 9/19/52 DESCRIPTION 24 NO.1157; BARGE; SUNK 9/00/52 BY MARINE CASUALTY; POSITION ACCURACY WITHIN 1 MILE SURVEY REQUIREMENTS NOT DETERMINED
						H09297/72WD-- OPR-480-R/H; WRECK OF THE F/V ELEANOR WARREN CHARTED IN LAT. 38-54.33N, LONG. 74-46.50 LOCATED IN LAT. 38-54-32.0N, LONG. 74-45.28W. SUNK BOTTOM UP AND COVERED BY 30 FEET. HUNG AT 38 FEET AND CLEARED TO 28 FEET. FATHOMETER DEPTH OF 29 FEET. CL905/72-- COMMANDING OFFICER, RUDE/HECK TO DIRECTOR, AMC;

10400	ELEANOR WARREN	12214	C	100	34	WRECK OF THE F/V ELEANOR WARREN (30 FT REP) CHARTED IN 38-54.53N, LONG. 74-46.50W HAS BEEN LOCATED AND CLEARED BY WIRE DRAG. THE WRECKAGE (IDENTIFIED BY DIVERS) IS LOCATED AT 38-54-32N, LONG. 74-45-28W WITH A LEAST DEPTH OF 30 FEET (PREDICTED TIDES). THE WRECK HAS BEEN CLEARED TO A DEPTH OF 28 FEET MLW. LNM33/72-- DELAWARE BAY APPROACH-WRECK INFORMATION; AN INVESTIGATION BY THE NATIONAL OCEAN SERVICE REVEALED THE FOLLOWING: 2. THE WRECK OF THE F/V ELEANOR WARREN CHARTED IN LAT. 38-54.53N, LONG. 74-46.50W HAS BEEN LOCATED IN LAT. 38-54-32.0N, LONG. 74-45-28.0W, CLEARED TO A DEPTH OF 28 FEET AT MLW. (ENT 6/30/99, SJV) H10935/99-- OPR-D392-WH; 200% SIDE SCAN SONAR IMAGERY REVEALED WRECKAGE. ECHO SOUNDER LD OF 36.9 FEET (11.2 METERS) IN LAT. 38-54-31..63N, LONG. 74-45-27.35W. EVALUATOR RECOMMENDS DELETING DANGEROUS WRECK CLEARED BY 28 FEET AND CHARTING A 37WK AS SURVEYED. (UP 5/16/00, SJV) H11104/02--OPR-C303-KR; WRECK FOUND IN LAT. 38/54/31.80N, LONG. 074/45/27.40W (NAD83) WITH A LEAST DEPTH OF 34 FEET MLLW. (UPDATED 12/02 BY MBH)
10401	BEAR RIDGE	12214	D	0100		
11066	DOROTHY B BARRETT	12214	C	102		
11074	UNKNOWN	12304	D	100	50	HISTORY H10917/00--OPR-D392-WH; SIDE SCAN SONAR CONTACT LOCATED DURING MAIN SCHEME HYDROGRAPHY. DIVER INVESTIGATION FOUND REMAINS OF A WRECK. LD OF 50.9 FEET (15.5 METERS) LOCATED IN LAT. 38-53-23.92N, LONG. 75-05-33.67W. EVALUATOR RECOMMENDS CHARTING A 50WK AS SURVEYED. (ENT 9/13/01, SJV)
11076	OBSTRUCTION	12304	D	067	64	HISTORY H10917/00-- OPR-D392-WH; SIDE SCAN SONAR CONTACT FOUND DURING MAIN SCHEME HYDROGRAPHY. ECHO SOUNDER DEVELOPMENT CONDUCTED TO VERIFY CONTACT'S HEIGHT AND POSITION. ECHO SOUNDER LD OF 64 FEET (19.5 METERS) LOCATED IN LAT. 38-53-25.68N, LONG. 75-05-20.49W. EVALUATOR RECOMMENDS CHARTING A 64OBSTN AS SURVEYED. (ENT 9/13/01, SJV)
11178	DUMP SITE	12214	C	067		
11180	UNKNOWN	12214	C	100		
11181	L.B.SHAW	12214	C	100	82	CL347/58--POLICY STATEMENT ON THE APPLICATION OF WRECKS ON CHARTS THAT CAUSED THE APPLICATION OF THE 1957 H.O. WRECK LIST TO THE CHARTS. THIS WRECK, FROM THE 1957 H.O. WRECK LIST FIRST APPEARS ON THE 7/15/58 EDITION OF THE CHART. THE NIMA DATABASE LISTS THIS WRECK AS THE L.B. SHAW, A BARGE SUNK ON 7/1/39 IN 38/54/54.00N, 074/23/00.00W (NAD27). F00093/50--FORMERLY FE NO. 2, 1951WD; CLEARED THIS CHARTED WRECK BY AN EFFECTIVE DEPTH OF 82 FEET MLW. NO HANGS WERE ENCOUNTERED DURING THE INVESTIGATION FOR THIS CHARTED WRECK. (ENTERED 12/01 BY MBH)
11182	UNKNOWN	12214	C	100	46	CL472/01--DTON FROM F00467, OPR-D392-WH; REPORTS FINDING A SUNKEN WRECK WITH A LEAST DEPTH OF 48' MLLW IN 38/55/39.94N, 074/45/33.62W (NAD83). (ENTERED 12/01 BY MBH) H11104/02--OPR-C303-KR; WRECK FOUND IN LAT. 38/55/38.95N, LONG. 074/45/33.43W (NAD83) WITH A LEAST DEPTH OF 46 FEET MLLW. (UPDATED 12/02 BY MBH)
11185	UNKNOWN	12214	C	100	27	LNM34/96--8TH CGD; ADD CAPE MAY ENTRANCE WRECK BUOY "WR" SHOWING QR IN LAT 34-54-12.00N, LONG 074-47-48W (NAD 83). LNM38/96--9/17/96, 8TH CGD; RELOCATES THE CAPE MAY ENTRANCE WRECK BUOY "WR" TO LAT 38-54-12.00N, LONG 074-48-48.00W (NAD 83). (ENTERED BY PSH, 12/01) H11104/02--OPR-C303-KR; WRECK FOUND IN LAT. 38/54/11.96N, LONG. 074/48/52.57W (NAD83) WITH A LEAST DEPTH OF 27 FEET MLLW. A SECOND WRECK ALSO FOUND IN CLOSE PROXIMITY AND LOGGED AS A NEW AWOIS ITEM. (UPDATED 12/02 BY MBH)

11956	OBSTRUCTION	12304	D	067	43.1	H11081/01-02--OPR-D307-KR-00; OBSTRUCTION FOUND IN LAT. 38/ 55/42.41N, LONG. 075/04/51.86W (NAD83) WITH A LEAST DEPTH OF 43.11 FEET MLLW. (ENTERED 9/03 BY MBH)
11958	OBSTRUCTION	12304	D	067	41.5	H11081/01-02--OPR-D307-KR-00; OBSTRUCTION FOUND IN LAT. 38/ 55/30.13N, LONG. 075/04/18.69W (NAD83) WITH A LEAST DEPTH OF 41.503 FEET MLLW. (ENTERED 9/03 BY MBH)
12021	UNKNOWN	12214	C	100	35	H11104/02--OPR-C303-KR; FOUND A SUNKEN WRECK IN LAT. 38/ 55/44.19N, LONG. 074/51/18.74W (NAD83) WITH A LEAST DEPTH OF 35 FT. MLLW. (ENTERED 12/03 BY MBH)
12023	OBSTRUCTION	12214	C	067	37	H11104/02--OPR-C303-KR; FOUND OBSTRUCTIONS IN LAT. 38/55/ 44.54N, LONG. 074/51/13.99W (NAD83) WITH A LEAST DEPTH OF 37 FT. MLLW. (ENTERED 12/03 BY MBH)
12026	UNKNOWN	12214	C	100	34	H11104/02--OPR-C303-KR; FOUND A SUNKEN WRECK IN LAT. 38/ 54/11.81N, LONG. 074/48/50.83W (NAD83) WITH A LEAST DEPTH OF 34 FT. MLLW. (ENTERED 12/03 BY MBH)
12031	UNKNOWN	12214	C	100	43	H11104/02--OPR-C303-KR; FOUND A SUNKEN WRECK IN LAT. 38/ 53/47.09N, LONG. 074/39/57.31W (NAD83) WITH A LEAST DEPTH OF 43 FT. MLLW. (ENTERED 12/03 BY MBH)
12035	OBSTRUCTION	12214	C	067	29.13	H11104/02--OPR-C303-KR; FOUND AN OBSTRUCTION IN LAT. 38/55/ 27.97N, LONG. 074/53/01.04W (NAD83) WITH A LEAST DEPTH OF 29.13 FT. MLLW. (ENTERED 12/03 BY MBH)
12036	OBSTRUCTION	12214	C	067	30.57	H11104/02--OPR-C303-KR; FOUND AN OBSTRUCTION IN LAT. 38.55/ 09.52N, LONG. 074/53/39.73W (NAD83) WITH A LEAST DEPTH OF 30.57 FT. MLLW. (ENTERED 12/03 BY MBH)
12037	OBSTRUCTION	12214	C	067	31.13	H11104/02--OPR-C303-KR; FOUND AN OBSTRUCTION IN LAT. 38/54/ 55.60N, LONG. 074/54/04.24W (NAD83) WITH A LEAST DEPTH OF 31.13 FT. MLLW. (ENTERED 12/03 BY MBH)
12038	OBSTRUCTION	12214	C	067	31.13	H11104/02--OPR-C303-KR; FOUND AN OBSTRUCTION IN LAT. 38/54/ 39.14N, LONG. 074/54/26.07W (NAD83) WITH A LEAST DEPTH OF 31.13 FT. MLLW. (ENTERED 12/03 BY MBH)
12039	OBSTRUCTION	12214	C	067	38.61	H11104/02--OPR-C303-KR; FOUND AN OBSTRUCTION IN LAT. 38/55/ 22.62N, LONG. 074/52/09.92W (NAD83) WITH A LEAST DEPTH OF 38.61 FT. MLLW. (ENTERED 12/03 BY MBH)
12041	OBSTRUCTION	12214	C	067	39.33	H11104/02--OPR-C303-KR; FOUND AN OBSTRUCTION IN LAT. 38/55/ 22.20N, LONG. 074/51/24.62W (NAD83) WITH A LEAST DEPTH OF 39.33 FT. MLLW. (ENTERED 12/03 BY MBH)
12043	OBSTRUCTION	12214	C	067	36.12	H11104/02--OPR-C303-KR; FOUND AN OBSTRUCTION IN LAT. 38/54/ 25.33N, LONG. 074/48/47.23W (NAD83) WITH A LEAST DEPTH OF 36.12 FT. MLLW. (ENTERED 12/03 BY MBH)
12047	UNKNOWN	12214	C	100	33.27	H11104/02--OPR-C303-KR; FOUND A SUNKEN WRECK IN LAT. 38/ 54/07.75N, LONG. 074/51/21.01W (NAD83) WITH A LEAST DEPTH OF 33.27 FT. MLLW. (ENTERED 12/03 BY MBH)
12057	UNKNOWN	12214	C	100	37.92	H11104/02--OPR-C303-KR; FOUND A SUNKEN WRECK IN LAT. 38/ 55/05.92N, LONG. 074/49/09.80W (NAD83) WITH A LEAST DEPTH OF 37.92 FT. MLLW. (ENTERED 12/03 BY MBH)
12058	OBSTRUCTION	12214	C	067	23.39	H11104/02--OPR-C303-KR; FOUND OBSTRUCTIONS IN LAT. 38/53/ 39.43N, LONG. 074/53/22.76W (NAD83) WITH A LEAST DEPTH OF 23.39 FT. MLLW. (ENTERED 12/03 BY MBH)
12062	UNKNOWN	12214	C	100	52.1	H11104/02--OPR-C303-KR; FOUND A SUNKEN WRECK IN LAT. 38/ 53/29.88N, LONG. 074/40/04.39W (NAD83) WITH A LEAST DEPTH OF 52.1 FT. MLLW. THIS ITEM IS PART OF FISH HAVEN AWOIS # 11187. (ENTERED 12/03 BY MBH)

12063	OBSTRUCTION	12214	C	067	57.45	H11104/02--OPR-C303-KR; FOUND OBSTRUCTIONS IN LAT. 38/53/40.09N, LONG. 074/40/04.92W (NAD83) WITH A LEAST DEPTH OF 57.45 FT. MLLW. THIS ITEM IS PART OF FISH HAVEN AWOIS # 11187. (ENTERED 12/03 BY MBH)
12064	UNKNOWN	12214	C	100	44.26	H11104/02--OPR-C303-KR; FOUND A SUNKEN WRECK IN LAT. 38/53/35.41N, LONG. 074/40/36.22W (NAD83) WITH A LEAST DEPTH OF 44.26 FT. MLLW. THIS ITEM IS PART OF FISH HAVEN AWOIS # 11187. (ENTERED 12/03 BY MBH)
12076	OBSTRUCTION	12214	C	067	36.94	H11104/02--OPR-C303-KR; FOUND AN OBSTRUCTION IN LAT. 38/53/58.96N, LONG. 074/46/35.40W (NAD83) WITH A LEAST DEPTH OF 36.94 FT. MLLW. (ENTERED 12/03 BY MBH)
12082	OBSTRUCTION	12214	C	067	38.45	H11104/02--OPR-C303-KR; FOUND OBSTRUCTIONS IN LAT. 38/53/25.37N, LONG. 074/39/39.41W (NAD83) WITH A LEAST DEPTH OF 38.45 FT. MLLW. THIS ITEM IS PART OF FISH HAVEN AWOIS # 11187. (ENTERED 12/03 BY MBH)
12103	OBSTRUCTION	12214	C	067	27.2	H11104/02--OPR-C303-KR; FOUND AN OBSTRUCTION IN LAT. 38/55/09.10N, LONG. 074/54/42.80W (NAD83) WITH A LEAST DEPTH OF 27.2 FT. MLLW. (ENTERED 12/03 BY MBH)
12104	OBSTRUCTION	12214	C	067	26.9	H11104/02--OPR-C303-KR; FOUND AN OBSTRUCTION IN LAT. 38/55/07.85N, LONG. 074/54/53.71W (NAD83) WITH A LEAST DEPTH OF 26.9 FT. MLLW. (ENTERED 12/03 BY MBH)
12106	OBSTRUCTION	12214	C	067	46.78	H11104/02--OPR-C303-KR; FOUND AN OBSTRUCTION IN LAT. 38/55/14.68N, LONG. 074/45/10.43W (NAD83) WITH A LEAST DEPTH OF 46.78 FT. MLLW. (ENTERED 12/03 BY MBH)
12114	OBSTRUCTION	12214	C	067	40.58	H11104/02--OPR-C303-KR; FOUND OBSTRUCTIONS IN LAT. 38/53/27.92N, LONG. 074/39/35.90W (NAD83) WITH A LEAST DEPTH OF 40.58 FT. MLLW. THIS ITEM IS PART OF FISH HAVEN AWOIS # 11187. (ENTERED 12/03 BY MBH)
12115	OBSTRUCTION	12214	C	067	41.99	H11104/02--OPR-C303-KR; FOUND OBSTRUCTIONS IN LAT. 38/53/25.82N, LONG. 074/39/42.95W (NAD83) WITH A LEAST DEPTH OF 41.99 FT. MLLW. THIS ITEM IS PART OF FISH HAVEN AWOIS # 11187. (ENTERED 12/03 BY MBH)

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Vessel Name	Chart #	Area	Cartocode	Depth	Latitude*	Longitude*	History
OBSTRUCTION	12233	E	0067	0	38/05/12.69	076/14/35.79	04511 HISTORY FE275/85SS--UNCHARTED OBSTRUCTION LOCATED DURING OFFICE PROCESSING IN LA 12.25N, LONG. 76-14-37.00W. COVERED 43 FT. THROUGH SIDE SCAN SONAR ANALYSIS COMPUTATION EVALUATOR RECOMMENDS CHARTING A DANGEROUS SUBMERGED OBSTRUCTION (43 FT REP.) IN LIS POSITION. SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE THROUGH 400% SIDE SCAN SONAR INVESTIGAION OR BOTTOM DRAG, 250 METER MIN. RADIUS. LD REQUIRED, IF FOUND. NOT ASSIGNED.
COLUMBIA	12233	E	0999	0	38/00/00.46	076/29/58.83	DESCRIPTION 17 BERMAN, B.D., 1972, ENCYCLOPEDIA OF AMERICAN SHIPWRECKS, #906, CITES WRE "COLUMBIA" 500 YARDS SOUTH-SOUTHEAST OF DRUM POINT LIGHT ON THE PATUXENT RIVER, CARGO SUNK 12/16/1942, WITH OL.S LILLIAN ANNE, SEE AWOIS 4007 (UP DAS 10/99) 24 NO.4817; CARGO, 359 G 15/43 BY MARINE CASUALTY; POSITION ACCURACY 3-5 MILES, POSITION REPORTED BY NAVY REPOR 00.00, 076/30/00.00 PLOTS ON LAND 61 SURVEY REQUIREMENTS NOT DETERMINED
UNKNOWN	12233	E	0100		38 04 0.5	076 22 58.8	HISTORY LNM39/73-- 33-FOOT CABIN CRUISER SUNK IN APPROX. POSITION LAT. 38-04-00N, LONG. 76-23 FOOT CABIN CRUISER SUNK IN APPROX. POS. 36-04-00N, 76-23-00W (LNM39/73, 9/25/73). (ENT 12/7/99, D
UNKNOWN	12233	E	0100	45	38/01/49.66	076/22/22.81	HISTORY CL100/52-- LETTER, 1/28/52, COE (WASHINGTON DISTRICT) TO USC&GS; APPLICATIONFROM P SHIPWRECKING CO., INC. OF POPES CREEK FOR A THREE YEAR EXTENSION TO CONDUCT OPERATIO CONNECTION WITH THE SALVAGE OF CARGO FROM A WRECK IN THE POTOMAC RIVER IN THE VICINIT POINT LOOKOUT, ST. MARYS COUNTY, MARYLAND. AFTER SALVAGE OPERATIONS, THERE WILL BE A DEPTH OF NOT LESS THAN 50 FEET AT MEAN LOW WATER OVER THE WRECK. CHARTED POSITION O TAKEN FROM GRAPHIC ATTACHED TO LETTER. NOTATION ON GRAPHIC REFERS TO THE "WRECK CHA SUNK 8 JAN. 1947". NO RECORD INDICATING IF THIS WORK WAS EVER UNDERTAKEN OR COMPLETED AWOIS NO. 10482). H08496/59-- SUNKEN WRECK LOCATED IN LAT. 38-01.82N, LONG. 76-22.40W. (ENT 12 DAS)
UNKNOWN	12233	E	0100	6	38/01/50.50	076/26/58.80	HISTORY NM 28/68-- WRECK- 39-FOOT CABIN CRUISER REPORTED SUNK IN 18 FEET OF WATER WITH 6 OVER HULL. UNMARKED IN LAT. 38-01-50N, LONG. 76-27-00W. CHARTED AS A SUBMERGED DANGERO (6 FT REP). NO PA.. (ENT 12/27/99, DAS)
UNKNOWN	12233	E	0100		38 05 55.5	076 28 38.8	HISTORY NM18/70-- WRECK - STRANDED IN 6 FEET OF WATER IN APPROX. POS. 38-05-55N, 76-28-40W (3/31/70). (ENT 12/99, DAS)
OBSTRUCTION	12233	E	0067	0	38/07/45.46	076/17/23.26	HISTORY FE267/84; OPR-S-E404-PE-84--INDICATION OF SMALL OBSTR ON ECHOGRAM AT LAT 38-07-45. 76-17-24.46W. ECHO SOUNDER LD OF 21FT. EVALUATOR RECOMMENDS OBSTR BE CHARTED IF SPAC AT CHART SCALE. SEE GP OF AWOIS # 3426. (ENTERED 5/89 GM)
UNKNOWN	12233	E	0100		38/03/05.46	076/21/10.81	HISTORY LNM47/73 (11/20/73); 32-FOOT OYSTER BOAT REPORTED SUNK IN APPROX. POS. LAT. 38-03-0 76-21-12W. A PORTION OF THE CABIN AND MAST VISIBLE ABOVE WATER. (ENT DAS, 12/12/99)
OBSTRUCTION	12233	E	0067	0	38/05/24.92	076/15/03.97	04512 HISTORY FE275/85SS--OBSTRUCTION (NOT DIVED ON) LOCATED IN LAT. 38-05-24.48N, LONG. 76-1 42 FT. LD DERIVED FROM MARINE CENTER SIDE SCAN SONAR ANALYSIS. EVALUATOR RECOMMENDS A DANGEROUS SUBM. OBSTR. (42 FT. REP.) AT THIS POSITION. SEE AWOIS NO. 3425 FROM COMPLET AND RELATED INFO. SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE THROUGH 400% SIDE SCA SEARCH OR BOTTOM DRAG INVESTIGATION, 250 METER MIN. RADIUS. LD REQUIRED IF FOUND. NOT A
UNKNOWN	12233	E	0100	38	38/06/55.66	076/30/36.04	HISTORY H08553/60-- WRECK OBSERVED IN LAT. 38-06.92N, LONG. 76-30.62W WITH A SHOAL SOUNDIN FEET AT MLW IN GENERAL DEPTHS OF 47-48 FEET. (ENT DAS, 12/27/99)
UNKNOWN	12233	E	0100	49	37/55/12.93	076/11/10.52	03673 HISTORY NM48/57--197 FOOT LSM TYPE VESSEL COVERED 45 FEET IN 63 FEET, 2.2 MILES 1 DEG SMITH POINT LIGHT. MARKED BY TWO 5 GALLON CANS. WRECK IN APPROX. POS. LAT. 37-55-00N, LON 00W. CL1959/78--MAR, JUNE, 1978; OPR-E609-RU/HE-78; ITEM 4; WRECK LOCATED DURING RECON. HY SIDE SCAN SONAR SEARCH. HUNG AT 46 FT. CLEARED 44 FT (PREDICTED TIDES).DIVERS LD 48 FT. W STEEL BARGE APPROX. 205 FT. LONG, WITH AN OPEN CENTER WELL, ON AN EVEN KEEL AND ORIEN LAT. 37-55.19N, LONG. 76-11.22W. HYDRO. RECOMMENDS CHARTING 44 FT. CLEARED DEPTH OVER W FE222/78WD--SEE CHART LETTER ABOVE. UNVERIFIED FE AS OF 1/4/85. NM8/79--REVISE WRECK PUB. 57 TO WRECK WITH SWEPT DEPTH OF 44 FT. IN POS. LAT. 37-55.2N, LONG. 76-11.2W. MAR--11/85, OPR- HE-85; WK FOUND IN LAT 37-55-12.7N, LONG 76-11-11.94W WITH LEAST DEPTH OF 48.9 FT, CORRECTED PREDICTED TIDES; HYDROGRAPHER RECOMMENDS REVISING CHART ACCORDINGLY. (UPDATED MSM FE275/85SS--(OPR-E609-RU/HE-85); WRECK LOCATED BY SIDE SCAN SONAR IN POSITION LAT. 37-55-12 LONG. 76-11-11.74. DEPTH OVER WRECK BY PNEUMATIC DEPTH GAUGE IS 49 FEET. THIS POSITION IS METERS EAST OF THAT GIVEN IN FE-222/78WD. EVALUATOR RECOMMENDS REVISING CHARTED SYM DANGEROUS WRECK, COVERED 49 FEET IN PRESENT SURVEY POSITION. DESCRIPTION **** TELECO HICKSON (MOA2321) AND S. VERRY (N/CG241) 1/4/85; CLEARANCE DEPTH OF 44 FT UNVERIFIED. SHOU

							CHARTED AS REPORTED CLEARANCE. FE222/78WD WILL NOT BE PROSESSED IN THE NEAR FUTURE. A BARGE OWNED BY THE C.G. WILLIS CO. ITEM IS CONSIDERED COMPLETE AND FURTHER INVESTIGA RECOMMENDED BY MOA2321 SURVEY REQUIREMENTS FULL–VERIFY OR DISPROVE THROUGH 400% SONAR SEARCH OF WIRE SWEEP INVESTIGATION, 250 METER MIN RADIUS. LD REQUIRED IF FOUND. N ASSIGNED
SQUAREHEAD	12233	E	0100	0	38/16/16.44	076/22/25.81	HISTORY NM23/54--SCHOONER YACHT SUNK IN APPROX. LAT.38-16-16N, LONG.76-22-30W AND COVERE OF WATER. WRECK LIES IN 26 FT. OF WATER AND MARKED BY LIGHTED SEADROME BUOY. NM33/54-- DISCONTINUED IN APPROX. POS. LAT.38-16-16N LONG.76-22-27W. THE SQUAREHEAD LAST REPORTED FT. BEARING 270 DEG. FROM THIS POS. AND CLEARED BY 25 FT. (ENTERED, 3/28/84, MCR) CL1206/84-- E404-PE-84; MINIRANGER FALCON 484; 400% SSS W/NEG RESULTS; CHAIN DRAG SEARCH OF APPARE ROCKY BOTTOM; CHAIN IMMEDIATELY HUNG, PRESUMABLY ON BOTTOM; HYDROGRAPHER RECOMME DELETING WK FROM CHART; AWAITING EVALUATION REPORT FROM AMC. (ENTERED MSM 1/2/85) FE2 OPR-S-E404-PE-84–EVALUATION REPORT CONFIRMS HYDROGRAPHER'S RECOMMENDATION TO DELE FROM CHART. (SEE CL1206/84 REF. ABOVE) (UPDATE 5/89 GM) SURVEY REQUIREMENTS FULL–VERIFY DISPROVE BY BOTTOM DRAG INVESTIGATION TO A 700 METER MINIMUM RADIUS OR BY 400% SIDE SC COVERAGE. DETERMINE LEAST DEPTH BY LEAD LINE (POSSIBLY COMPLETE). NOT ASSIGNED
OBSTRUCTION	12233	E	0067	0	38/14/08.24	076/20/16.81	HISTORY CL1412/68–COE RECEIVED APPLICATION FROM USN AIR STATION TO INSTALL RADAR TARGET LAT.38-14-15N, LONG.76-20-18W. STRUCTURE TO EXTEND APPROX.. 17.5 FT ABOVE MLW. CL1052/70-- CONSTRUCTION COMPLETED AT THE ABOVE POS. CL1382/80–OPR-E609-RU/HE-78, WIRE DRAG INVEST LOCATED AN OBSTRUCTION IN POS. LAT.38-14-7.8N, LONG.76-20-18W. A NOS/NAVY DIVING TEAM VERI OBSTRUCTION AND SECURED A SURFACE MARKER, NO CLEARANCE DEPTH GIVEN. (ENTERED, 2/6/84 FE267/84; OPR-S-E404-PE-84--CHARTED SUBM OBSTR AT LAT 38-14-07.8N, LONG 76-20-18W SEARCHED SSS AND CONSTANT TENSION WIRE DRAG. SMALL CONTACT WITH LESS THAN 1 METER SHADOW NOT SONARGRAM AT APPROX. POS. LAT 38-14-09N, LONG 76-20-19W. DRAG DEEMED INEFFECTIVE DUE TO CHARTED POS. INFO PROVIDED TO SHIP PEIRCE DURING FE BY PATUXENT RIVER NAVAL AIR TEST CE SAYS THAT CHARTED SUBM OBSTR TO BE FORMER LIGHTED PILE AT GEODETIC POS. LAT 38-14-15.57 LONG 76-20-24.68551W. LIGHTED PILE DESTROYED BY ICE IN 1970'S. NOS/NAVY TEAM REPORT DESTR LOCATED AND MARKED AT CHARTED POS. (SEE CL1382/80). EVALUATOR RECOMMENDS CHARTED SU BE RETAINED AND CONSIDERATION GIVEN TO CHARTING SUBM OBSTR AT GEODETIC POSITION, DUE T POSITIONAL DIFFERENCES NOTED BY SOURCES. (UPDATED 5/89 GM) SURVEY REQUIREMENTS FULL– DISPROVE, BY 400% SIDE SCAN SONAR SEARCH OR BOTTOM SWEEP TO RADIUS OF 500 METERS MIN LEAST DEPTH REQUIRED IF FOUND. NOT ASSIGNED
UNKNOWN	12233	E	0100	0	38/09/36.44	076/17/58.80	HISTORY NM37/66--DANGEROUS WRECK OF A 23 FT BOAT REPORTED SUNK IN APPROX. POS. 38-09-36 00W. FE267/84; OPR-S-E404-PE-84--SUBM WK SEARCHED FOR BY SSS WITH NEGATIVE RESULTS. HYDROGRAPHER CLAIMS 400 PERCENT COVERAGE. HOWEVER, FROM ALL AVAILABLE INFO RIGHT CH SSS DID NOT REACH MAXIMUM RANGE. ALSO HULL OF WK MAY NOT HAVE HAD REFLECTION COEFFIC WOULD GIVE RETURN ON SONARGRAM. EVALUATOR. RECOMMENDS DANGEROUS SUNKEN WK, PA E RETAINED ON CHART. (UPDATED 5/89 GM) SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE BY B DRAG TO A RADIUS OF 250 METERS MINIMUM OR 400% SIDE SCAN SONER COVERAGE. DETERMINE L DEPTH BY LEAD LINE AND/OR ECHO SOUNDER. NOT ASSIGNED
OBSTRUCTION	12233	E	0067	0	38/07/44.61	076/17/23.23	HISTORY H8279/55--18FT SNDG. FOUND BY FATHOMETER POS. SCALED AT 1:10,000 IN LAT. 38-07-43.80 76-17-26.10W. (ENTERED, 2/6/84, MCR) FE267/84; OPR-S-E404-PE-84--CHARTED 18-FT SOUNDING AT LAT LONG 76-17-26.10W SEARCHED WITH 10-METER SPACED SDG LINES BY ECHO SOUNDER, NOT FOUND DEPTHS OF 23-24 FEET EXIST AT LOCATION. OBSTR. COVERED BY 18 FT LOCATED BY ECHO SOUNDER 38-07-44.17N, LONG 76-17-24.43W ABOUT 47 METERS NORTH NORTHEAST OF CHARTED 18-FT DEPTH. E RECOMMENDS CHARTED 18 FT DELETED AND CHART OBSTR. (UPDATED 5/89 GM) SURVEY REQUIREM -VERIFY OR DISPROVE BY ECHO SOUNDER IN SHOAL AREA TO DETERMINE LEAST DEPTH NOT ASSIG
UNKNOWN	12233	E	0100	41	38/05/20.72	076/15/00.80	HISTORY NM45/45--WRECK REP. COVERED 34 FT., BEARING 137 DEG., 6,830 YDS. FROM POINT NO POI MARKED BY A SPAR BUOY AND A CAN BUOY. NM46/45–LIGHTED BELL BUOY EST., RB HOR. BANDS, C BEARS 137 DEG., 6,830 YDS. FROM POINT NO POINT LIGHT AND 163 DEG., 200 YDS FROM WRECK (AB IN APPROX. POS. LAT. 38-05N, LONG. 76-14W. NM34/46--POINT NO POINT WRECK LIGHTED BUOY DISCO NM41/46--SUBMERGED OBJECT, DANGEROUS TO NAVIGATION, REP. ABOUT 3 MILES 137 DEG. FROM P POINT LIGHT. LOCATED IN APPROX. POS. LAT. 38-05-30N, LONG. 76-14-50W. (DCGO 5TH NAVAL DISTRIC SEPT. 1946). FE102/51(WD) (F.E. NO. 11 1951)–CS-326; OBSTRUCTION REP. IN NM41/46 APPARENTLY BI AND PIECES OF WRECKAGE FOUND IN TWO LOCATIONS. ONE PIECE OF WRECKAGE HUNG TWICE WI HANG IN LAT. 38-05-23N, LONG 76-15-06W. ECHO SOUNDING OF 39.5 FT. (PREDICTED TIDES) OBTAINED GENERAL DEPTHS OF 43.5 FT. CLEARED BY WIRE DRAG TO 37.5 FT. HYDRO. RECOMMENDS CHARTIN CLEARED DEPTH OF 37 FT. ANOTHER HANG IN POS. LAT. 38-05-20N, LONG. 76-15-07W WAS NOT CHART SOUNDER DEPTH OF 40 FT. WAS OBTAINED ON THIS WRECKAGE IN GENERAL DEPTHS OF 44 FT. CLE 37.5 FT. CL858/50–SPECIAL REPORT OF FIELD EXAM. ABOVE MADE INTO CHART LETTER. NM47/50-NO OBSTRUCTION FOUND DURING USC&GS WIRE DRAG SURVEY AS CHARTED FROM NM41/46 ABOVE. CU NOTE EXPUNGED FROM CHARTS. SLIGHT DIFFERENCES IN DEPTHS REVEALED BY SURVEY TO BE AP CHART. H8283/55-56--ECHO SOUNDER INVEST., 100 METER SPACING, NEGATIVE. D-22--OPR-E404-PE-84 SIDE SCAN SONAR CONTACTS OBTAINED. ECHO SOUNDER LD ON CONTACT ONE WAS 43 FT. IN POS. I 23.6N, LONG. 76-15-03.9W. LD ON CONTACT TWO WAS 40 FT. IN POS. LAT 38-05-20.0N, LONG. 76-15-01.6 HYDRO. RECOMMENDS RETAINING OBSTRUCTION AS CHARTED. SURVEY NOT VERIFIED AS OF 1/18/85 -THE TWO OBSTRUCTIONS FOUND BY F.E. NO. 11, 1951 (FE-102WD (1951)) (ONLY ONE CHARTED) WERE LOCATED. ONE LOCATED IN LAT. 38-05-19.92N, LONG. 76-15-01.72W, ECHO SOUNDER LD OF 40 FT. SEC OBSTRUCTION LOCATED IN LAT. 38-05-24.00N, LONG. 76-15-03.76W, ECHO SOUNDER LD OF 43 FT. FE27 OBSTRUCTION LOCATED 13 METERS WEST OF FIRST ITEM ABOVE IN LAT. 38-05-20.28N, LONG. 76-15-0 DIVERS IDENTIFIED ITEM AS A WRECK WITH A PNEUMATIC DEPTH GAUGE LD OF 41 FT. AN OBSTRUCT DIVED ON) WAS LOCATED 37 METERS WEST OF THE SECOND ITEM ABOVE IN LAT. 38-05-24.48N LONG. 05.18W 42 FT. LD DERIVED FROM MARINE CENTER SIDE SCAN SONAR ANALYSIS. EVALUATOR RECOM DELETING THE CHARTED SUBM. OBSTR. CLEARED BY 37 FT. (THE ORIGINAL AWOIS NO. 3425) AND CH DANGEROUS WRECK, COVERED 41 FT. (THE NEW AWOIS NO. 3425). ALSO RECOMMENDS CHARTING DANGEROUS SUBM. OBSTR. (42 FT. REP.) IN THE SECOND POSITION. (SEE AWOIS NO. 04512) SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE THROUGH 400% SIDE SCAN SONAR SEARCH OR BOTTO INVESTIGATION, 250 METER MIN. RADIUS. LD REQUIRED IF FOUND. NOT ASSIGNED.
UNKNOWN	12233	E	0100	40	38/05/08.69	076/14/32.29	HISTORY NM45/45--WRECK REPORTED COVERED 34 FEET BEARING 137 DEG., 6,830 YDS. FROM POINT LIGHT. MARKED BY A SPAR BUOY AND CAN BUOY. NM46/45--LIGHTED BELL BUOY ESTABLISHED, RB H BANDS, QK FL; BEARS 137 DEG., 6,830 YDS. FROM POINT NO POINT LIGHT AND 163 DEG., 200 YDS. FR WRECK (ABOVE) REPORTED IN APPROX. POS. LAT. 38-05N, LONG. 76-14W. NM34/46–POINT NO POINT LIGHTED BUOY DISCONTINUED. NM41/46–SUBMERGED OBJECT DANGEROUS TO NAVIGATION REPORT 3 MILES, 137 DEG. FROM POINT NO POINT LIGHT. LOCATED IN APPROX. POS. LAT. 38-05-30N, LONG. 76- (DCGO 5TH NAVAL DISTRICT, 261338, SEPT. 1946). FE102/51WD (F.E. NO. 11 1951)--CS-326; WRECKAGE CLEARED IN LAT. 38-05-09N, LONG. 76-14-34W. FATHOMETER SOUNDING OF 39 FT. IN GENERAL DEPTH FT. WIRE DRAG CLEARED TO 39 FEET. CHARTED AS OBSTRUCTION CLEARED TO 39 FT. CL858/50–SPE REPORT OF FIELD EXAMINATION ABOVE MADE INTO CHART LETTER. H8283/55-56–ECHO SOUNDER INV METER SPACING, NEGATIVE. D-22–OPR-E404-PE-84; SIDE SCAN SONAR CONTACT LOCATED IN POS. LA 09.3N, LONG. 76-14-33.1W. ECHO SOUNDER LD OF 41 FT. HYDRO. RECOMMENDS RETAINING OBSTRUC PRESENTLY CHARTED. SURVEY NOT VERIFIED AS OF 1/8/85. FE267/84--SIDE SCAN SONAR CONTACT 2

							SE OF CHARTED POSITION. LD OF 41 FT. BY ECHO SOUNDER (5 PASSES) IN LAT. 38-05-08.60N, LONG. 7 33.14W. FE275/85SS--SIDE SCAN SONAR AND ECHO SOUNDER SEARCH LOCATED ITEM. DIVERS DESC WRECK, LARGELY BURIED AND DETERIORATED. LD OBTAINED BY PNEUMOFATHOMETER OF 40 FT. IN DEPTHS OF 42-45 FT. (14 METERS SW OF GP IN FE-267/84) IN LAT. 38-05-08.25N, LONG. 76-14-33.50W. E RECOMMENDS CHARTING A WRECK, COVERED 40 FT. IN LISTED GP AND DELETING CHARTED DANGEI SUBM. OBSTR. CLEARED TO 39 FT. SURVEY REQUIREMENTS FULL--VERIFY OR DISPROVE THROUGH 4 SCAN SEARCH OR BOTTOM DRAG INVESTIGATION, 250 METER MIN. RADIUS. LD REQUIRED, IF FOUND. ASSIGNED.
OBSTRUCTION	12233	E	0067	0	38/13/00.44	076/18/58.80	HISTORY CL1382/67-USCG; CO, USCG CONIFER REPORTED TARGET PLATFORM FOR BOMBING RUNS L AT LAT 38-13-00N, LONG 76-19-00W (CENTER OF PROHIBITED AREA ONE MILE IN DIA) NOT IN AGREEME CHARTED PILES. INTERPRETATION OF NOS PHOTOS COULD NOT TIE DOWN PILES, AS RESULT LABEL OBSTRS" CHARTED. CL1382/80--SHIPS RU/HE AUGUST 1978 MAR TO AMC; SUBM OBSTRS HUNG BY WI AT LAT 38-13-04N, LONG 76-18-51W AND LAT 38-12-59N, LONG 76-18-58W WITHIN PROHIBITED AREA. OB IDENTIFIED AS FORMER BOMBING TARGETS. DIVER INVESTIGATION NOT CONDUCTED DUE TO EXTENT NATURE OF DEBRIS IN AREA. SUBSURFACE WATER COLUMN CONTAINS LUMBER, STEEL, AND CONCF CONSIDERED HAZARD TO NAVIGATION. FE267/84; OPR-S-E404-84; FIVE(5) FIXED TARGETS LOCATED BY THEODOLITES OF PATUXENT RIVER NAVAL AIR TEST CENTER WITHIN PROHIBITED AREA. DIRECTOR OI PATUXENT RIVER AIR TEST CENTER TARGET SUPPORT GROUP FORWARDED NAVY EOD TEAM REPOF CONDITION OF TARGETS REMOVED AT OR BELOW 6 FEET FROM BOTTOM. NO POSITIONS GIVEN. EVA RECOMMENDS RETENTION OF PROHIBITED AREA ON CHART. (ENT 5/89 GM)
UNKNOWN	12233	E	0100		37/54/54.46	076/12/40.79	HISTORY LNM 29/79, 7-17-79, A WOODEN HULLED BOAT SUNK IN APPROX. POSITION 37-54.9N, 76-12.7W WRECK IS NOT MARKED. (ENT DAS 1/3/00)
OBSTRUCTION	12233	E	0067	25	37/56/37.36	076/16/49.07	HISTORY H10934/99-00-- OPR-E346-BH; UNCHARTED OBSTRUCTION LOCATED BY SIDE SCAN SONAR IN 37.36N, LONG. 76-16-49.07W WITH A SWMB LD OF 25 FEET (7.81 METERS). POSSIBLE OYSTER MOUND. EVALUATOR RECOMMENDS CHARTING A 25 OBSTN AS SURVEYED. (ENT 7/13/00, SJV)
OBSTRUCTION	12233	E	0067	26	37/56/50.72	076/17/13.36	HISTORY H10934/99-00-- OPR-E346-BH; SIDE SCAN SONAR LOCATED AN UNCHARTED OBSTRUCTION IN 50.72N, LONG. 76/17/13.36W WITH A SWMB LD OF 26 FEET (8.1 METERS). SIDE SCAN SONAR HEIGHT O METERS. POSSIBLE OYSTER MOUND. EVALUATOR RECOMMENDS CHARTING A 26 OBSTN AS SURVEY 7/13/00, SJV)
UNKNOWN	12233	E	0100	43	38/00/11.81	076/19/58.70	HISTORY H10934/99-00-- OPR-E346-BH; SIDE SCAN SONAR LOCATED UNCHARTED DANGEROUS SUBME WRECK IN LAT. 38/00/11.81N, LONG. 76/19/58.70W WITH A SWMB LD OF 43 FEET (13.33 METERS). SIDE SONAR HEIGHT OF 0.0 METERS. EVALUATOR RECOMMENDS CHARTING A 43 WK AS SURVEYED. (ENT SJV)
UNKNOWN	12233	E	0100	41	38/00/18.36	076/19/58.13	HISTORY H10934/99-00-- OPR-E346-BH; SIDE SCAN SONAR LOCATED UNCHARTED DANGEROUS SUBME WRECK IN LAT. 38/00/18.36N, LONG. 76-19-58.13W WITH A SWMB LD OF 41.0 FEET (12.62 METERS). SIDI SONAR HEIGHT OF 2.3 METERS. EVALUATOR RECOMMENDS CHARTING A 41 WK AS SURVEYED. (ENT SJV)
OBSTRUCTION	12233	E	0067	42	37/59/53.15	076/19/20.01	HISTORY H10934/99-00-- OPR-E346-BH; UNCHARTED OBSTRUCTION LOCATED BY SIDE SCAN SONAR IN 53.15N, LONG. 76-19-20.01W WITH A SWMB LD OF 42 FEET (12.89 METERS). SIDE SCAN SONAR HEIGHT METERS. EVALUATOR RECOMMENDS CHARTING A 42 OBSTN AS SURVEYED. (ENT 7/13/00, SJV)
UNKNOWN	12233	E	0100		38/03/46.00	076/22/32.00	HISTORY LNM26/86-- MARYLAND-CHESAPEAKE BAY-POTOMAC RIVER-HAZARD TO NAVIGATION; A HAZ NAVIGATION CONSISTING OF A SUNKEN 29-FOOT P/C IS LOCATED IN APPROX. POSITION LAT. 38-03.46I 76-22.32W. THE HAZARD HAS BEEN MARKED WITH A TEMPORARY UNLIGHTED BUOY, WHITE IN COLOF ORANGE DIAMOND. MARINERS ARE ADVISED TO USE CAUTION WHEN TRANSITING THIS AREA. THIS P(WAS REVISED ON 7/14/86 PER A TELCON FROM MCD TO CGD5 TO LAT. 38-03-46N, LONG. 76-22-32W. (E SJV)
OBSTRUCTION	12233	E	0067		38/07/25.50	076/30/58.80	HISTORY LNM48/70-- 2 RAILWAY FLATCARS REPORTED SUNK IN 30-50 FEET OF WATER IN LAT. 38-07-2! 76-31-00W. (ENT DAS, 12/27/99)
UNKNOWN	12233	E	100		38/02/18.00	076/21/18.00	HISTORY LNM 21/97-- A 57-FOOT WOODEN M/V SUNK IN APPROX. POSITION LAT. 38-02.3N, LONG. 76-21 FEET OF WATER. (ENT DAS 1/3/00)
SNDNG	12233	E	0067	40	37/58/37.85	076/17/34.03	HISTORY H10934/99-00-- OPR-E346-BH; SWMB LD OF 40 FEET (12.23 METERS) LOCATED IN LAT. 37-58-3 LONG. 76-17-34.03W. SIDE SCAN SONAR HEGHT OF 1.1 METER. EVALUATOR RECOMMENDS CHARTING IN AREA AS SURVEYED. AREA NOT COMPLR\ETLY COVERED WITH SWMB. ADDITIONAL WORK RECOM (ENT 7/13/00, SJV)
CHARLOTTE	12233	E	0100		38/02/29.86	076/23/23.43	HISTORY CL100/52-- LETTER, 1/28/52, COE (WASHINGTON DISTRICT) TO USC&GS; APPLICATION FROM F SHIPWRECKING CO., INC. OF POPES CREEK FOR A THREE YEAR EXTENSION TO CONDUCT OPERATIO CONNECTION WITH THE SALVAGE OF CARGO FROM A WRECK IN THE POTOMAC RIVER IN THE VICINIT POINT LOOKOUT, ST. MARYS COUNTY, MARYLAND. AFTER SALVAGE OPERATIONS, THERE WILL BE A DEPTH OF NOT LESS THAN 50 FEET AT MEAN LOW WATER OVER THE WRECK. CHARTED POSITION OI TAKEN FROM GRAPHIC ATTACHED TO LETTER. NOTATION ON GRAPHIC REFERS TO THE "WRECK CHAI SUNK 8 JAN, 1947". NO RECORD INDICATING IF THIS WORK WAS EVER UNDERTAKEN OR COMPLETED. 52-FOOT SOUNDING LOCATED IN LAT. 38-01-51N, LONG. 76-22-23W DETERMINED TO BE A WRECK DURI REVIEW AND THE DEPTH WAS REVISED TO 45 FEET AFTER RESTORING SOUNDING LINES REJECTED PREVIOUSLY. CONSIDERED BY REVIEWER TO BE THE WRECK MENTIONED IN CL100/52. REVIEWER AI STATED CHARTED WRECK IS ABOUT ONE MILE NW OF SURVEYED LOCATION. PRESENT SURVEY FOU EVIDENCE OF A WRECK AT CHARTED LOCATION. REVIEWER RECOMMENDED LEAVING CHARTING DE(TO CHART COMPILER. 45 WRECK ADDED TO CHART AS SURVEYED AND CHARTED DANGEROUS SUBN WRECK, PA RETAINED AS CHARTED. SEE AWOIS NO. 10471. (ENT DAS, 1/2000)
UNKNOWN	12233	E	0100	13.7	37/56/19.66	076/18/28.80	HISTORY NM2/22-- SUNKEN WRECK AT 37-56.43N, 76-18.50. SINKING OF PILE DRIVER. (ENT 12/30/99, DA 55-- SOLID STRUCTURE WITH A DEPTH OF 13.7 FEET LOCATED IN LAT. 37-56.32N, LONG. 76-18.50W. (EN DAS)
CASCHALOT	12233	E	0100		37/54/54.46	076/15/36.00	HISTORY LHNM26/37-- VESSEL CASCHALOT HARD AGROUND IN APPROX. LAT. 37-54.9N, LONG. 76-15.6 55-- ITEM NOT LOCATED. RETAINED AS CHARTED. ACCORDING TO CURTIS SMITH OF SUNNYBANK, VA BROKE UP AND WASHED AWAY LEAVING ONLY THE MOTOR IN PLACE. (ENT DAS, 12/30/99)
OBSTRUCTION	12233	E	67	18	38/10/25.06	076/33/31.24	HISTORY H08550/60-- OBSTRUCTION FOUND IN LAT. 38-10.41N, LONG. 76-33.54W HAVING A SHOAL DEP FEET IN 26 FEET OF WATER. (ENT DAS 12/27/99)
OBSTRUCTION	12233	E	0067	25	38/08/16.66	076/34/34.84	HISTORY NM48/49-- CHESAPEAKE BAY-POTOMAC RIVER-WRECK-BUOYS ESTABLISHED; A WRECK WI SWEPT DEPTH OF 65 FEET OF WATER OVER IT EXISTS IN LAT. 38-08-10N, 76-33-10W. MARKED BY 3 YE BUOYS. H08550/60-- INTENSIVE ECHO SOUNDER INVESTIGATION BY USC&GS VESSEL COWIE AND HEF REVEALED ONLY A SLIGHT SHOALING IN THE AREA OF A 66-FOOT SOUNDING OBTAINED BY COWIE. TI SHOALING , AFTER STUDYING THE FATHOGRAMS, WAS THOUGHT TO BE THE HULL OF A SAILING SLO MAST RISES TO A DEPTH OF 65 FEET IN LAT. 38-08.27N, LONG. 76/34.60W. CHARTED AS A 65 WRECK. (12/27/99)
							HISTORY NM48/49-- CHESAPEAKE BAY-POTOMAC RIVER-WRECK-BUOYS ESTABLISHED. A WRECK WI SWEPT DEPTH OF 65 FEET OF WATER OVER IT EXISTS IN LAT. 38-08-10N, LONG. 76-33-10W. IT IS MARK YELLOW BUOYS. H08553/60-- CS-409; A SHOAL (SIC) OF 66 FEET WAS FOUND IN 80 FEET OF WATER A 08-09.60N, LONG. 76-33-07.20W. THIS WAS REVIEW NOTE 8 AND CONFIRMED THE CHARTED DEPTH.

UNKNOWN	12233	E	100	65	38/08/10.06	076/33/06.04	SUBSEQUENT INVESTIGATION BY LAUNCH NEGATIVE. H08550/60-- CS-409; ITEM NO. 8; ROUTINE SHIP S LINE OBTAINED A 66-FOOT DEPTH IN 80 FEET OF WATER. LAUNCH INVESTIGATION FOUND ONLY A SLI(SHOALING OF THE BOTTOM IN THIS AREA. THIS SHOALING IS THOUGHT TO BE THE HULL OF A SAILING WHOSE MAST RISES TO A DEPTH OF 66 FEET. EVALUATOR RECOMMENDS CARRYING THE 66-FOOT S(FORWARD FROM H08553 AND RETAINING THE 65 WK AS CHARTED. (UP 9/18/02, SJV) H08550/60-- HULL SAILING SLOOP WHOSE MAST RISES TO 65 FEET . (ENT DAS 12/27/99)
UNKNOWN	12233	E	0100	1.5	38/08/26.26	076/30/45.04	HISTORY H08553/60-- WRECK FOUND IN LAT. 38-08-25.80N, LONG. 76-30-46.20W WITH A SHOAL DEPTH (AT MLW IN GENERAL DEPTHS OF 5-6 FEET. (ENT DAS 12/27/99)
OBSTRUCTION	12233	E	0067		38/02/00.45	076/19/04.81	HISTORY LNM 13/81--SHOALING OFF POINT LOOKOUT HAS EXTENDED TO APPROX. POSITION LAT. 38-0: LONG. 76-19-06W IN THE VICINITY OF POINT LOOKOUT SHOAL BUOY (LLP 365). COAST PILOT 3, 1980 EI (ENT DAS, 1/00) H10934/99-00-- OPR-E346-BH; 200% SIDE SCAN SONAR COVERAGE AND SWMB COVER EVALUATOR RECOMMENDS CHARTING AREA AS SURVEYED AND DELETING CHARTED NOTATION "SH(REP 1980". (UP 7/13/00, SJV)

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Vessel Name	Chart #	Area	Cartocode	Depth	Latitude*	Longitude*	History
UNKNOWN	12238	E	100	47	37/14/13.71	076/25/16.65	HISTORY NO REGISTRY NUMBER ASSIGNED; S-E604-RU-02; HLSPROJECT REPORT; SIDE SCAN SONAR CONTACT. SONAR IMAGING DESCRIBES A WRECK. SWMB LD OF 47 FEET IN LAT. 37-14-13.712N, LONG. 76-25-16.654W. EVALUATOR RECOMMENDS CHARTING A 47 WK AS SURVEYED. (ENT 4/2/04, SJV)
OBSTRUCTION	12238	E	067	37	37/14/08.72	076/30/05.37	HISTORY NO REGISTRY NUMBER ASSIGNED-- S-E604-RU-02; HLS PROJECT REPORT; SIDE SCAN SONAR CONTACT. SWMB LD OF 37 FEET IN LAT. 37-14-08.722N, LONG. 76-30-05.369W. SONAR IMAGERY DESCRIBES SUBMERGED PILING. EVALUATOR RECOMMENDS CHARTING A 37 OBSTN AS SURVEYED. (ENT 4/2/04, SJV)

OBSTRUCTION	12238	E	067	34	37/14/11.47	076/28/49.13	HISTORY NO REGISTRY NUMBER ASSIGNED; S-E604-RU-02; HLS PROJECT REPORT; SIDE SCAN SONAR CONTACT. SWMB LD OF 34 FEET IN LAT. 37-14-11.470N, LONG. 76-28-49.132W. EVALUATOR RECOMMENDS CHARTING A 34 OBSTN AS SURVEYED. (ENT 4/3/04, SJV)
OBSTRUCTION	12238	E	067	49	37/14/02.98	076/26/21.23	HISTORY NO REGISTRY NUMBER ASSIGNED-- S-E604-R0-02; HLS PROJECT REPORT; SIDE SCAN SONAR CONTACT. SWMB LD OF 49 FEET IN LAT. 37-14-02.981N, LONG. 76-26-21.234W. SONAR IMAGERY DESCRIBES SUBMERGED PILING. EVALUATOR RECOMMENDS CHARTING A 49 OBSTN AS SURVEYED. (ENT 4/3/04, SJV)
0BSTRUCTION	12238	E	067		37/11/32.71	076/10/58.88	HISTORY F00222/78-- OPR-E609-RU/HE; EVALUATOR STATES THAT A PRESENT SURVEY HANG OCCURRED AT 29 FEET IN LAT. 37-11-32.2N, LONG. 76-11-00.1W. NOT CLEARED. IDENTIFIED AS A DREDGE PIPE, 400 FEET LONG (NO ORIENTATION GIVEN). 3 FEET IN DIAMETER EXTENDING 1.5 FEET OFF THE BOTTOM. LIES IN PRIOR DEPTHS OF 32 FEET. RECOMMENDED THAT THIS HANG BE CHARTED AS A SUBMERGED OBSTRUCTION WITH THE LABEL (29 FEET REP) AS SURVEYED. ADDITIONAL FIELD WORK RECOMMENDED TO DETERMINE LD, LIMITS, AND ORIENTATION. (ENT 2/27/03, SJV)
OBSTRUCTION	12238	E	370	27	37/13/09.50	076/10/25.78	HISTORY H07677/47-48-- CS-313/ 326-PBS; ITEM NO. 25; WEST OBSTRUCTION HUNG AT 29 FEET AND CLEARED AT 27 FEET IN LAT. 37-13.15N, LONG. 76-10.45W. CHARTED AS AN OBSTN CLEARED AT 27 FEET AS SURVEYED. NATURE OF OBSTRUCTION NOT DETERMINED. (ENT 2/27/03, SJV)
							HISTORY NM12/60--3/19/60; DANGER AREA - A PALLET CONTAINING HIGH EXPLOSIVES IN TRANSPORT BOXES HAS BEEN REPORTED TO HAVE SUNK ABOUT 4,000 YARDS, 272°30'

OBSTRUCTION	12238	E	067		37/12/40.01	076/17/43.66	FROM YORK SPIT LIGHT. THE POSITION IS MARKED BY THREE RED ELLIPTICAL FLOATS SPREAD OVER AN AREA OF 15 FEET RADIUS. NM19/60--5/7/60; DANGER AREA - THE HIGH EXPLOSIVES IN TRANSPORT BOXES PREVIOUSLY REPORTED TO HAVE SUNK ABOUT 4,000 YARDS, 272°30' FROM YORK SPIT LIGHT HAVE BEEN RECOVERED WITH THE EXCEPTION OF ONE EXPLOSIVE CHARGE. THE US NAVY ADVISES THAT FURTHER SALVAGE OPERATIONS HAVE BEEN ABANDONED. THE NOTE "DANGER - EXPLOSIVE REPORTED (1960)" WILL BE CHARTED AT THE LOCATION. THE THREE FLOATS HAVE BEEN REMOVED. (ENTERED 2/02 BY MBH)
UNKNOWN	12238	D	0098	0	37/08/26.31	076/21/55.80	00952 HISTORY H7954/52-53 A HALF-SUBM WK AT END OF A MARINE RR SURVEY REQUIREMENTS FULL; LOW PRIORITY

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APPENDIX F

ECONOMIC JUSTIFICATION

Justification of Continued Maintenance
Baltimore Harbor and Channels

Background

In recent years the Corps of Engineers has conducted several studies of interest to the Port of Baltimore including the August 2000 Brewerton Channel Eastern Extension Limited Reevaluation Report (LRR), the March 1997 Baltimore Harbor Anchorages and Channels feasibility report and the November 2001 LRR, and the March 1997 Tolchester Channel S-Turn Straightening navigation assessment, all prepared by the Baltimore District; and the 1996 Chesapeake and Delaware Canal Deepening feasibility study that was conducted by the Philadelphia District. The recent Brewerton and Anchorages studies both showed that improvements to the system were warranted with benefit to cost ratios of greater than 1.0 (11.5 to 1 and 2.0 to 1 respectively). The Tolchester Channel S-Turn project was recommended due to safety concerns.

Below is the methodology and economic assessment for the continued maintenance of the Baltimore Harbor and Channels Project. The assessment was accomplished in three parts. The first part examined the costs and benefits of maintaining the channels that are authorized to a depth of 50 feet. These channels include the Cape Henry Channel, York Split Channel, Rappahannock Shoal Channel, and Craighill Approach Channel to Fort McHenry. The second part of this assessment focused on the Chesapeake and Delaware Canal and Approach Channels. These channels include the Tolchester Channel, Brewerton Channel Eastern Extension, and Swan Point. Also included were the C&D Canal and its approach channels, which are maintained by the Philadelphia District. The third part of this assessment examined the branch channels that include the Curtis Bay Channel, Curtis Creek, Ferry Bar, and Northwest Branch.

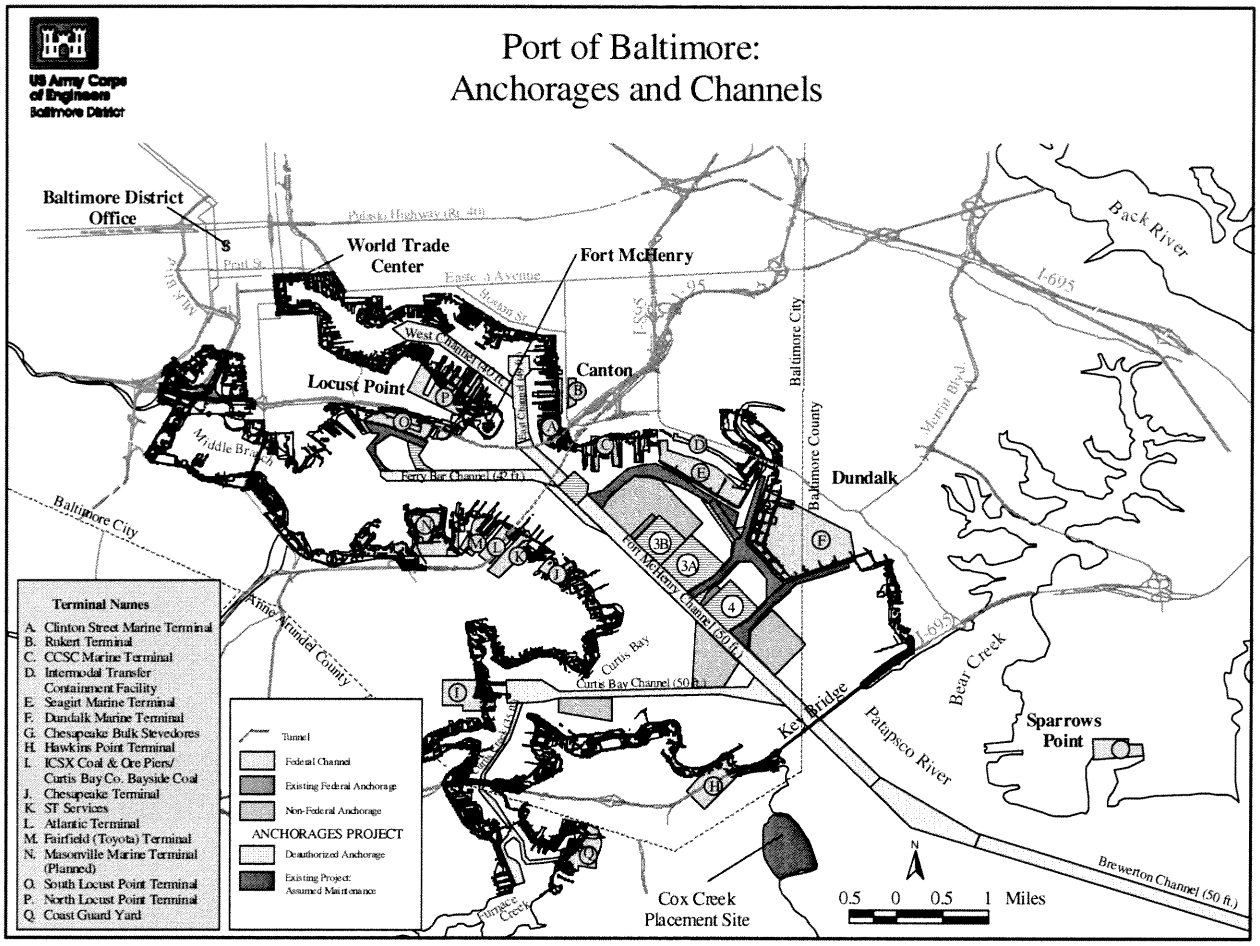
Existing Navigation Projects

The existing project for the Baltimore Harbor and Channels was adopted by the River and Harbor Act of 8 August 1917 and was modified by the River and Harbor Acts of 21 January 1927, 3 July 1930, 7 October 1940, 2 March 1945, 3 July 1958, and 31 December 1970. The existing navigation project is shown in Figures 1, 2, and 3.

The existing project includes a main channel, 50 feet deep, between Cape Henry, Virginia, and Fort McHenry at Baltimore. It should be noted that not all of the channels are constructed to their authorized dimensions. The authorized dimensions of the channels are as follows:

> <u>1. Cape Henry Channel:</u> 50 feet deep and 1,000 feet wide from the 50-foot depth curve in the Atlantic Ocean to that depth in Chesapeake Bay, a distance of 3 miles.

Figure 1



Port of Baltimore:
Anchorages and Channels
US Army Corps of Engineers
Baltimore District
Baltimore District Office
World Trade Center
Fort McHenry
Canton
Locust Point
Dundalk
Sparrows Point
Back River
Bear Creek
Patapsco River
Key Bridge
Curtis Bay
Middle Branch
Baltimore City
Baltimore County
Anne Arundel County
West Channel (40 ft.)
East Channel (40 ft.)
Ferry Bar Channel (42 ft.)
Fort McHenry Channel (50 ft.)
Curtis Bay Channel (50 ft.)
Brewerton Channel (50 ft.)
Cox Creek Placement Site
Furnace Creek
Pulaski Highway (Rt. 40)
Eastern Avenue
Boston St.
Pratt St.
I-95
I-895
I-695
Merritt Blvd.
MLK Blvd.
Terminal Names
A. Clinton Street Marine Terminal
B. Rukert Terminal
C. CCSC Marine Terminal
D. Intermodal Transfer Containment Facility
E. Seagirt Marine Terminal
F. Dundalk Marine Terminal
G. Chesapeake Bulk Stevedores
H. Hawkins Point Terminal
I. CSX Coal & Ore Piers/ Curtis Bay Co. Bayside Coal
J. Chesapeake Terminal
K. ST Services
L. Atlantic Terminal
M. Fairfield (Toyota) Terminal
N. Masonville Marine Terminal (Planned)
O. South Locust Point Terminal
P. North Locust Point Terminal
Q. Coast Guard Yard
Tunnel
Federal Channel
Existing Federal Anchorage
Non-Federal Anchorage
ANCHORAGES PROJECT
Deauthorized Anchorage
Existing Project: Assumed Maintenance
3B
3A
4
N
0.5 0 0.5 1 Miles

Figure 2

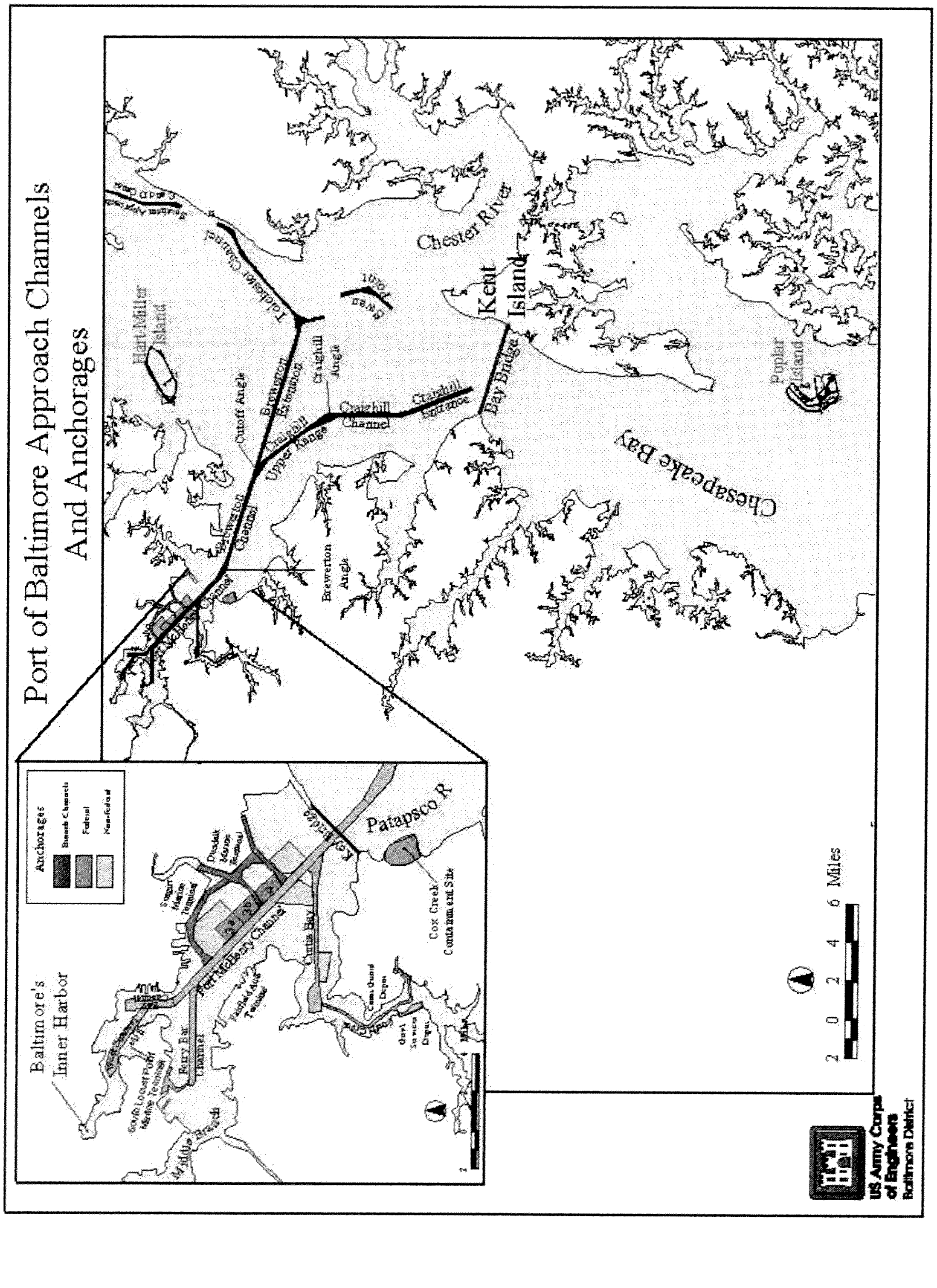
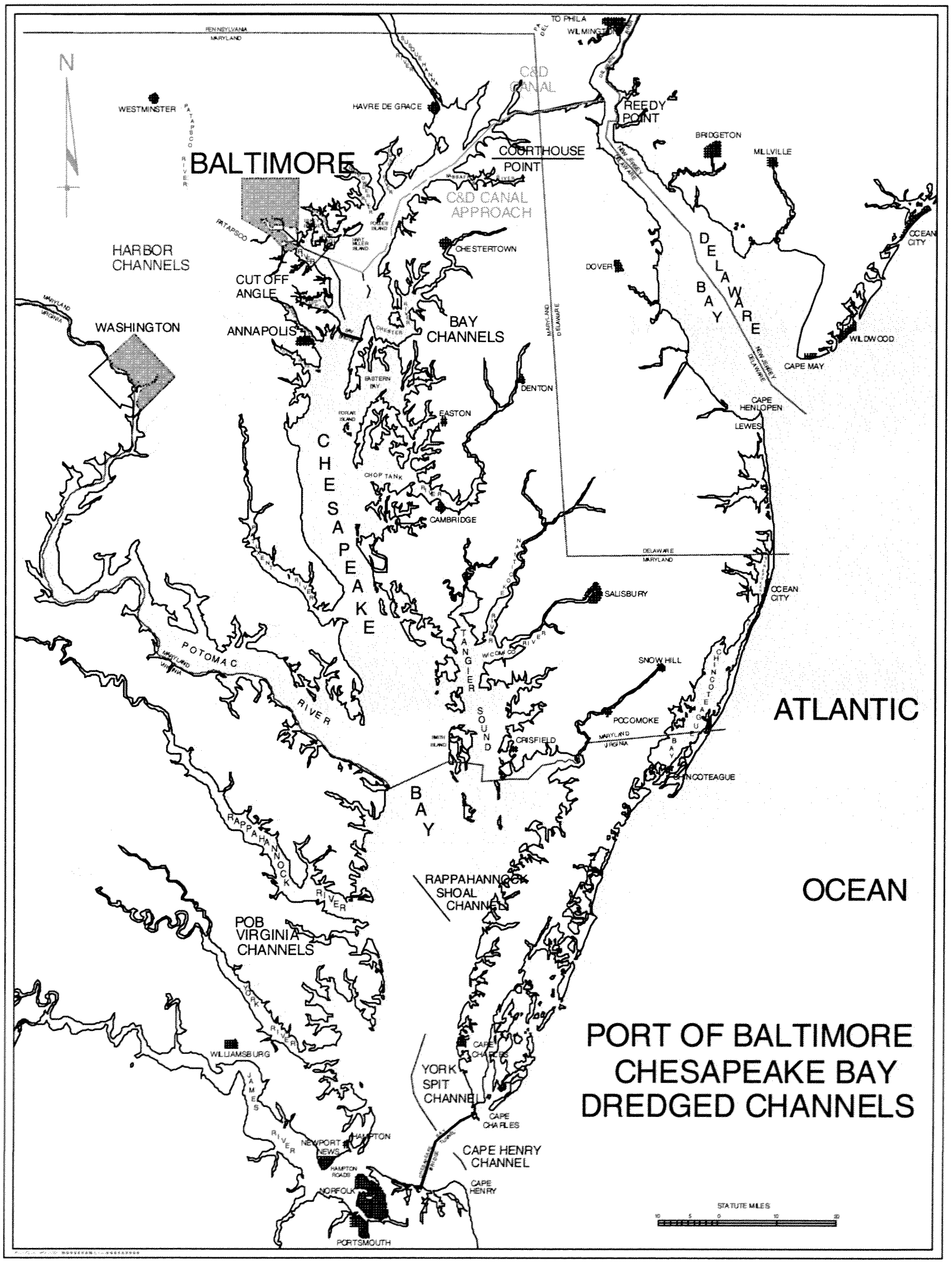

Port of Baltimore Approach Channels
And Anchorages
Hart-Miller Island
Tolchester Channel
Swan Point
Chester River
Kent Island
Bay Bridge
Craighill Channel
Craighill Entrance
Craighill Angle
Brewerton Extension
Cutoff Angle
Upper Range
Brewerton Channel
Brewerton Angle
Poplar Island
Chesapeake Bay
Baltimore's Inner Harbor
Anchorages
Fort McHenry Channel
Curtis Bay
Patapsco R
Cox Creek Containment Site
Ferry Bar Channel
Middle Branch
Miles
US Army Corps of Engineers Baltimore District

Figure 3


PORT OF BALTIMORE
CHESAPEAKE BAY
DREDGED CHANNELS
BALTIMORE
HARBOR CHANNELS
CUT OFF ANGLE
ANNAPOLIS
WASHINGTON
BAY CHANNELS
C&D CANAL
C&D CANAL APPROACH
COURTHOUSE POINT
REEDY POINT
DELAWARE BAY
CHESAPEAKE
BAY
ATLANTIC
OCEAN
RAPPAHANNOCK SHOAL CHANNEL
POB VIRGINIA CHANNELS
YORK SPIT CHANNEL
CAPE HENRY CHANNEL
POTOMAC RIVER
RAPPAHANNOCK RIVER
YORK RIVER
JAMES RIVER
TANGIER SOUND
WESTMINSTER
HAVRE DE GRACE
CHESTERTOWN
DOVER
DENTON
EASTON
CAMBRIDGE
SALISBURY
SNOW HILL
POCOMOKE
CRISFIELD
CHINCOTEAGUE
OCEAN CITY
LEWES
CAPE HENLOPEN
CAPE MAY
WILDWOOD
BRIDGETON
MILLVILLE
WILLIAMSBURG
NEWPORT NEWS
HAMPTON
NORFOLK
PORTSMOUTH
CAPE CHARLES
CAPE HENRY
STATUTE MILES

2. York Spit Channel: 50 feet deep and 1,000 feet wide connecting the 50-foot depth curves in the Chesapeake Bay opposite the York River near York Spit, a distance of 18.4 miles.

3. Rappahannock Shoal Channel: 50 feet deep and 1,000 feet wide connecting 50-foot depth curves in the Chesapeake Bay opposite the Rappahannock River, a distance of 10.3 miles.

4. Craighill Approach Channel to Fort McHenry: 50 feet deep and generally 800 feet wide, widened at the entrance and bends, from the 50-foot depth curve in Chesapeake Bay opposite the mouth of the Magothy River to Fort McHenry on Patapsco River, a distance of 20.7 miles.

The existing project also authorizes a series of branch channels that provide access to various public and private terminals serving the Port of Baltimore and that connect the main channel with the C&D Canal. The dimensions of the branch channels are as follows:

1. Connecting Channel to Chesapeake and Delaware Canal Approach Channel: 35 feet deep, 600 feet wide, and 15.6 miles long from the Cutoff Angle in the main channel to the 35-foot depth curves in the natural channel on the east side of Chesapeake Bay, which is part of the inland waterway from the Delaware River to Chesapeake Bay. The channel includes the Brewerton Channel Eastern Extension, Swan Point, and Tolchester Channels.

2. Curtis Bay Channel: 50 feet deep, 600 feet wide, 2.2 miles long from the main channel to and including a 1,275-foot-wide turning basin at the head of Curtis Bay.

3. Curtis Creek:

a. A channel 35 feet deep and 200 feet wide from the 50-foot channel in Curtis Bay to 750 feet downstream of the Pennington Avenue Bridge, distance of 0.9 miles.

b. A channel 22 feet deep and 200 feet wide from the 35-foot channel to and along the marginal wharf of the Curtis Bay Ordnance Depot.

c. An irregularly shaped basin 18 feet deep and 320 feet wide, adjacent to the head of the 22-foot channel, a distance of 600 feet.

d. A basin 15 feet deep and 450 feet wide, from the end of the 22-foot channel to the end of the marginal wharf, a distance of 0.2 miles.

e. A channel 22 feet deep and 200 feet wide, from the 22-foot channel of the CSX Rail Transport bridge to the vicinity of Arundel Cove, a distance of 2,800 feet. A channel 22 feet deep and 100 feet wide in Arundel Cove for a distance of 2,100 feet, with an anchorage basin 700 feet square adjacent to the channel and southwest of the wharf of the U.S. Coast Guard Depot at Curtis Bay.

4. Middle Branch: Ferry Bar East Section: A channel 42 feet deep and 600 feet wide, from the main channel at Fort McHenry to Ferry Bar, a distance of 1.4 miles. NOTE: The West Ferry Bar and Spring Garden Sections of the existing project were deauthorized by Section 1001 of the Water Resources Development Act of 1986, PL 99-662.

5. Northwest Branch:

a. East Channel: 600 feet wide and 49 feet deep for 1.3 miles, with a 950-foot-wide turning basin at the head of the channel.

b. West Channel: 600 feet wide and 40 feet deep for 1.3 miles, with a 1,050-foot-wide turning basin at the head of the channel.

The existing project pertaining to the Inland Waterway from Delaware River to Chesapeake Bay, Delaware and Maryland (C&D Canal) project under the jurisdiction of the Philadelphia District was adopted as House Document 63-196 in 1919 and modified by Section 3 of the Rivers and Harbors Act of 1927, by Rivers and Harbors 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 and the Chesapeake Bay to water of natural 35-foot depth in the Chesapeake Bay and an anchorage in Elk River, 35 feet deep and 1,200 feet wide, with an average length of 3,700 feet. The total channel length is about 46 miles.

Justification of Continued Maintenance

50-Foot Project

Benefits derived from the continued maintenance of the 50-foot project focused on two commodities, coal and iron ore, and three trade routes, Brazil, Canada, and Europe. These two commodities account for the largest percentage of benefits associated with the 50-foot channel. Benefits from coal and iron accounted for 87 percent of the total benefits in the 1981 General Design Memorandum (GDM). The Japan and Liberia trade routes that were part of the 1981 GDM are not included in this analysis because no vessel traffic using these routes was identified from the Waterborne Commerce Statistics Center (WCSC) data. Coal is exported almost exclusively to Europe. Iron ore is imported from Canada and Brazil. Although coal and iron ore tonnages are significantly less than in the past, there are still many ships transporting these commodities that require 50 feet of channel depth. Waterborne Commerce statistics show in 2001 thirty-five vessels drafting 45 feet or more left Baltimore for European ports exporting coal and forty-six vessels entered the port of Baltimore from Canada (25), South America (17), Australia (3) and Norway (1) importing iron ore.

In the 1981 GDM, benefits were defined as the expected transportation cost savings with implementation of the 50-foot deepening project from an existing depth of 42 feet. 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, the size of the vessel and the vessel operating costs. Of these three variables the only significant changes have been to the trade routes and the vessel operating costs. The current sizes of the vessels are within the range identified in the GDM (50,000 to 120,000 DWT). The GDM identified a trade route to Asia, but based on recent vessel movements this trade route was not considered. Therefore no benefits were estimated for this route. The WCSC import-export data indicates the trade routes with Europe, Brazil, and Canada are still active.

The remaining variable, vessel operating costs, has been reduced significantly since the GDM was completed. The GDM calculated the average unit savings per ton by taking into consideration the trade route and the existing and future fleet using that trade route. The existing and future fleets identified in the GDM were in the range of 50,000 to 120,000 DWT. Table 1 shows the transportation costs per ton for a channel depth of 42 and 50 feet. The difference between the transportation cost of the 42 and 50 foot channels provides the net savings per ton as presented in the GDM in 1981 dollars. As verified by WCSC entrances and exits data, the current, active trade routes and vessel types are the same as identified in the GDM. Any difference between the savings per ton estimated in the GDM and savings per ton today would result from changes in vessel operating costs. Subsequently, the 2004 WCSC average hourly vessel operating cost, for bulk carriers between 50,000 and 120,000 DWT, was used as a basis to update the average unit savings per ton to current price levels. Table 2 shows the across the board decrease in vessel operating costs between the GDM and the 2004 published vessel operating cost data. This decrease in the hourly operating cost ranged between 35 and 42 percent for vessels at sea compared to the GDM data for an average decrease of 39.2 percent. This average decrease was then applied to the 1981 savings per ton to estimate savings per ton in 2004 prices (see Table 1).

In order to compute benefits at the current price level, the average foreign tonnage from 1999 to 2003 for each commodity (see Table 3) was multiplied by the updated average savings per ton for that commodity. Based on the nature of the foreign trade for coal and iron ore, this analysis assumes that all foreign trade for these commodities will utilize the channel depth between 42 and 50 feet in order to minimize operating costs. Table 4 presents the process and result of this computation methodology. The annual savings for the two commodities at the current price level amounts to $12,176,000. The savings for iron ore are estimated based on half the tonnage coming from Canada and half from Brazil. Both estimates are based on Waterborne Commerce Statistics data identifying the origin and destination of vessel movements.

50-Foot Project Operation and Maintenance Cost

The Baltimore Harbor and Channels project is maintained by annual dredging of its channels as needed to maintain authorized channel depths. During the period from 2000-2004 the average cost to maintain the Baltimore Harbor and Channels, based on actual contract costs, including Corps of Engineers supervision and administration (S&A) and engineering and design (E&D) costs, was approximately $$8,949,000 nominal dollars. These costs reflect the costs to the navigation project to dredge and place the material at placement sites identified as the Federal standard. Where material dredged is used for beneficial use projects, the additional costs of transportation and placement to these sites are not included as part of the navigation project. After applying a price index to the cost in past years to update those costs to 2004 dollars, the average cost to maintain the channels is $9,489,000. This cost is the total cost at 2004 price levels to maintain channels from the natural depth to the authorized project depths.

Table 1

Summary of Transportation Cost Analysis

	Costs/Ton[1] Existing	**Costs/Ton**[1] Improved	**Savings/Ton**[1] 1981 Prices	**Savings/Ton**[2] 2002 prices
Imports				
Iron Ore	**42'**	**50'**		
Canada	$ 4.40	$ 3.49	$ 0.91	$ 0.55
Brazil	$ 15.42	$ 12.06	$ 3.36	$ 2.04
Liberia	$ 12.47	$ 11.09	$ 1.38	$ 0.84
Exports				
Coal	**42'**	**50'**		
Japan	$ 33.55	$ 28.41	$ 5.14	$ 3.13
Europe	$ 12.11	$ 9.45	$ 2.66	$ 1.62

[1]Data from 1981 GDM at 1981 price level.
[2]Calculated using the percent change in vessel operating costs from 1981 to 2004.

50-Foot Project Summary

The total cost to maintain the channels associated with the 50-foot project based on a 5-year average from 2000-2004 is $9,489,000. The annual benefits associated only with vessels requiring a channel depth of 45 to 50 feet equals $12,176,000. This evaluation demonstrates that continued maintenance of the 50-foot Baltimore Harbor & Channels project is warranted. This analysis does not consider the benefits accrued by vessels with operating drafts less than 42 feet.

Table 2
Hourly Operating Cost
Foreign Flag Dry Bulk Vessels

	1981 GDM		Current		1981-2004 % Change
Vessel DWT	At Sea[1]	In Port[1]	At Sea[2]	In Port[2]	At Sea
15,000	$ 734	$ 544	$ 500	$355	-32%
25,000	$ 818	$ 569	$ 545	$385	-33%
35,000	$ 881	$ 612	$ 583	$411	-34%
50,000	$ 986	$ 683	$ 643	$454	-35%
60,000	$1,094	$ 736	$ 684	$480	-37%
80,000	$1,303	$ 845	$ 772	$541	-41%
100,000	$1,486	$ 961	$ 871	$618	-41%
120,000	$1,667	$1,055	$ 970	$691	-42%
150,000	$1,957	$1,212	$1,041	$724	-47%

1Data from 1981 GDM at 1981 price level.

2 Fiscal Year 2004 Vessel Operating Costs published by HQUSACE.

Table 3
Annual Foreign Tonnages for the Port of Baltimore (1999-2003)

Coal (lignite)
(1,000 tons)

		Foreign		Canadian	
Year	Total	Inbound	Outbound	Inbound	Outbound
1999	5,536	--------	4,194	-------	1,313
2000	5,761	--------	4,893	-------	868
2001	5,341	484	4,131	-------	726
2002	4,182	322	3,502	-------	359
2003	3,916	573	2,547	-------	796
Average	4,947	276	3,853	-------	812

Table 3 (Cont'd)
Iron Ore (1999-2003)
(1,000 tons)

Year	Total	Foreign Inbound	Foreign Outbound	Canadian Inbound	Canadian Outbound
1999	3,779	1,905	--------	1,874	-----------
2000	4,847	2,632	--------	2,237	-----------
2001	4,156	2,080	--------	2,076	-----------
2002	4,936	2,558	--------	2,377	-----------
2003	4,457	2,481	--------	1,976	-----------
Average	4,439	2,331	--------	2,108	-----------

Source: Waterborne Commerce Statistics Center.

Table 4
Baltimore Harbor and Channels
Computation of Benefits by Commodity*

	(1,000 tons)		($000s)
Iron Ore (Canada)	2,108	$0.55	$1,159
Iron Ore (Foreign)	2,331	$2.04	$4,775
Coal	3,853	$1.62	$6,242
Totals	8,292		$12,176

*2004 price levels

Table 5
Annual Dredging Costs
Baltimore Harbor 50', Branch Channels, & Anchorages

Year	Nominal Cost	Price index (CPI)	2004 Cost
2000	$14,576,411	1.11	$16,179,816
2001	$ 6,055,703	1.08	$ 6,540,159
2002	$ 9,580,591	1.05	$10,059,621
2003	$ 4,359,881	1.03	$ 4,490,677
2004	$ 10,173,613	1.00	$10,173,613
5 yr. Avg.	$ 8,949,240		$ 9,488,777

Source: Baltimore Harbor & Channels O&M, General Expenditures

35-Foot Chesapeake and Delaware Canal Approach Channels

The methodology used to determine the justification of continued maintenance of the 35-Foot Chesapeake and Delaware Canal Approach Channels followed a similar approach as the 50-foot justification. However, data was averaged over a longer timeframe of 11 years. This longer timeframe was used to capture significantly higher dredging quantities in previous years, and, therefore, present a more representative view of the maintenance costs. Benefits associated with savings in travel costs were estimated using data from a 2004 report completed by John Martin Associates for the Port of Baltimore (Attachment 1). Dr. Martin utilized interviews, datasets maintained by the Army Corps of Engineers, and vessel registries. This report compiled data for potential transportation savings for each transit reported in 2003 and the sailing draft of the vessel. This data was used to estimate average transportation savings associated with vessels of similar type and draft. The savings were estimated based upon two potential routes to the Port of Baltimore; the Chesapeake and Delaware Canal route and an ocean route. The variables used to estimate the travel cost included type of vessel, port of origin, speed of vessel, and hourly vessel operating costs. The average transportation saving applied to the average number of trips per year provide the estimate for the annual transportation cost savings.

The Brewerton Channel Eastern Extension, Tolchester Channel, and Swan Point Channel comprise the 35-foot deep channels connecting the Port of Baltimore with the Chesapeake and Delaware (C&D) Canal and approach channels. While the majority of the traffic transiting the northern Chesapeake Bay between the Port and the C&D Canal use the Brewerton Channel Eastern Extension and Tolchester Channel, the Swan Point Channel is an integral part of the navigation system. The Swan Point channel is used by vessels transiting the Chesapeake Bay between the C&D Canal and points south of the Port. This includes vessels that bypass the Port from points north or south of the Port as well as vessels that go to the Annapolis Anchorage prior to calling on the Port.

The Swan Point Channel is also an important safety feature for the northern Bay navigation system, providing a safer alternative route to and from the Port during adverse weather conditions, difficult navigation conditions, or blockages of the Brewerton Channel Eastern Extension or Craighill approach channels (Attachment 2). For this analysis we have assumed that the safety benefits sufficiently justify the continued maintenance on the Swan Point Channel. The following justification will exclude the quantity of dredged material and associated cost from the Swan Point Channel.

Costs

Historic costs and quantities dredged were gathered for this report. With respect to channels that were maintained by the Baltimore District, the most recent 11 years of historic cost and quantity data were used (1994-2004) (Attachment 3). With respect to channels maintained by Philadelphia District, 5 years of historic cost data and 11 years of historic quantity data were used (Attachment 4). The additional years of quantity data for Philadelphia's channels were used to capture years with significant increases of dredged quantities. The most recent (2000-2004) 5-year average quantity dredged for the

Philadelphia channels is 656,156 cubic yards. This is significantly lower than the most recent 11-year average of about 1,000,000 cubic yards which will be used in this analysis. The historic 11-year average of dredged quantities for the Baltimore channels is lower than the 5-year average. The most recent (2000-2004) 5-year average was 439,000 cy versus 620,000 cy for the 11-year average. To be consistent with the Philadelphia channels, the analysis of Baltimore maintained channels will use the 11-year average quantity of 620,000 cy.

In order to estimate the quantity needed to be dredged for each increment of channel depth, a relationship was developed between the length of channel that would need to be dredged and the pre-channel bathymetry. Based on the existing bathymetry a determination was made at which depth each channel would no longer need to be dredged. At this depth, 0% of the channel would need to be dredged. As the channel depth was incrementally increased, the percent of the channel that would require dredging would increase. This percentage multiplied by the average quantities described earlier would yield the dredged quantities at each channel depth increment. Dredged quantities were calculated for each channel depth up to 35 feet for the Baltimore and Philadelphia maintained channels. Once the quantities for each depth are identified the maintenance cost will be calculated based on an average unit cost per cubic yard of material.

Table 6 shows that to maintain the Baltimore channels at 35 feet, the amount of material to be dredged would be 620,000 cubic yards. Maintaining the channels at 32 feet would reduce the annual amount of dredged material by about 77,000 cubic yards until at a depth of 19 feet no dredging would be needed. The estimated average annual cost to maintain the Baltimore Northern Approaches to a depth of 35 feet would be $2,834,000. These costs would be reduced by $426,000 annually if the channels were maintained at a depth of 32 feet. Further reductions in cost would be achieved until the natural channel depth is reached at a depth of approximately 19 feet. The incremental cost to maintain is significantly lower going from a depth of 29 feet to 23 feet. This is due to the fact that once a depth of 30 feet is reached, the Tolchester Channel is at its natural depth. The jump in the incremental cost to maintain the 20-foot channel depth is due to significant sections of the Brewerton Channel Eastern Extension reaching its natural depth. The Cumulative Incremental Cost column in Table 6 shows the incremental cost that could be saved by maintaining an alternative channel depth compared to the 35-foot channel. For example maintaining a channel depth at 26 feet would save approximately $1,355,000 over maintaining the channel at 35 feet. Table 7 shows the same information as Table 6 but for the channels that the Philadelphia District maintains. These channels begin to have sections reach the natural depth near 24 feet as demonstrated by the jump in incremental cost to maintain shown in Table 7. Table 8 shows the sum of the Baltimore and Philadelphia Channels. Costs used in these tables include the cost of dredging and placement at the placement site identified in the Federal standard.

Table 6
Baltimore Northern Approaches

Channel Depth	Cubic Yards	Cost to Maintain	Incremental Cost Saved	Cumulative Incremental Cost Saved
35	619,836	$2,834,203	0	0
32	543,265	$2,408,608	$425,595	$425,595
29	392,594	$1,531,116	$877,492	$1,303,087
26	379,277	$1,479,180	$51,936	$1,355,023
23	362,097	$1,412,178	$67,002	$1,422,025
20	189,905	$740,629	$671,549	$2,093,574
Natural Depth	0	$0	$740,629	$2,834,203

Table 7
Philadelphia District Costs

Channel Depth	Cubic Yards	Cost to Maintain	Incremental Cost Saved	Cumulative Incremental Cost Saved
35	1,103,248	$5,516,240	0	0
32	1,061,158	$5,305,791	$210,449	$210,449
29	992,357	$4,961,783	$344,008	$554,457
26	823,186	$4,115,930	$845,853	$1,400,310
23	465,420	$2,327,101	$1,788,829	$3,189,139
20	72,039	$360,197	$1,966,904	$5,156,043
Natural Depth	0	$0	$360,197	$5,516,240

Table 8
Total Cost

Channel Depth	Cubic Yards	Cost to Maintain	Incremental Cost Saved	Cumulative Incremental Cost Saved
35	1,723,084	$8,350,443	0	0
32	1,604,423	$7,714,399	$636,044	$636,044
29	1,384,951	$6,492,899	$1,221,500	$1,857,544
26	1,202,463	$5,595,110	$897,789	$2,755,333
23	827,517	$3,739,279	$1,855,831	$4,611,164
20	261,944	$1,100,826	$2,638,453	$7,249,617
Natural Depth	0	$0	$1,100,826	$8,350,443

Benefits

The key benefit from maintaining the channels at various depths is the time savings that can be realized over using the Cape Henry route. This time savings benefit depends on the route taken and the speed of the vessel or tug/barge combination. The monetary value of that time savings will be estimated based on the hourly operating cost of the vessel or tug.

Table 9 shows the number of trips for various vessel drafts for the years 1999 through 2003, the most recent 5 years of WCSC trip data. Travel costs savings for each vessel and tug/barge combination using the canal in 2003 that required at least 19 feet of water were calculated. The reduced travel costs associated with utilizing the C&D canal route over the Cape Henry route for barges were estimated using an hourly operating cost for the tugs of $750. The average speed that these tugs would operate on the Cape Henry route was assumed to be 8 nautical miles per hour. Both the hourly operating costs and the average tug speed used in the analysis were derived directly from interviews with C&D Canal and channels tug operators.

Additionally, the difference in pilotage fees associated with the two routes was considered in the overall travel cost savings. Costs were base on mileage saved by using the canal route over the Cape Henry route. Vessel operating costs by type, size and flag of each vessel were identified using the Economic Guidance Memorandum (EGM) 05-01, Deep Draft Vessel Operating Costs FY 2005- General Technical Support Document.

Table 9

Self-Propelled Vessel and Non Self-Propelled Barge Trips by Draft (1999-2003)

C&D Canal and Channels

Number of Trips*

	1999		2000		2001		2002		2003	
Draft	**Vessel**	**Barge**	**Vessel**	**Barge**	**Vessel**	**Barge**	**Vessel**	**Barge**	**Vessel**	**Barge**
33-30	170	10	146	18	111	5	96	0	76	0
29-27	140	21	138	26	123	27	124	35	104	24
26-24	216	35	244	48	195	118	209	77	170	53
23-21	97	185	83	205	98	201	85	199	77	147
20-18	35	62	38	69	39	116	47	93	19	114
Total	**658**	**313**	**649**	**366**	**566**	**467**	**561**	**404**	**446**	**338**

*Waterborne Commerce Statistics
Tug movements without a barge were not included in this analysis

For this analysis, vessel travel costs savings identified in the John Martin Associates report for each individual vessel were averaged together with vessels of similar draft to provide an average vessel travel cost savings for vessels at each draft (see Table 10). This travel costs savings was then applied to the average number of vessel trips for each draft to estimate total vessel savings for each draft. Similarly, the barge cost savings were averaged and applied to the average number of barge trips for each draft to estimate barge transportation cost savings. Table 10 shows the average number of trips from 1999 to 2003, the average travel cost savings for vessels and tug/barge combinations and cumulative benefits for each channel depth. Changes in average savings per barge movement are attributed to distance traveled from the previous port. The average number of trips was multiplied by the average transportation cost savings to estimate the average travel costs savings by vessel type and size. Cumulative incremental benefits per channel depth shows the amount of benefits that would be lost if the channels were maintained at the indicated depth verses the current 35-foot depth. Therefore, if the channels were maintained at a depth of 26 feet instead of 35 feet, the benefits foregone would equal $5,385,000.

Table 11 shows the net benefit for maintenance dredging for each increment of channel depth and Figure 4 graphically represents the comparison of cost to benefits. The Net Benefits column of Table 11 indicated the difference between reduced maintenance costs compared to the corresponding benefits foregone. For every reduced channel depth shown the benefits foregone are greater than the cost savings. Therefore continued maintenance for the 35-foot channel system is warranted.

Branch Channels and Anchorages

The Baltimore Harbor and Channels Project also includes several branch channels as indicated previously. The cost of maintaining these channels has been included in the assessment of the 50-foot channel. However, these channels were evaluated based on vessel usage. Curtis Bay Channel had vessel traffic in 2002 of 58 vessels with a draft greater than 30 feet. Of these vessels, 45 also used the Curtis Creek Channel, which connects directly to Curtis Bay Channel. Ferry Bar East Section was used by 106 vessels with a draft greater than 30 feet. The Northwest Branch East Channel had traffic of 85 vessels and the West Channel had traffic of 74 vessels exceeding a draft of 30 feet. Since the benefits of the anchorages were recently evaluated (Baltimore Harbor Anchorages and Channels LRR in 2001), no further justification was deemed necessary.

Consideration of Reduced Maintenance Dredging

The District conducts semiannual hydrographic surveys of the project channels to determine shoaling patterns and the need for dredging. Those channels that are shoaled and will require dredging are reviewed for traffic usage or projected traffic usage to determine whether the channels warrant maintenance dredging to the authorized or constructed dimensions.

Table 10
Travel Cost Savings

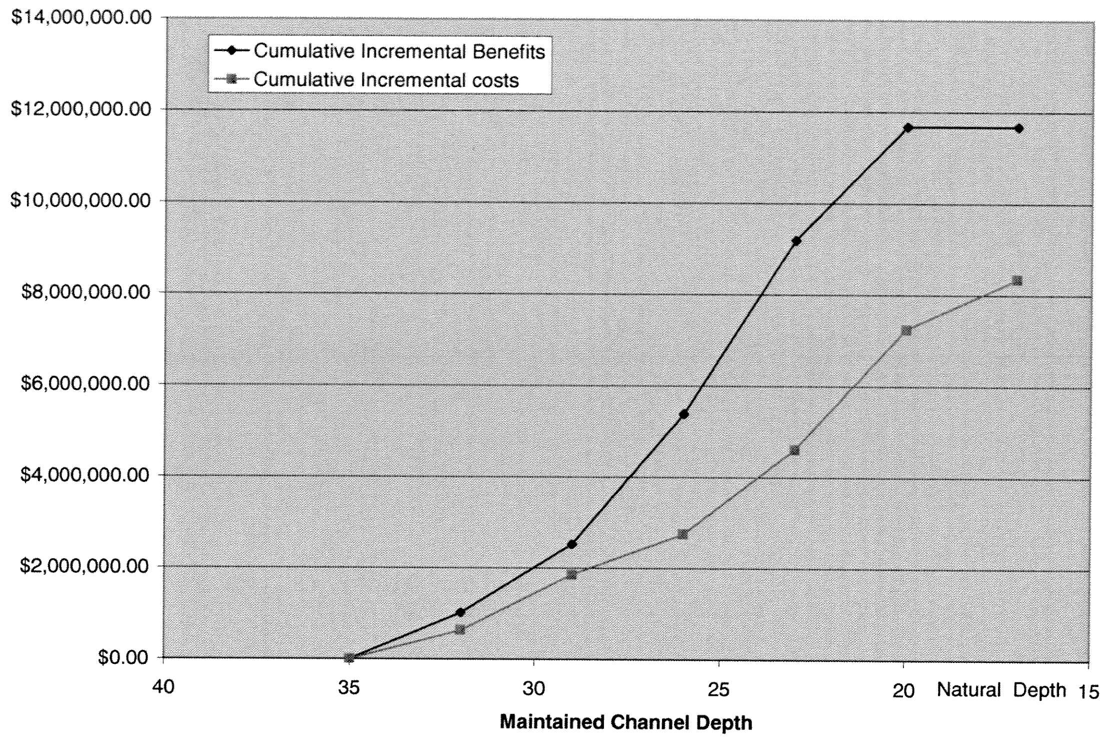
Avg. Trips (1999-2003)			Avg. Savings per Vessel		Avg. travel costs Savings (1999-2003)			Cumulative Incremental Benefits Per Channel Depth	Required Channel Depth
Vessel	Barge	Total	Vessel	Barge	Vessel	Barge	Total		
120	6	126	$ 7,113	$ 27,563	$ 853,560	$ 165,378	$ 1,018,938	$ 1,018,938	32
125	27	152	$ 6,747	$ 24,371	$ 843,379	$ 658,017	$ 1,501,396	$ 2,520,334	29
207	67	274	$ 5,852	$ 24,677	$1,211,364	$ 1,653,359	$ 2,864,723	$ 5,385,057	26
87	188	275	$ 5,821	$ 17,544	$ 506,427	$ 3,298,272	$ 3,804,699	$ 9,189,756	23
35	91	126	$ 5,357	$ 25,306	$ 187,495	$ 2,302,846	$ 2,490,341	$ 11,680,097	20
574	379	953			$3,602,225	$ 8,077,872	$11,680,097		

Cumulative Incremental Benefits derived from the existing channel depth of 35 feet.

Table 11
Summary Project Benefits

Channel Depth	Incremental Cumulative Benefits Foregone	Incremental Cumulative Costs Saved	Net Benefits Foregone
35	0	0	-
32	$ 1,018,938	$636,044	$ 382,894
29	$ 2,520,334	$1,857,544	$662,790
26	$ 5,385,057	$2,755,333	$2,629,724
23	$ 9,189,756	$4,611,164	$4,578,595
20	$ 11,680,097	$7,249,617	$4,430,480

Figure 4
Cumulative Incremental Cost Savings Vs. Cumulative Incremental Benefits Foregone



The constructed widths of many of the channels were reduced below their authorized widths to reduce dredging volumes and costs when the channels were deepened to 50 feet. These channels include: the York Spit and Rappahannock Shoal Channels in Virginia, which were reduced from the authorized width of 1,000 feet to 800 feet, the main approach channels in Maryland from the Craighill Entrance through the Ft. McHenry Channel, which were reduced from the authorized width of 800 feet to 700 feet; and the Curtis Bay Channel, which was reduced from the authorized width of 600 feet to 400 feet. Further reductions in channel widths would not be considered safe.

The District has reduced the maintained depths of several channels below the authorized depths in the past based on traffic usage. The Northwest Branch East Channel was deepened to 49 feet in 1990, but has not been maintained since that time because one of the users moved from the area and the remaining users have not deepened their channels. The Ferry Bar Channel was not maintained between 1985 and 2002 because users relocated from the South Locust Point site and the remaining users did not require the authorized 42-foot depth. A portion of the Ferry Bar Channel was maintained to 42 feet in 2003 to provide commensurate depths for the newly deepened channel into Fairfield. The District has not maintained the 35-foot deep Ft. McHenry Anchorage for many years since the anchorage is too narrow to safely handle untended ships and only smaller ships are temporarily held in the anchorage by tugs for short periods of time. The Ft. McHenry Anchorage was de-authorized by the Baltimore Harbor Anchorages and Channels study.

The Swan Point Channel was evaluated for reduced maintenance dredging. Due to its importance as a safety feature of the channel system, it was deemed necessary at its current dimensions. No further analysis was warranted (Attachment 2).

The District and the Maryland Port Administration have made a significant investment in dredging the navigation channels serving the Port of Baltimore. The District will continue to evaluate shoaling and traffic usage on an annual basis to determine whether maintenance is warranted in the project channels.

Conclusion

The benefit analysis for continued maintenance of the 50-foot Baltimore Harbor & Channels project evaluated the transportation cost savings for the inbound movement of iron ore to Baltimore Harbor and the outbound movement of coal from Baltimore Harbor. The transportation cost savings were evaluated by updating vessel operating cost information and commodity tonnage information used to evaluate increasing channel depths from 42 feet to 50 feet in the 1981 GDM project authorizing document. The updated evaluation was done using current vessel operating cost information as published by the Corps of Engineers HQUSACE and a 5-year average of the most recently available Waterborne Commerce Statistical Center (WCSC) commodity tonnage information. The updated annual benefits amount to $12.2 million. The average annual operation and maintenance cost for the period from 2000-2004 at current price levels for the 50-foot project channels is $9.5 million. Because expected annual benefits exceed annual maintenance dredging costs, the evaluation demonstrates that continued maintenance of the 50-foot Baltimore Harbor and Channels project is warranted.

A separate benefit analysis for continued maintenance of the 35-foot C&D Canal approach channels evaluated the benefits and costs associated with continued maintenance of the channels to a depth of 35 feet. The evaluation used transportation cost savings information from a John Martin & Associates 2004 report and WCSC vessel and barge traffic information to identify expected benefits at 3-foot intervals from 20 feet to 35 feet. These benefits were compared to the cost to maintain the channels at 3-foot intervals from 20 feet to 35 feet. The maintenance costs used in the analysis were generated using maintenance dredging information from the Corps of Engineers Baltimore District and the Corps of Engineers Philadelphia District. The benefits and costs at each 3-foot interval were compared. The total benefits identified for maintenance of the 35-foot channel amount to $11.7 million. The total costs for maintenance of the 35-foot channel depth amount to $8.4 million. This evaluation demonstrates that continued maintenance of the 35-foot C&D Canal approach channels project is warranted.

C&D Canal & Approach Channels Sensitivity Analysis

As identified in the continued maintenance analysis, the primary benefit from maintaining 35-foot C&D Canal and Approach Channels is the time savings that can be realized by using the C&D canal and approach channels instead of using the Cape Henry route. The speed of tug and barge combinations is a key component of the analysis. The analysis used an average speed of 8 nautical miles per hour as indicated by direct interviews with tug operators.

In order to test the sensitivity of transportation cost savings to variations in the tug/barge speed component, the transportation cost savings were computed using alternate tug/barge speeds of 9 nautical miles per hour and 10 nautical miles per hour. Table 12 displays the results of the sensitivity analysis. Compared to the average tug/barge speed of 8 knots per hour used in the analysis, tug/barge transportation cost savings would decrease by 11.1 percent assuming an average speed of 9 knots per hour and by 20 percent assuming an average speed of 10 knots per hour.

Table 12
Comparison of C&D Canal Approach Channels
Tug/Barge Transportation Cost Savings
At Speeds of 8, 9 and 10 Knots per Hour

Tug/Barge Speed (nautical mph)	Tug/Barge Transportation Cost Savings	Percent Change in Cost Savings From 8 knots
8 knots	$8,078,000	NA
9 knots	$7,180,000	(11.1%)
10 knots	$6,462,000	(20.0%)

The next step in the sensitivity analysis was to determine the difference in total transportation cost savings by varying the tug/barge speed assumption in the analysis. Table 13 displays the total expected annual transportation cost savings for the speeds of 8, 9 and 10 knots per hour and the difference in total transportation cost savings if tug/barge speed assumptions are altered.

Table 13
Comparison of C&D Canal Approach Channels
Total Transportation Cost Savings
At Speeds of 8, 9 and 10 Knots per Hour

Tug/Barge Speed (knots per hour)	Total Transportation Cost Savings	Decrease in Total Cost Savings From 8 knots	Percentage Change In Cost Savings
8 knots	$11,680,000	NA	NA
9 knots	$10,782,000	($898,000)	7.7%
10 knots	$10,064,000	($1,616,000)	13.8%

Table 13 shows the impact of varying the average tug/barge speed in the analysis of the 35-foot C&D Canal and approach channels on the total expected transportation cost savings. If the tug/barge speed assumption used in the analysis is changed to 9 knots or 10 knots instead of 8 knots, the total transportation cost savings exceed expected annual maintenance dredging costs of $8.4 million.

Another sensitivity analysis tested the use of a tug/barge operating cost savings of $750 per hour in the computation of transportation cost savings attributable to continued maintenance of the C&D Canal channels. Table 14 shows how applying an operating cost of $650 per hour at tug/barge speeds of 8, 9 and 10 knots per hour would impact expected annual tug/barge transportation cost savings and total transportation cost savings. The results indicate that if a tug/barge operating cost of $650 per hour is used in the analysis instead of a $750 per hour operating cost, the overall transportation cost savings exceeds the expected annual maintenance dredging cost of $8.4 million at each of the three tug/barge speeds.

Table 14
C&D Canal Approach Channels
Tug/Barge Transportation Cost Savings
With Operating Cost of $650 per Hour

Tug/Barge Speed (knots per hour)	Tug/Barge Transportation Cost Savings with $650 per hr. Operating Cost	Total Transportation Cost Savings with $650 per hr. Tug/Barge Operating Cost
8 knots	$7,000,000	$10,602,000
9 knots	$6,223,000	$9,825,000
10 knots	$5,600,000	$9,202,000

Maryland Port Administration
Maritime Center II
2310 Broening Highway
Baltimore, Maryland 21224-6621

October 19, 2004

Colonel Robert J. Davis, Jr.
District Engineer
U.S. Army Corps of Engineers
Baltimore District
P.O. Box 1715
Baltimore, Md. 21203-1715

Lt. Colonel Robert J. Ruch
District Engineer
U.S. Army Corps of Engineers
Philadelphia District
Wanamaker Building
100 Penn Square East
Philadelphia, Pa. 19107-3390

Dear Colonels:

I am pleased to transmit to each of you a copy of "Economic Benefits of Maintenance Dredging Program for C&D Canal," a study recently completed for the Maryland Port Administration and conducted by Martin Associates of Lancaster, Pennsylvania. This study examined all vessel and barge traffic using the C&D Canal during calendar year 2003 and calculated the national and regional economic benefits that the Canal provides by reducing transportation costs and making the Port of Baltimore more attractive for shipping lines and industry. The study then compared these benefits with the annual operations and maintenance cost for the Canal and found that the benefit/cost ratio was 1.93. This ratio was based on the most conservative assumptions about dredged material placement and maintenance costs.

It is my understanding that the methodology used to estimate national economic benefits is fully consistent with the methodology used by the Corps in its own studies. I am transmitting this study in the hope that it will be helpful to you and your staff as the Corps of Engineers conducts its own analysis of the benefits of maintenance dredging and of future dredged material placement options. If you have questions about this report or about data related to the report, please feel free to contact me or the Maryland Port Administration.

Sincerely,

Kathy Broadwater

M. Kathleen Broadwater
Deputy Executive Director

Economic Benefits of the Maintenance Dredging Program for the C&D Canal

Prepared for:
Maryland Port Administration
Maryland Department of Transportation
October 14, 2004

Martin Associates
John C. Martin Associates, LLC
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Executive Summary

Martin Associates was retained by the Maryland Port Administration to assess the economic benefits of maintaining the Chesapeake and Delaware Canal at its current channel depth of 35 feet. The benefits are quantified in terms of National Economic Development benefits (NED) which are defined as the transportation cost savings that the use of the C&D Canal provides to the ocean going ships and barges using the Canal compared to an alternative routing. The alternate routing to the use of the C&D Canal is the use of the Chesapeake Bay (accessed via Cape Henry) either to call the Port of Baltimore or to transit between the points to the North of Baltimore, i.e. the Delaware River and points south of Baltimore, such as Norfolk. Other alternatives considered included using smaller barges or truck transportation. If smaller barges are used to replace the large barges not able to transit the Canal (if the channel is not maintained at 35 feet), the number of barges and tugs that would be required (compared to available supply), as well as the additional number of transits via the C&D Canal made this alternative unacceptable. The other alternative to using the Cape Henry routing is the diversion of the cargo impacted to truck. The number of truck trips that would be required and the resulting environmental, safety and congestion impacts on the State's highways rendered this alternative unacceptable, as well.

In addition to the transportation cost savings from the cargo using the C&D Canal, Martin Associates also identified regional economic impacts generated by the cargo using the C&D Canal, as well as air quality impacts should alternative modes of transportation (truck or rail) be used to move the cargo now using the C&D Canal.

Benefits Calculation

The key benefit to the barge and vessel traffic of using the C&D Canal is the time savings that can be realized over using the Cape Henry routing. This time savings varies based on the port called just prior to the entrance of the Canal as well of the port called upon exit of the Canal, and also varies depending upon the speed of the specific type of vessel and tug/barge combination.

In 2003, the C&D Canal Project Office data base recorded nearly 7,000 transits of the Canal -- 3,190 empty transits and 3,829 loaded transits of the Canal. If the depth of the C&D Canal is not maintained, engineering studies have identified that the "regime" level of the Canal will stabilize at about 19 feet of water depth. At a channel depth of 19 feet, vessel and barge traffic that require an operating draft of 17 feet or more would no longer be able to transit the Canal and would be required to use a Cape Henry routing. A 17 foot sailing draft is used as the "cut-off point" for traffic, since two feet under keel of the vessel/barge is assumed for safety purposes. Therefore, the benefits of maintaining the C&D Canal at a 35 foot depth are measured in terms of the additional transportation costs that would be incurred by vessels and barges with a sailing draft of 17 feet or more.

As part of the study, Martin Associates conducted in-depth interviews with barge operators, ocean carriers using the Canal, shippers and consignees whose products move via the Canal, and with officials of the Association of Maryland Pilots and the Pilots' Association for the Bay & River Delaware. The barge companies were queried as to the loaded draft of each barge identified in the C&D Project Office data base for calendar year 2003, and provided an average operating cost per hour of each tug/barge combination. The barge operators also identified the key commodities moved by each barge and the typical sailing patterns. This included port called prior to entering the C&D Canal as well as port called for loaded barge transits leaving the C&D Canal. A major focus of the interviews with the ocean carriers was to identify specific operating costs of each type of vessel, load and discharge factors at the Port of Baltimore, and operational considerations driving the use of the C&D Canal (including labor start times and tidal considerations particularly for gypsum vessels calling the Bay of Fundy). Key customers located in the Port of Baltimore that rely on cargo moving via the C&D Canal (primarily by barge) are shippers/consignees of cement, liquid sugar, petroleum and petro-chemicals and other liquid bulk. Interviews were conducted with shippers/consignees and terminal operators associated with these commodities to understand the logistics needs of the key shippers/consignees that would potentially be impacted if the Canal were no longer maintained.

A total of 751 tug/barge transits and 603 vessel transits were identified as requiring a 19 foot or greater Canal channel depth. For each of the barge and vessel transits requiring 19 feet or greater water depth, (sailing draft of 17 feet or more) the distance penalty of using the Cape Henry/Chesapeake Bay routing was estimated. The incremental distance differential for each vessel and barge transit was used as an input into the appropriate cost models to estimate the cost penalty of using the Cape Henry routing versus the C&D Canal routing.

Using this methodology, it is estimated that the transportation cost benefits of maintaining the C&D Canal channel at 35 feet are $24.6 million, based on the level of vessel and barge traffic moving via the Canal, in calendar year 2003. Of the $24.6 million of annual benefits, barge traffic accounted for $20.7 million and vessel traffic $3.9 million, annually.

Cost Calculation

The cost of maintaining the C&D Canal channel at its current 35 ft. draft was calculated by Gahagan and Bryant Associates, Inc. under three scenarios as to disposal placement.

In Scenario 1, the dredged material from the Baltimore Connecting Channels is placed at Poplar Island. Also in this Scenario, Dredging Transportation and Placement (DTP) Costs charged to the Northern Passage Channel System (NPCS) must be apportioned to the project in a manner consistent with the disposal plan identified as the Federal Standard or National Economic Development (NED) disposal plan for said project. The NED cost for the 35 ft Baltimore Connecting Channels dredging projects is approximately $4.00 per cubic yard. The DTP unit cost, $8.42/cy, is $4.42/cy over and above the NED disposal plan for this project, and is apportioned to the Poplar Island

Environmental Restoration Project (PIERP) authorization and is not included in this scenario. Based on this apportionment, the total annual Operating & Maintenance (O&M) cost for Scenario 1 is $9.5 Million.

In Scenario 2, the dredged material from the Baltimore Connecting Channels is also placed at Poplar Island. However, in this Scenario, the DTP costs apportioned to both the NPCS and the PIERP Authorization are presented for illustration purposes. Thus in this case, the total DTP unit cost ($8.42/cy) for the Baltimore Connecting Channels results in a total annual O&M cost of $12.7 Million. This cost scenario includes the $3.2 million of environmental restoration costs at Poplar Island. Typically, such environmental restoration benefits are not included in the USACE benefit/cost calculations.

In Scenario 3, the dredged material from the Baltimore Connecting Channels is placed at Hart-Miller Island. The transport distance to Hart-Miller from the Baltimore Connecting Channels is significantly less than to Poplar Island, which results in a unit DTP cost of $5.94/cy, $2.42/cy less than if the material is taken to Poplar. The total annual O&M cost for Scenario 3 is $10.9 Million.

Benefits-Cost Calculation

Cost scenario 2 is the most costly alternative, resulting in a $12.7 million annual cost to maintain the C&D Canal at a channel depth of 35 feet. It is to be emphasized that this cost scenario includes the $3.2 million of environmental restoration costs at Poplar Island, and hence, is a more conservative approach than is usually followed by the USACE in the evaluation of navigation projects. **Even when this most expensive alternative is chosen, the benefits ($24.6 million) of maintaining the channel at the 35 ft. depth are nearly double the costs. This equates to a cost benefit ratio of 1.94 for the highest cost alternative.**

From a NED perspective, the annual benefits of maintaining the C&D Canal at the 35 foot channel depth are nearly twice the level of the total operating and maintenance costs of maintaining the 35 foot channel.

Sensitivity Analysis Of Benefit Cost Analysis

In order to control for the fact that some barges with drafts of 17 and 18 feet might not be utilized to the optimal capacity, Martin Associates conducted a sensitivity analysis as to changes in the benefits attributed to barge transportation for barges with a draft of 18 feet or more (606 barges) and for barges with a draft of 19 feet or more (423 barges). The barge savings for the 606 barge transits with a draft of 18 feet or more is $17.3 million. If transportation cost savings for the 328 barges with a loaded draft of 17 to 19 feet are eliminated completely from the analysis (145 barge transits between 17 and 18 feet of draft and 183 barge transits between 18 and 19 feet of draft), the cost savings attributable to the remaining 423 barge transits is $7.7 million. Combining this barge savings (transits with a draft of 19 feet or more) with the vessel cost savings of $3.9

million, the $11.6 million transportation benefits still exceed the costs of maintaining the C&D Canal at a 35 foot depth under Cost Scenarios 1 and 2. While this is unrealistic to assume that all barges with a draft of 17- 19 feet would be used inefficiently and light loaded to transit the Canal at a regime depth of 19 feet, the exercise underscores the magnitude of the transportation cost benefits provided by maintaining the C&D Canal at a 35 foot depth. This transportation cost benefit does not include the added costs associated with the additional number of tug and barge transits that would be required to move the cargo that would be light loaded.

It is to be emphasized that the Maryland Port Administration and the Dredged Materials Management Program (DMMP) Executive Committee tasked Martin Associates with assessing the economic benefits and costs of maintaining the C&D Canal at its current 35-foot depth. However, in order to assess the potential importance of a more detailed incremental benefit/cost analysis, Martin Associates did conduct a sensitivity analysis by comparing benefits and costs at lesser channel depths. Benefits and costs were estimated at channel depths in 5-foot increments from 20 feet to 35 feet. Essentially, as channel depth increases, both benefits and costs increase at approximately the same rate. So, while a channel depth of 25 feet results in lower benefits than a depth of 35 feet, the costs of dredging are reduced at a similar rate. The benefit/cost ratio ranges from 1.9 to 2.7 at channel depths of 25, 30 and 35 feet. Hence, the benefits are nearly twice as high as the costs for any depth up to 35 feet.

Regional Economic Impact of Maintaining the C&D Canal

Martin Associates has developed a detailed economic impact model for the public (those owned by the Maryland Port Administration) and private marine terminals located within the Port of Baltimore Port District. As part of this project, the economic impact model was adjusted to quantify economic impacts of the cargo moving via the C&D Canal that require the maintenance of the 35 foot channel. In 2003, the cargo that requires the 35 foot channel created the following economic impacts to the State of Maryland:

- **7,519 direct, induced and indirect jobs**
- **$386 million of direct, induced and indirect personal income**
- **$420.3 million of business revenue excluding the value of the cargo moving via the Canal**
- **$49.3 million of tax revenue to state and local governments within Maryland.**

Key Industry Impacts

Based on interviews with the major shippers/consignees and carriers using the C&D Canal, autos, ro-ro cargo, and gypsum were identified as three cargoes handled at the Port of Baltimore that would incur additional, less quantifiable impacts should the C&D Canal channel not be maintained at a 35 foot depth. The movement of these commodities via the public and private marine terminals within the Port of Baltimore generates significant local and regional economic impacts, and the additional transportation costs that would be incurred should the C&D Canal channel not be maintained could place this business, and associated impacts, at risk in the long run.

If the C&D Canal is not maintained at the 35 foot depth, the auto/ro-ro carriers calling the port would incur a $1.4 million annual cost penalty. Under tight operating margins, this increase in operational costs could, in the long run result in a loss of vessel service at the Port of Baltimore, which could jeopardize the 3,600 total job impact and $24 million of annual state and local tax revenue in the state that are supported by these operations.

The gypsum operations at the Port of Baltimore support nearly 2,000 total jobs in the local and regional economy, and $13.1 million of state and local tax revenue. If the C&D Canal were not maintained, this local Baltimore industry would incur an additional $245,000 of net shipping costs as well as a variety of other scheduling and operational difficulties. As the result of such a cost increase, further investment in additional capacity at the Baltimore facilities could be at risk, as the gypsum companies would look elsewhere to expand plant capacity.

Environmental Impacts

One alternative to transport the cargo that is now moved by barges and vessels is to divert this cargo to a surface mode of transportation, ether rail or truck, rather than to use a Cape Henry routing. However, this diversion to a surface mode would result in a significant increase in truck and rail traffic, which would not only impact the State of Maryland's highway system in terms of increased wear and tear and congestion on the highways, but also result in air quality issues.

Based on typical truck load factors, 641,424 truck movements would be required to handle the cargo that now moves via the C&D Canal on barges and ships that have a draft of 17 feet or more, and would be subject to diversion via the Cape Henry routing should the channel not be maintained at 35 feet.

Not only would this number of truck trips impact the cost of maintaining the state's highway system, the use of truck transportation rather than vessel or barge would have a negative impact on air quality. For example, the volatile organic compounds emissions generated by truck transportation to move an equivalent unit of cargo 100 miles is 23 times greater than to move the same volume of cargo over the same distance by ship. For oxides of nitrogen, truck creates 4 times more emissions than does the use of a ship or barge. Similarly, for particulate matter, truck conveyance emits 11 times more emissions than does an equivalent move by ship, and with respect to carbon monoxide, truck generates 4 times more emissions per mile than does a ship.

The Baltimore Area is a non attainment area for volatile organic compounds and oxides of nitrogen, and the potential impact of 641,424 additional truck trips would clearly exacerbate the air quality issues. As a result, the use of truck to move the cargo subject to a Cape Henry diversion should the C&D Canal not be maintained at 35 feet is not an attractive alternative.

Summary

In summary, from a NED perspective, the annual benefits of maintaining the C&D Canal at the 35 foot channel depth are nearly twice the level of the total operating and maintenance costs of maintaining the 35 foot channel. Furthermore, the cargo and shippers/consignees using the C&D Canal that require the maintenance of the channel at 35 feet generate 7,500 jobs in the State of Maryland. If the C&D Canal were not maintained at the 35 foot draft, continued investment in auto and gypsum operations at the Port of Baltimore would likely be reevaluated, as Baltimore would become a high cost port in which to operate, in turn jeopardizing the long term viability of these sectors at the Port of Baltimore. Finally, if trucks were used to convey the cargo that would be diverted from the Canal should the channel not be maintained, 641,424 new truck movements would be added to the state's highway system. Given the air quality impacts of truck transportation compared to vessel and barge, the use of trucks to move the cargo subject to a Cape Henry diversion should the C&D Canal not be maintained at 35 feet is not a feasible alternative.

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I. INTRODUCTION AND METHODOLOGY

Martin Associates was retained by the Maryland Port Administration to assess the economic benefits of maintaining the Chesapeake and Delaware Canal at its current channel depth of 35 feet. The benefits are quantified in terms of National Economic Development benefits (NED), which are defined as the transportation cost savings that the use of the C&D Canal provides to the ocean going ships and barges using the Canal compared to an alternative routing. The C&D Canal creates national benefits by providing a shorter route between Baltimore and points to the north than the alternative Cape Henry route. The shorter C&D Canal route saves time and money for vessels and barges which use the Canal. If the Canal were no longer available, the vessels and barges which use it would have to find alternative and generally more costly and inefficient means of transportation. These alternatives could include: a) using the longer Cape Henry route; b) shifting the cargo to smaller vessels or barges which could still use the Canal even if it silted to a 19-foot depth; c) for domestic cargo, shifting from barges to trucks or railroads; or d) closing down Baltimore operations and moving to another port. Alternatives a, b and c involve increased transportation costs; the avoidance of these costs are therefore classified as national benefits.

The alternative of shifting cargo to smaller barges and vessels was not pursued because it was estimated that this would require approximately three times the number of barges being used today. These additional barges are simply not available, and even if they were, since each barge requires its own tugboat, tripling the number of barges would amount to tripling the transportation cost. Alternative c, shifting cargo to truck or rail, was not considered further because it was estimated that 641,424 additional truck trips would be necessary to accommodate the cargo currently using the C&D Canal.

Therefore, the only alternative further investigated and quantified to using the C&D Canal is the use of the Chesapeake Bay (accessed via Cape Henry) to call the Port of Baltimore or to transit between the points to the North of Baltimore, i.e. the Delaware River and points south of Baltimore, such as Norfolk. These NED benefits are consistent with the methodology used by the U.S. Army Corps of Engineers to assess the benefit-cost ratios of navigation projects.

These NED benefits are consistent with the methodology used by the U.S. Army Corps of Engineers to assess the benefit-cost ratios of navigation projects. In addition to the NED benefits, which focus on national net benefits, economic benefits of the use of the C&D Canal at its current 35 foot draft to the state of Maryland have also been evaluated.

The cost of maintaining the C&D Canal channel at its current 35 ft. draft has also been calculated by Gahagan and Bryant Associates, Inc. The transportation cost savings to the ships and barge traffic using the C&D Canal are then compared with the dredging cost of maintaining the C&D Canal at the current 35 foot depth to develop a benefit/cost ratio.

In the balance of this chapter the methodology used to calculate the economic benefits and costs of maintaining the C&D Canal at the 35 foot depth is detailed.

1. Benefits Methodology

The C&D Canal is a major transportation route connecting the Chesapeake Bay and Delaware Bay. The Canal and approach channels are 60 miles in length and are maintained at a 35 foot depth. The initial task of the analysis was to identify the current usage of the Canal by both vessel and barge traffic. The benefits of using the Canal can be viewed in terms of the opportunity cost of the vessel and barge traffic not having access to the Canal, but instead having to use a Cape Henry routing for those vessels now using the Canal, (either to call the Port of Baltimore's marine terminals or to call marine terminals in the Norfolk/Hampton Roads region). The key benefit to the barge and vessel traffic of using the C&D Canal is the time savings that can be realized over using the Cape Henry routing. This time savings varies based on the port called just prior to the entrance of the Canal, as well of the port called upon exit of the Canal, and based on the speed of the specific type of vessel and tug/barge combination. For example, the time penalty is the greatest for vessel and barge traffic moving between Baltimore and points on the Delaware River, as this traffic would have to transit the Delaware River, the Delaware Bay and then enter the Chesapeake Bay via Cape Henry and transit the Chesapeake Bay to Baltimore if the Canal were not available. For vessel and barge traffic originating in the New York and more northern areas such as Canada, the vessel time savings impact of the C&D is less than for the Delaware River traffic. The time savings realized by the vessel and barge traffic translates into transportation cost savings, as the additional time penalty of not using the C&D Canal will result in increased operating costs as well as crew costs for both vessels and barge traffic.

If the depth of the C&D Canal is not maintained, engineering studies have identified that the "regime" level of the Canal will stabilize at about 19 feet[1]. If this were to occur, vessel and barge traffic that require an operating draft of 17 feet or more would no longer be able to transit the Canal and would be required to use a Cape Henry routing. Similarly, if the Canal were not maintained, the vessels and barges with a draft of 17 feet or more now using the C&D Canal to carry cargo between the Delaware River and the Norfolk/Hampton Roads region, would also be diverted to an open sea journey to Cape Henry and then into Norfolk. It is to be noted that a 17 foot sailing draft is used as the "cut-off point" for traffic, since two feet under keel of the vessel/barge is assumed for safety purposes. Therefore, the benefits of maintaining the C&D Canal at a 35 foot depth is measured in terms of the additional transportation costs that would be incurred by vessels and barges with a sailing draft of 17 feet or more.

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[1] Maryland Port Administration and the U.S. Army Corps of Engineers

Two key databases were used to identify the vessel and barge traffic that have a sailing draft of 17 feet or greater. The C&D Canal Project Office maintains records of every vessel, barge and towboat transit of the Canal. This data base identifies the:

- date and time of the transit,
- the direction of the transit, the type of transit (tug, foreign flag vessel, U.S. flag vessel, barge),
- name of the vessel, tug or barge,
- company/operator to which the barge, tug or vessel is registered,
- dimensions of the vessel, barge or tug (length and beam),
- whether the barge or vessel was loaded or empty

The major shortcoming of this data base is the fact that draft is not recorded.

The second data base utilized is a record of vessel calls at the Port of Baltimore that used the C&D Canal. This data base, maintained by the Baltimore Maritime Exchange, is essentially a subset of the C&D Canal Project Office data base, but is more comprehensive as this data base includes:

- vessel name,
- last port of call for arrivals and next port of call for departures using the C&D Canal,
- pilot assigned
- type of ship and cargo
- draft of vessel (arrival and departure)

The Baltimore Maritime Exchange data does not include vessels or barges passing through the Canal without a stop at the Port of Baltimore.

For the entire year of 2003, the C&D Canal Project Office data base recorded 3,189 empty transits and 3,824 loaded transits. It is to be emphasized that every tug and barge transit is counted as a separate transit. Interviews with the Canal Project Office, as well as with tug operators, indicated that the majority of the tug/barge transits consist of one barge and one tow due to Canal navigational dimensions. Therefore, the barge and tug transits must be adjusted to reflect a combined tug/barge transit or move in order to avoid double counting of benefits.

These two data bases for calendar year 2003 were then used to identify the vessel transits and tug/barge moves that could no longer use the C&D Canal if the channel depth were not maintained and the controlling depth silted to 19 feet. Since the focus of the analysis is on C&D traffic moving on vessels and barges with a sailing draft of 17 feet or more, it was necessary to first eliminate all barge transits that were empty moves, since an empty barge would not likely have a sailing draft of 17 feet or greater. Secondly, all tug transits were eliminated to avoid double counting a tug and barge as two transits, and further, since the tug itself will not typically draw in excess of 17 feet. After eliminating the tugs and empty barge transits, the actual number of C&D Canal barge transits for further analysis was reduced to 1,576 loaded barges. As noted, the C&D Canal Project Office data base does not include the draft of the barge, only the length and beam.

Two approaches were used by Martin Associates to identify the sailing draft of each loaded barge transit in calendar year 2003. The data base identified company/operator of each barge transit, as well as the name or unique identifier of each barge. To ascertain loaded sailing draft of each barge, Martin Associates interviewed the key operators/owners of the loaded barge transits. Interviews were conducted with:

- Express Marine
- Vane Bros.
- Penn Maritime
- Bouchard Transportation
- McAllister Towing and Transport Lines
- Bay Gulf Trading
- K-Sea Transportation
- Gateway Towing
- Rineaur

The companies were queried as to the loaded draft of each unique barge identified in the data base and also provided an average operating cost per hour of each tug/barge combination. The barge operators also provided the key commodities moved by each barge and the typical sailing patterns of each barge. This included port called prior to entering the C&D Canal as well as port called for loaded barge transits leaving the C&D Canal. Also included in this O/D analysis is the identification of barge transits that move through the C&D Canal between a port on the Delaware River and Norfolk, without a stop in Baltimore. Specific barges were identified that could not use an alternative routing to the C&D Canal. Several barges were not designed to operate in off-shore waters and these barges could not use the alternative route if the channel were not maintained.

In addition to the interviews with the barge/tug operators, Martin Associates also obtained loaded draft data for specific barges as identified in the "Waterborne Transportation Lines of the U.S.", IWR, U.S. Army Corps of Engineers, 2002, Volume 3. This data base was used as a cross reference to substantiate the loaded sailing drafts for specific barges as identified through the interview process with the barge/tug operators, as well as from the individual company web pages that identified the inventory of equipment. Using this two pronged approach, Martin Associates was able to identify the loaded sailing draft of each barge in the 2003 data base. Barges of relatively small length and beam dimensions were also eliminated from further research as these barges would require less than 19 feet of channel depth.

Interviews were next conducted with the key operators of vessels transiting the C&D Canal. The key commodities moving by vessel via the Canal are autos and ro-ro cargo, and gypsum (primarily from Canada). Interviews were held with the following ro-ro and auto carriers:

- Wallenius/Wilhelmsen Lines
- NYK Lines
- Mitsui OSK Lines (MOL)
- HUAL
- K-Line
- Atlantic Container Line (ACL)

To understand the impact of not using the C&D Canal on gypsum operations, Martin Associates interviewed the two gypsum importers located in the Port of Baltimore – US Gypsum and National Gypsum. A major focus of the interviews with the ocean carriers was to identify:

- specific operating costs of each type of vessel,
- load and discharge factors at the Port of Baltimore
- operational considerations driving the use of the C&D Canal (including labor start Times and tidal considerations particularly for gypsum vessels calling the Bay of Fundy)
- wallboard/gypsum plant operating characteristics and inventory systems

Other key customers located in the Port of Baltimore that rely on cargo moving via the C&D Canal (primarily by barge) are shippers/consignees of cement, liquid sugar, petroleum and petro-chemicals and other liquid bulk. To understand the logistics needs of the key shippers/consignees of these products that would potentially be impacted if the Canal were no longer maintained, Martin Associates conducted interviews with:

- Lafarge
- St. Lawrence Cement
- Domino Sugar
- Westway Trading
- Hess
- ST Services

Finally, interviews were conducted with officials of the Association of Maryland Pilots and the Pilots' Association for the Bay & River Delaware to identify pilotage rates and tariffs, as well as transiting speeds. It is critical to note that pilots are required for vessel traffic using the C&D Canal but not for barge traffic. Furthermore, vessels (not barges) realize a cost savings in terms of pilotage charges if a Cape Henry/Chesapeake Bay routing is used rather than a C&D Canal routing. This cost savings must be "netted out" from the cost penalty of not using the C&D Canal due to a controlling channel depth of 19 feet (if the Canal is not maintained).

The next step in the analysis was to identify the operating costs of each type of vessel that could be impacted if the channel depth of the C&D Canal were not maintained at 35 feet. Vessel costs by type, size and flag of registry of each vessel transiting the

Canal in 2003 (as reported by the C&D Canal Project Office and the Baltimore Maritime Exchange data base) were identified from the U.S. Army Corps of Engineers Deep Draft Vessel Operating Cost data base (2002). This data base provides typical operating costs for specific types of vessels (container, break-bulk, liquid bulk/tanker and dry bulk) and size classes within each vessel type category. Cost data is provided for such items as crew costs, insurance, annualized capital costs, fuel consumption at sea and at port, ship stores, and maintenance and repair. Other vessel characteristics included in the data base are operating draft, speed and fuel consumption. The data base does not include roll on-roll off construction equipment and farm machinery (Ro-Ro) vessels, but based on interviews with the Ro-Ro/auto ship operators, as well as with representatives of the U.S. Army Corps of Engineers IWR, vessel costs associated with a 1,600 TEU container vessel were used as a proxy for a typical Ro-Ro/auto ship transiting the C&D Canal.

Martin Associates vessel cost models were then calibrated with the vessel operating costs for each type and size of ship. This model translates distance into vessel costs based on the cost input data from the US Army Corps of Engineers Deep Draft Vessel Operating Cost data base. Separate models and cost inputs were developed for U.S. Flag vessels, since these vessels have much higher operating costs than foreign flag vessels primarily due to crew costs. The Deep Draft Vessel Operating Cost data base has a specific set of cost data for U.S. Flag vessels. On average, the estimated hourly operating cost of the foreign flag vessels was about $1,000 per hour of sailing time. While this cost varied somewhat by vessel type and size, the average hourly operating costs were consistent with the data provided by the vessel operators interviewed. In general, the speed of the vessels was about 17 knots, again differing slightly by size and type of vessel. An operating speed of 17 knots is consistent with the operating speed identified for ro-ro/auto vessels during the carrier interviews.

There does not exist a similar operating cost data base for the tug/barge operations on the C&D Canal. The U.S. Army Corps of Engineers does publish cost data for tug/barge operations on the inland waterways, but these costs cannot be used for the barge operations on the C&D Canal due to the required use of larger open water tugs to operate on the C&D Canal. As a result, as part of the interview process with the tug and barge operators, Martin Associates collected average hourly operating costs for a tug barge combination moving on the C&D Canal. Based on these interviews, an average hourly operating cost of $750 was developed. Each barge/tug operator was then presented this average hourly operating cost for approval. In addition, an average operating speed of 8 knots was used for the barge transits in open water. It is to be emphasized that these are coastal tugs and barges, and cannot be confused with inland river tugs and barges, which have lower operating costs. The coastal barges have significantly higher cost structures due to barge size and type (i.e., double hull barges, integrated tug barges, etc.), and the use of U.S. Flag and union crews on board coastal tugs. The coastal tug crews are represented by the Seafarers International Union and the American Maritime Officers Union. Inland river tugs typically use significantly lower cost, non-union crews.

Having established the costing models for the vessels and barge transits on the C&D Canal, the next step in the identification of the benefits of maintaining the C&D Canal channel was to identify the vessel and barge transits that have a sailing draft of 17 feet or greater. A total of 751 barge transits in 2003 were identified as requiring a channel depth of 19 feet or more (to accommodate a sailing draft of 17 feet or greater). If the maintenance dredging on the C&D Canal were to cease, these transits would need to use a Cape Henry routing. Of the 751 barge transits that would be subject to diversion if the Channel were not maintained, 423 transits had a sailing draft of 19 feet or greater, while 328 transits had sailing drafts ranging between 17 and 19 feet.

For the 751 barge transits, the typical origin/destination routings were identified from the interviews with the tug/barge operators. For example, each of the 751 barge transits was assigned an origin/destination routing such as a petroleum move between the Delaware River refineries and the Port of Baltimore, or a cement move between a cement quarry near Albany, New York and Baltimore. For the vessels, the Baltimore Maritime Exchange data base provided origin/destination routings for the next or previous port called after or prior to the C&D Canal transit.

Having identified the origin/destination routings for each of the 751 barge transits with a sailing draft of 17 feet or greater and the 603 vessel transits with a sailing draft of 17 feet or greater, distances were calculated for a transit using a C&D Canal routing versus the use of the Cape Henry/Chesapeake Bay routing. The mileage difference between the use of the C&D Canal and the alternative Cape Henry routing was calculated for each of the 751 barge transits and the 603 vessel transits.[2]

The distance penalties that are incurred for the key routings if the C&D Canal channel depth is not maintained at 35 feet are:

- 294 miles for moves originating or destined in the Delaware River (Wilmington and Philadelphia)
- 96 miles for moves originating or destined in the St. Lawrence River
- 151 miles for moves originating or destined in New York and New England
- 139 miles for moves originating or destined in Nova Scotia
- 100-120 miles for moves originating or destined for Northern Europe and the Mediterranean.

For each of the barge and vessel transits requiring 19 feet or greater water depth, (sailing draft of 17 feet or more) the distance penalty of using the Cape Henry/Chesapeake Bay routing was estimated and entered into the vessel cost and barge cost models. For the barge cost analysis, an average speed of 8 knots was assumed, as confirmed by the above identified tug/barge operators on the C&D Canal. The distance

[2] For barge transits that have multiple stops such as at Philadelphia and New York, an average distance was developed between Baltimore and Philadelphia and New York. The costs for eleven vessel transits most likely over 17 feet of draft were not included since actual draft was not available. The costs for 33 barge and 29 vessel transits with a draft in excess of 17 feet were not included since specific origin/destinations could not be determined. As a result, transportation cost savings are conservatively estimated.

penalty was then divided by the speed of the tug/barge combination to calculate the time penalty of not using the C&D Canal. The time penalty was next multiplied by the $750 per hour operating cost to estimate the cost penalty of not maintaining the C&D Canal channel depth at 35 feet. In addition to estimating the distance penalty of not using the C&D Canal, interviews with the barge/tug operators indicated that several barges drawing 17 feet or more of water could not use a Cape Henry routing. As a result, the cargo carried by these barges would have to be moved in smaller sized barges that would draw less than 17 feet of water. While this would require a greater number of transits with smaller barges, interviews with the barge/tug operators indicated that the cost per hour of these smaller barge transits would still remain at $750 per hour since coastal tugs would still be required.

To estimate the cost penalty for the vessel transits, the difference between the mileage using the C&D Canal routing and the Cape Henry routing for each vessel transit was calculated based on the previously identified origin/destination routing of each vessel transit. The incremental distance differential for each vessel transit was used as an input into the appropriate vessel cost model (corresponding to vessel type, size and flag of registry) to estimate the cost penalty of using the Cape Henry routing versus the C&D Canal routing. The cost penalty was then adjusted to reflect the savings in pilotage that would result from a Cape Henry routing versus the C&D Canal routing. This savings in terms of pilotage ranged from $3,500 to $4,900 per transit depending on vessel size and type.

The cost penalty, or conversely the benefit of maintaining the C&D Canal channel at 35 feet, was then estimated by summing the benefits (cost penalty) for each of the vessel and barge transits for calendar year 2003. These benefits of maintaining the C&D Canal channel are then compared to the cost of maintaining the channel to determine if the benefits of the maintenance of the 35 foot channel cover the costs of the actual maintenance dredging program.

The costs of the maintenance dredging program are the subject of the following section.

2. Maintenance Dredging Cost Methodology

The Maryland Port Administration contracted Gahagan and Bryant Associates, Inc. (GBA) to develop an estimate of the annual operation and maintenance (O&M) cost for the C&D Canal channel system[3]. GBA coordinated with the U.S. Army Corps of Engineers, Baltimore (CENAB) and Philadelphia (CENAP) Districts and state agencies in reviewing shoaling data, previous design reports, and past dredging activities to develop a cost estimate. The objective of this analysis was to develop the total dredging

[3] "Northern Passage Channel System Dredging Program O&M Cost Estimates", Prepared by Gahagan and Bryant Associates, Inc., for the Maryland Port Administration, July, 2004

program costs (O&M costs) for maintaining the 35 ft Northern Passage Channel System (NPCS) of the C&D Canal.

The NPCS is comprised of four sections, namely: the Chesapeake and Delaware (C&D) Canal, the Upper and Lower Approach Channels, and the Baltimore Connecting Channels. The placement sites for the dredged materials available to each section of the NPCS are shown in Exhibit 1, along with the mean distance to access the site from each section of the NPCS.

Exhibit 1: NPCS Placement Site Overview

Channel Section	Corps District	Channel Limits		Placement Site(s)	Placement Method	Mean Haul Distance, nm
		North	South			
Baltimore Connecting	CENAB	Pooles Island	Swan Point	Hart- Miller Island	Hydraulic Unloading	7.1
				Poplar Island		27.2
Lower Approach	CENAP	Sassafras River	Pooles Island	Pooles Island	Open Water Placement	5.5
Upper Approach	CENAP	Town Point	Sassafras River	Pearce Creek Courthouse Point	Hydraulic Unloading	2.9
C & D Canal	CENAP	Delaware River	Town Point	Chesapeake City Bethel Goose Point Biddles Point Reedy Point North	Hydraulic Unloading	1.5

The placement options for the Upper and Lower Approach Channels and the C&D Canal are similar in transport distances. However, for the Baltimore Connecting Channels, the two available placement options, Poplar Island and Hart-Miller Island (HMI), have significantly different transport distances and costs.

The annual O&M cost of the NPCS includes the cost of performing the maintenance work (dredging, transportation, and placement) and the dredging project design and monitoring costs (associated costs). There are two available placement site options (HMI and Poplar Island) for the Baltimore Connecting Channels, and therefore the final cost estimates are presented for both options. The engineering report contains detailed cost analysis spreadsheets outlining the values used in the cost estimates presented herein.

Cost estimates are based on present-day prices (2004). Assumed dredging, transportation, and placement equipment groups are based on recent (last 3 years) industry practices. The estimated annual maintenance dredging volumes were based on a 12-year history.

The annual dredging volumes required for maintaining the 35 ft NPCS are averages developed from a review of historical data from the past 12 years, provided by CENAB and CENAP.

The Dredging, Transportation and Placement (DTP) cost estimate is based on the production rates and time required to perform the work, as well as operating and ownership costs, and mobilization and demobilization costs. The total costs are then divided by the average annual maintenance dredging volume of each of the described channel sections, to derive an average annual unit rate ($/cy) for each section.

The estimate for the production rates and time required to perform the work is made assuming the use of the following two types of equipment groups and placement methods:

- 21 cy clamshell dredge with hopper scows towed to the placement site, where a 24-inch hydraulic unloader pumps the material into the site. This method is used for the C&D Canal, the Upper Approach Channel, and the Baltimore Connecting Channels.

- 21 cy clamshell dredge with bottom dump scows towed to an open water placement site (Pooles Island). This method is used for the Lower Approach Channel.

The daily production rates are typically controlled by dredge production or bottom coverage, which, in a clamshell dredging operation, is based on the characteristics of the material being dredged, the depth of the cut, the distribution of material over the area and reach of the project, the size of the dredge, and the hours of operation per day. Based on these conditions, the production rate of the selected 21 cy clamshell dredge was estimated to be approximately 16,000 cy per day. The time required to perform the work was then determined by applying the production rate to the average annual maintenance dredging quantities for each of the channel sections.

In addition to the production rates and time, operating and ownership costs must be determined. The operating cost is based upon the expense for operating the equipment which includes, but is not limited to, payroll costs, usage, repairs and maintenance, wear costs, marine insurance, operating supplies, and engineering and supervision required for the operation of the dredge and attendant plant.

The cost of owning and maintaining the dredging equipment is also an important part of the cost of dredging operations. Estimated ownership cost of the equipment considered in this cost analysis provides for amortization (depreciation and interest on capital investment), periodic major repairs, the cost of idle plant, the cost of yard facilities, and taxes and insurance.

The mobilization and demobilization cost accounts for the transport and setup of all the equipment, pipelines, supplies, and laborers to the site, and, once the operation is complete, returning them to their origins. Also, fuel, tugs, barges, materials and supplies, travel, freight, and supervision all contribute to the mobilization cost, which is greatly dependant upon distance traveled. On average, the demobilization is fifty percent of the initial mobilization cost of the project.

In addition to the above noted direct costs, associated costs of maintenance dredging will also be incurred. The associated costs include: the cost of work required to prepare the contract documents (plans, specifications, bidding, planning, advertising, and contract management costs); the cost to oversee proper contract execution (inspection and surveys); and finally placement site costs. Once the material is placed at a site, monitoring, operation and maintenance, and site management need to be performed to allow the area to achieve its maximum capacity.

Total annual NPCS operation and maintenance costs and dredging volumes are summarized in Exhibit 2. The costs assume an average annual maintenance volume for each section of the NPCS, as determined from historical dredging data, provided by CENAB and CENAP.

The Baltimore Connecting and the Lower Approach Channels require maintenance dredging every year, while the Upper Approach requires maintenance approximately every three years, and the C&D Canal approximately every five years. To develop an annual cost for the NPCS sections having a dredging frequency of greater than one year, the mobilization/demobilization costs for the given event are divided by the dredging frequency to provide an estimated yearly cost.

The maintenance material from the Baltimore Connecting Channels may be placed at two sites resulting in significantly different DTP costs. These sites are Poplar Island and Hart Miller Island. Exhibit 2 presents three scenarios for DTP costs of maintenance material from the Baltimore Connecting Channels.

Maintenance dredging for the Canal, Baltimore Connecting, and Lower Approach Channels is the responsibility of the U.S. Army Corps of Engineers – CENAB and CENAP – and as such is funded in the Corps' budget. The Harbor Maintenance Tax, a federal tax on the value of imported cargo paid by the importer, generates funding for this maintenance dredging activity.

Exhibit 2: NPCS Annual Projected O&M Volumes and Costs

NPCS Section	Annual Maintenance Volume (Mcy)	DTP Estimated Cost ($/cy)	Associated Annual Cost ($M)	Annual O&M Cost ($M)	Placement Site
1 - Baltimore Connecting Channel	0.73	$4.00[1]	$0.2	$3.1	Poplar
2 - Baltimore Connecting Channel	0.73	$8.42	$0.2	$6.3	Poplar
3 - Baltimore Connecting Channel	0.73	$5.94	$0.2	$4.5	HMI
Lower Approach Channel	0.85	$5.05	$1.0	$5.3	Pooles
Upper Approach Channel	0.15	$6.20	$0.05	$1.0	Pierce
C&D Canal	0.003	$24.70	$0.05	$0.1	Bethel
1 - Total NPCS O&M	**1.73**		**$1.3**	**$9.5**	
2 - Total NPCS O&M	**1.73**		**$1.3**	**$12.7**[2]	
3 - Total NPCS O&M	**1.73**		**$1.3**	**$10.9**	

1 – National Economic Development Plan

2 – Includes $3.2 Million Apportioned to the Poplar Island Environmental Restoration Projects

In Scenario 1, the dredged material from the Baltimore Connecting Channels is placed at Poplar Island. Also in this Scenario, DTP Costs charged to the NPCS must be apportioned to the project in a manner consistent with the disposal plan identified as the Federal Standard or National Economic Development (NED) disposal plan for said project. The NED cost for the 35 ft Baltimore Connecting Channels dredging projects is approximately $4.00 per cubic yard. The DTP unit cost, $8.42/cy, is $4.42/cy over and above the NED disposal plan for this project, and is apportioned to the Poplar Island Environmental Restoration Project (PIERP) authorization and is not included in this scenario. Based on this apportionment, the total annual O&M cost for Scenario 1 is $9.5 Million.

In Scenario 2, the dredged material from the Baltimore Connecting Channels is also placed at Poplar Island. However, in this Scenario, the DTP costs apportioned to both the NPCS and the PIERP Authorization are presented for illustration purposes. Thus in this case, the total DTP unit cost ($8.42/cy) for the Baltimore Connecting Channels results in a total annual O&M cost of $12.7 Million.

In Scenario 3, the dredged material from the Baltimore Connecting Channels is placed at Hart-Miller Island. The transport distance to Hart-Miller from the Baltimore Connecting Channels is significantly less than to Poplar Island, which results in a unit DTP cost of $5.94/cy, $2.42/cy less than if the material is taken to Poplar. The total annual O&M cost for Scenario 3 is $10.9 Million.

In the following chapter the benefits of maintaining the 35 foot channel depth are presented and then compared with the estimated total O&M costs under the three placement scenarios.

II. RESULTS OF BENEFITS ANALYSIS

In this chapter the transportation cost savings to vessels and barges using the C&D Canal are quantified. These benefits are measured in terms of the transportation cost penalty that would be incurred by the vessel and barge transits, which are no longer able to use the C&D Canal in the event that the channel was not maintained at a 35 foot depth. Under a no maintenance scenario, the controlling water depth of the channel system would be 19 feet. Therefore, vessels and barge transits with a sailing draft of 17 feet or more would have to use the Cape Henry/Chesapeake Bay routing rather than the C&D Canal, and hence, incur additional sailing time and associated transportation costs than would otherwise be the case if the Canal were available for use.

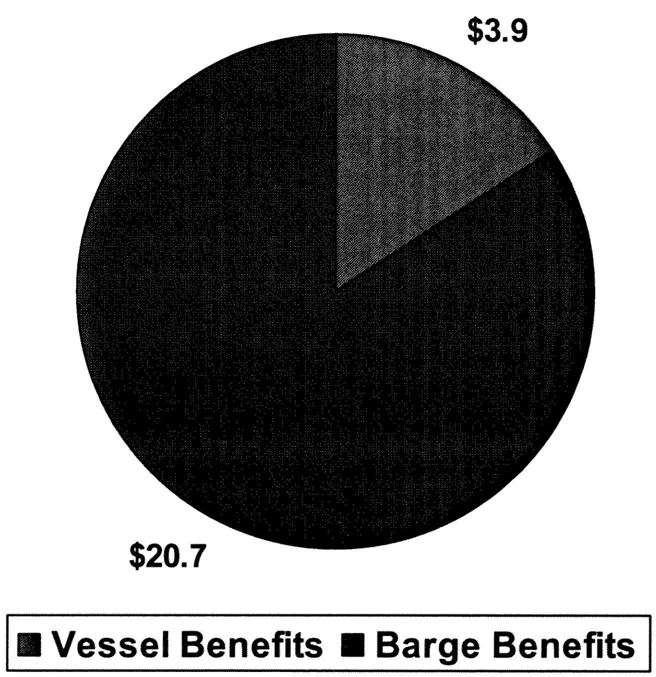
1. Quantification of Benefits

As indicated in the previous chapter the origin/destination routings for each of the 751 barge transits requiring 19 feet or greater channel depth and the 603 vessel transits requiring 19 feet or greater depth were identified and the distances were calculated for a transit using a C&D Canal routing versus the use of the Cape Henry/Chesapeake Bay routing. For barge transits that have multiple stops such as at Philadelphia and New York, an average distance was developed between Baltimore and Philadelphia and New York. For the barges that cannot sail in open off-shore water, it is assumed that the loads associated with these barge transits would move on smaller barges. For example, in 2003 there were 158 loaded transits on barges with a design draft of 17 feet or more that could not use open water. For each of these transits it is assumed that the loads were allocated to barges carrying 2,400 tons. For example, for a barge with a load capacity of 9,000 tons and with a loaded design draft in excess of 17 feet but not designed to operate in open waters, it was assumed that 4 smaller barge transits would be required to move through the C&D Canal at a rate of $750 per hour. Interviews with the tug and barge operators confirmed that most likely only one barge would be associated with a tug. In addition to the additional costs associated with the additional transits, additional coastal tugs and barges are not available in the short run. The added acquisition costs of the additional smaller barges and tugs are not included in the cost analysis.

To estimate the cost penalty (conversely the benefits of maintenance dredging) for the vessel transits, the difference between the mileage using the C&D Canal routing and the Cape Henry routing for each vessel transit was calculated based on the previously identified origin/destination routing of each vessel transit. The incremental distance differential for each vessel transit was used as an input into the appropriate vessel cost model (corresponding to vessel type, size and flag of registry) to estimate the cost penalty of using the Cape Henry routing versus the C&D Canal routing. The cost penalty was then adjusted to reflect the savings in pilotage that would result from a Cape Henry routing versus the C&D Canal routing. This savings in terms of pilotage ranged from $3,500 to $4,900 per transit depending on vessel size and type. The cost penalty for the barges is based on the incremental distance for each barge transit converted into a time penalty using a sailing speed of 8 nautical miles per hour. The average cost of $750 per hour was then used to convert the time penalty into a cost penalty.

Using this methodology, it is estimated that the transportation cost benefits of maintaining the C&D Canal channel at 35 feet is $24.6 million, based on the level of vessel and barge traffic moving via the Canal, in calendar year 2003. Exhibit 3 shows the distribution of the $24.6 million of transportation cost benefits between vessel traffic and barge traffic. It is to be emphasized that these benefits are associated only with those vessel and barge transits requiring 17 feet or more sailing draft, and as a result could not use the C&D Canal if the controlling depth of the channel were reduced to 19 feet under a no maintenance dredging scenario.

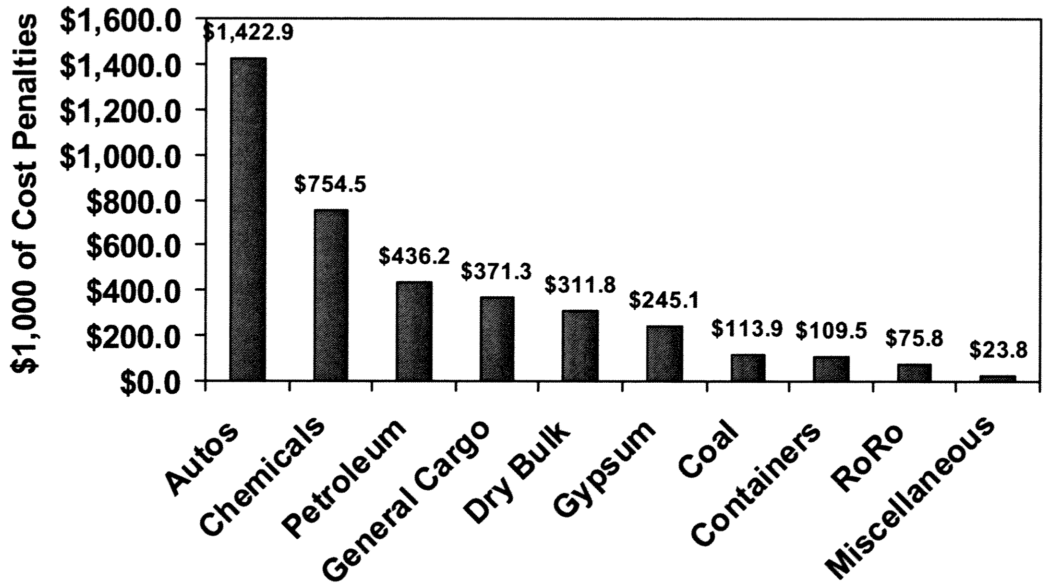
Exhibit 3: Distribution of $24.6 Million of Vessel and Barge Benefits (Millions of Dollars)



As demonstrated in Exhibit 3, the majority of transportation costs savings of maintaining the C&D Canal channel at the 35 foot depth are realized by the barge traffic requiring 17 feet or more of sailing draft. This reflects several factors. First, the total number of barge transits, 751 transits with a draft of 17 feet or more, is greater than the number of vessel transits. Secondly, the barge transits move at a speed of about 8 knots, compared to a vessel speed of between 15 and 17 knots, depending on size and type of vessel. Therefore, for a given distance penalty due to the use of the Cape Henry/Chesapeake Bay routing, the barge time penalty will be about twice the time penalty incurred by a vessel. In addition, a larger share of the barge transits typically move between Baltimore and Delaware River terminals (particularly for petroleum and petro-chemical products), and the distance penalty of using the Cape Henry routing as an alternative is greatest for this routing compared to a New York to Baltimore routing. Finally, the barge transits do not realize a cost savings in terms of lower pilotage costs on the Cape Henry routing. For the vessel transits, pilotage cost savings range from $3,500 per transit to $4,900 per transit based on the size and type of vessel. These pilotage cost savings are subtracted from the cost penalty calculation for the vessel transits.

The vessel and barge benefits of maintaining the C&D Canal at the 35 foot depth were estimated not only for each transit, but also by commodity. Exhibit 4 shows the distribution of the $3.9 million annual vessel benefits by commodity.

Exhibit 4: Distribution of $3.9 Million of Benefits Accruing to Vessel Traffic



Autos receive the greatest benefit of maintaining the C&D Canal at the 35 foot depth (about $1.4 million annually of cost savings), reflecting the reliance on the use of the C&D Canal particularly for auto vessel traffic between New York and Baltimore and Baltimore and Wilmington, DE. Chemicals and petroleum receive the second largest transportation cost benefit, $754,000 and $436,200 respectively. The transportation cost benefits accruing to the chemical and petroleum cargo of maintaining the C&D Canal channel depth at 35 feet reflects two key factors – first these cargoes often move on U.S. Flag vessels (as they are domestic moves) and as a result have a significantly higher operating cost than if a foreign flag tanker were used; and secondly, these two cargoes move between Baltimore and the Delaware River, the routing that is subject to the greatest distance penalty if the C&D Canal cannot be used. These three cargoes, autos, petroleum and chemicals account for about two-thirds of the total vessel benefits of maintaining the C&D Canal channel depth at 35 feet.

Exhibit 5 shows the distribution of the benefits of maintaining the C&D Canal by commodity type and the tonnage that would be diverted to a Cape Henry routing should the C&D Canal not be maintained at the 35 foot depth. This data is based on the typical load and discharge, by commodity type as ascertained through interviews with the importers and exporters. While gypsum represents the largest tonnage that benefits from the maintenance dredging of the C&D Canal, the dollar benefit is relatively small. The relatively smaller dollar benefits accruing to the gypsum shipments received at the of Port of Baltimore with respect to the tonnage levels reflects the fact that the cost penalty to divert a gypsum ship from Eastern Canada via the Cape Henry routing (and netting out the pilotage cost savings) is relatively small compared to the cost penalty that is incurred for a vessel moving between Baltimore and the Delaware River, as this latter routing represents the greatest distance penalty when a Cape Henry routing is used compared to the C&D Canal routing. Conversely, for the routings between Baltimore and the more northern points (as well as European points), the distance penalty of a Cape Henry diversion is less than for the Delaware River routing.

Exhibit 5: Distribution of Vessel Benefits and Associated Tonnage by Commodity

Commodity	Benefit	Tonnage/Units		
Dry Bulk	$311,787	Dry Bulk	906,500	tonnage
Cars	$1,422,936	Cars	233,750	units
Coal	$111,834	Coal	276,800	tons
Containers	$104,622	Containers	9,860	units
General Cargo	$371,294	General Cargo	954,600	tons
Gypsum	$245,058	Gypsum	1,787,100	tons
RoRo	$75,772	RoRo	16,150	units
Petroleum	$436,206	Petroleum	1,626,000	tons
Chemicals	$754,463	Chemicals	126,000	tons
Miscellaneous	$23,829	Miscellaneous		
Total	$3,857,801			

Nearly 90 percent of the $20.7 million of barge transit benefits from maintaining the C&D Canal channel at 35 feet accrues to coal and petroleum/petro-chemicals transported by barges with a loaded sailing draft of 17 feet or more. The majority of the petroleum cargo originates from the Delaware River refineries, and as a result, the transportation distance penalty is greatest for these transits when routed via Cape Henry. Cement moving by barge between points in New York near Albany, as well as in the Delaware River also receives $1.4 million of benefits from maintaining the Canal at a 35 foot draft. In 2003, liquid sugar that moved between Baltimore and New York received nearly $700,000 in benefits due the maintenance of the 35 foot channel in the C&D

Canal, but this move has been discontinued in 2004. Exhibit 6 provides the distribution of the $20.7 million of barge benefits by commodity and the tonnage of each commodity that benefits from the maintenance of the C&D Canal at the 35 foot channel depth.

Exhibit 6: Distribution of Benefits to the Barge Transits and Associated Tonnage by Commodity

Commodity	Benefit	Tonnage Impacted
Cement	$1,411,781	973,378
Coal	$9,570,453	2,317,060
Container	$82,688	NA
Liquid Bulk	$271,781	169,000
Liquid Sugar	$693,656	679,434
Petroleum Products	$8,512,453	3,449,619
Other Dry Bulk	$131,156	45,480
Total	$20,673,969	7,633,971

The C&D Project Office data base does not include the tonnage or commodity for barge transits. Therefore, as part of interviews with the barge/tug operators, Martin Associates identified the specific type of commodity moving on each barge with a loaded design draft of 17 feet or greater, and also identified the typical tonnage moving on each barge. For specific barges that were not identified via the interviews, Martin Associates used the "Waterborne Transportation Lines of the U.S.", IWR, USACE, 2002, Volume 3 to identify average load and type of barge. Using this methodology, the volume of cargo that would be subject to diversion to a Cape Henry routing should the Canal not be maintained at the 35 foot depth was estimated.

As presented in Exhibit 6, 7.6 million tons of cargo moving by barge benefit from maintaining the C&D Canal at a depth of 35 feet. Petroleum and petro-chemical products account for 6.8 million tons of the total 7.6 million tons benefiting from the maintenance dredging. These commodities also receive the majority of the dollar benefits from maintenance dredging.

2. Benefit Cost Ratio

In the previous chapter the total operating and maintenance costs associated with maintaining the C&D Canal channel at a water depth of 35 feet was presented under three scenarios as to disposal placement. These three scenarios, and the associated costs are repeated below:

In Scenario 1, the dredged material from the Baltimore Connecting Channels is placed at Poplar Island. Also in this Scenario, DTP Costs charged to the NPCS must be apportioned to the project in a manner consistent with the disposal plan identified as the Federal Standard or National Economic Development (NED) disposal plan for said project. The NED cost for the 35 ft Baltimore Connecting Channels dredging projects is approximately $4.00 per cubic yard. The DTP unit cost, $8.42/cy, is $4.42/cy over and above the NED disposal plan for this project, and is apportioned to the Poplar Island Environmental Restoration Project (PIERP) authorization and is not included in this scenario. Based on this apportionment, the total annual O&M cost for Scenario 1 is $9.5 Million.

In Scenario 2, the dredged material from the Baltimore Connecting Channels is also placed at Poplar Island. However, in this Scenario, the DTP costs apportioned to both the NPCS and the PIERP Authorization are presented for illustration purposes. Thus in this case, the total DTP unit cost ($8.42/cy) for the Baltimore Connecting Channels results in a total annual O&M cost of $12.7 Million. This cost scenario includes the $3.2 million of environmental restoration costs at Poplar Island. Typically, such environmental restoration benefits are not included in the USACE benefit/cost calculations.

In Scenario 3, the dredged material from the Baltimore Connecting Channels is placed at Hart-Miller Island. The transport distance to Hart-Miller from the Baltimore Connecting Channels is significantly less than to Poplar Island, which results in a unit DTP cost of $5.94/cy, $2.42/cy less than if the material is taken to Poplar. The total annual O&M cost for Scenario 3 is $10.9 Million.

Scenario 2 is the most costly alternative, resulting in a $12.7 million annual cost to maintain the C&D Canal at a channel depth of 35 feet. It is to be emphasized that this cost scenario includes the $3.2 million of environmental restoration costs at Poplar Island, and hence, is a more conservative approach than is usually followed by the USACE in the evaluation of navigation projects. **Even when this most expensive alternative is chosen, the benefits ($24.6 million) of maintaining the channel at the 35 ft. depth are nearly double the costs. This equates to a benefit cost ratio of 1.94 for the highest cost alternative.**

The benefit cost ratios for each of the cost scenarios are shown in Exhibit 7.

Exhibit 7: Summary of Benefit Cost Ratios

NPCS Section	Annual Maintenance Volume (Mcy)	DTP Estimated Cost ($/cy)	Associated Annual Cost ($M)	Annual O&M Cost ($M)	Placement Site	Benefit Cost Ratio
1 - Baltimore Connecting Channel	0.73	$4.00	$0.20	$3.10	Poplar	
2 - Baltimore Connecting Channel	0.73	$8.42	$0.20	$6.30	Poplar	
3 - Baltimore Connecting Channel	0.73	$5.94	$0.20	$4.50	HMI	
Lower Approach Channel	0.85	$5.05	$1.00	$5.30	Pooles	
Upper Approach Channel	0.15	$6.20	$0.05	$1.00	Pierce	
C&D Canal	0.003	$24.70	$0.05	$0.10	Bethel	
1 - Total NPCS O&M	**1.73**		**$1.30**	**$9.50**		**2.6**
2 - Total NPCS O&M	**1.73**		**$1.30**	**$12.72**		**1.9**
3 - Total NPCS O&M	**1.73**		**$1.30**	**$10.90**		**2.3**

From a National Economic Development perspective, the annual benefits of maintaining the C&D Canal at the 35 foot channel depth are nearly twice the level of the total operating and maintenance costs for the 35 foot channel.

3. Sensitivity of the Benefit Cost Ratio

In order to control for the fact that some barges with drafts of 17 and 18 feet might not be utilized to their optimal capacity, Martin Associates conducted a sensitivity analysis as to changes in the benefits attributed to barge transportation for barges with a draft of 18 feet or more (606 barge transits) and for barges with a draft of 19 feet or more (423 barge transits). The barge savings for the 606 barge transits with a draft of 18 feet or more is $17.3 million. If transportation cost savings for the 328 barges with a loaded draft of 17 to 19 feet are eliminated completely from the analysis (145 barge transits between 17 and 18 feet of draft and 183 barge transits between 18 and 19 feet of draft), the cost savings attributable to the remaining 423 barge transits is $7.7 million.

Combining this barge savings (transits with a draft of 19 feet or more) with the vessel cost savings of $3.9 million, the $11.6 million transportation benefits still exceed the costs of maintaining the C&D Canal at a 35 foot depth under Cost Scenarios 1 and 2. While this is unrealistic to assume that all barge transits with a draft of 17- 19 feet would be used inefficiently and light loaded to transit the Canal at a regime depth of 19 feet, the exercise underscores the magnitude of the transportation savings provided by maintaining the C&D Canal at a 35 foot depth. This transportation cost benefit does not include the costs that would be required by the additional number of tug and barge transits needed to move the cargo that would be light loaded.

It is to be emphasized that the Maryland Port Administration and the DMMP Executive Committee tasked Martin Associates with assessing the economic benefits and costs of maintaining the C&D Canal at its current 35-foot depth. However, in order to assess the potential importance of a more detailed incremental benefit/cost analysis, Martin Associates did conduct a sensitivity analysis by comparing benefits and costs at lesser channel depths. Benefits and costs were estimated at channel depths in 5-foot increments from 20 feet to 35 feet. Essentially, as channel depth increases, both benefits and costs increase at approximately the same rate. So, while a channel depth of 25 feet results in lower benefits than a depth of 35 feet, the costs of dredging are reduced at a similar rate. The benefit/cost ratio ranges from 1.9 to 2.7 at channel depths of 25, 30 and 35 feet. Hence, the benefits are nearly twice as high as the costs for any depth up to 35 feet.

Exhibit 8: Incremental Benefit Cost Analysis

Maintained Draft (Feet)	Savings In Dredging Costs (Millions)	Loss In Transportation Benefits (Millions)
30	$1.3 to $2.3	$2.3
25	$2.9 to $3.4	$6.5
20	$5.6 to $6.3	$12.3
19	$.7	$3.5

Exhibit 8 shows the incremental benefit cost analysis. This exhibit shows that the incremental cost savings for dredging only to a 30 foot depth (compared to a 35 foot depth) ranges between $1.3 million to $2.3 million annually, while $2.3 million in transportation benefits (compared to maintaining the channel at a 35 foot depth) are given up. The incremental cost savings of only maintaining the channel at 25 feet ranges from $2.9 million to $3.4 million, but $6.5 million transportation benefits are lost. A $5.6 million to $6.3 million cost savings is realized by maintaining the channel at 20 feet (compared a depth of 25 feet), but the cost to the transportation industry is $12.3 million in foregone shipping benefits.

This indicates that on an incremental basis, the cost savings from reduced dredging that can be realized at each five foot increment is offset by the transportation benefits that would be foregone at each corresponding increment.

III. REGIONAL BENEFITS

In this chapter, regional benefits to the state of Maryland are discussed. Martin Associates has developed a detailed economic impact model for the public (those owned by the Maryland Port Administration) and private marine terminals located within the Port of Baltimore Port District.[4] This impact model provides a tool by which the local and regional economic impacts of the maintenance of the 35 foot channel of the C&D Canal can be quantified. The impact model is based on a comprehensive survey of 380 port tenants and service providers. Using the survey results, terminal specific modules were developed to evaluate incremental impacts associated with changes in tonnage throughput, inland modal distribution patterns, labor productivity, vessel calls, and new capital projects. Because of the micro nature of the impact model, it is possible to isolate the economic impact of the commodities that would no longer be able to use the C&D Canal if the channel were not maintained at 35 feet. These commodities and the respective tonnages (units for cars, ro-ro and containers) are currently transported on vessels or barges requiring a draft of 17 feet or more.

1. State and Local Economic Impacts

The regional economic impact of maintaining the 35 foot channel of the C&D Canal is presented in Exhibit 9.

Exhibit 9: Economic Impact of Maintaining the 35 Foot Channel

Jobs	
direct	2,910
induced	1,370
indirect	3,239
total	7,519
Personal Income ($1,000)	
direct	$ 126,901
induced	$ 127,535
indirect	$ 131,710
Total (1,000)	$ 386,146
Revenue (1,000)	$ 420,327
S/L taxes(1,000)	$ 49,329

[4] "The Local and Regional Economic Impacts of the Port of Baltimore", prepared by Martin Associates for the Maryland Port Administration, 2002.

The cargo that requires the 35 channel supports annually 7,519 direct, induced and indirect jobs in the state of Maryland. Of these jobs, 2,910 are directly generated, while 1,370 induced jobs are supported by the local purchases for goods and services by those directly employed. Because of local purchases made by the firms providing the cargo and vessel handling services, another 3,239 indirect jobs are supported by the cargo requiring the 35 foot channel.

A total of $386 million of direct, induced and indirect personal income is also supported by the cargo requiring the 35 foot channel. $126.9 million of this total income impact is direct wages and salaries received by the 2,910 directly employed workers.

Businesses providing cargo handling services and inland transportation of the cargoes requiring the maintenance of the 35 foot channel receive $420.3 million annually. **It is important to note that this revenue impact does not include the value of the cargo being transported nor does it include the $24.6 million of transportation cost savings of maintaining the C&D Canal at 35 feet of channel depth.**

The state and local governments within Maryland receive $49.3 million annually in tax revenue from the firms and individuals that handle the cargo that requires the 35 foot channel.

In the long run, failure to maintain the C&D Canal at its current depth could put the regional economic benefits at risk. If the nearly 1,400 vessel and barge transits drawing 17 feet or more which used the Canal in 2003 were no longer able to transit the Canal, they would incur significant additional transportation costs on an ongoing basis. This additional cost burden could make operating in Baltimore a high cost and uncompetitive alternative to operations in other ports. Again, in the long run, this could lead to disinvestment in, and eventual abandonment of Baltimore operations.

2. Key Port Industry Sector Impacts

Based on interviews with the major shippers/consignees and carriers using the C&D Canal, autos, ro-ro cargo, and gypsum were identified as three cargoes handled at the Port of Baltimore that would incur additional, less quantifiable impacts should the C&D Canal channel not be maintained at a 35 foot draft. The movement of these commodities via the public and private marine terminals within the Port of Baltimore also generates significant local and regional economic impacts.

2.1 Autos/Ro-Ro Impacts

Based on the 2002 Economic Impact Study conducted by Martin Associates for the Maryland Port Administration, autos and Ro-Ro cargo generated substantial economic activity in the State of Maryland. These impacts are summarized in Exhibit 10.

Exhibit 10: Economic Impacts of Auto/Ro-Ro Cargo at the Port of Baltimore, 2002

Jobs	
direct	1,993
induced	983
indirect	649
total	3,625
Personal Income ($1,000)	
direct	$ 92,673
induced	$ 93,137
indirect	$ 25,181
Total ($1,000)	$ 210,992
Revenue ($1,000)	$ 212,393
S/L taxes ($1,000)	$ 23,783

Interviews with the major ocean carriers transporting the autos and ro-ro cargo to and from the Port of Baltimore expressed serious concern as to the inability to use the C&D Canal. In fact several carriers indicated that the C&D Canal transit was vital to the vessel rotation of individual fleets. If the C&D Canal were not maintained at a channel depth of 35 feet, several carriers further expressed the possibility that the Port of Baltimore could be dropped from the port rotation. If service were not maintained by the ro-ro and auto carriers, the auto and ro-ro processors currently at the Port would be at risk and could relocate to another port on the Atlantic. The concerns of the auto/ro-ro carriers are summarized as follows:

- The auto/Ro-Ro carriers as a group depend upon the use of the C&D Canal to keep vessel schedule integrity in the highly traveled waterways between New York and Baltimore.

- Any disruption in the ability to use the C&D Canal would add additional transit time to albeit "very tight schedules" especially in the winter months where North Atlantic crossings are often delayed by weather.

- The customary usage of 0800 labor starts at Baltimore is critical, whether transiting northbound or southbound, as the evening hours are used to sail to the next port whether it be a one or two day voyage. Ro-Ro/auto carriers are particularly penalized by working overtime as the need for additional drivers to a gang increases overall costs.

- Critical to the Ro-Ro carriers is the ability to work their vessels in daytime hours to minimize damage and allow surveys and inspections to take place on a timely basis. Therefore, time before the 0800 start is critical to conduct routine repairs and maintenance as well as for crew rest prior to vessel discharge or loading.

In addition to these concerns raised by the auto/Ro-Ro carriers, one carrier identified that the C&D Canal is so critical to the vessel rotation that several new vessels on order have had modifications in order to comply with air draft restrictions along the C&D Canal.

It is to be emphasized that if the C&D Canal is not maintained at the 35 foot depth, the auto/Ro-Ro carriers calling the port would incur a $1.4 million annual cost penalty. Under tight operating margins, this increase in operational costs could result in a loss of vessel service at the Port of Baltimore, which would jeopardize the 3,600 total job impact and $24 million of annual state and local tax revenue that are supported by these operations.

2.2 Gypsum Impacts

The two gypsum operations at the Port of Baltimore, U.S. Gypsum and National Gypsum, create nearly 2,000 total jobs in the local and regional economy, and $13.1 million of state and local tax revenue, as summarized in Exhibit 11.

Exhibit 11: Economic Impacts of Gypsum at the Port of Baltimore, 2002

Jobs	
direct	862
induced	461
indirect	669
Total	1,991
Personal Income ($1,000)	
direct	$ 44,718
induced	$ 93,137
indirect	$ 27,427
Total ($1,000)	$ 165,283
Revenue ($1,000)	$ 62,293
S/L taxes ($1,000)	$ 13,066

The interviews with the gypsum companies operating at the Port of Baltimore identified additional impacts in addition to the $245,000 net shipping cost increase that would occur should the C&D Canal not be maintained at a 35 foot depth. These additional impacts and concerns are summarized as follows:

- The self unloaders used in the gypsum trade are limited in supply and maintain a tight rotation to serve other ports, as well as Baltimore. As a result, equipment availability would become a problem, as the extra 10-12 hours of sailing time (due to a Cape Henry routing) would result in a loss of 1-2 ship calls per facility per year, for a loss of 160,000 tons of gypsum.

- Storage is limited at one facility, and diversion delays of 10-12 hours could result in the shutdown of facilities for a 24 hour period. To restart the operations, $200,000 of restart costs would be incurred.

- The opportunity cost to the vessel operators moving the gypsum was estimated by one gypsum carrier at $500,000 due to the loss of service of the vessels.

- Further investment in additional capacity at Baltimore facilities would be at risk if the Canal were not maintained at the 35 foot depth, as the gypsum companies would look elsewhere to expand plant capacity.

The additional time that would be encountered due to a Cape Henry routing would also impact the need to consider the tide fluctuations at Nova Scotia, creating another 12 hour delay on top of the diversion delay of 10-12 hours. This extra 12 hour delay is not factored in the transportation benefits analysis.

3. Environmental Impacts

As discussed, one alternative to moving the cargo that now moves on barges and vessels is to divert this cargo to a surface mode of transportation, ether rail or truck, rather than to use a Cape Henry routing. However, this diversion to a surface mode would result in a significant increase in truck and rail traffic, which would not only impact the State of Maryland's highway system in terms of increased wear and tear and congestion on the highways, but also result in increased mobile source emissions that contribute to regional air quality problems. To underscore the magnitude of the number of truck trips that would be required to transport the cargo now moving by vessel or barge with a draft requirement of 17 feet or more, the tonnage associated with these ship and barge moves was converted into equivalent truck or rail moves. Based on the 2002 Economic Impact Report for the Port of Baltimore prepared by Martin Associates for the Maryland Port Administration, it is assumed that each truck would move 22 tons of bulk and break bulk cargo, 2 containers, 2 pieces of Ro-Ro equipment and 10 automobiles. For rail, it is assumed100 tons per rail car for bulk cargoes, 60 tons per car for breakbulk cargo, 13 autos per rail car, 10 containers and 10 Ro-Ro units per car. A train length of 100 cars is assumed for bulk cargoes, an 80 car unit train for containers and a 60 car train for Ro-Ro and autos. Exhibits 12 and 13 present the number of truck and train equivalencies that would be required to handle the respective cargoes now moving by ship or barge that are subject to diversion via a Cape Henry routing if the C&D Canal were not maintained at the 35 foot channel depth.

Exhibit 12: Truck and Rail Equivalent Moves for Cargo Moving on Barges that require 17 Feet or More Draft

Commodity	Tonnage Impacted	Equivalent Truck Moves	Equivalent Rail Moves
Cement	973,378	44,244	97
Coal	2,317,060	105,321	232
Container	NA		
Liquid Bulk	169,000	7,682	17
Liquid Sugar	679,434	30,883	68
Petroleum Products	3,449,619	156,801	345
Other Dry Bulk	45,480	2,067	5
Total	7,633,971	346,999	763

Exhibit 13: Truck and Rail Equivalent Moves for Cargo Moving on Vessels that Require 17 Feet or More Draft

Commodity	Tonnage Impacted		Equivalent Truck Moves	Equivalent Rail Moves
Dry Bulk	906,500	tons	41,205	91
Cars	233,750	units	23,375	225
Coal	276,800	tons	12,582	28
Containers	9,860	units	4,930	16
Geenral Cargo	954,600	tons	43,391	159
Gypsum	1,787,100	tons	81,232	179
RoRo	16,150	units	8,075	27
Petroleum	1,626,000	tons	73,909	163
Chemicals	126,000	tons	5,727	13
Total			294,425	899

As these two exhibits illustrate, 641,424 truck movements would be required to handle the cargo that now moves via the C&D Canal on barges and ships that have a draft of 17 feet or more, and would be subject to diversion via the Cape Henry routing should the channel not be maintained at 35 feet.

It is well documented that movement of cargo by vessel or barge is a much more fuel efficient and environmentally friendly mode of transportation than truck or rail. Exhibit 14 presents the relative emissions (with respect to vessel) to move a ton of cargo over a distance of 100 miles. This data has been developed by Edwards and Kelcey for the Maryland Port Administration.[5]

[5] "Analysis of Emissions From Ship and Maryland Port Administration Operations in the Baltimore Air Quality Nonattainment Area", Final Report, Presented to the Maryland Port Administration, April, 2001.

Exhibit 14: Relative Comparison of Fuel Emissions by Mode

Emissions	Ship (baseline)	Rail	Truck
Carbon Monoxide	1.00	2.40	3.90
Volatile Organic Compounds	1.00	27.30	23.10
Oxides of Nitrogen	1.00	6.80	4.30
Sulfur Dioxide	1.00	0.20	1.10
Particulate Matter	1.00	6.80	11.00

Source: Edwards and Kelcey

As this table indicates, the volatile organic compounds emissions generated by truck and rail to move an equivalent unit of cargo 100 miles are 23 to 27 times greater than to move the same volume of cargo over the same distance by ship. For oxides of nitrogen, truck and rail create 4 to 7 times more emissions than does the use of a ship to move the same unit of cargo over a 100 mile distance. Similarly, for particulate matter, truck conveyance emits 11 times more emissions than does an equivalent move by ship, and rail generates nearly 7 times more particulate matter than does the use of a ship to move the same unit of cargo over 100 miles. Rail generates lower sulfur emissions than does a vessel, while truck transportation generates about the same level of sulfur dioxide emissions as an equivalent move by a ship. With respect to carbon monoxide, truck conveyance generates 4 times more emissions per 100 miles than does a ship, while rail generates 2.4 times more emissions per 100 miles per unit of cargo than does the same move by ship.

The Baltimore Area is a non attainment area for volatile organic compounds and oxides of nitrogen, and the potential impact of 641,424 additional truck trips would clearly exacerbate the air quality issues, as well as significantly increasing highway congestion. As a result, the use of truck or rail to move the cargo subject to a Cape Henry diversion should the C&D Canal not be maintained at 35 feet is not an attractive alternative.

Attachment 2

Swan Point Channel

The Brewerton Channel Eastern Extension, Tolchester Channel, and Swan Point Channel comprise the 35-foot deep channels connecting the Port of Baltimore with the Chesapeake and Delaware (C&D) Canal and approach channels. While the majority of the traffic transiting the northern Chesapeake Bay between the Port and the C&D Canal use the Brewerton Channel Eastern Extension and Tolchester Channel, the Swan Point Channel is an integral part of the navigation system. The Swan Point channel is used by vessels transiting the Chesapeake Bay between the C&D Canal and points south of the Port. This includes vessels that bypass the Port from points north or south of the Port as well as vessels that go to the Annapolis Anchorage prior to calling on the Port.

The Swan Point Channel is also an important safety feature for the northern Bay navigation system, providing a safer alternative route to and from the Port during adverse weather conditions, difficult navigation conditions, or blockages of the Brewerton Channel Eastern Extension or Craighill approach channels. The Brewerton Channel Eastern Extension intersects with the Tolchester Channel on the eastern side of the Upper Bay to form a 70-degree angle. This angel is acute by navigation standards and is a relatively difficult angle to navigate. The angle becomes particularly difficult to navigate during adverse weather conditions such as high northerly/northwesterly winds combined with high ebb currents, ice conditions, and fog and storm conditions that limit visibility. Northerly winds, ebb currents and southerly ice flows all work to prevent a south-bound vessel from turning from the Tolchester Channel into the Brewerton Channel Eastern Extension and a north-bound vessel from turning from the Brewerton Channel Eastern Extension into the Tolchester Channel. During adverse weather or in the event a ship is not handling well, a pilot can take the vessel south past the Brewerton Channel Eastern Extension and use the Swan Point Channel to connect to the main Craighill approach channels and the Port of Baltimore, or sail south out of the Port and turn north through the Swan Point Channel to the Tolchester Channel and avoid the acute angle at the eastern end of the Brewerton Channel Eastern Extension. There have been several groundings at the eastern end of the Brewerton Channel Eastern Extension associated with trying to make the turn, the latest grounding occurring in November 2004.

Because the Brewerton Channel Eastern Extension runs in an east to west direction across the upper Bay, the prevailing winds and tidal currents are generally perpendicular to the channel. Tidal currents have average maximum velocities of 0.7 and 0.6 knots for ebb and flood currents, respectively, at the eastern end of the Brewerton Channel Eastern Extension. However, actual current velocities can frequently exceed 1 knot, and storm-induced surges and heavy runoff during and following storm events can increase current velocities even more. Wind conditions vary; with the most critical conditions for navigating the Brewerton Channel Eastern Extension occurring when prevailing northerly winds coincide with an ebb tide and, to a lesser degree, when prevailing southerly winds combine with a flood tide. Weather conditions vary considerably in the upper Bay. The upper Chesapeake Bay is exposed to predicted as well as unexpected storms with high winds, which can adversely affect navigation. Wind speeds can easily reach 30 to 50 miles per hour. Hurricanes can also occur in the area from June through November. The upper Chesapeake Bay is frequently subject to freezing conditions during the period of December through February each year, resulting in ice coverage of several inches to 1 foot thick. The breaking and movement of the ice with the tides and winds results in the ice piling up to form ice flows that can be several feet thick in areas. Ice conditions increase maneuvering difficulty due to the increased resistance and the need to cut through the ice, and the movement of large ice floes with the tides, which may move vessels off their intended course. The ice also obscures navigation buoys, which makes it more difficult to judge the layout of the channel and the vessel's location in the channel. Fog conditions are common during the fall and spring months of the year as well as other times. Such conditions make navigation more difficult since range lights, buoys, and other vessels can be obscured by the fog, and pilots must rely upon the vessel's radar, global positioning systems and radio communication. Thunderstorms are also frequent, particularly during the summer months. The storms can be accompanied by high gusts of wind that can move vessels off course, and by heavy downpours that can obscure range lights, buoys, and other vessels, and can attenuate radar performance.

The Swan Point Channel has also been used during times when it is unsafe to pass ships in the Brewerton Channel Eastern Extension, or when there have been groundings or blockages in the Brewerton Channel Eastern Extension. It has also been used as an alternative route to the main Craighill approach channels when there has been a blockage in the Craighill approach channels. Therefore, the Swan Point Channel is an integral component of the navigation system between the Port of Baltimore and the C&D Canal and its continued maintenance is critical to the safe operation of vessels utilizing this channel system.

Baltimore Harbor Channels, Maryland
Average Annual Dredging Quantities and Costs
Southern Approach Channels to C D Canal

YEAR	CHANNELS	QUANTITY	DREDGING	E&D	COST S&A	TOTAL
1993	Brewerton Extension	0	$317,112	$72,334	$8,688	$398,134
	Tolchester Channel	220,351	$685,161	$42,503	$49,901	$777,565
	Swan Point Channel	248,048	$146,059	$0	$47,632	$193,691
	Total	468,399	$1,148,332	$114,837	$106,221	$1,369,390
1994	Brewerton Extension	822,369	$2,972,382	$52	$106,180	$3,078,614
	Tolchester Channel	145,712	$1,007,257	$0	$54,657	$1,061,914
	Swan Point Channel	0	$0	$0	$0	$0
	Total	968,081	$3,979,639	$52	$160,837	$4,140,528
1995	Brewerton Extension	0	$632,171	$33,771	$10,134	$676,076
	Tolchester Channel	0	-$160,397	$31,975	-$269	-$128,692
	Swan Point Channel	0	-$142,949	$0	$0	-$142,949
	Total	0	$328,825	$65,746	$9,865	$404,436
1996	Brewerton Extension	787,700	$1,951,844	$8,394	$87,507	$2,047,745
	Tolchester Channel	0	$373,999	$32,996	$726	$407,721
	Swan Point Channel	0	$0	$0	$0	$0
	Total	787,700	$2,325,843	$41,390	$88,233	$2,455,466
1997	Brewerton Extension	528,178	$2,238,208	$22,481	$73,307	$2,333,996
	Tolchester Channel	565,226	$1,745,358	$45,751	$56,807	$1,847,917
	Swan Point Channel	0	$0	$0	$0	$0
	Total	1,093,404	$3,983,566	$68,232	$130,114	$4,181,912
1998	Brewerton Extension	684,745	$2,117,433	$94,286	$0	$2,211,719
	Tolchester Channel	0	$14,999	$30,569	$0	$45,568
	Swan Point Channel	0	$0	$0	$0	$0
	Total	684,745	$2,132,432	$124,855	$0	$2,257,287
1999	Brewerton Extension	767,743	$3,743,173	$8,845	$75,411	$3,827,429
	Tolchester Channel	322,362	$1,686,830	$23,972	$22,865	$1,733,667
	Swan Point Channel	0	$0	$0	$0	$0
	Total	1,090,105	$5,430,003	$32,817	$98,276	$5,561,097
2000	Brewerton Extension	0	$138,490	$9,811	$0	$148,300
	Tolchester Channel	851,496	$3,923,259	$16,691	$100,612	$4,040,562
	Swan Point Channel	0	$4,996	$15,034	$994	$21,024
	Total	851,496	$4,066,745	$41,536	$101,606	$4,209,887
2001	Brewerton Extension	857,441	$3,209,292	$9,983	$105,825	$3,325,100
	Tolchester Channel	0	$0	$25,632	$0	$25,632
	Swan Point Channel	827,721	$5,419,323	$0	$111,379	$5,530,702
	Total	1,685,162	$8,628,616	$35,615	$217,204	$8,881,435
2002	Brewerton Extension	0	$50,752	$29,845	$0	$80,597
	Tolchester Channel	0		$32,522	$0	$32,522
	Swan Point Channel	0	-$366,150	$0	$0	-$366,150
	Total	0	-$315,398	$62,367	$0	-$253,031
2003	Brewerton Extension	333,351	$997,182	$33,789	$58,783	$1,089,753
	Tolchester Channel	0	$0	$0	$0	$0
	Tolchester S-Turn	0	$252,948	$29,809	$16,728	$299,486
	Swan Point Channel	0	$0	$0	$0	$0
	Total	333,351	$1,250,130	$63,599	$75,511	$1,389,239
11-Year Average Annual Dredging		723,858	$2,996,248	$59,186	$89,806	$3,145,240
5-Year Average Annual Dredging		792,023	$3,812,019	$47,187	$98,519	$3,957,725

1/ Dredging quantities are total pay quantities and exclude non-pay overdepth. Costs include all Engineering and Design, Supervision and Administration, and contract dredging costs, including costs to conduct all contract, immediately before dredging and after dredging surveys. Costs do not include operation costs for conducting project condition surveys of the channels. Costs do not include dredging quantities or costs for straightening the Tolchester Channel S-Turn, but do include quantities and costs for subsequent maintenance of the new straightened channel.

2/ Costs do not include new work dredging costs to widen the Brewerton Channel Eastern Extension.

3/ Costs do not include the incremental increase in costs for placement at the Poplar Island Environmental Restoration Project.

4/ Maintenance of a 27-foot deep, 600-foot wide channel would require dredging the Brewerton Channel Eastern Extension to ~ STA 29+500.
The Brewerton Channel Eastern Extension is currently dredged to STA 33+400.
Dredging costs for a 27-ft project were prorated for 88% (29,500/33,400).
E&D, S&A costs were not prorated. The Swan Point and Tolchester Channels are naturally deeper than 27 feet and would not require dredging.
5/ Negative costs reflect credits as a result of prior year dredging cost projections being higher than the actual dredging costs.

Attachment 3

Inland Waterway from Delaware River to Chesapeake Bay, DE and MD (C and D Canal)
Average Annual Dredging Quantities and Costs

YEAR	CHANNELS	QUANTITY	DREDGING	COST MOB/DEMOB	TOTAL	ASSOCIATED
1993	C&D Canal	0	$0	$0	$0	$0
	Upper Bay (Town Point to Sassafras River)	557,556	$1,185,653	$450,043	$1,635,696	
	Lower Bay (Sassafras to Pooles Island)	982,389	$2,049,122	$792,957	$2,842,079	
	Total	1,539,945	$3,234,775	$1,243,000	$4,477,775	$0
1994	C&D Canal	0	$0	$0	$0	$0
	Upper Bay (Town Point to Sassafras River)	0	$0	$0	$0	$0
	Lower Bay (Sassafras to Pooles Island)	1,913,532	$4,370,393	$709,000	$5,079,393	$0
	Total	1,913,532	$4,370,393	$709,000	$5,079,393	$0
1995	C&D Canal	89,995	$130,493	$77,000	$207,493	$0
	Upper Bay (Town Point to Sassafras River)	513,446	$1,386,304	$393,344	$1,779,648	$0
	Lower Bay (Sassafras to Pooles Island)	896,318	$2,420,059	$686,656	$3,106,715	$0
	Total	1,499,759	$3,936,856	$1,157,000	$5,093,856	$0
1996	C&D Canal	0	$0	$0	$0	$0
	Upper Bay (Town Point to Sassafras River)	0	$0	$0	$0	$0
	Lower Bay (Sassafras to Pooles Island)	1,800,825	$5,222,393	$160,000	$5,382,393	$0
	Total	1,800,825	$5,222,393	$160,000	$5,382,393	$0
1997	C&D Canal	0	$0	$0	$0	$0
	Upper Bay (Town Point to Sassafras River)	329,595	$1,196,430	$116,353	$1,312,783	$0
	Lower Bay (Sassafras to Pooles Island)	1,115,087	$4,047,766	$393,647	$4,441,413	$0
	Total	1,444,682	$5,244,196	$510,000	$5,754,196	$0
1998	C&D Canal	0	$0	$0	$0	$0
	Upper Bay (Town Point to Sassafras River)	0	$0	$0	$0	$0
	Lower Bay (Sassafras to Pooles Island)	759,534	$2,665,964	$575,000	$3,240,964	$0
	Total	759,534	$2,665,964	$575,000	$3,240,964	$0
1999	C&D Canal	0	$0	$0	$0	$0
	Upper Bay (Town Point to Sassafras River)	0	$0	$0	$0	$0
	Lower Bay (Sassafras to Pooles Island)	336,620	$1,955,762	$572,000	$2,527,762	$930,546
	Total	336,620	$1,955,762	$572,000	$2,527,762	$930,546
2000	C&D Canal	0	$0	$0	$0	$0
	Upper Bay (Town Point to Sassafras River)	0	$0	$0	$0	$0
	Lower Bay (Sassafras to Pooles Island)	776,453	$3,315,454	$375,000	$3,690,454	$1,085,727
	Total	776,453	$3,315,454	$375,000	$3,690,454	$1,085,727
2001	C&D Canal	32,811	$553,522	$187,862	$741,384	$329,214
	Upper Bay (Town Point to Sassafras River)	0	$0	$0	$0	$0
	Lower Bay (Sassafras to Pooles Island)	115,314	$759,919	$660,238	$1,420,157	$1,157,018
	Total	148,125	$1,313,441	$848,100	$2,161,541	$1,486,232
2002	C&D Canal	0	$0	$0	$0	$0
	Upper Bay (Town Point to Sassafras River)	369,623	$1,570,898	$588,624	$2,159,522	$746,506
	Lower Bay (Sassafras to Pooles Island)	204,946	$1,147,698	$326,376	$1,474,074	$413,917
	Total	574,569	$2,718,596	$915,000	$3,633,596	$1,160,423
2003	C&D Canal	0	$0	$0	$0	$0
	Upper Bay (Town Point to Sassafras River)	0	$0	$0	$0	$0
	Lower Bay (Sassafras to Pooles Island)	836,196	$3,570,557	$375,000	$3,945,557	$1,068,002
	Total	836,196	$3,570,557	$375,000	$3,945,557	$1,068,002
11-Year Average Annual Dredging		1,057,295	$3,413,490	$676,282	$4,089,771	N/A
5-Year Average Annual Dredging		534,393	$2,574,762	$617,020	$3,191,782	$1,146,186

1/ Dredging quantities are total pay quantities and exclude non-pay overdepth.

2/ Associated costs are available only for the years 1999 to 2003 and include: disposal area monitoring, disposal area management and operation and maintenance costs, contract associated surveys, associated contract management costs, contract plans and specification preparation, open water site monitoring - 50% of total costs - Maryland Port Administration also pays 50% - average of $100,000 - $150,000 per organization per year.

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APPENDIX G

PRELIMINARY ASSESSMENT

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
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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.

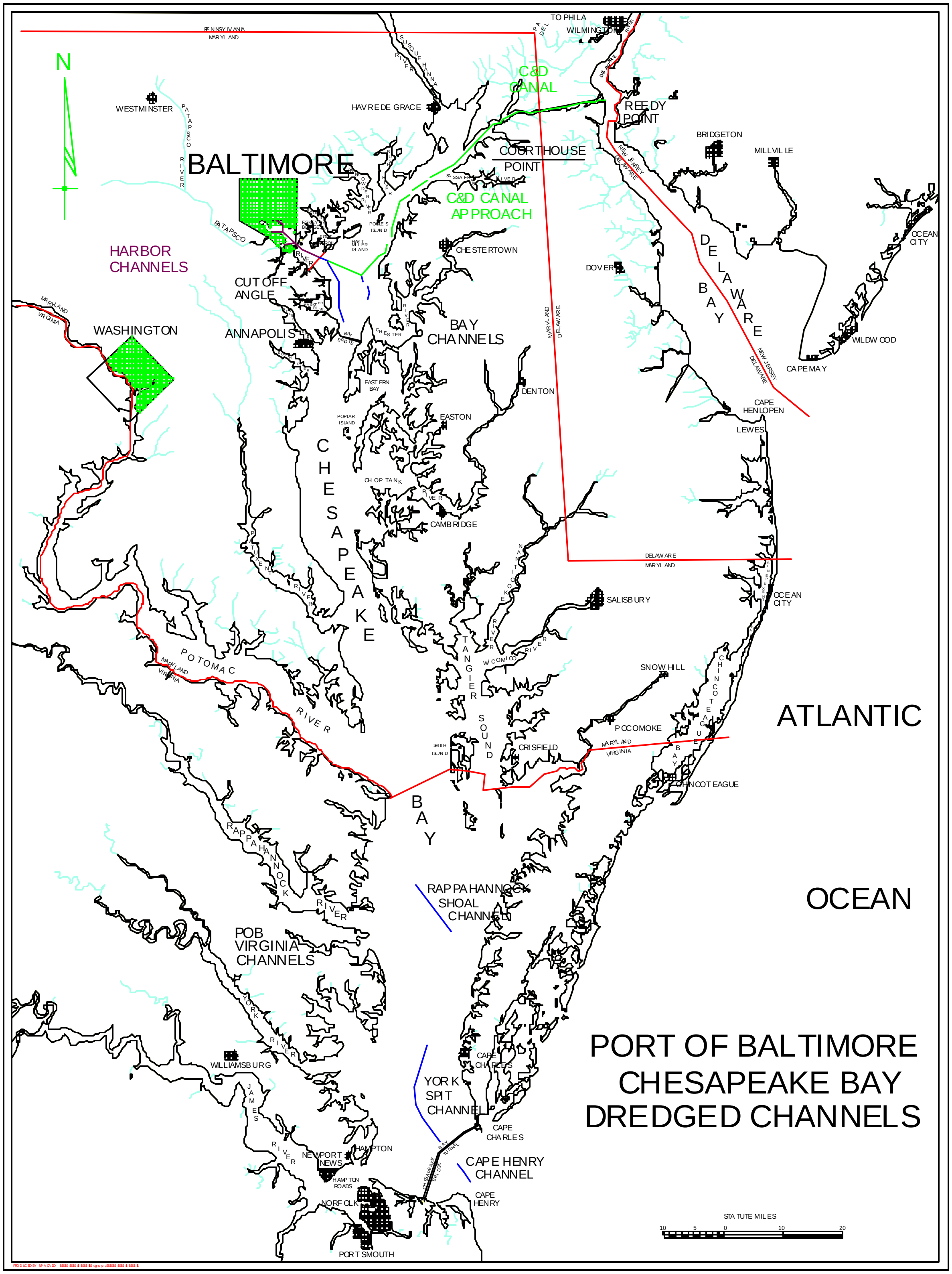
DREDGED MATERIAL MANAGEMENT PLANS

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

Commodity	**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

Commodity	**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

Year	**Quantity**	**Cost**	**2000 Price Level**
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	2,839,800	$17,162,500	$17,621,300
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 on-going 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

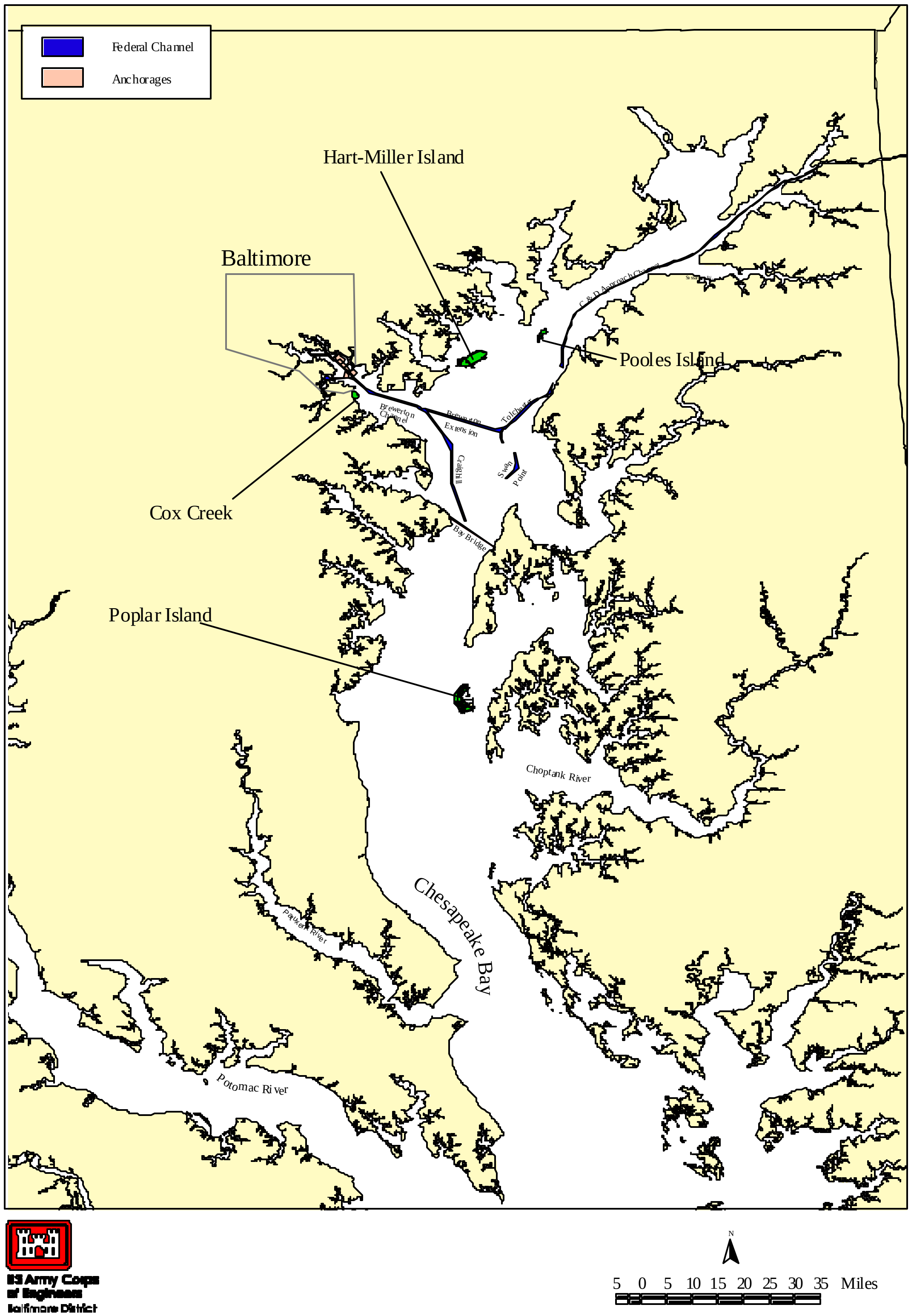
Pooles Island	6.0
Hart-Miller Island	18.0
Poplar Island*	30.2
Cox Creek**	6.0
VA Sites***	Large
Total	60.2

* 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



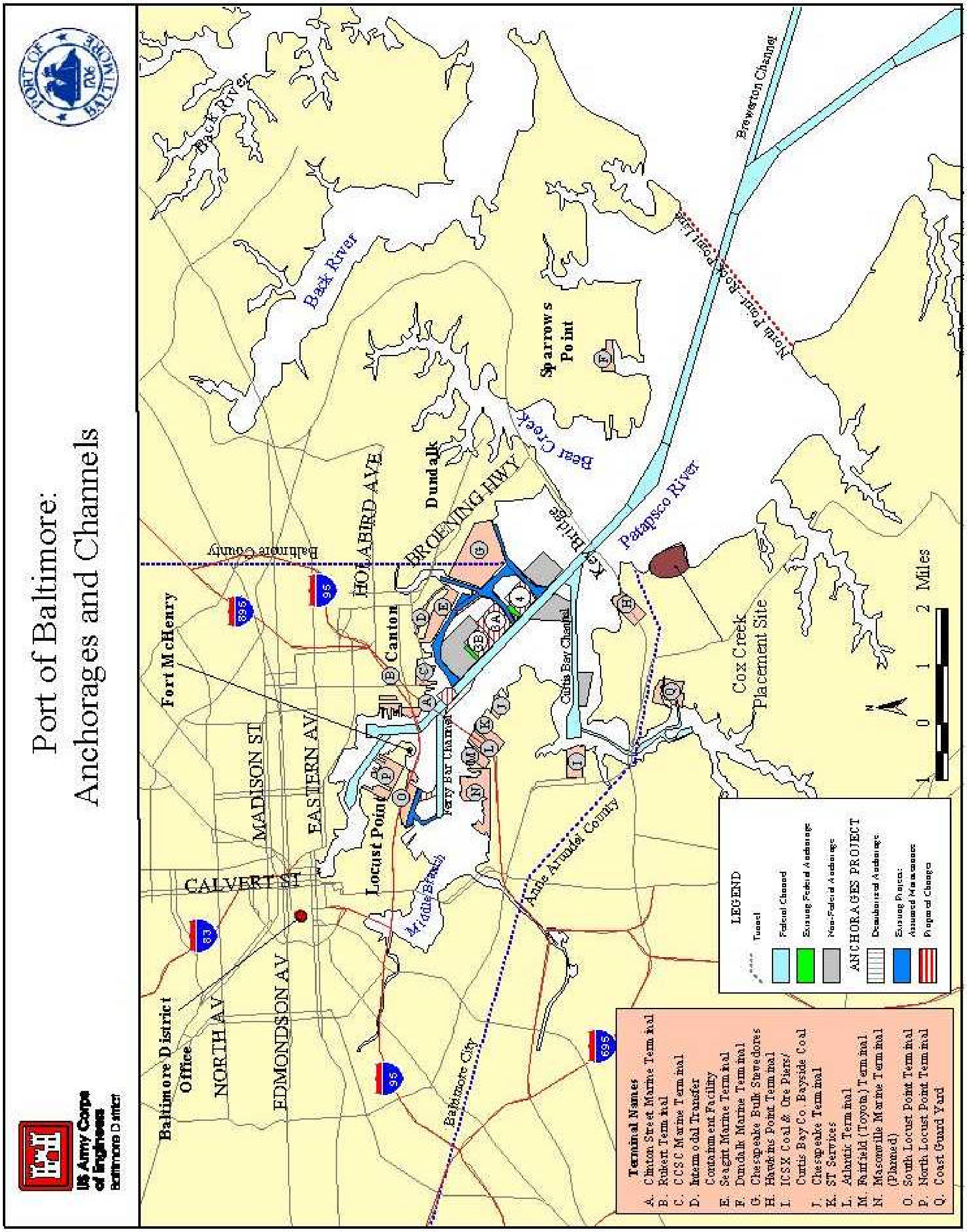
The MPA continues to examine potential sites and options as part of their regular business process through their Dredging Needs and Placement Options Program. The most current assessment by the State of Maryland has been set forth in the Governor of Maryland's Strategic Plan for Dredged Material, dated 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.

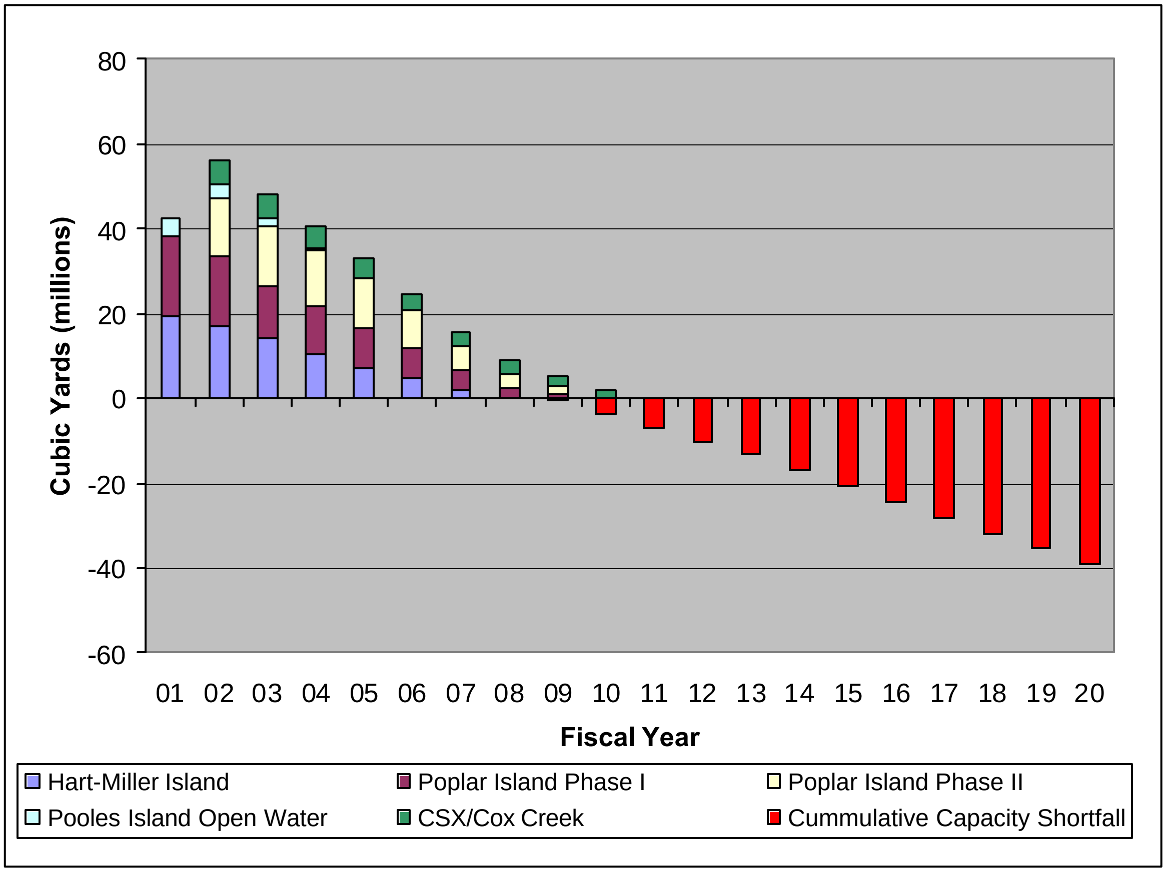
The only active open-water site, Pooles Island, is used for placement of material from the approach channels to the C&D Canal south of the Sassafras River that are the responsibility of the Philadelphia District. Pooles Island has an estimated 6 mcy of capacity remaining and due to a State law passed 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.

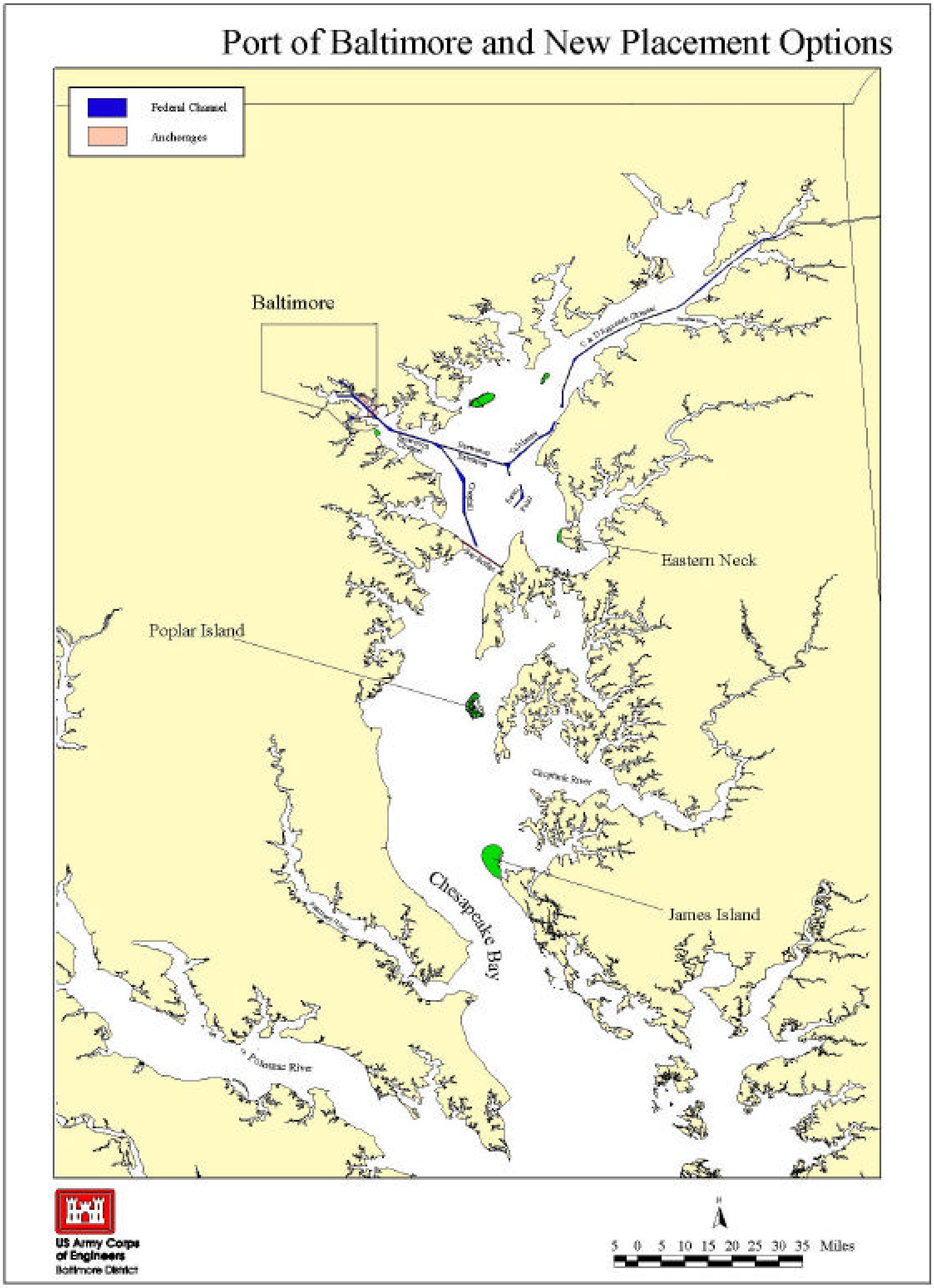
Expand the Footprint

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.

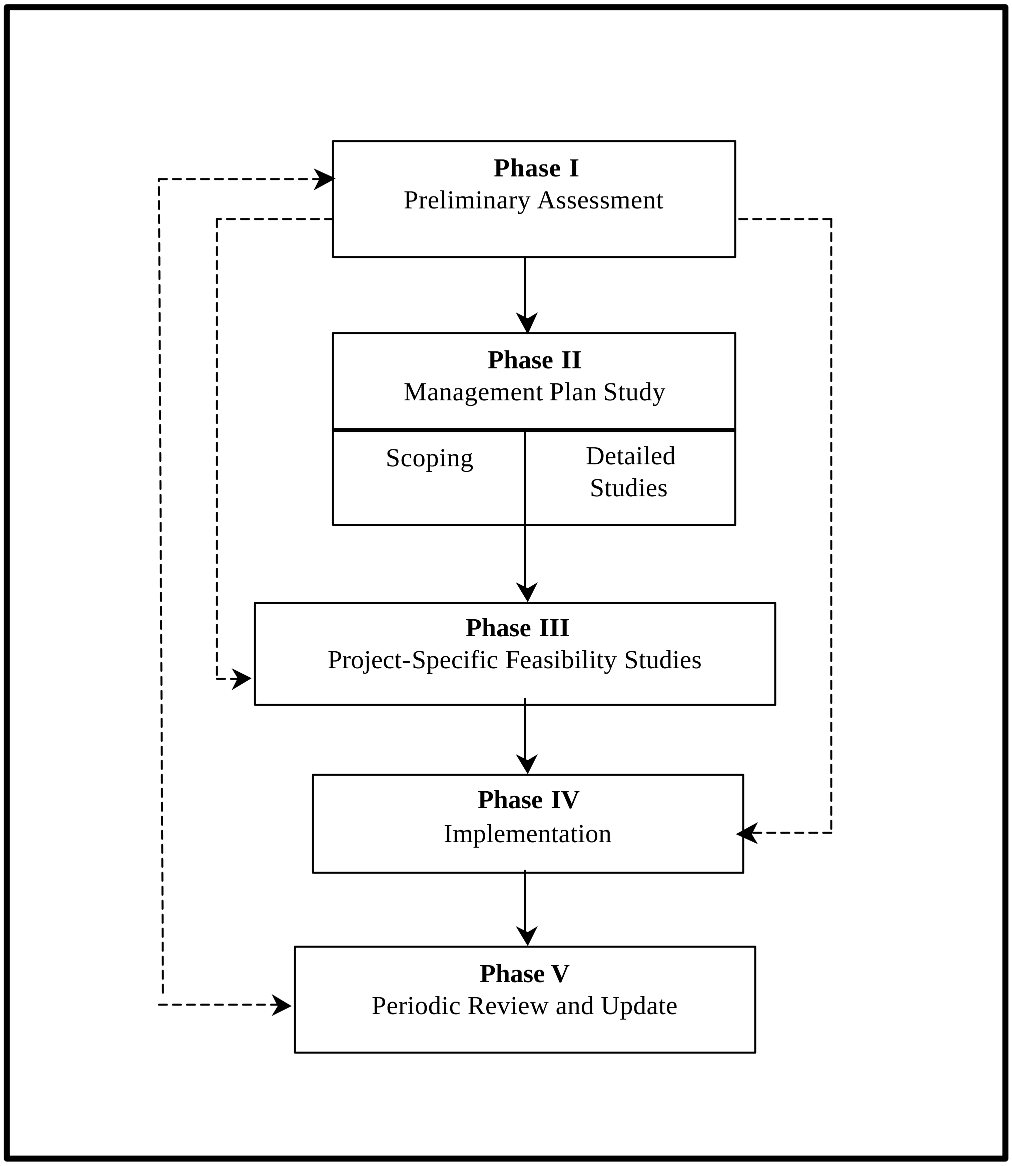
RECOMMENDATION

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



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APPENDIX H

PUBLIC INVOLVEMENT

Summary of Formal and Informal Coordination with Resource Agency Representatives Independent of BEWG and CAC

Date	Person / Organization From	Person / Organization To	Summary
April 11, 2002	USACE Baltimore and Norfolk District Personnel	Representatives of Ches. Bay Foundation, Md. Historic Trust, Md. Dept. of Agriculture, Md. Dept. of the Environment, Md. Dept. of Natural Resources, Md. Port Administration, NMFS, Univ. of Md., USEPA, & USFWS	Meeting. Presented overview of USACE DMMP Study. Discussed differences between this study and state study, no action alternative, tiered NEPA context, management of existing placement sites, and management of placed dredged material.
April 23, 2002	Michelle Gomez / USACE	Memorandum for Record	DMMP Agency Coordination Meeting
July 12, 2002	John Wolflin / USFWS	Colonel Charles Fiala / USACE	Letter. Responding to notice of public scoping meetings. USFWS has played role in Maryland's DMMP process and wish to continue to remain involved in process. USFWS opposes vertical or horizontal expansion of the Poplar Island project since no additional natural resources benefits would accrue. USFWS recommends James, Barren, and Eastern Neck Islands instead.
May 7, 2004	Wes Coleman / USACE	John Wolflin / USFWS	Letter. Provided information on DMMP Study and requested information on presence of Federally-listed species.
May 13, 2004	Wes Coleman / USACE	Julie Crocker / NMFS	Letter. Provided information on DMMP Study and requested information on presence of Federally-listed species.
May 21, 2004	Mary Colligan / NMFS	Wes Coleman / USACE	Letter. Provided information on presence of Federally-listed species under the jurisdiction of the NMFS in DMMP Study area. Species present include shortnose sturgeon, and several species of sea turtle. Loggerhead and Kemp's ridley sea turtles are of greatest concern among the latter. USACE will be required to determine whether DMMP actions would affect any listed species, and request concurrence from NMFS regarding determination.

May 26, 2004	Chris Spaur / USACE	Lou Chiarella / NMFS	E-mail. Provided information on proposed means of conducting EFH Impacts Assessment previously discussed with John Nichols.
May 27, 2004	Chris Spaur & Gwen Meyer / USACE, & Barry Dubinski / Weston Solutions, Inc.	Lou Chiarella / NMFS	Conference Call. Discussed how to structure EFH Impacts Assessment document and what to include. John Nichols should be technical contact; Lou would be involved as necessary to deal with policy issues.
June 23, 2004	Chris Spaur / USACE	Maricela Constantino / USFWS	E-mail. Provided additional information to clarify information requested in formal letter from Wes Coleman.
June 24, 2004	Andrew Moser / USFWS	Wes Coleman / USACE	Letter. Provided list of Federally-listed species occurring in the upper and mid – Chesapeake Bay, Md. Federally-listed species present in the potential project area include: Maryland darter, Puritan tiger beetle, swamp pink, bog turtle, bald eagle, and Delmarva fox squirrel. Recommended contacting Md. DNR for additional information on these and additional state-listed species.
July 15, 2004	Wes Coleman / USACE	Karen L. Mayne / USFWS	Letter. Provided information on DMMP Study and requested information on presence of Federally-listed species.
Aug. 2, 2004	Karen L. Mayne / USFWS	Form.	Letter. Provided list of Federally-listed species occurring in Accomack County, City of Hampton, City of Norfolk, City of Virginia Beach, Gloucester County, Mathews County, and Northampton County. Recommended contacting Vir. Dept. of Game and Inland Fisheries and Vir. Dept. of Conservation and Recreation for information on state-listed species.
Aug. 12, 2004	Chris Spaur / USACE	Glenn Carowan and Dixie Birch / USFWS	E-mail. Provided status report informing them that restoration of tidal wetlands in Dorchester County (presumably including Blackwater NWR) has made it to the DMMP Study's recommended plan as a placement site for material from the C&D Canal and Chesapeake Bay Approach Channels (to Baltimore) in Maryland. Also provided forecast of future efforts that would be required to undertake this work.

Sept. 9, 2004	Chris Spaur / USACE	Corinne Murphy Weston Solutions, Inc. / Gwen Myer, USACE / Jeffrey McKee / USACE	E-mail. Contains forecasted schedule; assistance provided by Scott Johnson; USACE.
Sept. 15, 2004	Chris Spaur / USACE	Kevin Smith and Raj Williams / MD DNR	E-mail. Provided status report informing them that restoration of tidal wetlands in Dorchester County (presumably including Blackwater NWR) has made it to the DMMP Study's recommended plan as a placement site for material from the C&D Canal and Chesapeake Bay Approach Channels (to Baltimore) in Maryland. Also provided forecast of future efforts that would be required to undertake this work.
Dec. 2, 2004	Citizen's Advisory and Management Committee	– – –	Meeting minutes.
Dec. 8, 2004	Chris Spaur / USACE	Kevin Smith and Raj Williams / MD DNR	E-mail. Informed them that DMMP Study report is currently scheduled for January 2005 release. Fishing Bay WMA adjacent to Blackwater NWR would presumably be candidate site in Dorchester County.
Dec. 9, 2004	Glenn A. Carowan / USFWS	COL Robert Davis / USACE	Letter. Expressed support for use of dredged material in restoring the Blackwater National Wildlife Refuge and requested discussions with USACE staff for planning of restoration work.

File: Corps DMMP

U.S. Army Corps of Engineers
Dredged Material Management Plan

Initial Agency Meeting

April 11, 2002

Agenda

1. Welcome and Introductions	1:00
2. Goals of Meeting	1:10
3. Overview of DMMP a) Why is the Corps Doing a DMMP? b) What is the Corps Process? c) NEPA d) Agency and Public Input to Process	1:15
4. Open Discussion	1:45
5. Adjourn	3:00

Dredged Material Management Plan
Meeting Sign In Sheet
April 11, 2001

Name	Organization	Phone Number	E-Mail Address
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Dredged Material Management Plan
Meeting Sign In Sheet
April 11, 2001

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Matthew Rowe	MDE	410-631-3578	mrowe@mde.state.md.us
Charles Poukish	MDE	410-631-4434	cpoukish@mde.state.md.us

CENAB-PL-P **23 April 2002**

(revised 8 July 2002)

MEMORANDUM FOR THE RECORD

SUBJECT: Dredged Material Management Plan Agency Coordination Meeting

ATTENDEES: See Attached Sheet

1. The Baltimore District study team met with the various Federal and Maryland agencies to initiate the Dredged Material Management Plan (DMMP) Study at the Baltimore District Office in Baltimore Maryland on 11 April 2002. See attached sign in sheet for attendees (enclosure 1).

2. Dan Bierly, Planning Division, conducted the meeting. A hand out of the power point presentation was provided to all (enclosure 2). After welcome and introductions, Dan stated the purpose of the meeting. The Corps is initiating the DMMP study and inviting the agencies and other interested parties to provide input and suggestions to the process. The DMMP process, which is required by Corps regulations, will provide the District with a management tool for placement of dredged material from Port of Baltimore projects for a minimum of 20 years. Aside from coordinating with the agencies through meetings, the Corps will be conducting three public scoping meetings in June 2002 in the Baltimore, Annapolis, and Queen Anne's County areas to inform the general public of the DMMP process and to solicit input from the general public. Agency coordination meetings will be held throughout the process. In addition, the Corps' goal is to make this study as transparent as possible by being available for meetings, phone calls, e-mails. A website for the DMMP study will be set up in the near future for the latest available information on the study.

3. The Corps updated the agencies on the Federal dredging responsibilities. The Corps is 100 percent responsible for maintenance of Federal navigation channels up to the 45-foot depth. For other channels deeper than this, maintenance is cost shared 50/50 with MPA or others. In the case of the Baltimore Harbor and Channels system in Maryland, the cost of dredging to 50 feet is 100 percent Federal. This is because when the channels were deepened to 50 feet, it was determined that there would be no additional maintenance dredging need compared to maintenance of the 42-foot channels. Dan went over the amount of annual maintenance for the Port of Baltimore. The total annual maintenance is approximately 4,500,000 cubic yards of material. There is a need for dredging and with this is a need for placement sites.

4. The Corps reviewed the regulations outlining the need to develop a DMMP for the next 20 years. The DMMP needs to include an assessment of beneficial use for environmental purposes including habitat restoration. Ecosystem restoration is the best way to use the dredged material beneficially and enhance the environment. The DMMP will be 100 percent Federally financed under the Operations and Maintenance Program.

5. The Corps explained how the Corps DMMP differs from the process that the State is currently following as required by their legislature. The Federal process will need to be in compliance with the National Environmental Policy Act (NEPA) and will have public and agency interest and participation. Projects are evaluated from a national interest perspective. State law cannot limit the Federal agencies. Although implementation of a recommendation that goes against state law will not occur, it may be used to determine the base plan for economic purposes. Most likely the Corps will produce a tiered document to satisfy NEPA. This is not a duplicative process of what the State has done so far. The State's work will be incorporated and used in the Corps process where appropriate.

6. There is a difference in the time frame that the State plan will be complete (a progress report on the recommendations and options for further study is due to the Governor by December 2002) and the Corps study will be complete (final EIS expected in September 2004). The Corps will not approve the State plan, as we will need to conduct our NEPA evaluation. Most likely a tiered process with the production of an umbrella document (Environmental Impact Statement (EIS)) that studies the options for dredged material placement. This document will evaluate the identified options for placement and recommendations for programming future dredging. These will be evaluated and proposed recommendations for further study will be made. These recommendations will lead to more detailed studies and will be evaluated through supplemental environment assessments or EISs. The agencies were concerned about how this process and documentation will be conducted. The tiered process will allow the Corps to look at all of the different types of placement options and categorize and evaluate them. Such categories could include, but are not limited to, large island restoration, small island restoration, shoreline protection and restoration, upland placement, innovative uses, and recycling. The Corps assured that the process was open to suggestions.

7. The agencies asked what the no action alternative would be for this process. NEPA requires that the no action alternative be evaluated. It was brought up that deauthorization of the projects may be a no action alternative. However, deauthorization of a channel or channels could not be assumed to be the no action alternative. Deauthorization or reauthorization (i.e., modifying the project) would require a separate study for the specific projects. For the DMMP study, the no action alternative would need to assume the continued operation and maintenance of channels and that there is no coordinated plan to manage the placement of the dredged material.

8. The agencies stated that they were concerned how the NEPA document will address the need for maintenance dredging. It was suggested that new technologies be investigated that would avoid or minimize the amount of maintenance dredging. Also mentioned innovative shoreline erosion control and ways to minimize other sedimentation problems. The Corps assured the agencies that these issues would be addressed in the document. Furthermore, the Corps has other authorities that can be used to consider projects that will help to reduce sedimentation in the Bay. Although

the DMMP is not broad enough to evaluate all such options in great detail, recommendations for further study can be identified.

9. The agencies also stated that there needs to be a way to program the efficient use of the dredged material placement sites. This could be done by changing the project schedule for new work. This needs to be addressed to assure that we are not always compromising the process.

10. The Corps explained the dewatering process of the dredged material to demonstrate the need for the amount of placement sites. Best management is to leave a 3-foot layer of dredged materiel for 12 to 18 months to let it dry properly. Currently we only have approximately 6 months for crust management. Ideally, we need approximately 1800 acres of placement site to properly manage 3 million cubic yards of material annually.

11. The agencies stated that the Corps could reduce need by postponing some of the start up of new projects. Also stated that we do not necessarily need to have one large site to address the need. Several smaller projects could be implemented and on line prior to the closing of the larger sites. The Corps stated that to do this we need to factor in costs, economics, getting the site up to speed to accept the material, etc; however, it is agreed that any combination of projects that allows for sufficient capacity would be acceptable.

12. The agencies stated that the NEPA document needs to address specifics. Also, we need to determine how the options (i.e., innovative uses) versus specific sites will be addressed. There is a need to stress beneficial use in the Chesapeake Bay. This should be spread throughout the area versus within one area.

13. The Corps identified that some projects have been approved for study as early start initiatives. These projects may be considered prior to completion of the DMMP process. The NEPA documents for these projects will not be completed until after the NEPA for the DMMP is completed. If these studies are justified based on the DMMP study, then the feasibility phase will be completed and the projects will proceed. These projects were given the go-ahead for early consideration to ensure that there would be capacity available to make up for the current deficiency in placement sites that is anticipated in 7 to 10 years as determined by the DMMP initial assessment. The projects that were selected for early start consideration were chosen based on the Corps' experience in dredged material planning and the "sense of the agencies" that has developed during the Maryland's process. These options, mid-Bay island restoration and Poplar Island expansion, were determined to be worthy of further study.

14. The agencies wanted to know at what point detailed information would be included in the NEPA document. The Corps explained the umbrella EIS would spawn more detailed tiers of study. The agencies stressed that new projects should be deferred. Also wanted to know how the documentation or evaluation of specific sites versus

concepts will be conducted without more detail. It was also noted that there is a problem with early initiation of specific projects, i.e., Poplar Island is currently ranked farther down than other options/sites. Therefore, why are we studying this now? This effort seems pre-decisional. The agencies are concerned that the document may dictate islands as the only options. The Corps needs to figure out how their document will compare options versus specific sites and at what point the detailed information such as footprint of the project will be evaluated. The Corps welcomed all comments. Reiterated that this process is an open process and that all recommendation suggestions, etc. will be considered. The Corps is requesting input from all to create a comprehensive decision document.

Michele L. Gomez
Biologist
Planning Division

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401

July 12, 2002

Colonel Charles J. Fiala, Jr., PE
District Engineer
U.S. Army Corps of Engineers
P.O. Box 1715
Baltimore, MD 21203-1715

Attn: Ms. Michele A. Bistany

Re: Notice of Public Scoping Meetings, Dredged Material Management Program

Dear Colonel Fiala:

This responds to the above referenced notice concerning the initiation of a dredged material management plan (DMMP) study to evaluate placement options for sediment dredged from Baltimore Harbor and approach channels in the Chesapeake Bay. The following comments are submitted in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 884, as amended; 16 U.S.C. 661 *et seq.*).

As you know, the Service has played a key role in the State of Maryland's DMMP process for the last several years. We remain committed to seeking solutions for the placement of dredged material that will minimize impacts and maximize benefits to fish and wildlife in the Chesapeake Bay. Moreover, we are firmly convinced that beneficial use of dredged material for fish and wildlife management purposes is and can continue to be a successful venture if sound science is applied to the design, implementation, and management of such projects.

We take this opportunity to remind you that the Service maintains its opposition to any modifications to the Poplar Island Restoration Project, either through horizontal or vertical expansion. The primary purpose for a project at Poplar Island was to restore habitat through the beneficial use of dredged material, thereby enhancing natural resources in the Bay. We see no additional benefits to natural resources by expanding the project. A single large project such as an expanded Poplar Island is not and should not be considered a fix for natural resource problems in the Bay. Given the extensive loss of island and wetland habitats over the last 150 years through erosion and subsidence, we should undertake several restoration projects around the Bay, rather than overloading one site.

Furthermore, we are concerned about public perception and its potential impacts on future beneficial use projects if the Poplar Island Project is expanded solely to satisfy dredge material placement needs. You will recall that when Hart-Miller Island was expanded there was a significant negative public response. A similar response regarding an expansion at Poplar Island could place future beneficial use projects in jeopardy.

While we understand that there are certain capacity needs that require attention, it is also our belief that beneficial use placement areas must not be overfilled or filled too rapidly or they become unstable for extensive periods of time, limiting their effectiveness as restoration sites. Capacity needs over time would be more effectively managed by rotating between several beneficial use projects that are brought on-line simultaneously. This would allow for more efficient sediment dewatering and management, insuring greater long-term capacity and optimal structural stability for habitat development. As we did with the State, we propose that the Corps investigate potential economic and scientific avenues to bring a multiple-project concept to fruition.

We recommend that high priority be placed on concurrent beneficial use projects at James Island, Barren Island, and Eastern Neck Island. Initiating new projects such as these would begin to spread the restoration benefits of the beneficial use of dredge material to fish and wildlife resources throughout the Chesapeake Bay. It has been estimated that 10,000 acres of habitat in the Chesapeake Bay have been lost to erosion in the past 100 years. In order to begin to address this problem, a broader geographic basis for resource management in the Chesapeake Bay will be required. Rather than expanding or accelerating current projects, we should direct our efforts to the initiation of new projects that will result in greater benefits throughout the region. While it may be cheaper in the short-term to modify established projects, greater benefits will be reaped from the reduced erosion, increased and improved fish and wildlife habitats, and improved water quality that will result from equitable project coverage throughout the Chesapeake Bay Region. In addition, as we noted in previous correspondence, high priority should be placed on investigations into methods that would reduce dredging requirements throughout the bay.

We appreciate the opportunity to provide comments at the initiation of the Corp's DMMP process. If you have any questions, please contact Dan Murphy at (410) 573-4521.

Sincerely,

for John P. Wolflin
Supervisor

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P. O. BOX 1715
BALTIMORE, MARYLAND 21203-1715

REPLY TO
ATTENTION OF

May 7, 2004

Planning Division

Mr. John Wolflin
Supervisor
U.S. Fish and Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, Maryland 21014

Dear Mr. Wolflin:

This letter is in reference to the U.S. Army Corps of Engineers, Baltimore District's (Corps) Dredged Material Management Plan (DMMP) study to evaluate the dredged material placement needs and opportunities for the Port of Baltimore. The purpose of the plan is to develop a long-term strategy for providing viable placement alternatives to meet the dredging needs of the Port of Baltimore channels, including State and local dredging needs, for a minimum of the next 20 years.

The DMMP will evaluate how the dredged material can be managed in an environmentally and economically acceptable manner with emphasis on beneficial uses of the material. Beneficial uses may include, but are not limited to, ecosystem and habitat restoration, shoreline stabilization, and upland use. A tiered environmental impact statement (EIS) will be prepared in accordance with the National Environmental Policy Act (NEPA). Any alternative recommended in the DMMP will not be implemented without additional detailed study and appropriate site-specific NEPA documentation.

For the purpose of the DMMP EIS, the dredged material management needs for four geographic areas (see attached Figure 1) are assessed separately, and include Federal and non-dredging within the areas. A list of the dredged material placement alternatives is attached as Table 1. Specific dredged material disposal areas have not been selected for most alternatives. However, regions within the Chesapeake Bay containing suitable areas for each alternative have been identified and are shown on the attached Figures 2, 3, and 4.

The Corps is requesting any information your office may have on the presence of federally protected species listed by Section 7 of the Endangered Species Act (ESA). This request is for the project areas shown in the enclosed figures. A coordination letter has also been sent to the National Marine Fisheries Service (NMFS) for information concerning listed species managed under their charter. Please inform the Corps of any preliminary comments on Section 7 requirements for this project within 30 days of the date of this letter so that we may address these concerns during the plan formulation phase.

If you have any questions regarding this matter, please contact Mr. Chris Spaur at (410) 962-6134.

Sincerely,

Wesley E. Coleman, Jr.
Chief, Civil Projects Development Branch

Enclosures

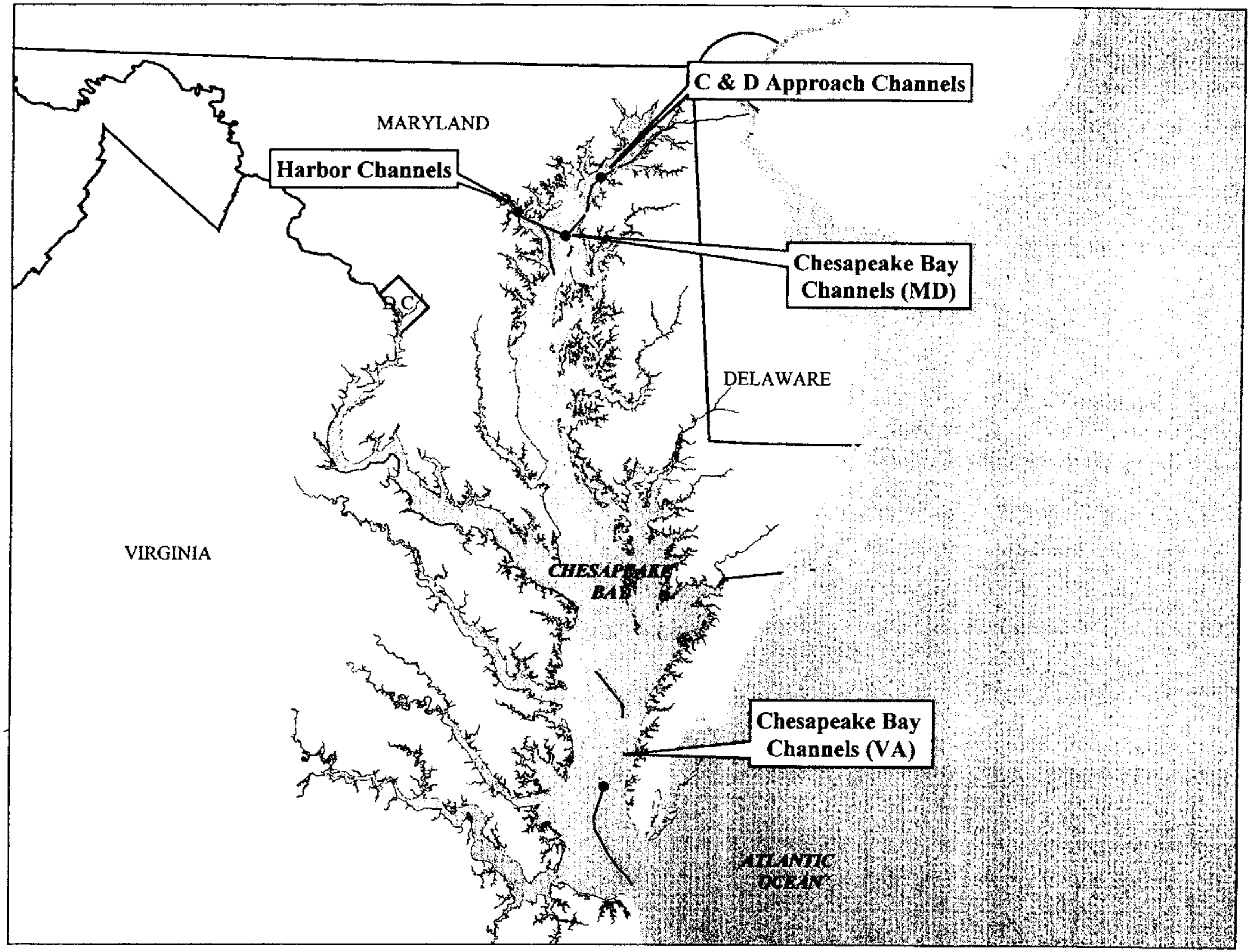


Figure 1: Geographic Boundaries of CENAB DMMP with Channel Designations

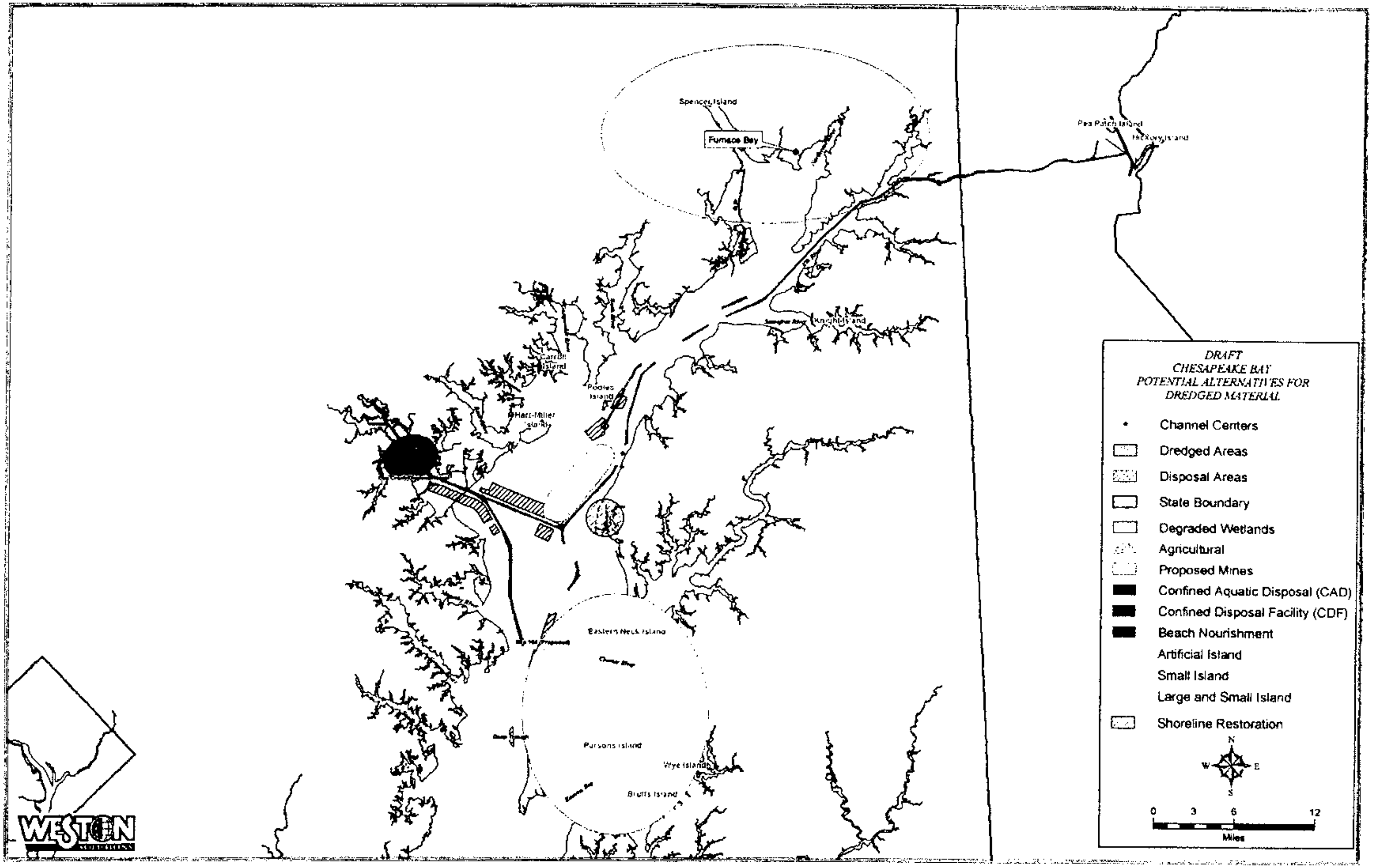


Figure 2 : Upper Bay Dredged Material Management Alternatives

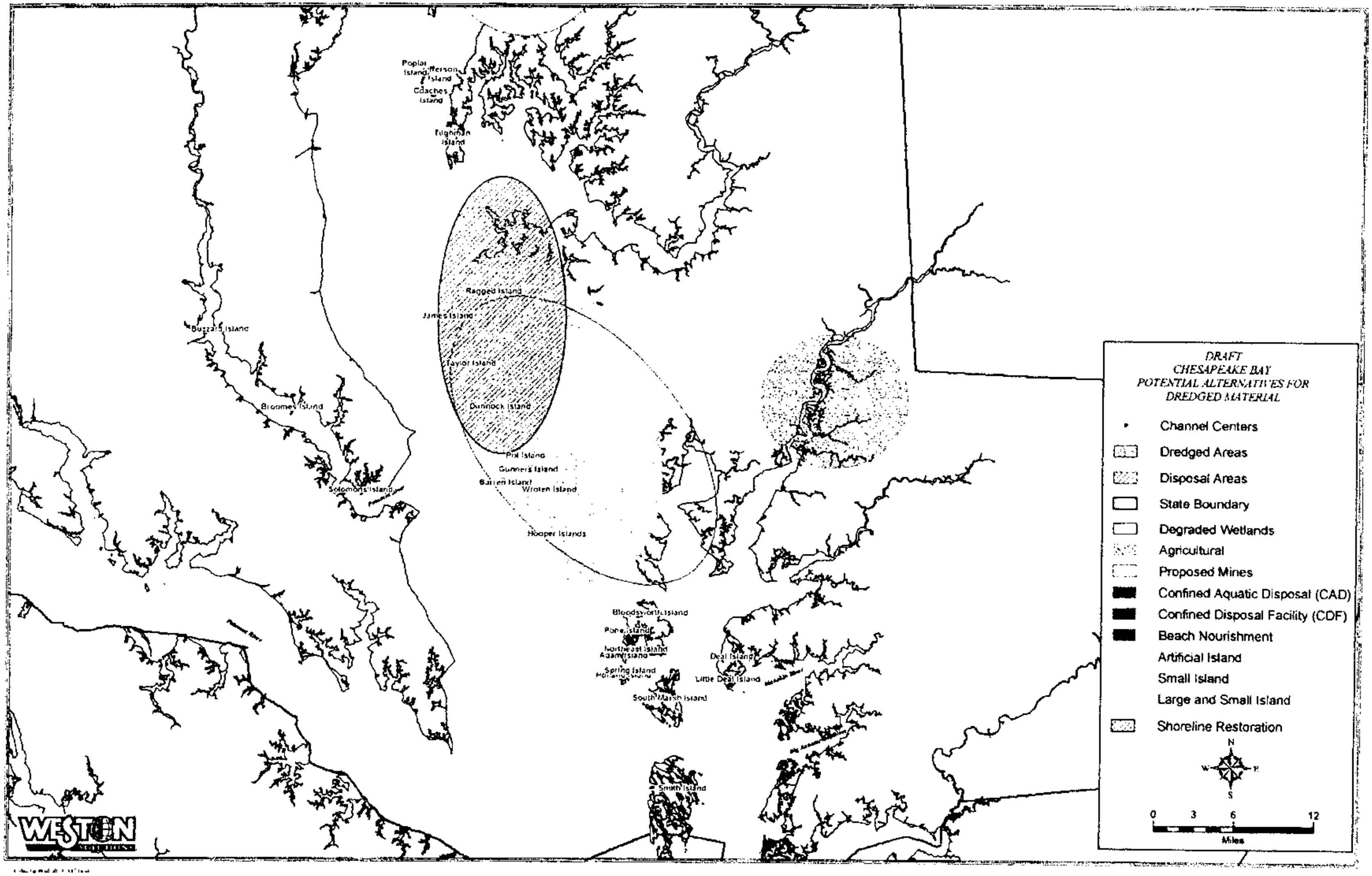


Figure 3 : Mid-Bay Dredged Material Management Alternatives

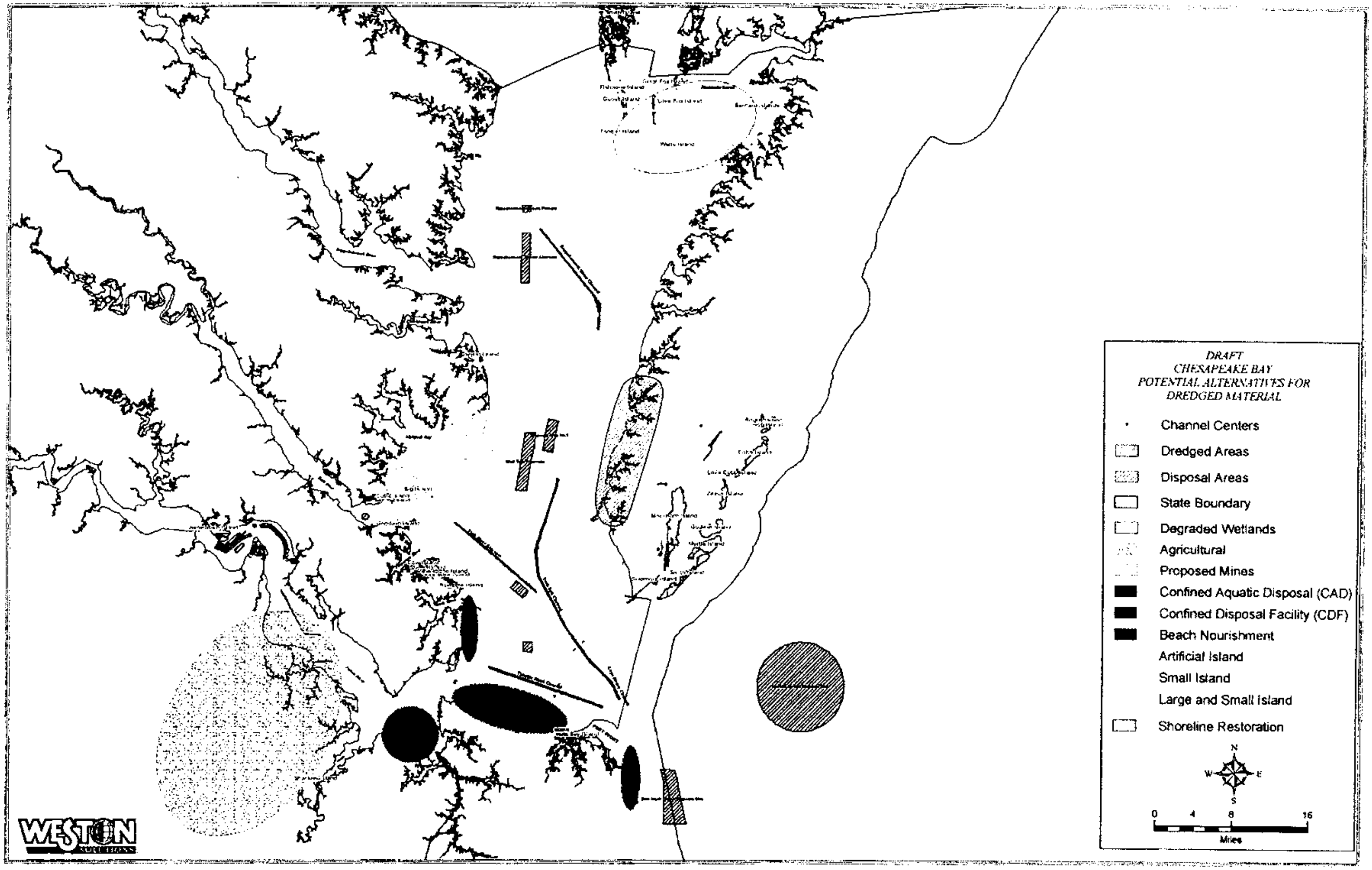


Figure 4 : Lower Bay Dredged Material Management Alternatives

Table 1: USACE, BALTIMORE DISTRICT, PORT OF BALTIMORE DMMP - POTENTIAL ALTERNATIVES			
	Alternative	Acreage	Assumptions
1	Agricultural Placement-Maryland	325 acres	Representative area is Dorchester County/Wicomico County, MD - Clamshell dredge and scow; material is hauled by barge as close as possible to the ag site; berms or silt fencing constructed; material is pumped directly from the barge (using a hydraulic unloader) to the ag site in multiple lifts of 6" each; dewatering through percolation and evaporation with little or no discharge; treatment to remove salts may be necessary; approx. 1' of sediment placed by tilling into existing soil; revegetation and monitoring as necessary.
2	Agricultural Placement-Virginia	325 acres	Representative area is Isle of Wight County, VA - Clamshell dredge and scow; material is hauled by barge as close as possible to the ag site; berms or silt fencing constructed; material is pumped directly from the barge (using a hydraulic unloader) to the ag site in multiple lifts of 6" each; dewatering through percolation and evaporation with little or no discharge; treatment to remove salts may be necessary; approx. 1' of sediment placed by tilling into existing soil; revegetation and monitoring as necessary.
3	Artificial Island Creation-Lower Bay	1,000 acres	Representative area near Watts Island, VA; east/leeward side of Tangier Island - Water depth approx. -6' MLLW; 50% Upland/50% Wetlands; For initial cost estimation purposes, artificial island creation uses the same design parameters as those for large island restoration. Therefore, the design presented here is similar to James Island Habitat Development, Alignment 1 parameters (dike height approx.+20' MLLW, 979 acres, 35 mcy capacity, 20.4 year design life). Information on layout obtained from "James Island Beneficial Use of Dredged Material" by Maryland Environmental Service, 2002.
4	Artificial Island Creation-Upper Bay	1,000 acres	Representative area west of Tolchester Channel (Gales Lump Reef) - Water depth approx. -12' MLLW; 50% Upland/50% Wetlands; For initial cost estimation purposes, artificial island creation uses the same design parameters as those for large island restoration. Assume dike height of +25' MLLW and there is sufficient sand at the site to construct dikes.
5	Beach Nourishment-Virginia	375 acres	Representative areas are Va Beach, Willoughby Spit/Ocean View, Buckroe Beach - Placing suitable sandy material from the Cape Henry Channel.
6	Building Products		Dewatered material will be obtained from an existing facility. A total of 500,000 cy will be used over a period of 5 years; final product of brick pavers covering approximately 50 acres.
7	C&D Canal Upland Sites Expansion	260 existing acres	Vertical expansion of an existing CDF along the upper bay or along the C & D Canal; Representative area is the Pearce Creek upland disposal site, covering 260 diked acres ; raising the dikes 10 ft. would provide an additional capacity of approximately 4.2 mcy.
8	Capping - Landfill/Brownfields	62 acres covered of final product for beneficial use	Potential sites are 30 miles from dewatering locations
9	Capping-Elizabeth River, VA	20 acres	Potential sites may be too shallow; Assume 3' (2' of dredged material and 1' of sand) cap placed over contaminated sediment.
10	Capping-Patapsco River, MD	20 acres	Material placed to provide a 4' cap (2' of dredged material and 2' of sand) over existing harbor material that would not be dredged.
11	Confined Aquatic Disposal Area-Patapsco River	100 acres	Harbor material to be placed in an existing pit after sand mining operations in the Patapsco River (Representative area is Sollers Point); 25' cut into bottom to mine sand; material is placed followed by a 4' cap (2' clean dredged material + 2' sand).
12	Confined Disposal Facility-Lower Bay	30 acres	Reinforce/expand toe of west berm (water side) at Craney Island; 1946 legislation currently precludes placing dredged material from outside Norfolk harbor and vicinity.

Note: Locations and design parameters assocated with each of the potential alternatives are representative, chosen only for the purpose of cost comparison. Actual follow-on site specific projects may vary in location and design parameters.

	Table 1: USACE, BALTIMORE DISTRICT, PORT OF BALTIMORE DMMP - POTENTIAL ALTERNATIVES		
	Alternative	**Acreage**	**Assumptions**
13	Confined Disposal Facility-Patapsco River	100 acres	Nearshore CDF constructed for material placement with no habitat creation. Assumptions will represent an average of the State of Maryland's potential Harbor CDF/Fastland sites; Assume average water depth of -12' MLLW and dike height of +10' MLLW; assume there is sufficient sand near the potential site to build the dikes.
14	Cox Creek Expansion		Raising dikes above + 36' with no beneficial use; Dike raising will extend outside slope of dike upward with no additional impact to the Patapsco River.
15	Hart-Miller Island Expansion	300 acres	Lateral expansion to the south with dike height of +18 MLLW; vertical expansion of the existing south cell to +28' MLLW dike height; placement includes harbor material and clean material; no beneficial use.
16	Large Island Restoration-Lower Bay	240 acres	Representative area is New Point Comfort Island, VA - 50% Upland/50% Wetlands
17	Large Island Restoration-Mid Bay	1,000 acres	Representative area is Dorchester County, MD - 50% Upland/50% Wetlands; Design is similar to James Island Habitat Development, Alignment 1 parameters (dike height approx. +20' MLLW), 979 acres, 35 mcy capacity, 20.4 year design life). Information on layout obtained from "James Island Beneficial Use of Dredged Material" by Maryland Environmental Service, 2002. Dike perimeter length is 31,100 LF with a neat dike fill volume of 4,505,000 cy. Average water depth within cell is 6 ft (GBA, 2003).
18	Mine Placement-Cecil County, MD	130 acres	Representative area is Furnace Bay. Material dewatered and amended; hauled by truck/rail to site.
19	Mine Placement-Pennsylvania/Western Maryland	300 acres	Abandoned coal mine; Material dewatered and amended; hauled by truck/rail to site; revegetation and monitoring. Representative area in western Maryland.
20	Norfolk Ocean Open Water Placement	41,500 acres	Clamshell w/Dump Scow for the MD channels; hopper dredge or clamshell for VA channels - Sufficient capacity; expansion unnecessary.
21	Pooles Island Open Water Site Expansion	350 acres	Expand existing open water placement site.
22	Poplar Island Expansion	600 acres	50% Upland/50% Wetlands; 600-acre lateral expansion with a dike height of +20' MLLW; vertical expansion of the existing island to a dike height of +35 MLLW.
23	Rappahannock Shoal Open Water Site Expansion	1,000 acres	Expand existing site; clamshell w/ Dump scow for the MD channels; hopper dredge for the VA channels
24	Shoreline Restoration-Lower Bay	110 acres	Representative area is Eastern Shore of Virginia (Old Town Neck); Restoring a peninsula using dredged material; 1500' x 3200'; 4' of dredged material to create low marsh and high marsh habitat; armored dike that is breached and allows occasional overtopping; assume there is sufficient sand at the site to construct dikes.
25	Shoreline Restoration-Mid Bay	175 acres	Representative area is NW Dorchester County, MD; Restoring a peninsula using dredged material; 1500' x 5100'; 4' of dredged material to create low marsh and high marsh habitat; armored dike that is breached and allows occasional overtopping; assume there is sufficient sand at the site to construct dikes.
26	Shoreline Restoration-Upper Bay	110 acres	Representative area is West of Rock Hall, MD; Restoring a peninsula using dredged material; 1500' x 3200'; 4' of dredged material to create low marsh and high marsh habitat; armored dike that is breached and allows occasional overtopping; assume there is sufficient sand at the site to construct dikes.
27	Small Island Restoration-Lower Bay	100 acres	Representative area is mouth of Mobjack Bay - Water depth is -5 MLLW; 50% Upland/50% Wetlands; Dike height of +10' MLLW; assume there is sufficient sand near the site to construct the dikes.
28	Small Island Restoration-Mid Bay	100 acres	Representative area is Parsons Island - Water depth is -5 MLLW; 50% Upland/50% Wetlands; Water depth is -5 MLLW; 50% Upland/50% Wetlands; Dike height of +10' MLLW; assume there is sufficient sand near the site to construct the dikes.
29	Wetlands Restoration-Dorchester County, MD	1,000 acres	Representative area is Blackwater Wildlife Refuge. Material pumped to the placement site; 2' of material placed to restore/protect wetlands from sea level rise and subsidence.

Note: Locations and design parameters assocated with each of the potential alternatives are representative, chosen only for the purpose of cost comparison. Actual follow-on site specific projects may vary in location and design parameters.

Table 1: USACE, BALTIMORE DISTRICT, PORT OF BALTIMORE DMMP - POTENTIAL ALTERNATIVES			
	Alternative	Acreage	Assumptions
	BASE PLANS		
1	Dam Neck Ocean Open Water Placement (Existing)		Hopper dredge; dredged material from the Cape Henry channel
2	Hart-Miller Island (Existing)		Clamshell w/Barge and hydraulic unloader.
3	Open Water Placement-Mid Bay (Deep Trough)		Clamshell w/Dump Scow for the MD channels
4	Pooles Island Open Water Site (Existing)		Clamshell w/Dump Scow for the MD channels
5	Rappahannock Shoal Open Water Site (Existing)		Clamshell w/Dump Scow for the MD channels; hopper dredge for the Virginia channels
6	Wolf Trap Open Water Placement (Existing)		Clamshell w/Dump Scow for the MD channels; hopper dredge for the Virginia channels

Note: Locations and design parameters assocated with each of the potential alternatives are representative, chosen only for the purpose of cost comparison. Actual follow-on site specific projects may vary in location and design parameters.

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P. O. BOX 1715
BALTIMORE, MARYLAND 21203-1715

REPLY TO
ATTENTION OF

May 13, 2004

Planning Division

Ms. Julie Crocker
National Marine Fisheries Service
U.S. Department of Commerce
One Blackburn Drive
Gloucester, MA 01930-2298

Dear Ms. Crocker:

This letter is in reference to the U.S. Army Corps of Engineers, Baltimore District's (Corps) Dredged Material Management Plan (DMMP) study to evaluate the dredged material placement needs and opportunities for the Port of Baltimore. The purpose of the plan is to develop a long-term strategy for providing viable placement alternatives to meet the dredging needs of the Port of Baltimore channels, including State and local dredging needs, for a minimum of the next 20 years.

The DMMP will evaluate how the dredged material can be managed in an environmentally and economically acceptable manner with emphasis on beneficial uses of the material. Beneficial uses may include, but are not limited to, ecosystem and habitat restoration, shoreline stabilization, and upland use. A tiered environmental impact statement (EIS) will be prepared in accordance with the National Environmental Policy Act (NEPA). Any alternative recommended in the DMMP will not be implemented without additional detailed study and appropriate site-specific NEPA documentation.

For the purpose of the DMMP EIS, the dredged material management needs for four geographic areas (see attached Figure 1) are assessed separately, and include Federal and non-Federal dredging within the areas. A list of the dredged material placement alternatives is attached as Table 1. Specific dredged material disposal areas have not been selected for most alternatives. However, regions within the Chesapeake Bay containing suitable areas for each alternative have been identified and are shown on the attached Figures 2, 3, and 4.

The Corps is requesting any information your office may have on the presence of federally protected species listed by Section 7 of the Endangered Species Act (ESA). This request is for the project areas shown in the enclosed figures. A coordination letter has also been sent to the U.S. Fish and Wildlife Service (USFWS) for information concerning listed species managed under their charter.

As you are already aware, the Corps is preparing a biological assessment (BA) on the potential impacts from dredging and dredged material placement operations on shortnose sturgeon (*Acipenser brevirostrum*) in the Chesapeake Bay, Maryland. The BA has been drafted and is currently being reviewed by our technical staff in the District. Although it is nearly finalized it will be undergoing some revisions in the near future. Therefore any information that you have that would help us in finalizing this document would be appreciated. Please inform the Corps of any preliminary comments on Section 7 requirements for this project within 30 days of the date of this letter so that we may address these concerns during the plan formulation phase.

If you have any questions regarding this matter, please contact Mr. Chris Spaur at (410) 962-6134.

Sincerely,

Wesley E. Coleman

Wesley E. Coleman, Jr.
Chief, Civil Project Development Branch

Enclosures

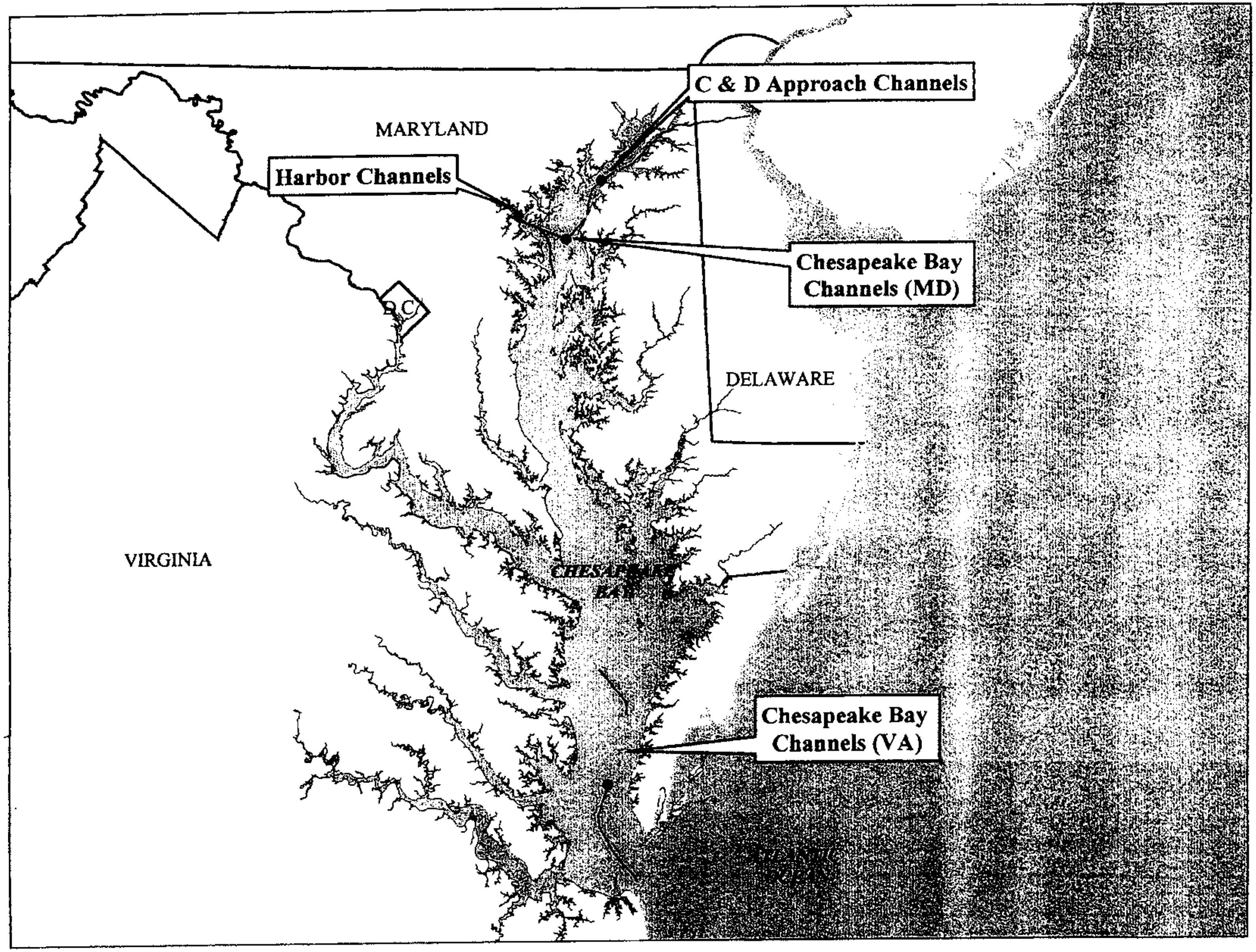


Figure 1: Geographic Boundaries of CENAB DMMP with Channel Designations

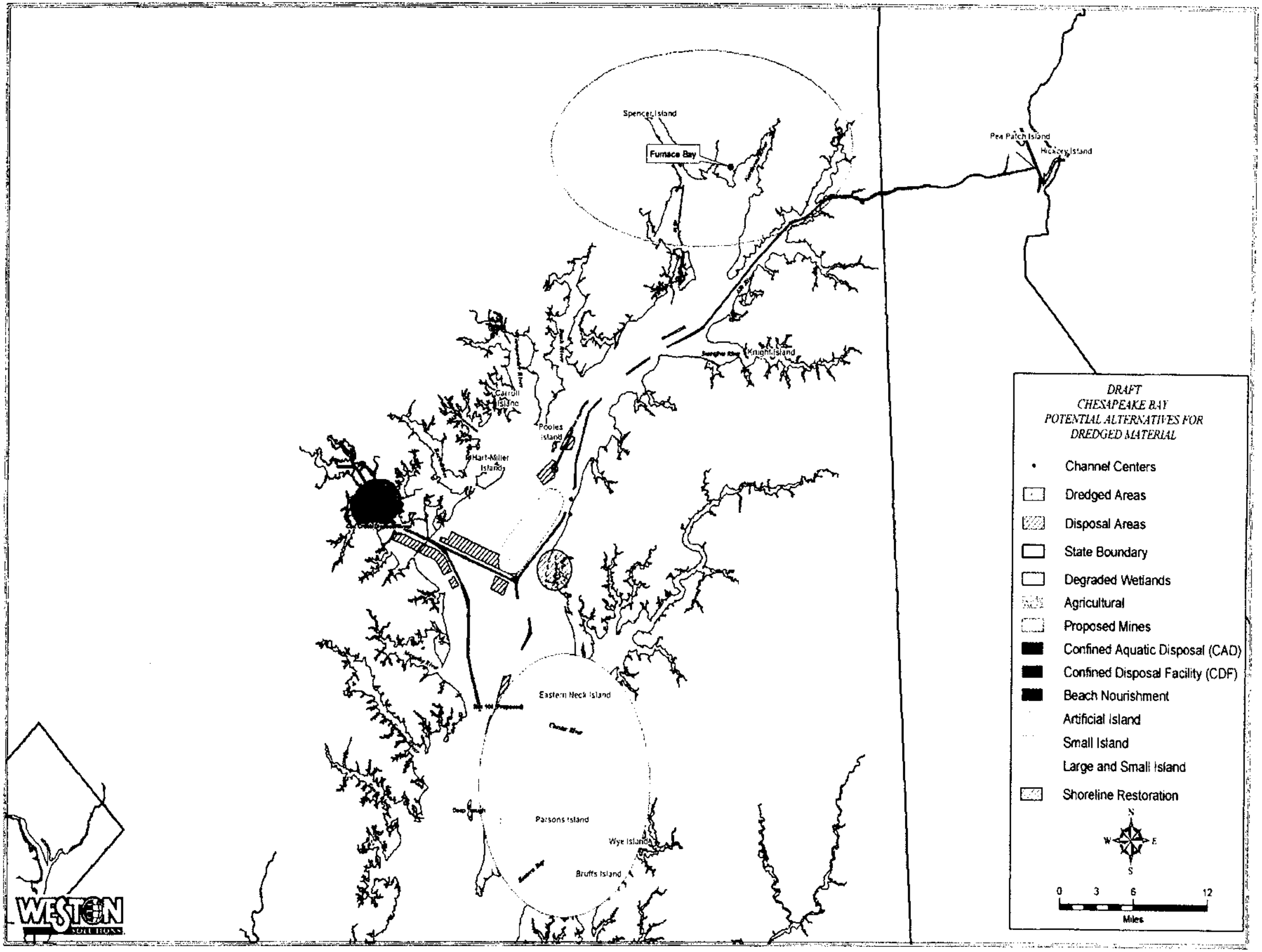


Figure 2 : Upper Bay Dredged Material Management Alternatives

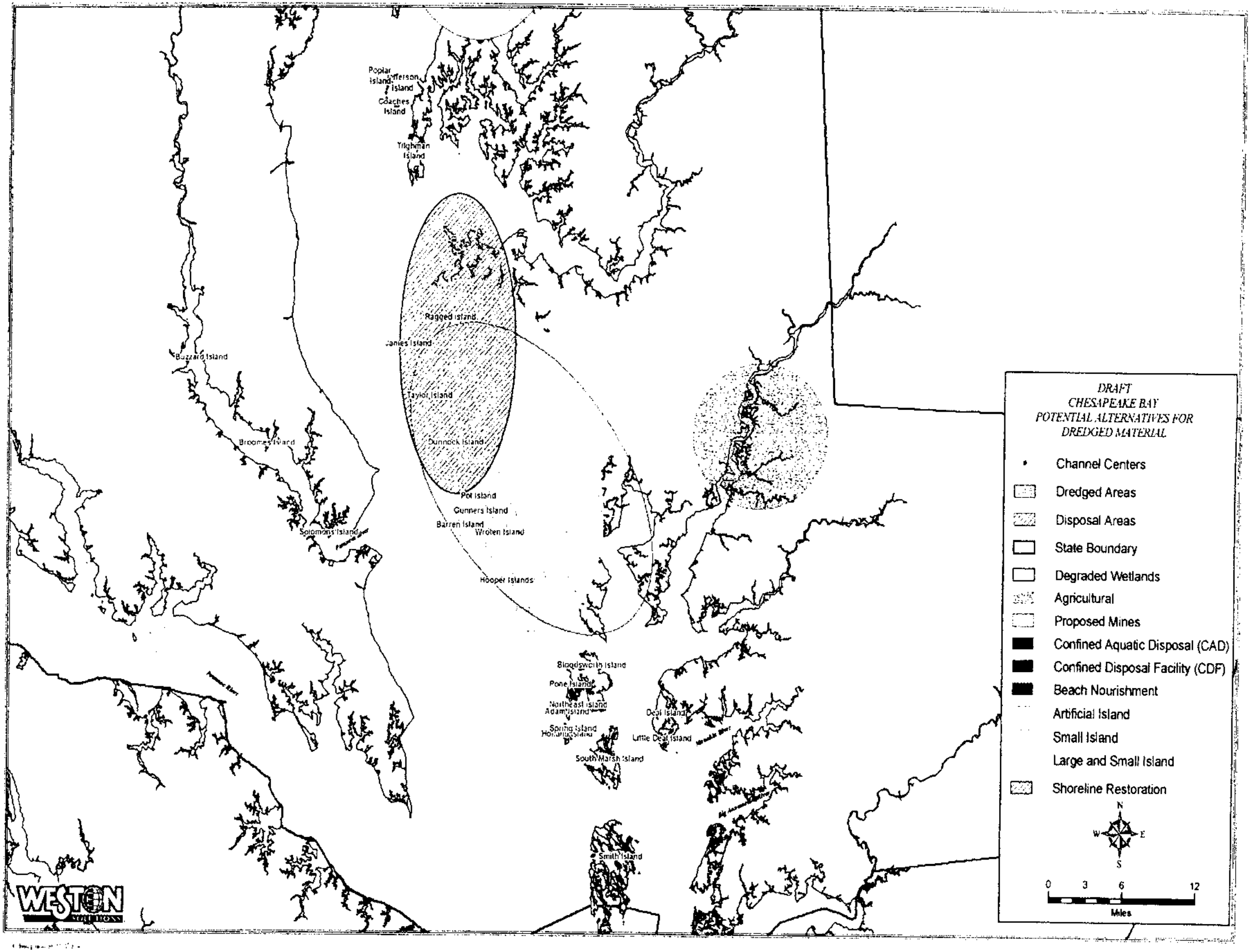
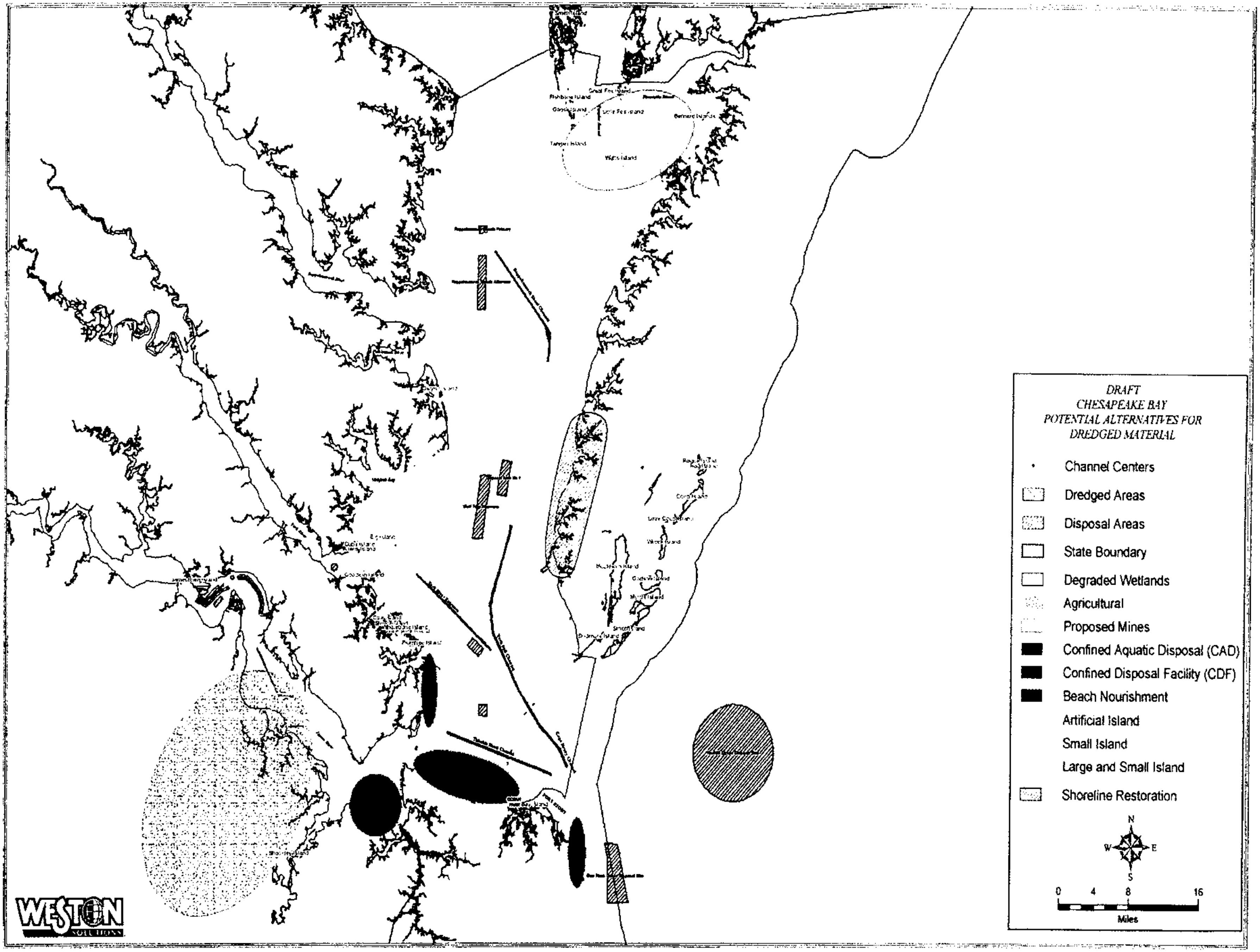


Figure 3 : Mid-Bay Dredged Material Management Alternatives



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17	Large Island Restoration-Mid Bay	1,000 acres	Representative area is Dorchester County, MD - 50% Upland/50% Wetlands; Design is similar to James Island Habitat Development, Alignment 1 parameters (dike height approx. +20' MLLW), 979 acres, 35 mcy capacity, 20.4 year design life). Information on layout obtained from "James Island Beneficial Use of Dredged Material" by Maryland Environmental Service, 2002. Dike perimeter length is 31,100 LF with a neat dike fill volume of 4,505,000 cy. Average water depth within cell is 6 ft (GBA, 2003).
18	Mine Placement-Cecil County, MD	130 acres	Representative area is Furnace Bay. Material dewatered and amended; hauled by truck/rail to site.
19	Mine Placement-Pennsylvania/Western Maryland	300 acres	Abandoned coal mine; Material dewatered and amended; hauled by truck/rail to site; revegetation and monitoring. Representative area in western Maryland.
20	Norfolk Ocean Open Water Placement	41,500 acres	Clamshell w/Dump Scow for the MD channels; hopper dredge or clamshell for VA channels - Sufficient capacity; expansion unnecessary.
21	Pooles Island Open Water Site Expansion	350 acres	Expand existing open water placement site.
22	Poplar Island Expansion	600 acres	50% Upland/50% Wetlands; 600-acre lateral expansion with a dike height of +20' MLLW; vertical expansion of the existing island to a dike height of +35 MLLW.
23	Rappahannock Shoal Open Water Site Expansion	1,000 acres	Expand existing site; clamshell w/ Dump scow for the MD channels; hopper dredge for the VA channels
24	Shoreline Restoration-Lower Bay	110 acres	Representative area is Eastern Shore of Virginia (Old Town Neck); Restoring a peninsula using dredged material; 1500' x 3200'; 4' of dredged material to create low marsh and high marsh habitat; armored dike that is breached and allows occasional overtopping; assume there is sufficient sand at the site to construct dikes.
25	Shoreline Restoration-Mid Bay	175 acres	Representative area is NW Dorchester County, MD; Restoring a peninsula using dredged material; 1500' x 5100'; 4' of dredged material to create low marsh and high marsh habitat; armored dike that is breached and allows occasional overtopping; assume there is sufficient sand at the site to construct dikes.
26	Shoreline Restoration-Upper Bay	110 acres	Representative area is West of Rock Hall, MD; Restoring a peninsula using dredged material; 1500' x 3200'; 4' of dredged material to create low marsh and high marsh habitat; armored dike that is breached and allows occasional overtopping; assume there is sufficient sand at the site to construct dikes.
27	Small Island Restoration-Lower Bay	100 acres	Representative area is mouth of Mobjack Bay - Water depth is -5 MLLW; 50% Upland/50% Wetlands; Dike height of +10' MLLW; assume there is sufficient sand near the site to construct the dikes.
28	Small Island Restoration-Mid Bay	100 acres	Representative area is Parsons Island - Water depth is -5 MLLW; 50% Upland/50% Wetlands; Water depth is -5 MLLW; 50% Upland/50% Wetlands; Dike height of +10' MLLW; assume there is sufficient sand near the site to construct the dikes.
29	Wetlands Restoration-Dorchester County, MD	1,000 acres	Representative area is Blackwater Wildlife Refuge. Material pumped to the placement site; 2' of material placed to restore/protect wetlands from sea level rise and subsidence.

Note: Locations and design parameters assocated with each of the potential alternatives are representative, chosen only for the purpose of cost comparison. Actual follow-on site specific projects may vary in location and design parameters.

Table 1: USACE, BALTIMORE DISTRICT, PORT OF BALTIMORE DMMP - POTENTIAL ALTERNATIVES			
	Alternative	**Acreage**	**Assumptions**
	BASE PLANS		
1	Dam Neck Ocean Open Water Placement (Existing)		Hopper dredge; dredged material from the Cape Henry channel
2	Hart-Miller Island (Existing)		Clamshell w/Barge and hydraulic unloader.
3	Open Water Placement-Mid Bay (Deep Trough)		Clamshell w/Dump Scow for the MD channels
4	Pooles Island Open Water Site (Existing)		Clamshell w/Dump Scow for the MD channels
5	Rappahannock Shoal Open Water Site (Existing)		Clamshell w/Dump Scow for the MD channels; hopper dredge for the Virginia channels
6	Wolf Trap Open Water Placement (Existing)		Clamshell w/Dump Scow for the MD channels; hopper dredge for the Virginia channels

Note: Locations and design parameters assocated with each of the potential alternatives are representative, chosen only for the purpose of cost comparison. Actual follow-on site specific projects may vary in location and design parameters.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
One Blackburn Drive
Gloucester, MA 01930-2298

MAY 21 2004

Wesley E. Coleman, Jr.
Chief, Civil Project Development Branch
Department of the Army
Baltimore District, US Army Corps of Engineers
PO Box 1715
Baltimore, Maryland 21203-1715

Attn: Planning Division/Chris Spaur

Dear Mr. Coleman,

This is in response to your letter dated May 13, 2004 requesting information on the presence of any federally listed threatened or endangered species under the jurisdiction of the National Marine Fisheries Service (NOAA Fisheries) in the Chesapeake Bay. The Army Corps of Engineers (ACOE) is currently developing a Dredged Material Management Plan (DMMP) study to evaluate the dredged material placement needs and opportunities for the Port of Baltimore. The purpose of the plan is to develop a long-term strategy for providing viable placement alternatives to meet the dredging needs of the Port of Baltimore channels, including State and local dredging needs, for a minimum of the next twenty years.

The federally endangered shortnose sturgeon (*Acipenser brevirostrum*) has been documented in the Chesapeake Bay. The NOAA Fisheries recovery plan (1998) indicates that shortnose sturgeon found in the Chesapeake Bay and its tributaries are considered part of the Chesapeake Bay population. Welsh *et al.* (1999) summarizes historical and recent evidence of shortnose sturgeon presence in the Chesapeake Bay. The first published account of shortnose sturgeon in the Chesapeake system was an 1876 record from the Potomac River reported in a general list of fishes of Maryland (Uhler and Lugger 1876). Other historical records of shortnose sturgeon in the Chesapeake include: the Potomac River (Smith and Bean 1899), the upper Bay near the mouth of the Susquehanna River in the early 1980's, and the lower Bay near the mouths of the James and Rappahannock rivers in the late 1970's (Dadswell *et al.* 1984). The US Fish and Wildlife Service Reward Program for Atlantic Sturgeon began in 1996. Shortnose sturgeon have been incidentally captured via this program. As of May 2003, fifty-two shortnose sturgeon were captured via the reward program in the Chesapeake Bay and its tributaries – two from the

Susquehanna Flats, eight from the Susquehanna River, two in the Bohemia River, six in the Potomac River, one in the Sassafras River, one in the Elk River, two south of the Bay Bridge near Kent Island, one near Howell Point, one just north of Hoopers Island, and two in Fishing Bay. The remaining shortnose sturgeon were captured in the upper Bay north of Hart-Miller Island. These fish were captured alive in either commercial gillnets, poundnets, fykenets, eel pots, hoop nets, or catfish traps. On October 22, 2003, one shortnose sturgeon was observed in a pre-dredge trawl operation in Thimble Shoals Channel.

Several species of sea turtles are known to be present in the Chesapeake Bay. Leatherback sea turtles (*Dermochelys coriacea*) are present off the Maryland coast but are predominantly pelagic. Loggerhead (*Caretta caretta*), Kemp's ridley (*Lepidochelys kempi*), and green sea turtles (*Chelonia mydas*) are present in the Mid Atlantic region mainly during late spring, summer and early fall when water temperatures are relatively warm. Aerial surveys of loggerhead turtles north of Cape Hatteras indicate that they are most common in waters from 22 to 49m deep, although they range from beaches to waters beyond the continental shelf. In the Chesapeake Bay area, Kemp's ridleys frequently forage in shallow embayments, particularly in areas supporting submerged aquatic vegetation. Green sea turtles are known to occur in estuarine and oceanic waters along the East Coast from Long Island to the tropics. Recent data from sightings and incidental captures in fishing gear indicate that loggerhead and Kemp's ridley are the species of sea turtles most likely to be found in the waters of Chesapeake Bay while leatherback and green sea turtles may be also in the area.

As listed species are likely to be present at many of the sites proposed as part of the DMMP, there may be the potential for these species to be affected by the long term dumping of dredged material at these sites. In particular, shortnose sturgeon eggs and larvae are known to be vulnerable to smothering by excess sediment. Also, female shortnose sturgeon have been documented to abandon spawning runs due to unfavorable environmental conditions. An increase in turbidity or sediment may cause females to abort a spawning run. The forage base of both shortnose sturgeon and listed sea turtles may also be affected by the dumping of dredged material. NOAA Fisheries is also concerned about the potential release of toxins from contaminated sediment that may be dredged from some areas of the Chesapeake Bay and the effects that disposing of this material in the Bay area may have on listed species.

Section 7(a)(2) of the Endangered Species Act (ESA) of 1973, as amended, states that each Federal agency shall, in consultation with the Secretary, insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Any discretionary federal action that may affect a listed species must undergo Section 7 consultation. The federal action agency (i.e., the ACOE) will be responsible for determining whether the proposed action is likely to affect any listed species. The ACOE should submit their determination along with a request for concurrence, to the attention of the Endangered Species Coordinator, NOAA Fisheries, Northeast Regional Office, Protected Resources Division, One Blackburn Drive, Gloucester, MA 01930. After reviewing this information, NOAA Fisheries would be able to conduct a consultation under section 7 of the ESA.

If you have any questions or concerns about these comments or about the consultation process in general, please contact Julie Crocker of my staff at (978) 281-9328 ext. 6530.

Sincerely,

Mary A. Colligan
Assistant Regional Administrator
for Protected Resources

Cc: Nichols, F/NER4 – OX

File Code: Sec 7 ACOE Baltimore Ches Bay Dredge Disposal

From: Spaur, Christopher C NAB02
Sent: Wednesday, May 26, 2004 10:23 AM
To: 'Lou.Chiarella@noaa.gov'
Cc: 'john.nichols@noaa.gov'
Subject: Programmatic Consultation - EFH Impacts Assessment

Lou:

We (Baltimore District Corps) would like to discuss undertaking the above in our current efforts to develop a long-term Dredged Material Management Plan for Baltimore Harbor and Channels. I'm sitting in for Michele Gomez while she's on maternity leave (probably several months). I believe that Michele had discussed this topic with you. You provided her with a copy of the Historic Area Remediation Site (HARS) assessment prepared by N.Y. District Corps that we could potentially use as an example. John Nichols (Habitat and Protected Resources Division of NMFS, Oxford, Maryland) suggested to Michele that we divide the assessment into three subdivisions based on Chesapeake Bay physical environmental characteristics and biology: upper, mid, and lower. John stated that we need to consider both dredging sites and placement sites, and need to address alternatives considered and dismissed as well as the recommended alternatives. We would like to confirm with you that John's suggested approach is appropriate, and discuss how we might consider modifying the structure of the N.Y. District document to best fit the situation here. If your schedule allows, could we discuss this with you tomorrow (Thursday, 5/27) sometime between either 8 and 930 AM or 12 noon to 1 PM?

Chris

MEMORANDUM FOR THE RECORD 15 June 2004

SUBJECT: Minutes from 27 May 2004 telephone conference call held to discuss preparation of an EFH Impacts Assessment for Dredged Materials Management Plan (DMMP) and Mid-Bay Islands Studies.

PARTICIPANTS:

PERSON	ORGANIZATION	e-mail ADDRESS
Lou Chiarella	National Marine Fisheries Service	Lou.Chiarella@noaa.gov
Gwen Meyer	Corps of Engineers	Gwendolyn.C.Meyer@usace.army.mil
Angie Sowers	Corps of Engineers	Angela.Sowers@usace.army.mil
Chris Spaur	Corps of Engineers	Christopher.C.Spaur@usace.army.mil
Barry Dubinski	Weston Solutions, Inc.	Barry.Dubinski@WestonSolutions.com

MINUTES:

1. Gwen Meyer said that the DMMP Study is seeking to identify sites to place dredged material from the Baltimore Harbor and Channels and Chesapeake and Delaware (C&D) Canal for the next 20 years. The Baltimore District is preparing an EIS for the study. The channels run from the mouth of the Bay in Virginia all the way up to the C&D Canal in the northern Bay. No new dredging is proposed - all material will come from maintenance work. The study is tasked with formulating alternatives that will provide substantial environmental benefits, such as by creating or restoring aquatic habitat. A parallel study looking into creating a new island in the middle Bay (something like Poplar Island) from Baltimore Harbor and Channel material is proceeding concurrently with the DMMP Study. A separate EIS is being prepared for this study. This Mid-Bay Island alternative is actually included one of the alternatives being evaluated in the DMMP Study. The District is proceeding with investigations for this potential alternative ahead of other potential sites because of the substantial time that would be required to implement this alternative if it was chosen. In that event, the District and Port of Baltimore don't want to have lost the several years required to have completed the study by waiting until the end of the DMMP Study before undertaking Mid-Bay Island investigations. The DMMP Study does not include maintenance dredging of other smaller Federal channels and harbors in the Bay[i].

2. Gwen said that John Nichols of the Oxford, NMFS Office has been participating in the DMMP study team to formulate and evaluate alternative placement sites. Michele had intended to arrange a conference call previously with Lou to discuss how to best prepare an EFH Impacts Assessment document, but hadn't completed this prior to her departure for maternity leave. Chris Spaur is sitting in for her during her absence. Gwen noted that Lou had previously provided Michele with a copy of the Historic Area Remediation Site (HARS) assessment prepared by N.Y. District Corps that could potentially be used as a model for our assessment document. Lou said that he would

have preferred to have had John in on the call, but is pleased to hear John has been involved in the study. Gwen said that we would like to have had John participate today, but decided it was worth holding the telephone conference on short notice even if John wasn't available. Nothing controversial is anticipated and our contractors (Weston Solutions, Inc.) that will be preparing the EFH Impacts Assessment document for the DMMP Study need some guidance on developing the assessment document. Gwen said that if a topic came up requiring John's participation we could postpone making a decision related to that topic until John could be contacted.

3. Chris provided a summary of information that Michele had provided him regarding discussions she had had with John. Michele's notes state that John suggested to Michele that we divide the assessment into three sections based on Chesapeake Bay physical environmental characteristics and biology: upper, mid, and lower. The notes state that we need to consider both dredging sites and placement sites, and need to address alternatives considered and dismissed as well as the recommended alternatives. Chris said that we would like to confirm that John's suggested approach is appropriate, and discuss how we might consider modifying the structure of the N.Y. District document to best fit the situation here. Chris also said that they want to discuss how an EFH Impacts Assessment for the Mid-Bay Island Study should relate to the assessment prepared for the DMMP. Chris asked whether we could prepare the EFH Impacts Assessments in such a way that they're fully integrated into (essentially a part of) the EISs we're preparing.

4. Lou said that totally integrating the EFH assessment into the EIS would be fine. However, EIS would need to have a separate subsection focused on EFH assessment, such as in an annex, that would tell where all the pieces were in the larger document. It would be appropriate to include an EFH discussion in the existing conditions section. Lou said that EFH documents often don't include information on early consultation efforts, such as John has been engaged in by participating in the study. Including information on all alternatives considered in the assessment would lead to an informed decision on what NMFS' preferred assessment would be. Both the dredging and placement components need to be included in the assessment, as John said. With so much proposed, it's likely that NMFS would have recommendations for both dredging and placement. Chris said that based on this, we essentially have to prepare two different EFH Impact Assessments for the DMMP and Mid-Bay Studies since we're preparing two different EISs. A Mid-Bay specific EFH document could reference information included in the DMMP EFH document. Lou agreed and added that since Baltimore Harbor is somewhat distinct from the other three regions of the Bay (severity of environmental degradation there), it would be appropriate to break it out as a distinct entity within the EISs and EFH Impact Assessments.

5. Lou didn't see the DMMP Study as being different from other EISs they've been involved in. Lou said that based on what we're describing, he would view this not as a programmatic consultation, but instead as just a very large project. However, EFH recommendations would probably establish recommendations relevant for consideration for other actions in Bay, and thus could effectively be considered programmatic.

Programmatic from his perspective would differ in that it would cover a suite of actions with some relationship to each other. Ideally, we would get away from doing individual consultations for every individual dredging project. Prior to preparation of the NY District HARS they had to do many individual consultations. Other example of a programmatic consultation is EFH impact assessments developed for Regulatory Nationwide Permits. NMFS is currently working with New England District on a programmatic consultation for all civil works maintenance dredging. Programmatic EFH impact assessments need periodic reevaluation. On reevaluation, could determine that the assessment is still valid, or may determine that it would need updating. DMMP EFH Impacts Assessment should build in similar opportunities for reevaluation.

6. Lou said that John would handle the technical issues and be the day to day contact. He (Lou) would provide policy guidance as necessary. Lou might pull in Mike Johnson of NMFS for assistance, he's their biologist dealing with New England Division. Cathy Rogers is Corps' person NMFS is dealing with on this.

Draft version of minutes were e-mailed to all participants on 6/7 for their review. Comments were received from Gwen Meyer and Angie Sowers on 6/7 and 6/8 respectively and were incorporated into the finalized minutes presented above.

Christopher Spaur

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[i] There's also a Poplar Island Expansion Study (PIES) underway for which a General Reevaluation Report and supplemental EIS are being prepared. Due to an anticipated shortfall in dredged material placement locations beginning in 2009-2010, the Corps is authorized to undertake the PIES before the DMMP Study is completed (same situation as Mid-Bay Island Study). The PIES is a follow on study and part of the DMMP Study but is tracking several months behind the programtic DMMP document.

-----Original Message-----
From: Spaur, Christopher C NAB02
Sent: Wednesday, June 23, 2004 2:19 PM
To: 'Maricela_Constantino@fws.gov'
Subject: RE: Coordination letter maps

Maricela:

I recognize that the table and maps we gave you are a bit difficult to deal with in that in many cases the potential alternatives are regions rather than sites. We're fairly early on in what will be a long process, and this exercise is being conducted to gather preliminary information that would aid in formulating the ultimate plan. Given that, identifying general rare species concerns appropriate for regions, rather than concerns focused on specific sites, would be appropriate for many of the alternatives listed/mapped. If it is appropriate, you could choose to lump alternatives by region or other attribute. As we get further along and choose specific sites, we will coordinate further with USFWS and NMFS on E&T species issues specific to those sites.

Chris

-----Original Message-----
From: Maricela_Constantino@fws.gov [mailto:Maricela_Constantino@fws.gov]
Sent: Friday, June 18, 2004 4:23 PM
To: Spaur, Christopher C NAB02
Subject: Re: Coordination letter maps

Chris,
Thanks for the clarification. I took another look at the figures to make sure that those areas where only a label had been placed on the map were reviewed for the presence of federally protected species and then incorporated the necessary species information into my response. However, I did not review each item on Table 1 as your correspondence states that "Specific dredged material disposal areas have not been selected for most alternatives." Furthermore, the specific locations (map) of the individual alternatives were not provided with the request. If you would like the individual potential alternatives reviewed for the presence of federally listed species, please provide additional maps (1) identifying the locations of the individual alternatives and (2) delineating the individual project boundaries.

Let me know if you have any questions,
Maricela

Maricela A. Constantino
Biologist
Threatened & Endangered Species Program
USFWS/Chesapeake Bay Field Office
410-573-4542 (office); 410-269-0832 (fax)

"Spaur, Christopher C NAB02"
<Christopher.C.Spaur@nab02.usace.army.mil>

To: "'maricela_constantino@fws.gov'" <maricela_constantino@fws.gov>

cc:

06/18/04 03:25 PM

Subject: Coordination letter maps

Maricela:

I didn't explain it quite right in our last phone conversation. In certain cases, the areas we're asking for your rare species review of are places identified on the map only with place names, not polygons (from the legend). Examples: Hart-Miller Island and Pooles Island. Best bet would be to use the table that came with the letter and do review for each of the rows.

Thanks for your help,

Chris

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401

June 24, 2004

Mr. Wesley E. Coleman, Jr.
Chief, Civil Projects Development Branch
U.S. Army Corps of Engineers
Baltimore District
P.O. Box 1715
Baltimore, MD 21203-1715

Re: U.S. Army Corps of Engineers, Baltimore District's Dredged Material Management Plan (DMMP), Evaluation of Dredged Material Placement Needs in the Upper and Mid-Chesapeake Bay, MD

Dear Mr. Coleman:

This responds to your letter, received May 21, 2004, requesting information on the presence of species which are federally listed or proposed for listing as endangered or threatened within the above referenced project area. We have reviewed the information you enclosed and are providing comments in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

The federally endangered Maryland darter (*Etheostoma sellare*) has been documented to occur within the Upper-Bay Dredged Material Management Alternatives (DMMA) area, specifically near the mouths of Gashey and Deer Creeks, Harford County, Maryland. Critical habitat is designated for this species and documented in The Maryland Darter Recovery Plan as follows: (1) Deer Creek main channel from the junction with Elbow Branch downstream to the junction with the Susquehanna River; (2) Gasheys Run (also known as Gasheys Creek) main channels of east and west forks from their overcrossing by old Penn Central Railroad south to the confluence with Swan Creek (U.S. Fish and Wildlife Service, 1985). The Maryland darter inhabits areas of shallow stream flow (riffles) containing unsilted rocky crevices for shelter and production of aquatic insects and snails for food. This species may be impacted by projects that result in hydrologic changes, siltation, and runoff (quantity and quality) on the watershed. If such impacts may occur, further section 7 consultation with the U.S. Fish and Wildlife Service may be required.

The federally threatened Puritan tiger beetle (*Cicindela puritana*) is know to occur within the Mid-Bay DMMA area, specifically on Solomons Island in Calvert County, Maryland. This species occurs along shorelines of the Chesapeake Bay and its tidal tributaries in locations with sandy beaches, often narrow, below high bluffs. The larvae of the beetle live in deep burrows on non-vegetated portions of the bluff face; the adults use both the bluff and the beach below it. Populations have declined due to habitat alterations resulting from shoreline development and shoreline stabilization (bulkheads, revetments, groins, breakwaters). The beetle larvae, in particular, are sensitive to natural and human-induced changes to beaches and bluffs, as well as human traffic and water-borne pollution. Any potential impacts on Puritan tiger beetle habitat should be analyzed as part of your environmental assessment. If such impacts may occur, further section 7 consultation with the U.S. Fish and Wildlife Service may be required.

The federally threatened swamp pink *(Helonias bullata)* has been documented to occur in the Upper-Bay MDDA area, specifically in Cecil and Anne Arundel Counties. Swamp pink is a perennial wildflower that inhabits a variety of freshwater wetlands, including spring seepages, swamps, bogs, wet meadows and margins of small streams. We recommend that any wetlands in the above referenced counties that are to be filled or otherwise affected by the proposed project be surveyed for the presence of swamp pink by a professional botanist. Enclosed is a list of qualified individuals who have experience with swamp pink surveys. Even if no direct effects to potential swamp pink habitat are identified, any projects on this property must be designed to minimize impacts of hydrologic changes, siltation, and runoff (quantity and quality) on the watershed. Any such potential impacts on swamp pink habitat should be analyzed as a part of your environmental assessment. If such impacts may occur, further section 7 consultation with the U.S. Fish and Wildlife Service may be required.

The federally threatened bog turtle (*Clemmys muhlenbergii*) may be present within the proposed Upper-Bay DMMA area, specifically in suitable habitat located north of Interstate 95 in Harford and Cecil Counties. Bog turtles primarily inhabit palustrine wetlands comprised of a muddy bottom or shallow water, and tussocks of vegetation. A survey for bog turtle habitat and bog turtles may be appropriate. These surveys should be conducted at any location where the Maryland Wildlife and Heritage Division recommends them. Upon completion, survey reports should be forwarded to both the Service and the Maryland Wildlife and Heritage Division for review. If you have not already sent a copy of your request for threatened and endangered species information to the Maryland Department of Natural Resources Wildlife and Heritage Division (580 Taylor Avenue, E-1, Annapolis MD 21401), please do so. Ms. Lori Byrne of the Wildlife and Heritage Division will provide additional information regarding the need for surveys and a list of experts who are qualified.

The federally threatened bald eagle *(Haliaeetus leucocephalus)* nests in several locations throughout the proposed Upper and Mid-Bay DMMA areas; however, this species is not known to nest within the Baltimore City limits. Any construction or forest clearing activities within one-quarter mile of an active nest may impact bald eagles. If such impacts may occur, further section 7 consultation with the U.S. Fish and Wildlife Service may be required.

The federally endangered Delmarva fox squirrel *(Sciurus niger cinereus)* may be present in the proposed Upper and Mid-Bay DMMA areas. This species occupies mature pine and hardwood forests, both bottomland and upland, with a relatively open understory. If any forest areas in Kent, Queen Anne's, Talbot, Dorchester or Wicomico Counties, Maryland are to be cleared for this project, this species may be affected. Any potential impacts on Delmarva fox squirrel habitat should be analyzed as a part of your environmental assessment. If such impacts may occur, further section 7 consultation with the U.S. Fish and Wildlife Service may be required.

It is the U.S. Fish and Wildlife Service's understanding that specific dredged material disposal areas have not been selected. Therefore, we recommend that our agency be contacted when site-specific information becomes available so that a determination may be made as to whether there is truly a likelyhood of occurrence of the above species within the project impact area.

Except for occasional transient individuals, no other federally proposed or listed endangered or threatened species are known to exist within the project area. Should additional information on the distribution of listed or proposed species become available, this determination may be reconsidered.

This response relates only to Federally protected threatened or endangered species under our jurisdiction. It does not address other fish and wildlife concerns under the Fish and Wildlife Coordination Act. For information on the presence of other rare species, you should contact Ms. Lori Byrne of the Maryland Wildlife and Heritage Division at (410) 260-8573.

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interests in these resources. If you have any questions or need further assistance, please contact Maricela Constantino at (410) 573-4542.

Sincerely,

G. A. Moser

G. Andrew Moser
Acting Program Supervisor, Threatened and Endangered Species

Enclosure

cc: Glenn Therres, Maryland Wildlife and Heritage Division, Annapolis, MD
Lori Byrne, Maryland Wildlife and Heritage Division, Annapolis, MD

SURVEY CONTACTS
FOR THE
SWAMP PINK
(Helonias bullata)

D. Daniel Boone
8111 Chestnut Avenue
Bowie, MD 20715
301-464-5199

David Maddox
The Nature Conservancy
Science Division
1815 North Lynn Street
Arlington, VA 22209
703-841-5383

Jan Reese
Environmental Regulations Consultant
P.O. Box 298
St. Michaels, MD 21663

Dr. Donna Ware
Department of Biology
The College of William and Mary
Williamsburg, VA 23187
757-221-2213

Mark Strong
Smithsonian Institution
Washington, DC
202-357-4570

Phil Sheridan
Botanist
2500 ½ Kensington Avenue
Richmond, VA 23220
804-359-6439

Garrie D. Rouse
Rouse Environmental Services, Inc.
Route 1, Box 25
Alett, VA 23009
804-769-0846

Ted Bradley
George Mason University
Department of Biology
Fairfax, VA 22030-4444
703-993-1050

Catherine Tucker
302 Danray Drive
Richmond, VA 23228
(H) 804-264-6941
(W) 804-786-0450

Inclusion of names on this list does not constitute endorsement by the U.S. Fish and Wildlife Service or any other U.S. Government agency.

JANUARY 23, 1998

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P. O. BOX 1715
BALTIMORE, MARYLAND 21203-1715

REPLY TO
ATTENTION OF

July 15, 2004

Planning Division

Ms. Karen Mayne
Supervisor
U.S. Fish and Wildlife Service
Virginia Field Office
669 Short Lane
Gloucester, VA 23061

Dear Ms. Mayne:

This letter is in reference to the U.S. Army Corps of Engineers, Baltimore District's (Corps) Dredged Material Management Plan (DMMP) Study. The purpose of the study is to develop a long-term plan to provide viable placement alternatives to meet the dredging needs of the Port of Baltimore channels, including Federal, State and local channels, for a minimum of the next 20 years.

The DMMP Study will evaluate alternatives to manage this dredged material in an environmentally and economically acceptable manner, with emphasis on beneficial uses of the material. Beneficial uses may include, but are not limited to, ecosystem and habitat restoration, shoreline stabilization, and upland use. A tiered environmental impact statement (EIS) will be prepared in accordance with the National Environmental Policy Act (NEPA). Any alternative recommended in the DMMP will not be implemented without additional detailed study and appropriate site-specific NEPA documentation.

For the purposes of the DMMP Study, the dredged material management needs are being assessed separately for four geographic areas (see attached Figure 1). A list of the dredged material placement alternatives under consideration is attached as Table 1. Specific dredged material disposal areas have not been selected for most alternatives. However, regions within the Chesapeake Bay watershed containing suitable placement areas for each alternative have been identified and are shown on the attached Figures 2, 3, and 4.

The Corps is requesting that your office provide information on federally protected species present in the Virginia project areas listed in Table 1 and depicted in Figure 4. A separate letter has been sent to the Chesapeake Bay Field Office requesting information on the presence of federally protected species in Maryland sites. A coordination letter has also been sent to the National Marine Fisheries Service (NMFS) for information concerning listed species managed under their charter. Please inform the Corps of any preliminary endangered/threatened species concerns for these potential placement sites within 30 days of the date of this letter so that we may incorporate consideration of these concerns into the DMMP.

If you have any questions regarding this matter, please contact Mr. Chris Spaur at (410) 962-6134.

Sincerely,

Wesley E. Coleman, Jr.
Chief, Civil Project Development Branch

Enclosures

Table 1: USACE, BALTIMORE DISTRICT, PORT OF BALTIMORE DMMP - POTENTIAL ALTERNATIVES

	Alternative	Acreage	Assumptions
1	Agricultural Placement-Maryland	325 acres	Representative area is Dorchester County/Wicomico County, MD - Clamshell dredge and scow; material is hauled by barge as close as possible to the ag site; berms or silt fencing constructed; material is pumped directly from the barge (using a hydraulic unloader) to the ag site in multiple lifts of 6" each; dewatering through percolation and evaporation with little or no discharge; treatment to remove salts may be necessary; approx. 1' of sediment placed by tilling into existing soil; revegetation and monitoring as necessary.
2	Agricultural Placement-Virginia	325 acres	Representative area is Isle of Wight County, VA - Clamshell dredge and scow; material is hauled by barge as close as possible to the ag site; berms or silt fencing constructed; material is pumped directly from the barge (using a hydraulic unloader) to the ag site in multiple lifts of 6" each; dewatering through percolation and evaporation with little or no discharge; treatment to remove salts may be necessary; approx. 1' of sediment placed by tilling into existing soil; revegetation and monitoring as necessary.
3	Artificial Island Creation-Lower Bay	1,000 acres	Representative area near Watts Island, VA; east/leeward side of Tangier Island - Water depth approx. -6' MLLW; 50% Upland/50% Wetlands; For initial cost estimation purposes, artificial island creation uses the same design parameters as those for large island restoration. Therefore, the design presented here is similar to James Island Habitat Development, Alignment 1 parameters (dike height approx.+20' MLLW, 979 acres, 35 mcy capacity, 20.4 year design life). Information on layout obtained from "James Island Beneficial Use of Dredged Material" by Maryland Environmental Service, 2002.
4	Artificial Island Creation-Upper Bay	1,000 acres	Representative area west of Tolchester Channel (Gales Lump Reef) - Water depth approx. -12' MLLW; 50% Upland/50% Wetlands; For initial cost estimation purposes, artificial island creation uses the same design parameters as those for large island restoration. Assume dike height of +25' MLLW and there is sufficient sand at the site to construct dikes.
5	Beach Nourishment-Virginia	375 acres	Representative areas are Va Beach, Willoughby Spit/Ocean View, Buckroe Beach - Placing suitable sandy material from the Cape Henry Channel.
6	Building Products		Dewatered material will be obtained from an existing facility. A total of 500,000 cy will be used over a period of 5 years; final product of brick pavers covering approximately 50 acres.
7	C&D Canal Upland Sites Expansion	260 existing acres	Vertical expansion of an existing CDF along the upper bay or along the C & D Canal; Representative area is the Pearce Creek upland disposal site, covering 260 diked acres ; raising the dikes 10 ft. would provide an additional capacity of approximately 4.2 mcy.
8	Capping - Landfill/Brownfields	62 acres covered of final product for beneficial use	Potential sites are 30 miles from dewatering locations
9	Capping-Elizabeth River, VA	20 acres	Potential sites may be too shallow; Assume 3' (2' of dredged material and 1' of sand) cap placed over contaminated sediment.
10	Capping-Patapsco River, MD	20 acres	Material placed to provide a 4' cap (2' of dredged material and 2' of sand) over existing harbor material that would not be dredged.
11	Confined Aquatic Disposal Area-Patapsco River	100 acres	Harbor material to be placed in an existing pit after sand mining operations in the Patapsco River (Representative area is Sollers Point); 25' cut into bottom to mine sand; material is placed followed by a 4' cap (2' clean dredged material + 2' sand).
12	Confined Disposal Facility-Lower Bay	30 acres	Reinforce/expand toe of west berm (water side) at Craney Island; 1946 legislation currently precludes placing dredged material from outside Norfolk harbor and vicinity.

Note: Locations and design parameters assocated with each of the potential alternatives are representative, chosen only for the purpose of cost comparison. Actual follow-on site specific projects may vary in location and design parameters.

Table 1: USACE, BALTIMORE DISTRICT, PORT OF BALTIMORE DMMP - POTENTIAL ALTERNATIVES			
	Alternative	Acreage	Assumptions
13	Confined Disposal Facility-Patapsco River	100 acres	Nearshore CDF constructed for material placement with no habitat creation. Assumptions will represent an average of the State of Maryland's potential Harbor CDF/Fastland sites; Assume average water depth of -12' MLLW and dike height of +10' MLLW; assume there is sufficient sand near the potential site to build the dikes.
14	Cox Creek Expansion		Raising dikes above + 36' with no beneficial use; Dike raising will extend outside slope of dike upward with no additional impact to the Patapsco River.
15	Hart-Miller Island Expansion	300 acres	Lateral expansion to the south with dike height of +18 MLLW; vertical expansion of the existing south cell to +28' MLLW dike height; placement includes harbor material and clean material; no beneficial use.
16	Large Island Restoration-Lower Bay	240 acres	Representative area is New Point Comfort Island, VA - 50% Upland/50% Wetlands
17	Large Island Restoration-Mid Bay	1,000 acres	Representative area is Dorchester County, MD - 50% Upland/50% Wetlands; Design is similar to James Island Habitat Development, Alignment 1 parameters (dike height approx. +20' MLLW), 979 acres, 35 mcy capacity, 20.4 year design life). Information on layout obtained from "James Island Beneficial Use of Dredged Material" by Maryland Environmental Service, 2002. Dike perimeter length is 31,100 LF with a neat dike fill volume of 4,505,000 cy. Average water depth within cell is 6 ft (GBA, 2003).
18	Mine Placement-Cecil County, MD	130 acres	Representative area is Furnace Bay. Material dewatered and amended; hauled by truck/rail to site.
19	Mine Placement-Pennsylvania/Western Maryland	300 acres	Abandoned coal mine; Material dewatered and amended; hauled by truck/rail to site; revegetation and monitoring. Representative area in western Maryland.
20	Norfolk Ocean Open Water Placement	41,500 acres	Clamshell w/Dump Scow for the MD channels; hopper dredge or clamshell for VA channels - Sufficient capacity; expansion unnecessary.
21	Pooles Island Open Water Site Expansion	350 acres	Expand existing open water placement site.
22	Poplar Island Expansion	600 acres	50% Upland/50% Wetlands; 600-acre lateral expansion with a dike height of +20' MLLW; vertical expansion of the existing island to a dike height of +35 MLLW.
23	Rappahannock Shoal Open Water Site Expansion	1,000 acres	Expand existing site; clamshell w/ Dump scow for the MD channels; hopper dredge for the VA channels
24	Shoreline Restoration-Lower Bay	110 acres	Representative area is Eastern Shore of Virginia (Old Town Neck); Restoring a peninsula using dredged material; 1500' x 3200'; 4' of dredged material to create low marsh and high marsh habitat; armored dike that is breached and allows occasional overtopping; assume there is sufficient sand at the site to construct dikes.
25	Shoreline Restoration-Mid Bay	175 acres	Representative area is NW Dorchester County, MD; Restoring a peninsula using dredged material; 1500' x 5100'; 4' of dredged material to create low marsh and high marsh habitat; armored dike that is breached and allows occasional overtopping; assume there is sufficient sand at the site to construct dikes.
26	Shoreline Restoration-Upper Bay	110 acres	Representative area is West of Rock Hall, MD; Restoring a peninsula using dredged material; 1500' x 3200'; 4' of dredged material to create low marsh and high marsh habitat; armored dike that is breached and allows occasional overtopping; assume there is sufficient sand at the site to construct dikes.
27	Small Island Restoration-Lower Bay	100 acres	Representative area is mouth of Mobjack Bay - Water depth is -5 MLLW; 50% Upland/50% Wetlands; Dike height of +10' MLLW; assume there is sufficient sand near the site to construct the dikes.
28	Small Island Restoration-Mid Bay	100 acres	Representative area is Parsons Island - Water depth is -5 MLLW; 50% Upland/50% Wetlands; Water depth is -5 MLLW; 50% Upland/50% Wetlands; Dike height of +10' MLLW; assume there is sufficient sand near the site to construct the dikes.
29	Wetlands Restoration-Dorchester County, MD	1,000 acres	Representative area is Blackwater Wildlife Refuge. Material pumped to the placement site; 2' of material placed to restore/protect wetlands from sea level rise and subsidence.

Note: Locations and design parameters assocated with each of the potential alternatives are representative, chosen only for the purpose of cost comparison. Actual follow-on site specific projects may vary in location and design parameters.

Table 1: USACE, BALTIMORE DISTRICT, PORT OF BALTIMORE DMMP - POTENTIAL ALTERNATIVES			
	Alternative	Acreage	Assumptions
	BASE PLANS		
1	Dam Neck Ocean Open Water Placement (Existing)		Hopper dredge; dredged material from the Cape Henry channel
2	Hart-Miller Island (Existing)		Clamshell w/Barge and hydraulic unloader.
3	Open Water Placement-Mid Bay (Deep Trough)		Clamshell w/Dump Scow for the MD channels
4	Pooles Island Open Water Site (Existing)		Clamshell w/Dump Scow for the MD channels
5	Rappahannock Shoal Open Water Site (Existing)		Clamshell w/Dump Scow for the MD channels; hopper dredge for the Virginia channels
6	Wolf Trap Open Water Placement (Existing)		Clamshell w/Dump Scow for the MD channels; hopper dredge for the Virginia channels

Note: Locations and design parameters assocated with each of the potential alternatives are representative, chosen only for the purpose of cost comparison. Actual follow-on site specific projects may vary in location and design parameters.

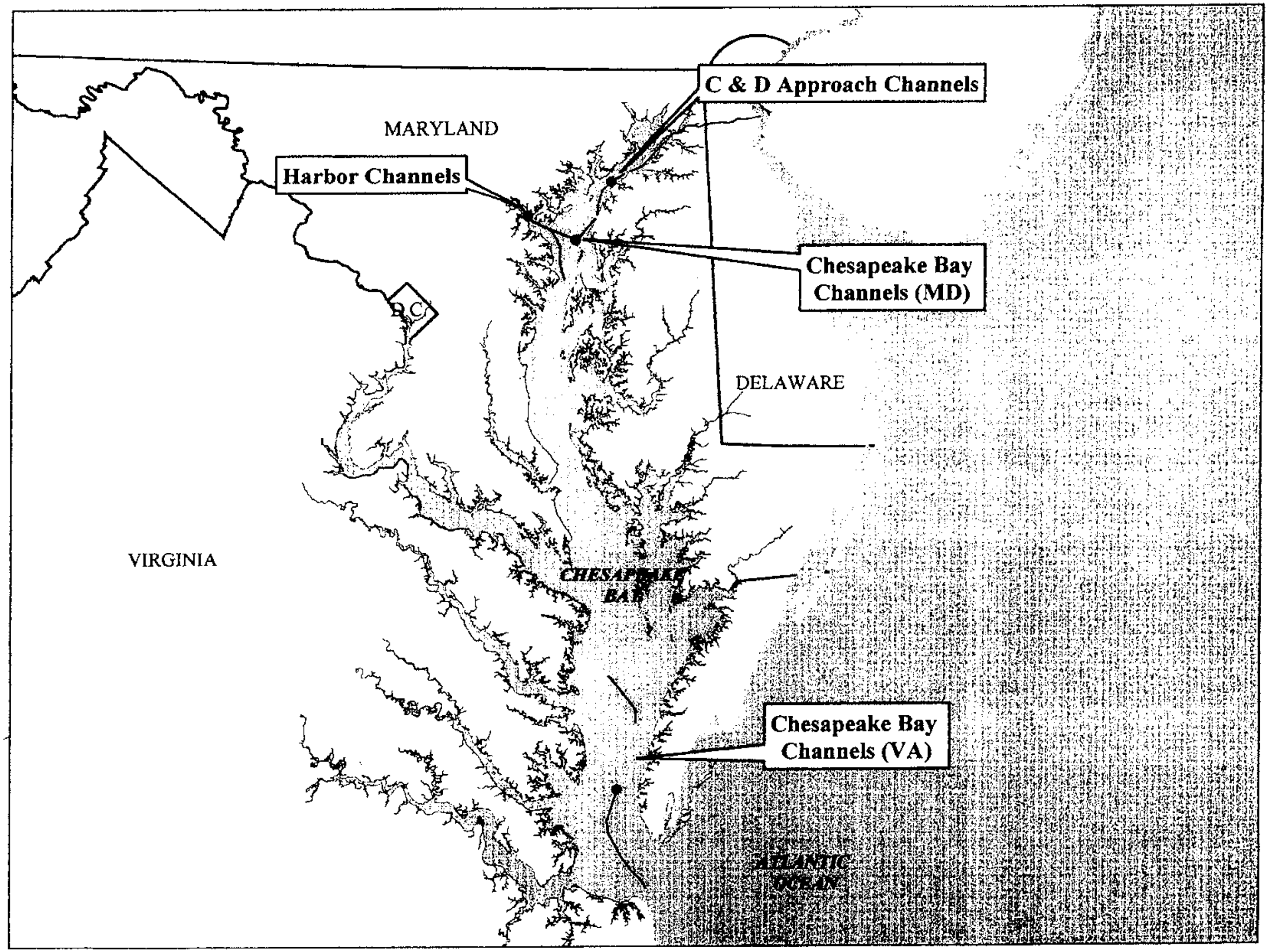


Figure 1: Geographic Boundaries of CENAB DMMP with Channel Designations

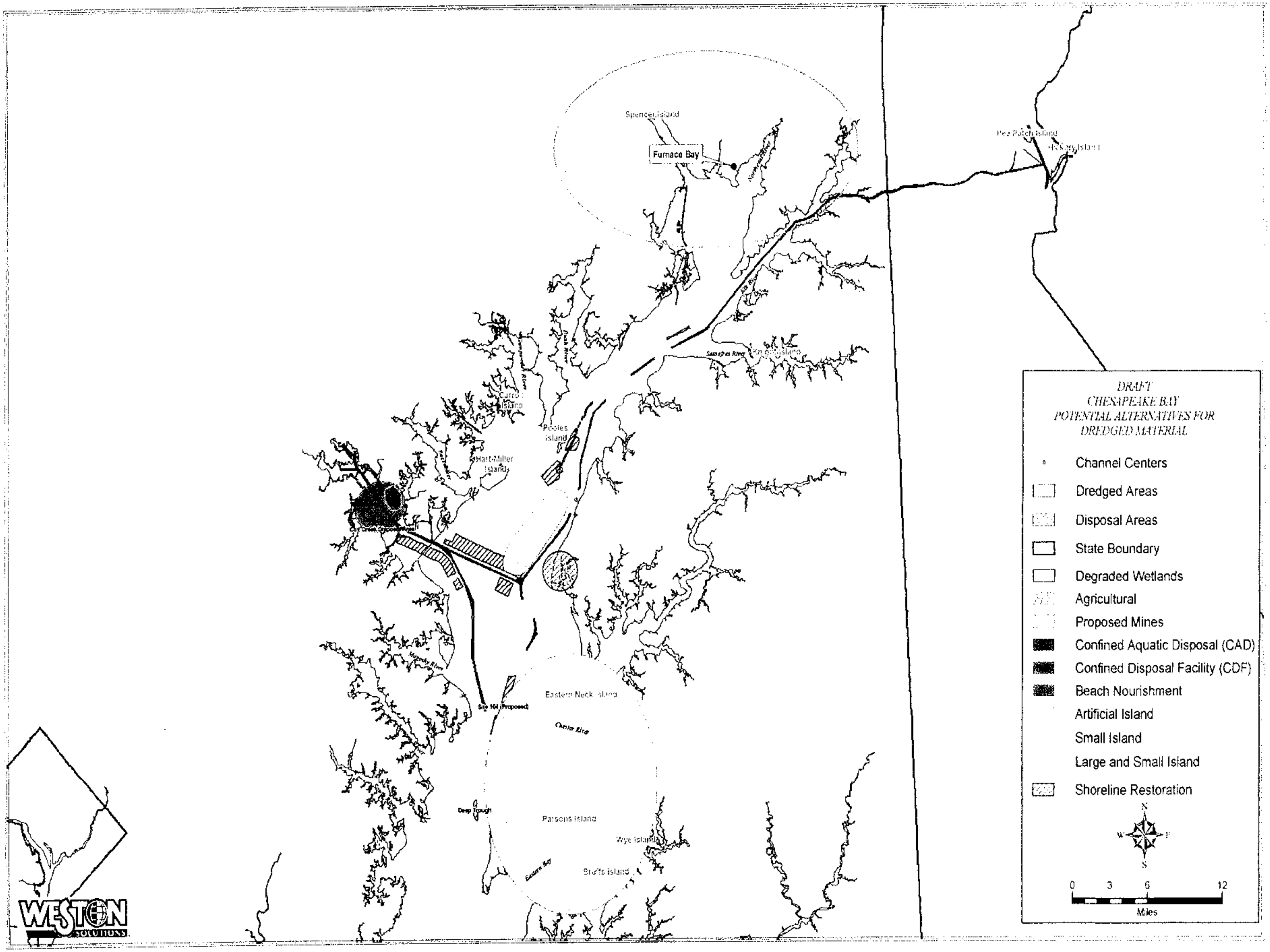


Figure 2 : Upper Bay Dredged Material Management Alternatives

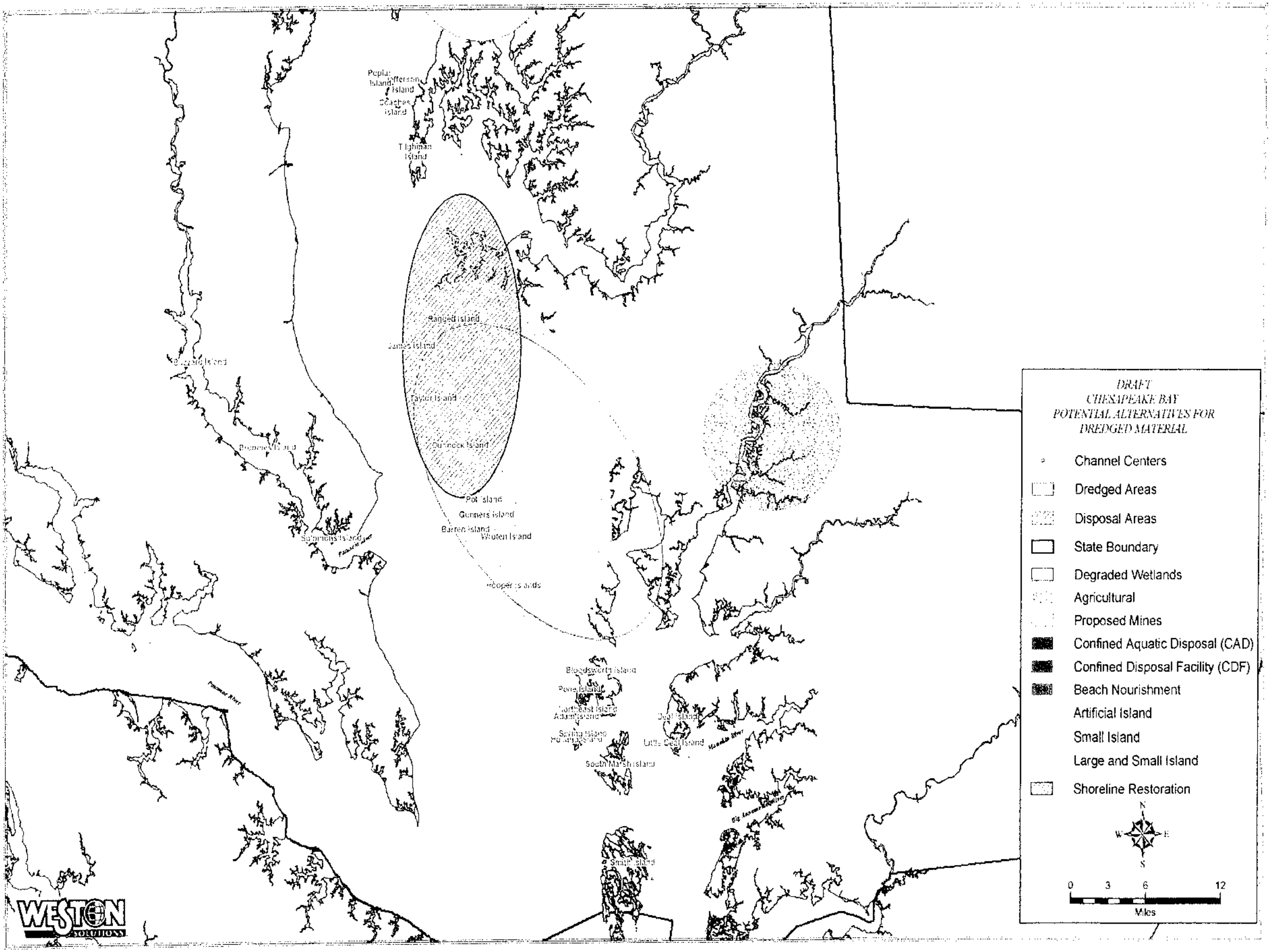


Figure 3 : Mid-Bay Dredged Material Management Alternatives

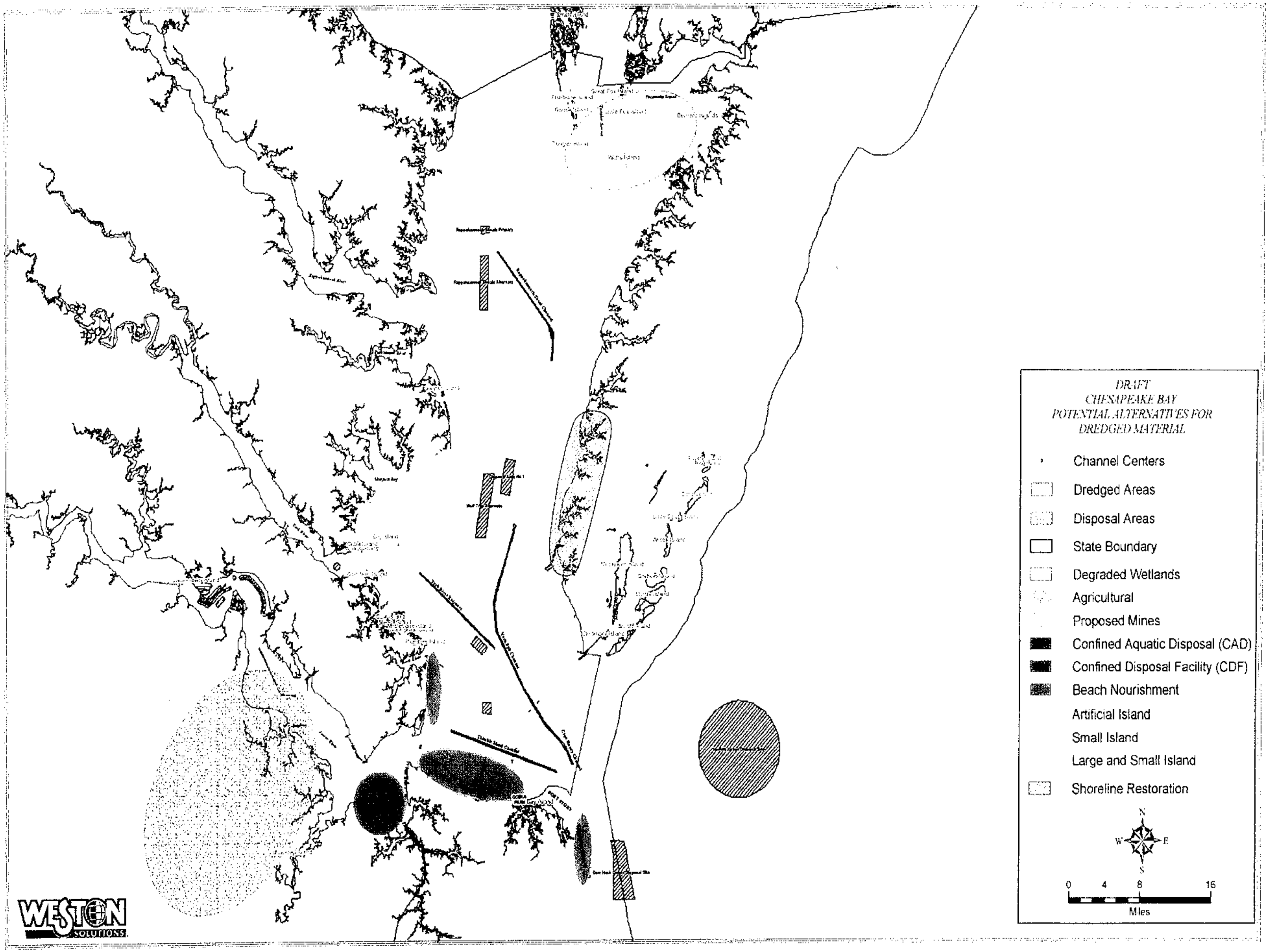


Figure 4 : Lower Bay Dredged Material Management Alternatives

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
6669 Short Lane
Gloucester, VA 23061

August 2, 2004

Project name: Baltimore Corps' Dredged Material Management Plan Study

Project number: 9002 City/County, VA: Gloucester, Mathews, Accomack, Northampton, Virginia Beach, Norfolk, + Hampton

Greetings:

The U.S. Fish and Wildlife Service has reviewed your request for information on federally listed or proposed endangered or threatened species and designated critical habitat for the above referenced project. The following comments are provided under provisions of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

✓ You requested scoping comments. Enclosed are county lists (with species fact sheets).

✓ The information you requested is available at our website at http://vafo.fws.gov.

✓ In order to ensure coordination with the State agencies, we recommend that you contact **both** of the State agencies listed below since each agency maintains a different database and has differing expertise and/or regulatory responsibility. If either of these agencies determines that your project may impact a federally listed, proposed, or candidate species OR federally designated critical habitat, please contact this office and provide a copy of the response letter from each agency and the above referenced project number; otherwise, further contact with this office is not necessary.

Virginia Dept of Game and Inland Fisheries
Environmental Services Section
P.O. Box 11104
Richmond, VA 23230
(804) 367-1000

Virginia Dept of Conservation and Recreation
Division of Natural Heritage
217 Governor Street, 2nd Floor
Richmond, VA 23219
(804) 786-7951

_____ Enclosed is information about communication towers and how certain categories of work may not require further coordination.

_____ We concur that the proposed action is not likely to adversely affect federally listed species.

If you have any questions, please contact Eric Davis at (804) 693-6694, ext. 104.

Sincerely,

J. Eric Davis Jr.

for Karen L. Mayne
Supervisor
Virginia Field Office

KEY

LE - federally listed endangered.

LT - federally listed threatened.

PE - federally proposed endangered.

PT - federally proposed threatened.

EX - believed to be extirpated in Virginia.

LE(S/A) - federally listed endangered due to similarity of appearance to a federally listed species.

LT(S/A) - federally listed threatened due to similarity of appearance to a federally listed species.

C - candidate species; the U.S. Fish and Wildlife Service has enough information to list the species as threatened or endangered, but this action is precluded by other listing activities.

SOC - species of concern; those species that have been identified as potentially imperiled or vulnerable throughout their range or a portion of their range. These species are not protected under the Endangered Species Act.

G - global rank; the species rarity throughout its total range.

G1 - extremely rare and critically imperiled with 5 or fewer occurrences or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.

G2 - very rare and imperiled with 6 to 20 occurrences or few remaining individuals; or because of some factor(s) making it vulnerable to extinction.

G3 - either very rare and local throughout its range or found locally (abundantly at some of its locations) in a restricted range; or vulnerable to extinction because of other factors. Usually fewer than 100 occurrences are documented.

G_T_ - signifies the rank of a subspecies or variety. For example, a G3T1 would apply to a subspecies of a species that is very rare and local throughout its range or found locally in a restricted range (G3) but the subspecies warrants a rank of T1, critically imperiled.

G_Q - The taxon has a questionable taxonomic assignment.

GLOUCESTER COUNTY, VIRGINIA
Federally Listed, Proposed, and Candidate Species

SCIENTIFIC NAME	COMMON NAME	STATUS
BIRDS		
Haliaeetus leucocephalus	Bald eagle	LT
VASCULAR PLANTS		
Isotria medeoloides	Small whorled pogonia	LT

Species of Concern (No official Federal status)

INVERTEBRATES		
Speyeria diana	Diana fritillary	G3
VASCULAR PLANTS		
Eriocaulon parkeri	Parker's pipewort	G3
Fimbristylis perpusilla[1]	Harper's fimbristylis	G2G3
Trillium pusillum var. virginianum	Virginia least trillium	G3T2

[1]This species has been documented in an adjacent county and may occur in this county.

May 29, 2001
Prepared by U.S. Fish and Wildlife Service, Virginia Field Office

MATHEWS COUNTY, VIRGINIA
Federally Listed, Proposed, and Candidate Species

SCIENTIFIC NAME	COMMON NAME	STATUS
BIRDS		
Haliaeetus leucocephalus	Bald eagle	LT
INVERTEBRATES		
Cicindela dorsalis dorsalis	Northeastern beach tiger beetle	LT

Species of Concern (No official Federal status)

INVERTEBRATES		
Stygobromus araeus	Tidewater interstitial amphipod	G2
VASCULAR PLANTS		
Fimbristylis perpusilla[1]	Harper's fimbristylis	G2G3
Polygonum glaucum	Sea-beach knotweed	G3

[1]This species has been documented in an adjacent county and may occur in this county.

March 22, 1999
Prepared by U.S. Fish and Wildlife Service, Virginia Field Office

ACCOMACK COUNTY, VIRGINIA
Federally Listed, Proposed, and Candidate Species

SCIENTIFIC NAME	COMMON NAME	STATUS
BIRDS		
Charadrius melodus	Piping plover	LT
Haliaeetus leucocephalus	Bald eagle	LT
INVERTEBRATES		
Cicindela dorsalis dorsalis	Northeastern beach tiger beetle	LT
MAMMALS		
Sciurus niger cinereus	Delmarva peninsula fox squirrel	LE
REPTILES		
Caretta caretta	Loggerhead sea turtle	LT
VASCULAR PLANTS		
Amaranthus pumilus	Seabeach amaranth	LT

Species of Concern (No official Federal status)

VASCULAR PLANTS		
Polygonum glaucum	Sea-beach knotweed	G3
Trillium pusillum var virginianum	Virginia least trillium	G3T2

May 29, 2001

Prepared by U.S. Fish and Wildlife Service, Virginia Field Office

CITY OF VIRGINIA BEACH, VIRGINIA
Federally Listed, Proposed, and Candidate Species

SCIENTIFIC NAME	COMMON NAME	STATUS
BIRDS		
Haliaeetus leucocephalus	Bald eagle	LT
REPTILES		
Caretta caretta	Loggerhead sea turtle	LT

Species of Concern (No official Federal status)

SCIENTIFIC NAME	COMMON NAME	STATUS
INVERTEBRATES		
Barronopsis jeffersi	A funnel-web spider	G3
Bothynotus johnstoni	A mirid bug	G3
Ctenotrachelus shermani	Combneck assassin bug	G3
Euphyes dukesi	Scarce swamp skipper	G3
Pnirontis brimleyi	An assassin bug	G2
Pseudopolydesmus paludicolous	A millipede	G1
VASCULAR PLANTS		
Chamaecrista fasciculata var. macrosperma	Marsh senna	G5T2
Carex decomposita	Epiphytic sedge	G3
Trillium pusillum var. virginianum	Virginia least trillium	G3T2

February 28, 2000
Prepared by U.S. Fish and Wildlife Service, Virginia Field Office

CITY OF NORFOLK, VIRGINIA
Federally Listed, Proposed, and Candidate Species

SCIENTIFIC NAME	COMMON NAME	STATUS
None documented		

Species of Concern (No official Federal status)

None documented

March 22, 1999
Prepared by U.S. Fish and Wildlife Service, Virginia Field Office

CITY OF HAMPTON, VIRGINIA
Federally Listed, Proposed, and Candidate Species

SCIENTIFIC NAME	COMMON NAME	STATUS
BIRDS		
Charadrius melodus	Piping plover	LT
Haliaeetus leucocephalus	Bald eagle	LT
INVERTEBRATES		
Cicindela dorsalis dorsalis	Northeastern beach tiger beetle	LT

Species of Concern (No official Federal status)

VASCULAR PLANTS		
Trillium pusillum var. virginianum	Virginia least trillium	G3T2

May 29, 2001
Prepared by U.S. Fish and Wildlife Service, Virginia Field Office

NORTHAMPTON COUNTY, VIRGINIA
Federally Listed, Proposed, and Candidate Species

SCIENTIFIC NAME	COMMON NAME	STATUS
BIRDS		
Charadrius melodus	Piping plover	LT
Haliaeetus leucocephalus	Bald eagle	LT
INVERTEBRATES		
Cicindela dorsalis dorsalis	Northeastern beach tiger beetle	LT
MAMMALS		
Sciurus niger cinereus	Delmarva peninsula fox squirrel	LE
REPTILES		
Caretta caretta	Loggerhead sea turtle	LT
VASCULAR PLANTS		
Amaranthus pumilus	Seabeach amaranth	LT

Species of Concern (No official Federal status)

INVERTEBRATES		
Speyeria diana	Diana fritillary	G3
VASCULAR PLANTS		
Desmodium ochroleucum	Creamflower tick-trefoil	G2G3
Polygonum glaucum	Sea-beach knotweed	G3

August 26, 1999
Prepared by U.S. Fish and Wildlife Service, Virginia Field Office

U.S. Fish & Wildlife Service

Bald Eagle

Haliaeetus leucocephalus

Description - The bald eagle occurs throughout the United States. It is a large bird-of-prey with dark brown plumage, a white head and tail, and a yellow bill, feet, and eyes. Juvenile eagles generally have a dark brown body, sometimes with white patches on the tail, belly, and underwings. The head and tail become completely white when full adult plumage is reached at four to five years of age.

Life History - The majority of Virginia's eagle population is found on the coastal plain. The bald eagle breeding season begins in mid-November when large nests are built (or the previous year's nest is repaired) usually in loblolly pine trees that are in close proximity to water. Eagles lay one to three eggs between mid-January and late March. In March, most eggs hatch and by June or July most young have fledged. However, the young will continue to use the nest for several weeks. In Virginia, during the summer and winter months, juvenile and nonbreeding adult eagles congregate along large rivers in areas with abundant food and little human disturbance. During the day, these eagles feed and perch along the river shoreline. In late afternoon, they move inland to roost either singly or communally. Roosts are typically located away from human disturbance and near water and a food source. Bald eagles feed primarily on fish, but will also eat carrion, waterfowl, small mammals, snakes, and turtles.

Conservation - The bald eagle was federally listed as an endangered species in the Chesapeake Bay Region on March 11, 1967. On July 12, 1995, the bald eagle was reclassified to threatened throughout the 48 lower states because the population had increased due to the banning persistent pesticides, habitat protection, and other recovery activities. On July 6, 1999, the bald eagle was proposed for removal from the list of endangered and threatened wildlife in the lower 48 states. This action was proposed because the available data indicated that this species has recovered. The recovery is due in part to habitat protection and management actions initiated under the Endangered Species Act. It is also due to reduction in levels of persistent pesticides occurring in the environment. If and when the eagle is no longer protected by the Endangered Species Act, it will still be protected by the Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, and state laws. Until the eagle is officially delisted, it will continue to receive protection pursuant to the Endangered Species Act. Bald eagles in the Chesapeake Bay are increasing. However, habitat destruction through urban and residential development and human disturbance in nesting, roosting, and foraging habitats continue to be a threat.

What You Can Do To Help - If you know of a bald eagle nest on or near property proposed for clearing, development, or logging please contact one of the following agencies for assistance:

Virginia Department of Game and Inland Fisheries
P.O. Box 11104
Richmond, Virginia 23230
(804) 367-1000

U. S. Fish and Wildlife Service
6669 Short Lane
Gloucester, Virginia 23061
(804) 693-6694

References

U.S. Fish and Wildlife Service. 1990. Chesapeake Bay Region bald eagle recovery plan: first revision. Newton Corner, Massachusetts.

U.S. Fish and Wildlife Service. 1999. Proposed rule to remove the bald eagle in the lower 48 states from the list of endangered and threatened wildlife. Federal Register 64(128): 36453-36464.

Watts, B.D., K.W. Cline, and M.A. Byrd. 1994. The bald eagle in Virginia: An information booklet for land planners. The Center for Conservation Biology, College of William and Mary, Williamsburg, Virginia.

U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, Virginia 23061
(804) 693-6694
http://www.fws.gov
August 1999

U.S. Fish & Wildlife Service

Small Whorled Pogonia

Isotria medeoloides

© D.D. Tyler

Description - The small whorled pogonia is a herbaceous perennial orchid. It has a widely scattered distribution in the eastern United States along the Atlantic coast from Maine to Georgia with outlying occurrences in the midwest and Canada. This species has pale green, elliptical leaves, usually five or six, that grow in a single whorl at the top of a hairless, grayish-green stem. The one or two flowers per plant are yellowish-green, unscented, and form in the center of the whorl.

Life History - In Virginia, the small whorled pogonia is found in ordinary looking third-growth upland forests with an open understory and a closed canopy where the topography is typically moderately sloping or almost level. The plants are usually associated with decaying vegetative matter such as fallen trunks and limbs, leaf litter, bark, and tree roots. The pogonia is found in soils that are acidic sandy loams with low nutrient content. The flowers appear in late April to mid-May. The small whorled pogonia reproduces primarily through self-pollination and occasionally vegetatively. It is often confused with the Indian cucumber-root (*Medeola virginiana*) and the large whorled pogonia *(Isotria verticillata*). The Indian cucumber-root has deep green leaves with a stem that is thin, hairy, and wiry. The large whorled pogonia has a reddish-purple stem and dark green leaves; its flower is reddish-purple.

Conservation - The small whorled pogonia was federally listed as an endangered species on September 10, 1982. It was reclassified as threatened on November 7, 1994. This was possible because at the time of reclassification 61% of the viable populations had been protected. The small whorled pogonia and its habitat continue to be threatened, directly and indirectly, by residential and commercial development. The upland habitat where it is found is seldom protected by federal or state laws unless it occurs on federally-owned property. Without voluntary landowner protection many pogonia populations have been and will be destroyed. Other threats to this species are collection by plant enthusiasts and browsing by white-tailed deer and invertebrates.

What You Can Do To Help - If you find a plant that appears to be the small whorled pogonia, take note of the location and photograph the plant, if possible. Please do not remove the plant!

Contact one of the following agencies for assistance:

Virginia Department of Agriculture
and Consumer Services
Office of Plant Protection
P.O. Box 1163
Richmond, Virginia 23209
(804) 786-3515

Virginia Department of
Conservation and Recreation
Division of Natural Heritage
217 Governor Street, 3rd Floor
Richmond, Virginia 23219
(804) 786-7951

U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, Virginia 23061
(804) 693-6694

References

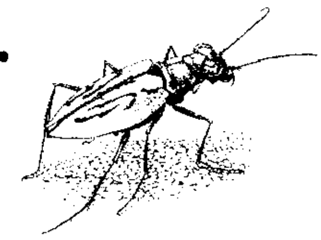
U.S. Fish and Wildlife Service. 1992. Small whorled pogonia (*Isotria medeoloides*) recovery plan, first revision. Newton Corner, Massachusetts.

Ware, D.M.E. 1991. Small whorled pogonia. Pages 95-97 in K. Terwilliger, ed. Virginia's Endangered Species, Proceedings of a Symposium. McDonald and Woodward Publishing Company, Blacksburg, Virginia.

U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, Virginia 23061
(804) 693-6694
http://www.fws.gov
August 1999

Northeastern Beach Tiger Beetle

Cicindela dorsalis dorsalis



© K. Brown-Wing

Description - Historically, the northeastern beach tiger beetle was common on coastal beaches from Massachusetts to central New Jersey, and along the Chesapeake Bay in Maryland and Virginia. Currently, the only populations known to exist along the Atlantic Coast are in New Jersey and southeastern Massachusetts. The majority of populations occur in the Chesapeake Bay. This insect measures 0.5 inches in length. It has white to light tan wing covers, often with several fine grayish-green lines, and a bronze-green head and body.

Life History - Adult and larval tiger beetles are found on long, wide, dynamic beaches that have little human and vehicular activity, fine sand-particle size, and a high degree of exposure to tidal action. Adult beetles are present from June through August and are active on warm, sunny days where they can be seen feeding, mating, or basking along the water's edge. Adults are active predators that forage on small invertebrates or scavenge on dead fish, crabs, and amphipods. Larvae are sedentary predators that live in well-formed burrows from which they extend to capture passing prey. During the summer, adult tiger beetles lay eggs on the beach. After hatching, the larvae pass through three developmental stages and emerge from their burrows as adults two years following egg-laying.

Conservation - The northeastern beach tiger beetle was federally listed as a threatened species on August 7, 1990. Few northeastern beach tiger beetle sites are protected and many are threatened by human activities. Loss of this beetle from most of its range has been attributed primarily to destruction and disturbance of natural beach habitat from shoreline development, beach stabilization, and high levels of recreational use. Additional threats include pollution, pesticides, oil slicks, and off-road vehicle traffic. Natural limiting factors include winter storms, beach erosion, flood tides, hurricanes, parasites, and predators. Recovery for the tiger beetle depends to a large extent on re-establishing the subspecies across its former range along the Atlantic Coast and protecting it within the Chesapeake Bay.

What You Can Do To Help - If you plan to stabilize a tidal beach along the Chesapeake Bay or its tributaries, please contact the U.S. Fish and Wildlife Service. Such activity may require a federal permit, for more information contact:

U.S. Army Corps of Engineers
Norfolk District
803 Front Street
Norfolk, Virginia 23510-1096
(757) 441-7652

References

Knisley, C.B. 1991. Northeastern beach tiger beetle. Pages 233-234 in K. Terwilliger, ed. Virginia's Endangered Species, Proceedings of a Symposium. McDonald and Woodward Publishing Company, Blacksburg, Virginia.

Knisley, C.B., J.I. Luebke, and D.R. Beatty. 1987. Natural history and population decline of the coastal tiger beetle, *Cicindela dorsalis dorsalis* Say (Coleoptera: Cicindelidae). Virginia Journal of Science 38: 293-303.

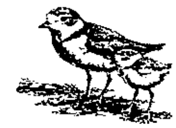
U.S. Fish and Wildlife Service. 1994. Northeastern beach tiger beetle (*Cicindela dorsalis dorsalis* Say) recovery plan. Hadley, Massachusetts.

U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, Virginia 23061
(804) 693-6694
http://www.fws.gov
August 1999

U.S. Fish & Wildlife Service

Piping Plover

Charadrius melodus



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Description - Piping plovers occur in three disjunct populations in North America: Northern Great Plains, Great Lakes, and Atlantic Coast. The piping plover is a 5 ½ inch long pale grayish-brown shorebird with a white breast. During the breeding season, it has a black breast band which is sometimes incomplete and a black bar between its eyes. The bill is dull orange with a black tip and the legs and feet are orange.

Life History - The piping plover nesting season is from late April to late July with one brood raised per year. If there is a disturbance or the nest is lost, the birds may renest. Plovers nest on beaches, dunes, and washover areas. They also nest on areas where suitable dredged material is deposited. The nest is a shallow scrape in the sand dug by the adults and is usually lined with broken seashells and small pebbles. The female usually lays four eggs. The chicks are mobile and able to feed themselves within hours of hatching. Piping plovers feed on small invertebrates in intertidal surf zones, mud flats, tidal pool edges, barrier flats, and sand flats and along the ocean and barrier bays. Plovers migrate to breeding grounds from February through early April, and to wintering grounds from late July through September.

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Conservation - The piping plover was federally listed as a threatened species along the Atlantic Coast on January 10, 1986. In the Northern Great Plains, it is federally listed threatened and in the Great Lakes, endangered. Destruction and degradation of habitat and disturbance during the nesting season by humans and pets are threats to this species. Piping plovers are extremely sensitive to disturbance during the nesting season. Predation by red foxes, skunks, raccoons, feral cats, herring gulls, fish crows, grackles, and ghost crabs is an additional threat to the eggs and young.

What You Can Do To Help - Respect all signed or fenced shorebird nesting areas; stay as far away from these areas as possible. The birds and their eggs blend in with the sand and are difficult to see. Young birds are particularly vulnerable before they can fly and can be killed by vehicles or trapped in vehicle tracks. Watch for signs of adult birds calling, displaying a feigned broken wing, or flying or running ahead of you. Keep pets leashed or indoors during the nesting season; both dogs and cats are known to prey on eggs and chicks. Take care not to discard trash or food scraps on beaches used by nesting birds, as they attract predators that may prey on eggs and/or chicks.

To find out more about the piping plover contact:

Virginia Department of Game and Inland Fisheries
P.O. Box 11104
Richmond, Virginia 23230
(804) 367-1000

References

Cross, R.C. 1991. Piping plover. Pages 501-502 in K. Terwilliger, ed. Virginia's Endangered Spcies, Proceddings of a Symposium. McDonald and Woodward Publishing Company, Blacksburg, Virginia.

U.S. Fish and Wildlife Service. 1985. Endangered and Threatened Wildlife and Plants: Determination of endangered and threatened status for the piping plover; final rule. Federal Register 50(238):50726-59734.

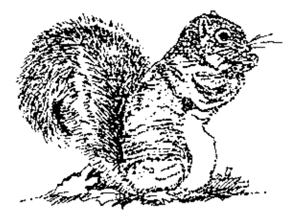
U.S. Fish and Wildlife Service, Region 5. 1994. You can help protect the piping plover. Newton Corner, Massachusetts.

U.S. Fish and Wildlife Service. 1996. Piping plover (*Charadrius melodus)* Atlantic Coast population, revised recovery plan. Hadley, Massachusetts.

U.S. Fish & Wildlife Service

Delmarva Peninsula Fox Squirrel

Sciurus niger cinereus



Description - The Delmarva Peninsula fox squirrel is a light gray, large-bodied tree squirrel with a full, fluffy tail. The feet and underparts are white and the ears and face are whitish. This fox squirrel is easily confused with the more common gray squirrel. However, the gray squirrel is smaller with darker gray fur and its feet, tail, face, and back are rusty brown.

Distribution - Historically, the Delmarva Peninsula fox squirrel was distributed throughout the eastern shore of Maryland and Virginia, southeastern Pennsylvania, New Jersey, and Delaware. By the early 1900s, this squirrel was extinct in Virginia. However, it has been reintroduced at Chincoteague National Wildlife Refuge in Accomack County and property owned by The Nature Conservancy in Northampton County.

Habitat - This fox squirrel is typically found in open, mature loblolly pine and oak forests or in mixed stands of pine, beech, and sweetgum. Sites that contain mast and seed producing trees, have old trees that provide den sites, and have agricultural fields nearby are preferred by this squirrel.

Life History - The diet of the fox squirrel appears to be identical to that of the gray squirrel. In autumn, nuts and pine cones are usually plentiful and comprise a large portion of the fox squirrel's diet. In the spring, their diet shifts to tree buds and flowers, fruit, insects, seeds, and occasionally bird eggs and young. The fox squirrel prefers tree hollows for dens. They also construct nests composed of leaves and twigs. These nests are used for shelter and rearing young. Mating occurs in late winter and early spring and most young are born from February to April with a few as late as July or August. Offspring are raised solely by the female and food availability likely governs the size and number of the litters.

Conservation - The Delmarva Peninsula fox squirrel was federally listed as an endangered species on March 11, 1967. Destruction of habitat by timber harvest, short-rotation pine management, forest conversion to agriculture, and residential development is a continuing threat to this species. Pine-bark beetles, severe storms, and other factors causing forest die-offs are additional threats.

What You Can Do To Help - To learn more about the Delmarva Peninsula fox squirrel visit:

Chincoteague National Wildlife Refuge
U.S. Fish and Wildlife Service
P.O. Box 62
Chincoteague, Virginia 23336
(757) 336-6122

Or contact:

Virginia Department of Game and Inland Fisheries
P.O. Box 11104
Richmond, Virginia 23230
(804) 367-1000

References

Dueser, R.D. and C.O. Handley, Jr. 1991. Fox squirrel. Pages 585-587 in K. Terwilliger, ed. Virginia's Endangered Species, Proceedings of a Symposium. McDonald and Woodward Publishing Company, Blacksburg, Virginia.

U.S. Fish and Wildlife Service. 1993. Delmarva fox squirrel *(Sciurus niger cinereus)* recovery plan, second revision. Hadley, Massachusetts.

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Gloucester, Virginia 23061
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August 1999

From: Spaur, Christopher C NAB02
Sent: Thursday, August 12, 2004 1:21 PM
To: 'glenn_carowan@fws.gov'; 'Dixie_Birch@fws.gov'
Cc: Johnson, Scott NAB02; Meyer, Gwendolyn C NAB02; Pugh, Steven B NAB02; Kopecky, Steven NAB02; Nook, Karen M NAB02
Subject: FW: DMMP Study and Blackwater

Glenn and Dixie:

FYI, restoration of tidal wetlands in Dorchester County (presumably Blackwater) has made it to the Baltimore, Philadelphia, and Norfolk District's recommended plan as a placement site for material from the C&D Canal and Chesapeake Bay Approach Channels (to Baltimore) in Maryland.* The District's recommended plan for this material also includes expanding Poplar Island and restoring another large island in the mid-Bay comparable to Poplar. Restoration of wetlands in Dorchester is a lower priority recommendation due to the cost and complexity involved than either of the other alternatives. It was included more for the environmental benefits that could be accrued than for the more pressing dredged material placement needs. It was felt that the potential environmental benefits were too large to overlook and that it was at least worth further study. This recommendation has to be approved by our higher authorities, who will likely identify as problematic us undertaking work on another Federal agency's lands (we typically don't do this). However, it may be that the recommendation can be approved if it is worded in such a way as to indicate that the Corps will need special authority to undertake this, and that it will need to partner with other Federal and state agencies to be able to undertake this work. If all goes well, a draft EIS will be released to the public for the DMMP Study in November, and a Record of Decision signed by July 2005.

We would then need to undertake a feasibility study, perhaps in conjunction with the USFWS, focused on placement of material at Blackwater. This study would likely take 3 years. Following this, there would likely be protracted policy and real estate studies/negotiations that would take years to complete. Also during this time, there would likely be extensive engineering investigations undertaken. At the earliest, we might be able to start implementation of the Blackwater project in 10 to 12 years. Even at that it would take a tremendous amount of support from all sectors, (private, public, political, etc) to make it happen.

Chris

*(Virginia portion of Bay also has channels, but material from there will go elsewhere).

From: Spaur, Christopher C NAB02
Sent: Thursday, September 09, 2004 11:39 AM
To: 'Corinne.Murphy@WestonSolutions.com'
Cc: Meyer, Gwendolyn C NAB02; McKee, Jeffrey A NAB02
Subject: DMMP: Blackwater

Corinne:

2nd and 3rd paragraphs in e-mail below contain forecast schedule that I mentioned in today's meeting. E-mail was written with help of Scott Johnson (review and input).

Chris

-----Original Message-----

From: Spaur, Christopher C NAB02

Sent: Thursday, August 19, 2004 9:20 AM

To: 'don_cahoon@usgs.gov'; 'glenn_guntenspergen@usgs.gov'; 'mk11@umail.umd.edu'; 'clarsen@usgs.gov'; 'DNemerson@aqua.org'; 'court@hpl.umces.edu'

Cc: Pugh, Steven B NAB02; Kopecky, Steven NAB02

Subject: Corps and Blackwater

All:

FYI, the Section 206 Continuing Authorities Program Study, under which the Demonstration Project was constructed, is on hold at least until October 1st, the beginning of Federal FY 2005. Previously, we were hoping that the national funding shortfall for these studies/projects would have been resolved in time for us to start up again at that time. I'm not in the loop on financial and political matters generally, but what I've heard causes me to be pessimistic about the study starting up again anytime soon. (At the College Park meeting we provided a little bit of information about finances and magnitudes of potential projects we could produce under this study.)

Probably of far greater importance - restoration of tidal wetlands in Dorchester County (presumably Blackwater) has made it to the Baltimore, Philadelphia, and Norfolk District's recommended plan as a placement site for material from the C&D Canal and Chesapeake Bay Approach Channels (to Baltimore) in Maryland* under the auspices of the *Port of Baltimore Dredged Material Management Plan Study* (see attached newsletter for study information). The District's recommended plan for this material also includes expanding Poplar Island and restoring another large island in the mid-Bay comparable to Poplar. Restoration of wetlands in Dorchester is a lower priority recommendation due to the cost and complexity involved than either of the other alternatives. It was included more for the environmental benefits that could be accrued than for the more pressing dredged material placement needs. It was felt that the potential environmental benefits were too large to overlook and that it was at least worth further study. This recommendation has to be approved by our higher authorities, who will likely identify as problematic us undertaking work on another Federal agency's lands (we typically don't do this). However, it may be that the recommendation can be approved if it is worded in such a way as to indicate that the Corps will need special authority to undertake this, and that it will need to partner with other Federal and state agencies to be able to undertake this work. If all goes well, a draft EIS will be released to the public for the DMMP Study in November, and a Record of Decision signed by July 2005.

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Chris

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<< File: Newsletter-120803-DMMP Final.pdf >>

From: Spaur, Christopher C NAB02
Sent: Wednesday, September 15, 2004 2:46 PM
To: 'kmsmith@dnr.state.md.us'; 'rwilliams@dnr.state.md.us'
Cc: Kopecky, Steven NAB02; Pugh, Steven B NAB02
Subject: DMMP: Blackwater

Kevin and Raj:

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Chris

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<< File: Newsletter-120803-DMMP Final.pdf >>

DRAFT
SUMMARY OF THE DREDGED MATERIAL MANAGEMENT PROGRAM CITIZENS' ADVISORY AND MANAGEMENT COMMITTEE MEETING
December 2, 2004, 1:00 PM
2310 Broening Highway, 1st Floor Training Room
Baltimore, Maryland

Attendees:

Alliance for the Chesapeake Bay: Charlie Conklin
Blasland, Bouck, and Lee: Tim Donegan, Tim Iannuzzi
Coastal Conservation Association: Bud Waltz
Coastal Watershed Resources Advisory Committee (CWRAC)/Citizens' Advisory Committee Liaison: Greg Kappler
Cecil County: John Williams
Chesapeake Bay Yacht Club Association, Citizens' Advisory Committee: Don Burton
Citizens' Advisory Committee: Fran Flanigan
Don Ren Corporation, Citizens' Advisory Committee: H.E. Parker
Dorchester County: Bruce Coulson, Joseph Coyne
EA Engineering: Jane Boraczek
Ecologix Group: Bob Hoyt, George Chmael
Gahagan & Bryant Associates (GBA): Dennis Urso, Richard Thomas, Daniel Wilson
General Physics Corporation: Sarah Coffey
Greater Pasadena Council: Rebecca Kolberg
Hart Miller Island Oversite Committee: Fred Habicht
ISG: Bob Abate
Martin Associates: John Martin
Maryland Conservation Council: Mary Marsh
Maryland Department of the Environment (MDE): George Harman, Matthew Rowe
Maryland Department of Transportation: Ron Burns
Maryland Environmental Service: Cecelia Donovan, Charles Madison, John Sparkman, Karen Cushman, Gwen Gibson, Elizabeth Habic, Tammy Banta, Melissa Slatnick
Maryland Geological Survey (MGS): Jeff Halka, Bill Panageotou
Maryland Pilots: Eric Nielsen, William Band
Maryland Port Administration (MPA): Frank Hamons, Steve Storms, John Vasina, Nathaniel Brown, Katrina Jones, Bill Lear, Kathy Broadwater, Ben Lieberman, Greg Maddalone
National Oceanic and Atmospheric Administration (NOAA) Chesapeake Bay Office: Peter Bergstrom
North Point Community Council: Francis Taylor
Private Sector Port Coalition: Bud Nixon
Rukert Terminals: Steve Landess
T. Parker Host of Maryland, Citizens' Advisory Committee: Donald Carroll
US Army Corps of Engineers, Baltimore District (CENAB): Scott Johnson, Jeffrey McKee
US Army Corps of Engineers, Philadelphia District (CENAP): Chip DePrefontaine, Robert Selsor
US Environmental Protection Agency (EPA): Ralph Spagnolo, Tom Slenkamp
US Fish and Wildlife Service (USFWS): Bob Zepp
University of Maryland, Center for Environmental Science: Dennis King

Action Items:

1. None.

Statements for the Record:

1. Dr. John Williams provided a statement for the record (attached).

1.0 Convene, Welcome, Introductions — Frank Hamons, Greg Kappler

Mr. Hamons welcomed the attendees and asked that everyone introduce themselves. Mr. Kappler welcomed both the Management Committee and Citizens' Advisory Committee members. Mr. Kappler summarized the topics to be discussed during the meeting including the Martin Report, update on Corps DMMP, update on State DMMP, and upcoming events.

2.0 Economic Assessment of Maintenance of C&D Canal — John Martin

Dr. Martin provided a presentation detailing the completed study on the economic benefits of the maintenance dredging program for the C&D Canal. The purpose of the study was to identify the economic benefits of maintaining the C&D Canal at the current draft of 35 feet, and to identify the benefit-cost ratio of the C&D Canal maintenance dredging program. Dr. Martin detailed the methodology used in the study.

Dr. Martin reported that the results of the study indicated that approximately $24 to $24.6 million of annual transportation cost penalties would result if the C&D Canal was not maintained to current depth. Dr. Martin provided documentation to support his belief that the benefits of maintaining the C&D Canal are twice as great as the costs. Dr. Martin's presentation detailed regional economic impacts that would result from changes to the current maintenance dredging program. A summary of Dr. Martin's study can be found on MPA's webpage, www.mpasafepassage.org.

Mr. Spagnolo asked Dr. Martin to indicate the range of drafts for the 423 transits with a draft of 19 feet or more. Dr. Martin explained that the deepest draft is 35 feet, but specific information for each transit by draft is included in the database and the exact number of transits for any specific draft can be obtained from the database.

Ms. Kolberg asked for an explanation of induced jobs. Dr. Martin explained that three types of jobs were used in the analysis including direct, indirect, and induced jobs. The direct jobs are those jobs that would go away immediately if shipping activity were to cease (i.e., operators, truckers, railroads, etc.). The employees with direct jobs get direct income, or wages and earnings. Induced jobs are jobs that are supported in the economy by the purchases of the direct laborers (i.e. grocery, housing, transportation). Indirect jobs are those jobs supported by the purchases of the firms.

Dr. Williams asked for an explanation of the compensation level. Dr. Williams questioned why there are only half as many induced as direct jobs. Dr. Martin explained that the analysis truncated the spending on the second level of purchases, or the retail and wholesale level. The induced impact includes the earnings of the induced jobs and a multiplier effect that includes other purchases, such as purchases made by the grocery stores. Dr. Martin explained that truncating the spending allows for a conservative estimate of induced jobs.

Mr. Burton stated that approximately 5 to 10 years would be required for the C&D Canal to silt in to 17 feet, using the NED calculation. Mr. Burton added that, by that point in time, dredged material would be moved down the Bay for placement at Poplar Island, James Island, or some other placement location instead of placing the material at Hart-Miller Island or Pooles Island. Mr. Burton stated his belief that moving the material down the Bay for placement would result in a significant dredging cost increase, and he questioned if those costs had been taken into consideration in the economic analysis. Dr. Martin stated that the economic analysis for the C&D Canal was completed for three different current cost scenarios. Mr. Burton questioned if the analysis was a snap shot of current conditions, and expressed concern that conditions could change in the future and result in an increase in dredging costs. Dr. Martin agreed that the analysis was completed based on current conditions.

Mr. Spagnolo questioned the difference between fuel costs for vessels and trucks. Dr. Martin explained that the fuel costs were not analyzed, and that the number of trucks that would be required to handle the shipping cargo was only presented to show the amount of truck traffic that may result if all shipping cargo was transported by truck. To compare the fuel costs, the costs would have to be analyzed on a per ton mile basis. Dr. Martin added that vessels are more fuel efficient than trucks.

Ms. Kolberg asked what percentage of auto and Roll-on/Roll-off (RoRo) carriers use the C&D Canal. Dr. Martin stated he was unsure of the exact percentage but could investigate the question and provide a percentage to Ms. Kolberg. Dr. Williams stated that, for the Northern Access Route (the C&D Canal), the B&E database for the year 2002 states that auto carriers represented 45% of the traffic, and RoRo carriers represented 6.7%. Therefore, a little over half of the vessels using the northern route in 2002 were of that general category. Dr. Williams added that the database also reported that, of the vessels coming in and out of the Port of Baltimore, the auto carriers and RoRo ships combined would account for 37.4% of the Port of Baltimore calls.

Mr. Nixon agreed with the results of the economic analysis and thanked Dr. Martin for completing the analysis. Mr. Nixon urged that the Port should move on and put the study behind them. Mr. Nixon stressed the importance of the C&D Canal being a great asset of the Port of Baltimore and stated that it is important to continue on with business as usual as opposed to doing further economic analysis and study.

Dr. Williams read a statement into the record regarding his concerns with the results from the Martin economic analysis of the maintenance of the C&D Canal. Dr. Williams expressed concern regarding the estimated dredging quantity, the estimation of NED benefits, and concern with the particular numerical estimates used to quantify those factors. A copy of Dr. Williams' statement is included as an addendum to this meeting summary.

Dr. Martin provided a response to Dr. Williams's statement. Dr. Martin explained that Dr. Williams's first analysis, completed in January 2003, assumed a barge operation rate of 23 knots per hour. Dr. Martin also stated that Dr. Williams's second report, completed in September 2004, was rejected by the independent peer reviewers who also reviewed and accepted Dr. Martin's analysis. Dr. Martin explained that the benefits in Dr. Williams's reports started at approximately $4 million in the first report, and increased to approximately $6 to $8 million in the second report.

Addressing Dr. Williams's comments regarding vessel densities, Dr. Martin explained that assumptions have to be made during any economic analysis, such as assuming that barges are being utilized to their fullest capacity. Dr. Martin stated that, using the sensitivity analysis, eliminating all barges 19 feet and under, a positive cost benefit ratio can still be achieved. Dr. Martin stated that the positive cost benefit ratio can be achieved even without including the extra costs of additional barges to carry the added cargo on light-loaded barges. Dr. Martin stated that the cost associated with moving light-loaded barges would be approximately $700 per hour.

In response to Dr. Williams's comments regarding interviews, Dr. Martin admitted that no single good database exists, and each database has its flaws. As a result, after reviewing the databases, it is important to talk to those individuals operating the canal. Dr. Martin explained that the individuals interviewed had no vested interest in being dishonest with regard to their operating costs. Published sources exist that detail charter rates for tank barges and tugs. No database currently exists for deep draft vessels, although the Corps is currently in the process of developing one. Dr. Martin added that the operating costs used in the analysis were based on all barge operators reporting, independently, that their operating costs were between $700 and $900 per hour.

Dr. Martin stated that Dr. Williams used examples including inland waterway tugs and barges in his analysis. Dr. Martin explained that inland waterway tugs and barges cannot be used in correlation with coastal waterway tugs and barges as they are totally different structures and operate under different contracts. For example, many coastal waterway tugs and barges operate under union contracts, while the inland tugs and barges operate mainly under non-union contracts. Dr. Martin stated that the correlations of horsepower and costs included in Dr. Williams's report cannot be used to complete an assessment, and the report was lacking charter rates for the barges.

Mr. Landess requested the Committee Members should keep in mind that all studies are subjective and that assumptions have to be made when completing any type of analysis. Mr. Landess stated his belief that it would not be in the Port of Baltimore's best interest to continue to spend millions of dollars to complete additional economic analyses of the C&D Canal. Mr. Landess expressed concern that, if additional studies are completed, the reputation of the Port of Baltimore could be damaged.

Dr. Williams acknowledged the comments made by Dr. Martin regarding the earlier versions of work that he has completed, and stated that he would not stand by any of those numbers at this point in time. Dr. Williams stated that everyone gets smarter as they grow older and he has a better understanding of those issues now. Dr. Williams stated that he does not believe that either one of the reports that he has previously completed are accurate, or are the final answer. Dr. Williams stated that the process still needs to move forward, and expressed his belief that the answers Dr. Martin has put forward are not necessarily the precise, accurate, right answer. Dr. Williams stated his belief that, based on good data, the benefits exceed the costs as they have been calculated at the current point in time. Dr. Williams added that he would estimate that the benefit cost ratio is most likely in the range of 1.1 to 1.2 for the year 2003. Dr. Williams stressed that the benefit cost ratio will change for 2004.

Dr. Williams stressed that all Committee Members should think about the future and what changes will occur. He highlighted the importance of understanding the amount of commerce associated with barge traffic, especially with coal and oil transits. Dr. Williams stated his belief that, in approximately 5 years, the cost of dredge material disposal will markedly escalate when Pooles Island and other cheaper placement options can no longer be used. Dr. Williams estimated that the costs will triple, thus bringing the benefit cost ratio below one. Dr. Williams stressed the need to carefully estimate future cost benefit ratios so that proper business decisions can be made.

Mr. Kappler thanked both Dr. Martin and his company for completing the economic analysis and Dr. Martin for taking the time to present the results to the Committees. Mr. Kappler stressed the importance of having the results of the analysis approved by peer review and allowing the Committee to have an accurate snapshot of the current state of the C&D Canal that can be used to make economic decisions. Mr. Kappler also thanked Dr. Williams for his comments.

3.0 Update on the Corps of Engineers DMMP — Scott Johnson

DMMP Schedule and Recommendations

Mr. Johnson provided a presentation on the Corps of Engineers, Baltimore District DMMP. Mr. Johnson highlighted current activities in the Federal DMMP process, reviewed the habitat index, reviewed the results from the quantitative analysis, presented the results of the qualitative risk analysis, discussed the alternative suite development process, discussed the selection of the Recommended Plan, and updated the schedule.

Over the past year the Corps has completed the plan formulation stage for the DMMP and developed preferred alternatives for three regions. The preferred alternative for the Virginia Channels is continued utilization of open water placement locations. For the Inner Harbor Channels, the preferred alternative is a multiple confined disposal facility. The preferred alternative for the Chesapeake Bay approach channels includes an expansion of Poplar Island, a mid-Bay Island restoration project, and wetland restoration in Dorchester County.

Mr. Johnson reported that the Draft DMMP is scheduled for completion in December 2004. The Draft DMMP will be available for public review in January 2005, with public hearings in February 2005. The Final DMMP and Tiered Environmental Impact Statement (EIS) is planned for completion in July 2005, with a Record of Decision (ROD) to be complete in September 2005.

Mr. Spagnolo stated that some alternatives were eliminated from consideration because they were against state law. Mr. Spagnolo questioned if any of the alternatives were eliminated from consideration because they were against federal laws. Mr. Johnson stated that he was unaware of any federal laws that would be applicable for any of the proposed alternatives. Mr. McKee agreed that no federal laws exist that mandate what can or cannot be done with dredged material.

Mr. Nixon asked if any consideration had been given to using dredged material to construct a new terminal in the Port of Baltimore. Mr. Johnson stated that the construction of a new terminal would be a State issue, but the Corps could be a participating partner. Mr. Johnson stressed that the Corps DMMP is identifying placement alternatives, but not specific development projects.

Mr. Nixon asked, for projects such as the proposed wetland restoration at Blackwater, if funding would be solicited from other entities. Mr. Johnson stated that all the recommendations being put forward with the Corps DMMP are environmental restoration projects, or projects that provide beneficial use of dredged material for environmental restoration. Mr. Johnson explained that the funding will come from Federal and State sources, but comes out of a funding source separate from the navigational and operations and maintenance funding. Mr. Johnson explained that, when Congress authorizes money for an environmental restoration project, the incremental cost above the base plan to take the material to Poplar Island or a mid-Bay island and the cost to create habitat at the site is considered part of the project costs.

Poplar Island Expansion Study
Mr. Johnson provided an update on the Poplar Island Expansion Study, discussing the proposed lateral and vertical expansion, acceptance of material from additional locations, environmental enhancements, and recreational and educational opportunities.

Mr. Johnson explained that one of the issues identified during the public outreach for the Poplar Island Expansion study was a possible blocking of the view shed from Jefferson Island. In addition, the watermen expressed interest in obtaining some type of tradeoff for the previous crabbing areas that would be lost. Ms. Boraczek stated that the watermen expressed interest in having an area from Wade's Point to Bloody Point redesignated from trot lines to potting.

Mr. Nixon asked about the possibility of the Corps buying Jefferson Island. Mr. Johnson stated that the Corps cannot buy the Island but the State could possibly buy Jefferson Island if the owner was willing to sell the property. Mr. Johnson speculated that the purchase of Jefferson Island could be a good idea, and it could be a valuable enhancement to the proposed project.

Mr. Spagnolo questioned how information will be made available to the public. Mr. Johnson stated that the Corps is in the process of drafting a General Reevaluation Report (GRR)/Supplemental Environmental Impact Statement (SEIS), and a public comment period will follow the release of the document. Mr. Spagnolo questioned if any feedback had been received from the public about the raising of the dikes. Mr. Johnson stated that the dike raising will be limited to 5 feet.

Mr. Johnson stated that the schedule for the Poplar Island Expansion Study includes completion of the draft GRR/SEIS in May 2005, issuing the Draft GRR/SEIS for public comment in September 2005, holding public information meetings in October 2005, completing the Final GRR/SEIS in December 2005, and completing the study with a ROD in February 2006.

Mid-Bay Island Study
Mr. Johnson provided an update on the Mid-Bay Island Study, discussing the formulation of alternatives, constraints, screening of alternatives, comparison and evaluation of plans, and the proposed alignments. The proposed alignment for James Island includes a 2,072-acre island comprised of 45% uplands with 20 foot high dikes, and 55% wetlands. The study also

recommends protection of existing resources at Barren Island with a combination of segmented or solid breakwaters.

Mr. Johnson stated that schedule for the Mid-Bay Island study includes completing the draft report in March 2005, issuing the Draft report/EIS for public comment in September 2005, holding public information meetings in October 2005, completing the Final report/EIS in December 2005, and completing the study with a ROD in January 2006.

4.0 Update on Maryland DMMP — Frank Hamons

Mr. Hamons stated that the Committee Members have heard a lot during the meeting about costs and benefits, and discussion of the issue will continue in the near future. Mr. Hamons explained that the MPA will continue to follow direction from the Congress of the United States and the State of Maryland legislature to evaluate beneficial use and island restoration projects, as well as innovative reuses of dredged material. Mr. Hamons explained that it is difficult to assign value to the environmental benefits to be gained from different placement locations. Mr. Hamons stated that Congress and the Maryland Legislature have, at the current time, placed a value of $600 million on the environmental benefits being gained at Poplar Island. Mr. Hamons stressed that costs and benefits analysis is a dynamic area and will continue to be very important in the future. He stressed the difficulty in fairly assigning costs for environmental benefits using the current processes and procedures.

Harbor Studies

Mr. Hamons stated that the State DMMP is evaluating several options for placement of Inner Harbor dredged material. Those options included Masonville, BP Fairfield, Sparrows Point, and innovative reuse. The Reconnaissance Study for the BP Fairfield site has been completed and the initial Feasibility Studies for the Masonville and Sparrows Point sites have been started. Full and final Feasibility Studies for all three sites will be initiated in January 2005 and are expected to be completed by the end of 2005.

Hart-Miller Island Capping/Closing Issues

Mr. Hamons stated that the State is attempting to get one of the aforementioned Harbor options online by 2008 to coordinate with the closing of Hart-Miller Island. Mr. Hamons explained that, by Legislative mandate, Hart-Miller Island must be capped by the end of 2009, and it will take approximately two years to install a 3-foot cap over the site. Mr. Hamons stated that after Masonville, BP Fairfield, or Sparrows Point is put online in 2008, a second option will need to be operational by 2012.

Mr. Hamons stressed that all proposed Harbor options will included community enhancements as agreed upon by the individual communities. The MPA is continuing to work closely with the communities to further define the specific community enhancements that will be incorporated into the project design when the project is recommended.

Cox Creek Progress

Mr. Hamons stated that the Cox Creek project is progressing and the discharge permit was effective December 1, 2004. A public hearing was held, but no public comments were submitted. The meeting was attended by Ms. Kolberg and two elected officials. Mr. Hamons stated that the MPA will continue to work closely with the community to keep them apprised as to the activities at the Cox Creek site. Mr. Hamons stated that the site is currently operational for hydraulic placement of dredged material. The Critical Areas Commission recently approved the construction of the pier to allow for mechanical unloading of dredged material. The pier should be completed and will be operational for the next dredging season, beginning in October 2005.

5.0 Upcoming Events **Frank Hamons**

Innovative Reuse Forum

Mr. Hamons reported that an Innovative Reuse Forum will be held on from 8 am to 5 pm on Thursday, December 9, 2004, at the Radisson Hotel in Annapolis, Maryland. Mr. Hamons stated that the forum will allow interested firms to present ideas for innovative reuse, and a panel will be present to critique the presentations. Business models will also be presented. Mr. Hamons encouraged everyone to attend and reported that a meeting Agenda and registration are available on the MPA's website. Anyone with questions was asked to contact Ms. Katrina Jones.

Mr. Hamons stated that the information obtained from the forum will be used to make decisions as to how the State will move forward with identifying possible innovative reuse technologies for dredged material.

Executive Committee Meeting

Mr. Hamons stated that he distributed the Management Committee's Report to the Executive Committee for review. Only three sets of comments have been returned. Mr. Hamons urged the Management Committee and Citizens' Advisory Committee Members to review the report and provide any feedback or comments as soon as possible. The Report will be presented to the Executive Committee during the next Executive Committee meeting on Thursday, December 16, 2004. Mr. Hamons stated that the meeting will take place at the Maryland Department of Transportation headquarters and was tentatively scheduled for 3:30 pm. Mr. Hamons stated that an e-mail confirmation would be distributed when the meeting time is finalized.

Next Meetings

Ms. Flanigan reported that the next Citizens' Advisory Committee meeting has been scheduled for Wednesday, January 12, 2005. Mr. Hamons asked the Committee Members if they liked the joint meeting setup and would like to continue to hold a joint Management and Citizens Meeting once each year. The Committee Members agreed.

From: Spaur, Christopher C NAB02
Sent: Wednesday, December 08, 2004 9:09 AM
To: 'kmsmith@dnr.state.md.us'; 'rwilliams@dnr.state.md.us'
Subject: RE: DMMP: Blackwater

Kevin and Raj:

FYI, DMMP Study report referenced below is still in internal review. Scheduled release date as of now is January 24, 2005. Also, in message below I forgot to mention that Fishing Bay WMA would presumably also be on the table along with Blackwater. There's definitely marsh failure going on in the upper end bordering Blackwater, and probably elsewhere in the upper reaches of the WMA.

Chris

-----Original Message-----
From: Spaur, Christopher C NAB02
Sent: Wednesday, September 15, 2004 2:46 PM
To: 'kmsmith@dnr.state.md.us'; 'rwilliams@dnr.state.md.us'
Cc: Kopecky, Steven NAB02; Pugh, Steven B NAB02
Subject: DMMP: Blackwater

Kevin and Raj:

FYI, the Section 206 Continuing Authorities Program Study, under which the Demonstration Project was constructed, is on hold at least until October 1st, the beginning of Federal FY 2005. Previously, we were hoping that the national funding shortfall for these studies/projects would have been resolved in time for us to start up again at that time. I'm not in the loop on financial and political matters generally, but what I've heard causes me to be pessimistic about the study starting up again anytime soon. (At the College Park meeting we provided a little bit of information about finances and magnitudes of potential projects we could produce under this study.)

Probably of far greater importance - restoration of tidal wetlands in Dorchester County (presumably Blackwater) has made it to the Baltimore, Philadelphia, and Norfolk District's recommended plan as a placement site for material from the C&D Canal and Chesapeake Bay Approach Channels (to Baltimore) in Maryland* under the auspices of the *Port of Baltimore Dredged Material Management Plan Study* (see attached newsletter for study information). The District's recommended plan for this material also includes expanding Poplar Island and restoring another large island in the mid-Bay comparable to Poplar. Restoration of wetlands in Dorchester is a lower priority recommendation due to the cost and complexity involved than either of the other alternatives. It was included more for the environmental benefits that could be accrued than for the more pressing dredged material placement needs. It was felt that the potential environmental benefits were too large to overlook and that it was at least worth further study. This recommendation has to be approved by our higher authorities, who will likely identify as problematic us undertaking work on another Federal agency's lands (we typically don't do this). However, it may be that the recommendation can be approved if it is worded in such a way as to indicate that the Corps will need special authority to undertake this, and that it will need to partner with other Federal and state agencies to be able to undertake this work. If all goes well, a draft EIS will be released to the public for the DMMP Study in November, and a Record of Decision signed by July 2005.

We would then need to undertake a feasibility study, perhaps in conjunction with the USFWS, focused on placement of material at Blackwater. This study would likely take 3 years. Following this, there would likely be protracted policy and real estate studies/negotiations that would take years to complete. Also during this time, there would likely be extensive engineering investigations undertaken. At the earliest, we might be able to start implementation of the Blackwater project in 10 to 12 years. Even at that it would take a tremendous amount of support from all sectors, (private, public, political, etc) to make it happen.

Chris

*(Virginia portion of Bay also has channels, but material from there will go elsewhere).

<< File: Newsletter-120803-DMMP Final.pdf >>

United States Department of the Interior
FISH AND WILDLIFE SERVICE
CHESAPEAKE MARSHLANDS NWR COMPLEX
BLACKWATER NATIONAL WILDLIFE REFUGE
2145 Key Wallace Drive
Cambridge, MD 21613
Phone: 410-228-2692
FAX: 410-228-3261

⇒ ~~ORIG:~~ PL 143
cc: PPMD
OP-N
CPO

December 9, 2004

Colonel Robert J. Davis
District Engineer
Baltimore District, Army Corps of Engineers
P.O. Box 1715
Baltimore, MD 21203

Dear Colonel Davis:

I want to thank you for the efforts of you and your staff in restoring 15 acres of marsh habitats at Blackwater National Wildlife Refuge in 2003. The results of these efforts are outstanding. Dr. David Nemerson of the National Aquarium and Dr. Dixie Birch of my staff conducted vegetation sampling during August 2004 and the results of the restoration work are extremely positive. The photo documentation of these sites demonstrates how effective the restoration efforts were in 2003. Plants have volunteered on their own in many areas and sediments have accumulated in areas that were not initially restored.

I would like to request that we begin discussions about using dredged material from the Port of Baltimore to continue this important habitat restoration. I believe the partnerships formed during the 2003 restoration effort demonstrated the effectiveness of our approach and we are eager to continue restoration efforts using clean dredged materials from the Port of Baltimore. Our partners for the 2003 restoration effort included the Army Corps of Engineers, National Aquarium, Friends of Blackwater, and Salisbury Zoo. In addition, we have been working with the U.S. Geological Survey, University of Maryland, State of Maryland, and others who are keenly interested in working with us to restore an additional 11,000 acres of marsh habitats in Dorchester County.

We would like to initiate discussions with you or your staff as soon as possible to being the planning of this restoration work. We are preparing a powerpoint presentation for the February 8, 2005 meeting of the Dredged Material Management Program at 1pm at the Maryland Port Administration to demonstrate the effectiveness of the 2003 restoration and to discuss future efforts. We hope you will be able to join us for that meeting. If you have any questions, please don't hesitate to contact me or Dr. Birch at 410-228-2692.

Sincerely,

Glenn A. Carowan, Jr.
Glenn A. Carowan, Jr.
Project Leader

Cc: Congressman Wayne Gilcrest
Senator Paul Sarbanes
Senator Barbara Mikulski

DREDGED MATERIAL MANAGEMENT PROGRAM

Bay Enhancement Working Group
Final Meeting Summary
July 23, 2003
10:00 AM, Maryland Port Administration Conference Room A
Maryland Port Administration, 2310 Broening Highway, Baltimore, Md

ATTENDEES

Anne Arundel County: Keith Tate
Baltimore County Department of Environmental Protection and Resource Management (DEPRM): Candy Croswell
EA Engineering, Science and Technology, Inc. (EA): Jane Boraczek
Ecologix Group: Bob Hoyt, George Chmael
Gahagan & Bryant Associates: Ed DeAngelo
Maryland Department of Natural Resources (MDNR): Roland Limpert, Dave Brinker
Maryland Department of the Environment (MDE): Joe Beaman, Matt Rowe, Charles Poukish
Maryland Environmental Service (MES): Lauren Franke, Stephanie Maihan, Vince Gardina, Rebecca Halloran, Elizabeth Habic
Maryland Geological Survey (MGS): Bill Panageotou
Maryland Port Administration (MPA): Stephen Storms, Nat Brown, Bill Lear
National Marine Fisheries Service, Habitat Conservation (NMFS): John Nichols
The Harbor Team/Oxford Group: Lester Ettlinger
University of Maryland Center for Environmental Studies (UMCES): Elizabeth Price, Lisa Wainger
USACE-CENAB: Jeff McKee, Michelle Gomez
USACE-CENAP: Chip DePrefontiaine
US Environmental Protection Agency (EPA Region III): Bill Muir
U.S. Fish and Wildlife Service (USFWS): Bob Pennington

Action Items

- MES will incorporate Jeff McKee and Roland Limpert's comments to the July 1st Draft BEWG meeting summary.
- MES will update the fact sheets with water bird information provided by Dave Brinker.
- MDE will provide UMCES with well water information for the Baltimore area.
- UMCES will provide 100-yr floodplain maps to accurately score the floodplain category for each option.
- MES will correct the Sparrows Point information sheet to remove the statement that 500 pairs of herring gulls nest at this site.
- Caveats will be drafted by any agency with a dissenting opinion on a parameter and submitted to Jane Boraczek (see below).

1.0 Welcome and Global Information **Rebecca Halloran**

1.1 Meeting Goals

To review new UMCES natural resource and view shed and noise information. To review the draft scores for the Harbor Options matrix and finalize scores.

1.2 Review actions items from June 3rd

Action items from the July 1st meeting have been completed. Roland Limpert suggested clarifying "outlying areas" on page 4 of the July 1st Draft meeting summary as being within the harbor. Jeff McKee also suggested clarifying that the "work still in draft" referred to in the notes should say, "Fall 2002 sediment sampling results are in draft."

Ms. Halloran informed the group that a joint venture (JV) with MPA, Moffatt & Nichol, Gahagan & Bryant, and EA has been established. The JV is gathering further information for Masonville, Sparrows Point, and Fairfield-Amoco. Dead Ship, Thoms Cove, and Sollers Point all have reconnaissance studies completed; these reports can be made available by contacting MES.

2.0 Harbor Options Information

2.1 UMCES Presentations *Elizabeth Price*

UMCES presented natural resource information for the Patapsco River. Jane Boraczek questioned Finfish Spawning data stating that it may be more appropriate for this to say "Rearing" as spawning mostly occurs in the reaches and not the main Patapsco.

Joe Beaman stated that there are more recreational fishing areas than noted in the Recreational Fishing data, and that MDNR should be able to provide locations. He also stated that MDE considers the entire Patapsco River off limits for shellfish catches, and an advisory for chlordane has been in effect for the river since 1988. Mr. Beaman will provide this additional information to UMCES.

Dave Brinker suggested that the bird data for the Patapsco is out of date, as an old nesting site at Sollers Point has moved to Fort Carroll. Rebecca Halloran requested that anyone with additional information for the natural resource GIS maps could contact Lisa Wainger or Elizabeth Price.

UMCES also presented new data on view shed and noise disturbances. These presentations are available on EA's ftp site.

2.2 Information Sheets *Vince Gardina*

Vince Gardina briefly reviewed the Harbor Options fact sheets. He stated that Aquatic Habitat and Biology and Water birds had been updated. The sheets have also been updated with the new UMCES data on view shed and noise disturbances. An information sheet was created for Fairfield-Amoco. Mr. Gardina stated that Amoco is trying to remediate contamination at Fairfield. The groundwater at Fairfield is also contaminated. Dave Brinker stated that the Water birds information should be updated on the fact sheets, as the data presented is no longer accurate. Rebecca Halloran suggested that the group contact MES with any additional information or changes to the fact sheets.

3.0 Harbor Matrix & Materials **Rebecca Halloran/Jane Boraczek**

3.1 Review of complete harbor definitions/parameter table

The group briefly reviewed the defnitons and parameters.

3.2 Review of previous Harbor caveats

Ms. Halloran reviewed the pre-existing Harbor caveats and asked the group to review and contact her with any changes. New caveats will be added as they present themselves in the scoring process.

3.3 Review Harbor Options DRAFT scores

Parameters that were discussed or received a score change are outlined below:

Dissolved Oxygen

Masonville Shoreline Enhancement (SE) changed from 0 to 0. Sparrows Point – Jones Creek SE changed from 0 to 1.

Turbidity

Sollers East 1 to 0. Sollers West 0 to 1. Masonville-SE and Sparrows Point Jones Creek SE 1 to 0. The group decided it was most appropriate to score those sites with existing hardened shoreline as a 0. John Nichols stated that NMFS considers a positive 1 score only if the placement would reduce erosion that is occurring at an unnaturally fast pace. Candy Croswell (DEPRM) wanted all wetland creation projects to be scored with a positive 1 because the wetlands would decrease turbidity.

Groundwater

Fairfield-Amoco changed from 0 to 0. Les Ettlinger raised the point that although the groundwater is not potable here, it was stated that it is also an unsuitable residential area. He cautioned against this statement stating that several years down the road this may not be true. Jane Boraczek offered that all Baltimore City water is drawn from surface sources. Roland Limpert reminded the group that its responsibility is to score whether a potential project would make this parameter better or worse. It was requested that MDE provide available well water information to UMCES for the Baltimore area.

Benthic Community
Sollers East –1 to 1. Masonville-SE 0 to 0. Sparrows Point-Jones Creek 0 to 1. Sparrows-WD (wetland development) –1 to 1. Sparrows-Bear Creek 0 to 0. John Nichols stated that he would consider wetland creation a positive for benthics. Jeff McKee asked that the benthics of Bear Creek would most likely be improved, depending on the depth of contamination, as a result of enhancement dredging. Joe Beaman offered that contamination of the sediments in Bear Creek likely go as deep as 20ft. A caveat is to be created stating that creation of wetlands is considered to be beneficial to the benthic community as well as DO.

Shallow Water Habitat
Masonville 0 shaded to 0. Sparrow Point- Jones Creek 0 shaded to 1.

SAV
Sparrows-Jones Creek 0 shaded to 1.

Tidal Wetlands
Sparrows-WD changed from 0 peach to 0 shaded.

Non-tidal Wetlands
Deadship Anchorage was changed from 0 shaded to 0 shaded. Thoms Cove 0 to 0. Masonville SE 0 to 0. Sparrows-Bear Creek 0 to 0 shaded.

Finfish Rearing Habitat
Fairfield-Amoco 0 to –1. Sparrows-WD 0 to 0 shaded. John Nichols suggested these changes, to reflect presence of shallow water habitat at these options.

Essential Fish Habitat
John Nichols suggested a caveat stating that although there is no evidence of summer flounder or bluefish in the Harbor, this area technically fits the definition of EFH for these species. Ms. Halloran recommended a meeting with John Nichols, UMCES, MES and EA to update this information.

Recreational Fishery
A caveat was suggested stating that anecdotal information exists that there is recreational fishing activity off of Sollers Point. Joe Beaman (MDE), Keith Tate (Anne Arundel County), and Candy Croswell (DEPRM) voted for a 1 for this parameter but were outnumbered and so the score remains 0.

Protected Species (RTE) (SSPRA)
All sites were changed to 0 except for Sollers West, which was scored 0. Dave Brinker stated that there are no RTE species at any of these sites and

they should all be scored a 0. The herring gulls that used to inhabit Sollers Point have left and now reside at Ft. Carrol. Bob Pennington requested further information confirming RTE use of Sollers Point. Dave Brinker will provide more information on RTE species at Sollers.

Habitat of Particular Concern
Masonville, and Sparrows #1 & 2 were shaded to coincide with the scores for Shallow Water Habitat.

Waterfowl Use
Dead Ship 0 to –1, Sparrows #1 0 to –1, Sparrows #2 0 to –1, Sollers East 1 to –1, Thoms Cove 0 to –1, Masonville-SE 1 to 0, Sparrows-Jones Creek 0 to 0, Sparrows-WD 0 to –1, and Sparrows-Bear Creek 0 to 0. Roland Limpert suggested the score changes to –1 as these projects could potentially remove existing habitat for diving ducks (deeper waters) while creating habitat (shallow waters) for mallards, which are a less valuable species.

Wading and Shorebird Use
Dead Ship 0 to –1, Sollers West 0 to –1, Thoms Cove 0 to –1, Sparrows-Jones Creek 0 to 1. Sollers East and Fairfield remain a 0, as the existing shoreline is riprap.

Wildlife Habitat
Sollers West 0 to 0, Thoms Cove 0 to 0, Fairfield-Amoco 0 to 0 shaded, Sparrows Point-Jones Creek 0 to 0.

Streams
Thoms Cove **0** to 0. John Nichols may conduct a field visit to determine presence or absence of streams and non-tidal wetlands at Thoms Cove.

Lakes & Ponds
Dead Ship 0 shaded to 0.

Substrate/Soil Characteristics
Dead Ship Anchorage, Masonville, Sparrows #1, Sparrows #2, Sollers East, Sollers West, Thoms Cove, and Fairfield-Amoco 0 to 0. Masonville-SE and Sparrows-Jones Creek 1 to 0. This parameter was highlighted peach; more discussion/information is need before scoring.

Hydrodynamic Effects
Fairfield, Sparrows-Jones Creek, and Sparrows-Bear Creek 0 to 0. Masonville-SE 0 to 0.

Toxic Contaminants
Dead Ship and Thoms Cove 0 to 1. Sollers East 1 to 0. Sparrows Point Wetland Development 0 to 0. This parameter should be discussed for clarification. A caveat was suggested (USFWS, MDE, and NMFS) to explain the short-term potential for release in order to reduce the long-term potential release as well as to clarify potential impacts from a Bear Creek enhancement project.

CERCLA/UXO
Masonville SE and Fairfield-Amoco 0 to –1. Masonville 0 to –1. Sparrows WD 0 to 0.

Floodplains
This parameter was highlighted peach; more discussion/information is need before scoring.

Recreational Value
Sollers East 1 to 0, Sollers West 0 to 1, Thoms Cove –1 to 0. A caveat was suggested to reflect Candy Croswell's (DEPRM) point that deepening of Bear Creek might enhance recreational value by providing greater access for larger boats.

Aesthetics
Thoms Cove –1 to 0.

Noise
Sollers East and West 0 to 0. Fairfield –1 to 0.

Cultural Resources
Dead Ship 0 to 0.

Infrastructure
All options received a score of 0. A caveat was suggested to define assumptions that are made when scoring this parameter.

Public Safety
This parameter was highlighted peach; more discussion/clarification is need before scoring. The weighting for this parameter and the Public Health parameter were suggested to be reconsidered by the group.

Beneficial Use-Faunal
Masonville was changed from 0 to 0 shaded.

Shoreline Protection
Thoms Cove 1 to 0.

4.0 Other updates and next meeting — Rebecca Halloran

The next BEWG meeting is August 5th, 10am MPA Conference room.

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DREDGED MATERIAL MANAGEMENT PROGRAM

Bay Enhancement Working Group

Meeting Summary

August 5, 2003

1:00 PM, Maryland Port Administration Conference Room A

Maryland Port Administration, 2310 Broening Highway, Baltimore, Md

ATTENDEES

Anne Arundel County: Sepehr Baharlou
Baltimore City Planning Department: Duncan Stuart
EA Engineering, Science and Technology, Inc. (EA): Jane Boraczek
Gahagan & Bryant Associates: Ed DeAngelo
Maryland Department of the Environment (MDE): Joe Beaman, Charles Poukish
Maryland Environmental Service (MES): Elizabeth Habic, Amanda Ohler, Stephanie Maihan, Vince Gardina, Cecelia Donovan
Maryland Geological Survey (MGS): Bill Panageotou, Jeff Halka
Maryland Port Administration (MPA): Stephen Storms, Nat Brown
Maryland Saltwater Sport fisherman's Association (MSSA): Richard Novotny
National Marine Fisheries Service, Habitat Conservation (NMFS): John Nichols
The Harbor Team/Oxford Group: Lester Ettlinger
University of Maryland Center for Environmental Studies (UMCES): Elizabeth Price, Lisa Wainger
USACE-CENAB: Jeff McKee, Michelle Gomez, Scott Johnson
USACE-CENAP: Chip DePrefontaine
U.S. Fish and Wildlife Service (USFWS): Bob Pennington

Action Items

- Caveats will be drafted by any agency with a dissenting opinion on a parameter and submitted to Jane Boraczek (see below).

- MES will update the caveats, send them out and post them on the ftp site.

- Ms. Boraczek will revise the definitions for the Floodplain, Substrate/Soil Characteristics, and Public Safety & Health parameters for BEWG review.

- Mr. Stuart will inquire about additional floodplain information from Baltimore City.

- Mr. Nichols will submit a caveat for the Recreational Fishing parameter in relation to wetland development options.

- BEWG should review the Innovative Use information sheets in preparation for the August 19th scoring meeting and send any comments to Vince Gardina or Jane Boraczek.

- Mr. Gardina will contact the charter boat captains whose contact information was supplied by Richard Novotny to find additional information concerning recreational fishing in the Inner Harbor.

1.0 Welcome and Global Information **Vince Gardina**

1.1 Meeting Goals

To re-evaluate scores in question, and review the scores for public health and public safety on the Harbor Options Matrix. To review the list of caveats. To review new information provided by UMCES on floodplains.

1.2 Review & Finalize summary & actions items from July 23rd

Action items from the July 23rd meeting have been completed. UMCES has gathered and will present information on the floodplain parameter today. The meeting summary was accepted as final.

2.0 Harbor Options Information **Elizabeth Price**

UMCES Updated Resource Information

Ms. Price presented floodplain information for the harbor options. The floodplain parameter is discussed in section 3.1.

Ms. Price reviewed natural resource information presented in the last meeting. A discussion began concerning the options effects on recreational fisheries.

Mr. Novotny questioned where UMCES obtained their data on recreational fishing in the harbor. Ms. Wainger explained that the data was collected from MDNR and noted their data does not include shoreline fishing. In general it was agreed that more recreational fishing occurs than is shown in the presentation.

Mr. Novotny stated he had no knowledge of any “head boats” going into the harbor and suggested using the term “charter boat”, which refers to boats with a capacity for 6-30 people. He has a list of charter boat captains that fish in the area of the harbor options, which he will give to MES so the captains can be contacted for more information on recreational fishing activities and use of harbor locations.

Ms. Boraczek asked if there is any area in the harbor that is more frequently fished than others.

Mr. Novotny stated there is more recreational fishing including fly fishing occurring outside the Key Bridge than inside. The north shore and both sides of the shipping channels almost up to Fort McHenry are frequently fished areas inside the Key Bridge. It was also noted that any area with bright lights attracts fish and in turn fishermen in the evening and at night.

Ms. Price continued by updating the ground water information. They stated ground water is not an issue with any of the options because there are no known drinking water wells near any of the sites. There is a possibility of a few hand-dug wells, but there is no way to survey them and all of the areas receive water from the municipalities.

Ms. Price mentioned a perspective brought up by the Harbor Team at their July 31st meeting. The Harbor Team suggested that those participating water related activities (fishing and boating) would be most negatively impacted by noise and aesthetics of these projects.

In general, there had been a feeling that the estimated number of residents in the viewshed of the proposed options are too high. Ms. Price stated that the only way to get a more accurate estimate on this parameter is to conduct a ground analysis to include trees and buildings in the study. They used Digital Ortho Quarter Quad (DOQQ) images and counted the number of residences within the buffered zone. Until a ground analysis can be completed, it was suggested that the current more conservative analysis be used to compare each option.

Ms. Boraczek said during the reconnaissance studies of Deadship, Thoms Cove, & Sollers Point the viewshed was evaluate from the water by boat the industrial area blocks the view of the residences. She also stated that similar evaluations are being conducted at Masonville and Sparrows Point.

3.0 Harbor Matrix & Materials Vince Gardina/Jane Boraczek

3.1 Review of parameters and Harbor Options DRAFT scores

Parameters that were discussed or received a score change are outlined below:

Recreational Fishery

Dead Ship Anchorage and Masonville changed from 0 to 0, until more fishermen are contacted. Sparrows Point 1 and Sparrows Point 2 changed from 0 to –1. Sollers Point East (Wetland Creation) changed from 0 to –1 with a caveat (see section 3.3). Sollers Point West changed from 0 to –1. Thoms Cove and Fairfield-Amoco changed from 0 to –1. Masonville-Shoreline Enhancement changed from 0 to 0. Sparrows Point Wetland Development changed from 0 to –1 with the same caveat as Sollers Point East.

Substrate/Soil Characteristics
There was a review and discussion on the definition of this parameter. It was decided that protection of the existing bottom is the key issue and that a sandy bottom was a limited resource and should be considered a –1 if the project were to cover it with dredged material.

Dead Ship Anchorage changed from 0 to 0. Masonville changed from 0 to 0. Sparrows Point 1 & 2 changed from 0 to 0. Sollers Point East (Wetlands Creation) changed from 1 to –1. Sollers Point West (Key Quay) changed from 0 to 0. Thoms Cove changed from 0 to –1. Fairfield-Amoco changed from 0 to 0. Masonville- Shoreline Enhancement and Sparrows Point-Jones Creek Shoreline Enhancement changed from 0 to 1. Sparrows Point – Bear Creek Enhancement changed from 0 to 0.

Toxic Contaminants
At the last meeting the parameter definition was not clear. MDE suggested a general caveat to state that BEWG recognizes the potential for short-term release of contaminants. This caveat was originally just for Bear Creek.

Ms. Boraczek stated the original issue with scoring this parameter was that options with potential CERCLA accountability are a liability to the sponsor. MDE agrees with this but mitigation of HTRW would have positive impacts relative to redevelopment site and consistent with the brown fields initiative. Ms. Boraczek will revise this caveat.

Floodplains
UMCES slide of the 100-year floodplain area was reviewed. Every option is adjacent to or inside a floodplain.

Ms. Donovan and Mr. Halka commented that none of the options are on a large enough scale compared with the total bay volume to make a significant impact on the floodplain or water elevation.

Mr. Baharlou suggested that the question in mind when scoring this parameter is: Could the project cause or prevent flooding upstream?

Ms. Wainger stated that tidal wetlands do not offer flood control. The consensus was that this parameter depends on what is being done at each individual option site. The surrounding land use and topography needs to be taken into consideration to score accurately.

Ms. Boraczek will revise the floodplain definition for BEWG to review.

Every option was scored as a 0 until more information is reviewed.

Public Safety
The safety of the recreational boaters in the harbor was the main focus of discussion.

Mr. Ettlinger stated fishermen are at risk when material placement pushes them closer to the main shipping channel. Mr. Ettlinger also noted that increased truck traffic also poses a public safety risk, this is more applicable to the innovative use options or option that requires material to be moved on land. Leaving less room between the shoreline and the main shipping channel and/or increased truck traffic to move dredged material were determined to be a negative impact on Public Safety.

Mr. Beaman stated that walking across riprap is more dangerous than walking on a pier, and BEWG should take things like that into consideration when scoring the Public Safety parameter. It was decided that clean up or addition of safe walkways would be considered a positive affect.

Sparrows Point 1 & 2 changed from 0 to –1. Thoms Cove changed form 0 to –1. Fairfield-Amoco changed from 0 to –1. Sparrows Point- Wetland Development changed from 1 to 0.

3.2 *Review of Weights for Public Health and Safety*
Mr. Gardina asked if the weights of the Public Health and Public Safety parameters were suitable as they are, or if a change is needed.

Mr. Ettlinger stated that public health and safety has become a "catch all" and the weight should be kept the same because it incorporates so many parameters that are not individually scored on this matrix, it is an important parameter.

There was a vote and it was unanimously decided the weight for Public Safety and Public Health would remain 5.

3.3 *Review of previous Harbor caveats*
The harbor caveats that were handed out were not the latest version. The revised version is on the ftp site and will be sent out to BEWG members by MES. New caveats will be added as they present themselves in the scoring process.

A caveat was suggested for the recreational fishery parameter at Sparrows Point- Wetland Development and Sollers Point East (Wetlands Creation) options. The caveat, proposed by Mr. Nichols and Mr. Pennington, will state that there may be an enhancement to the recreational fishery at these options because the wetlands provide nursery habitat for fish and therefore has the potential to increase the number of fish for recreational fishing.

4.0 Information Sheets **Vince Gardina/Jane Boraczek**

4.1 Innovative Use Information Sheets

Mr. Gardina stated that a criterion for the innovative use options is that there will need to be a process facility. At this facility the dredge material will be dewatered and decontaminated before it moves to the next phase (becoming bricks, used to reclaim mines, etc…).

BEWG members were asked to read and review the innovative use fact sheets to be prepared to score these options at the August 19th meeting.

4.2 Review of draft scores in preparation for August 19th

The draft scores were not officially reviewed at the meeting.

Ms. Boraczek stated that Innovative use at Cox Creek, Agricultural Use, and Mines & Quarries Reclamation were scored last year, so she used those numbers for the current matrix. She scored Use in Aggregates and Bricks similarly to Cox Creek. Landfill Usage was scored by Ms. Boraczek using a blend of Cox Creek and Mines & Quarries philosophy. She also stated that most of the matrix parameters are not applicable to these innovative use options.

Mr. Baharlou asked why existing land use isn't shaded. This brought up the question: if we don't know what site will be used for innovative use, how can we score accurately? Ms. Boraczek responded that each innovative use option already has an implied existing land use that can be used to preliminarily score each use. For example, Landfill usage would mean that the existing land use is a landfill and so placing dredged material in a landfill generally would not be detrimental to the existing land use.

Comments on the Innovative Use information sheets should be sent to Mr. Gardina or Ms. Boraczek.

5.0 Other updates and next meeting **Vince Gardina**

The next BEWG meeting is August 19th 10 AM, MES Conference room.
The following BEWG meeting is September 9th at 1 PM MPA Conference Room.

DREDGED MATERIAL MANAGEMENT PROGRAM

Bay Enhancement Working Group
Meeting Summary

August 19, 2003
10:00 AM, Maryland Environmental Service Conference Room
Maryland Environmental Service, 2011 Commerce Park Drive, Annapolis, MD

ATTENDEES

Anne Arundel County: Keith Tate
Baltimore County Department of Environmental Protection and Resource Management (DEPRM): Candy Croswell
Baltimore City Planning Department: Duncan Stuart
EA Engineering, Science and Technology, Inc. (EA): Jane Boraczek
Maryland Department of Natural Resources (DNR): Roland Limpert
Maryland DMMP Citizens' Advisory Committee Facilitator: Fran Flanigan
Maryland Environmental Service (MES): Elizabeth Habic, Amanda Ohler, Stephanie Maihan, Vince Gardina, Rebecca Halloran Farris
Maryland Geological Survey (MGS): Jeff Halka
Maryland Port Administration (MPA): Stephen Storms
University of Maryland Center for Environmental Studies (UMCES): Elizabeth Price
USACE-CENAB: Jeff McKee, Michelle Gomez

Action Items

- MES will clarify the wording of Mr. Gardina's statement in the August 5th meeting summary concerning innovative use options and their need for a processing facility.
- MES will update the caveats and matrix and send out all materials for review by BEWG prior to delivery to the Harbor Team.
- BEWG should review all materials to be sent to the Harbor Team and notify MES of any comments.

1.0 Welcome and Global Information — Rebecca Halloran Farris

Ms. Rebecca Farris announced that she will be leaving MES on August 29th and that this will be her last BEWG meeting.

1.1 Meeting Goals

Ms. Farris stated the goals of this meeting are to review the innovative use scores, review all items that will be sent to the harbor team And to review information provided by Mr. Halka if time is available.

1.2 Review & Finalize summary & actions items from August 5th

The action items from the August 5th meeting have been completed. Mr. Tate requested clarification in the August 5th meeting summary concerning Mr. Gardina's statement about innovative use options requiring a processing facility for the material. MES will make the clarifications to the meeting summary. Mr. McKee stated that Mr. DePrefontaine's name was misspelled. MES will make the correction in the meeting summary and distribute to BEWG via email.

2.0 Innovative Use **Rebecca Farris/Jane Boraczek**

2.1 Innovative Use Information Sheets

BEWG members were asked to read the information sheets in order to review the scores August 19th. Ms. Farris suggested reviewing the scores for the new parameters first; they are highlighted in light green on the matrix.

2.2 Review of draft scores for Innovative Use options

Parameters that were discussed and/or received a score change are outlined below:

<u>Aesthetics</u>

Mr. Tate questioned the "1" score for Landfill Usage. After discussion it was determined that Landfill Usage is scored "1" because the ultimate capping using dredge material allows for planting of the landfill.

Unshaded Cox Creek, Aggregates, and Bricks options (from 0 to <u>0</u>) because potential impact to this parameter may be applicable.

<u>Noise</u>

Cox Creek changed from 0 to –1. Agricultural Use changed from 0 to <u>0</u>. Unshaded Aggregates and Bricks options (from 0 to <u>0</u>) because potential impact to this parameter may be applicable.

<u>Infrastructure</u>

Cox Creek changed from 0 to <u>0</u>. Landfill Usage changed from 0 to <u>0</u>. Use in Aggregates changed from 0 to <u>0</u>. Bricks for Construction and Walkways changed from 0 to <u>0</u>. Agricultural Use changed from 0 to <u>0</u>. Mines & Quarries Reclamation changed from 0 to <u>0</u>.

<u>Existing Land Use</u>

Use in Aggregates changed from 0 to 0. Bricks changed from 0 to 0.

Commercial Socioeconomics
Cox Creek changed from 0 to 0. Landfill Usage changed from 1 to 0. Aggregates and Bricks both changed from 0 to 1.

Community Socioeconomics
Agricultural Use changed from 0 to 0.

Environmental Justice
Agricultural Use changed from 0 to 0.

Public Health
Cox Creek changed from 0 to 1 with a caveat proposed by Mr. Tate who felt the score should be 0. Aggregates, Bricks, and Mines & Quarries changed from 0 to 1. Agricultural Use changed from 0 to 1.
A general caveat was created for this parameter stating the general assumption that all MDE regulations will be followed when processing the dredge material.

Public Safety
Cox Creek, Aggregates, and Bricks changed from 0 to 0. Landfill Usage and Mines & Quarries changed from -1 to 0.

Beneficial Use- Recreational Enhancement
Cox Creek changed from 0 to 0. Landfill Usage score stays the same, but the line under the 1 was removed. Mines and Quarries changed from 0 to 1.

Nutrient Enrichment
Mr. McKee questioned the current scores of 1 for all the innovative use options because the dewatering process could release nutrients into the bay.

Ms. Boraczek stated that BEWG scored parameters based on the end product ONLY and did not take in to consideration the dewatering process (this is consistent with most other scoring of options).

A general caveat was made for this parameter stating that the scores were chosen assuming the dredged material dewatering process is not part of the evaluation of this parameter.

Salinity
Mines & Quarries changed from 0 to 0.

Protected Species (RTE) (SSPRA)
Agricultural Use changed from 0 to 0.

Larval Transport
Ms. Boraczek stated that the entire larval transport column should be shaded. She informed BEWG that Mr. Nichols noted this in a previous meeting.

Forests
Landfill Usage changed from 0 to 0.

Streams
Agricultural Use changed from 0 to 0.

Lakes & Ponds
Agricultural Use changed from 0 to 0.

Toxic Contaminants
Mr. Tate expressed his views for Landfills and Agriculture to be scored 1 instead of 0. Mr. McKee stated that landfills are required to be capped anyway, so there would be no change.

Caveats for Landfill Usage and Agricultural Use were created to address Mr. Tate's opinion.

Floodplains
Mines & Quarries changed from 0 to 0.

Air Quality
Cox Creek, Landfill Usage, Aggregates, and Bricks options were unshaded (from 0 to 0) because a potential impact to this parameter may be applicable. Agricultural Use and Mines & Quarries changed from 0 to 0.

The City of Baltimore suggested a general caveat for all applicable harbor options that mosquito control plans should be included in these projects to minimize the opportunity for standing water at the project sites, which would minimize mosquito breeding grounds.

3.0 Harbor Matrix & Materials Rebecca Farris/Jane Boraczek

3.1 Review of parameters: recreational fishing, floodplain
BEWG did not have time to go over these parameters formally at this meeting. This will be included in the September 9th meeting agenda.

3.2 Review of Harbor caveats & definitions
Brief reviews of the changed definitions were noted as the scoring process proceeded.

Ms. Farris requested BEWG members to review the caveats and note the changed items in italics prior to them being delivered to the Harbor Team on August 21st.

3.3 Review of all materials for delivery to Harbor Team

A copy of the memo constructed by Mr. Halka on behalf of the BEWG to the Harbor Team was handed out to all BEWG members. The memo lists all items to be sent to the Harbor Team on August 21st.

Ms. Farris stated that all documents (i.e. the matrix, caveats, parameter definitions, etc.) would be updated and sent out to BEWG members August 20th for review and comments before delivery to the Harbor Team.

Mr. McKee asked if Sollers Point East (Wetlands Creation) should be moved to the Community Enhancement/Beneficial Use (concepts) category.

Ms. Boraczek added that the Harbor Team would also like to see Sollers Point West (Key Quay) moved to the Community Enhancement/Beneficial Use category.

BEWG decided to move Sollers Point East (Wetlands Creation) to the Community Enhancement category on the matrix to send to the Harbor Team.

Ms. Farris reminded BEWG members to be certain they have reviewed and accept the caveats, since they will be added to the legislative report for this year.

Ms. Farris reminded BEWG that these documents can be revised and resent to the Harbor Team if comments and changes are received at the September 9th meeting. This will always be a working document since new information is continuously becoming available as studies are completed.

Ms. Boraczek announced that initial field study information from the Joint Venture Harbor study team would be presented on September 9th.

4.0 Other updates and next meeting **Rebecca Farris**

The next BEWG meeting is September 9th at 1 PM MPA Conference Room.

DREDGED MATERIAL MANAGEMENT PROGRAM

Bay Enhancement Working Group
DRAFT Meeting Summary

September 9, 2003
1:00 PM, Maryland Port Administration Conference Room A
Maryland Port Administration, 2310 Broening Highway, Baltimore, MD

ATTENDEES

Anne Arundel County: Keith Tate
Baltimore County Department of Environmental Protection and Resource Management (DEPRM): Candy Croswell
Baltimore City Planning Department: Duncan Stuart
EA Engineering, Science and Technology, Inc. (EA): Jane Boraczek
Ecologix Group: Bob Hoyt
Gahagan & Bryant Associates: Ed DeAngelo
Maryland Department of the Environment (MDE): Charles Poukish
Maryland Department of Natural Resources (DNR): Roland Limpert, Dave Brinker
Maryland DMMP Citizens' Advisory Committee Facilitator: Fran Flanigan
Maryland Environmental Service (MES): Amanda Ohler, Stephanie Maihan, Vince Gardina, Karen Cushman
Maryland Geological Survey (MGS): Jeff Halka, Bill Panageotou
Maryland Port Administration (MPA): Stephen Storms
Moffatt & Nichol Engineers: Pete Kotulak, Mike Herrman
University of Maryland Center for Environmental Studies (UMCES): Elizabeth Price, Lisa Wainger
USACE-CENAB: Jeff McKee, Michele Gomez, Scott Johnson
USACE-CENAP: Chip DePrefontaine
U.S. Fish and Wildlife Service (USFWS): Bob Pennington
Weston Solutions: Geoffrey Jay

Action Items

- Mr. Halka will research maps and determine the current and past erosion rates for Thoms Cove.

- Review Mid-Bay documents to ensure accuracy before inclusion in the LCR 2003.

1.0 Welcome and Global Information **Vince Gardina**

1.1 Meeting Goals

Mr. Gardina stated the goals of this meeting are to review information provided by Mr. Halka, UMCES, and Ms. Boraczek and to review all documents to be included in the LCR 2003.

1.2 Review & Finalize summary & actions items from August 19th

The action items from the August 19th meeting have been completed. Mr. Gardina clarified his statement that all innovative use options require a processing facility for the material except aggregates. The meeting summary from August 19th was finalized.

2.0 Harbor Sediment Substrate Characteristics Presentation **Jeff Halka**

2.1 Review sediment information and impact on matrix scores

Mr. Halka noted that the Harbor Team appreciated everyone's hard work scoring the options.

Mr. Halka presented information on the types of material and percent sand found at each harbor option. It was noted that after removing the organics and carbonates from the sample at Dead ship, there was nothing left to analyze.

Ms. Boraczek verified with BEWG members that the Substrate/Soil Characteristics parameter scores were based on the assumption that sand is a limited resource.

The scores for the Substrate/Soil Characteristics were reviewed and Fairfield-Amoco changed from 0 to 0. Sollers Point West (Key Quay) changed from 0 to –1.

3.0 UMCES Presentation—Aesthetics and Noise Update **Elizabeth Price**

3.1 Presentation and review of matrix rankings

At a harbor team meeting, it was determined that the residents of Fort Howard may be in the buffer zone of the Sparrows Point options.

Ms. Price presented information that Fort Howard residents are located within the 4,400 ft buffer of Sparrows Point. This buffer only considers topography and doesn't take actual land cover into account, so Fort Howard residents may not be able to see the actual project at Sparrows Point.

After receiving the new information, the scores for Aesthetics and Noise were reviewed. There were no score changes for these parameters.

4.0 2003 Baltimore Harbor Ecological Studies — Jane Boraczek

4.1 Presentation and review of matrix rankings

Ms. Boraczek presented information on ecological studies at Masonville, Sparrows Point, Thoms Cove, and Sollers Point option sites. Ms. Boraczek provided a handout of the presentation and stated it will be available on the ftp site.

New information on benthic communities, nutrients, sediment quality, fish species, and abundance was presented.

After receiving the new information, the following parameters and matrix scores were reviewed:

<u>Benthic Community</u>
There were no score changes for this parameter.

<u>Finfish Rearing Habitat</u>
There were no score changes for this parameter.

<u>Toxic Contaminants</u>
Masonville changed from <u>0</u> to 1, because creating a fastland will contain the contaminants currently in the soil. Sparrows Point-Wetland Development changed from <u>0</u> to 1.

Mr. Tate asked if Masonville-Shoreline Enhancement and Sparrows Point-Jones Creek scores should also change to 1. Ms. Boraczek stated that the final project for these two options is still unclear, so the scores remain the same.

5.0 Harbor Matrix & Materials — Vince Gardina/Jane Boraczek

5.1 Review any new information (floodplains, aesthetics and noise, sediments)

Aesthetics, noise and sediment parameters were discussed earlier in the meeting after their presentations were given.

Mr. Halka mentioned in his presentation that building any of the options would have little to no effect on the floodplain.

5.2 *Review of Harbor caveats & definitions*

There was no proposal to change the caveats and definitions

5.3 *Review of caveats for Recreational Value and Shoreline Protection*

Mr. Stuart, of the Baltimore City Planning Department, had two concerns regarding the Thoms Cove option. Although Mr. Stuart was not present, Mr. Gardina addressed Mr. Stuart's concerns as stated in the e-mail.

Mr. Stuart felt that the Recreational Value score for Thoms Cove should be changed from 0 to 1. He feels bird watchers from boats use the area.

BEWG members decided to add Mr. Stuart's concern for Recreational Value at Thoms Cove as a caveat stating citizens may use the area for bird watching and the option will improve the recreational value.

Mr. Stuart also thought the Shoreline Protection parameter for Thoms Cove should be changed from 0 to 1.

There was discussion on the actual rate of erosion occurring in the Thoms Cove area. The score for <u>Shoreline Protection</u> at Thoms Cove was changed from 0 to <u>0</u>, until Mr. Halka checks maps and erosion rates for that area.

5.4 Discuss movement of Sollers Point West (Key Quay) to Community Enhancement and Sparrows Point-Wetland Development to Placement Options (Harbor Team suggestion)

There was no discussion or opposition on the movement of these two options to different categories in the matrix.

5.5 Review matrix scores to finalize and rank

Ms. Boraczek presented information that was in question from previous BEWG meetings.

Ms. Boraczek stated the Non-Tidal Wetlands at Thoms Cove are all storm management ponds of various ages and the streams only run during heavy rain events.

BEWG members could not determine if these storm management ponds were still maintained or not or if they had been built in a natural wetland. It was decided that additional information would be needed to determine the status of these areas.. There were no score changes based on this new information on Thoms Cove.

Ms. Boraczek stated that the Lakes and Ponds thought to be on the Dead Ship Anchorage site are actually wastewater ponds. In light of this new information, the score for <u>Lakes & Ponds</u> on Dead Ship Anchorage changed from <u>0</u> to 0 and the caveat was removed.

The Masonville-Shoreline Enhancement score for <u>Non-Tidal Wetlands</u> changed from <u>0</u> to 0.

The Public Health score for Masonville changed from 0 to 1.

Ms. Price questioned the recreational value score of 1 for landfills. US Army Corps of Engineers Baltimore District stated that a general understanding of the "base case" needs to be established in order to appropriately score the parameter of recreational value. The "base case" for landfill usage assumes that even though recreational activities would likely not be occurring at an active landfill, many landfills are redeveloped for recreational use after final capping (so there would be existing recreation at the site prior to some dredged material enhancement). Beneficial Use recreational enhancement assumed that some currently closed landfills that are not being used for recreational activities might be enhanced by placement of dredged materials (i.e. plant shrubs to attract birds). Both of these cases are based upon the premise that landfills are required by law to be capped and therefore can provide recreational opportunities regardless of whether dredged material is used as the cap.

Moffatt and Nichol stated there would be no significant change in tidal elevations due to the construction of any option. Mr. Halka agreed to this statement.

All Harbor options, except for the innovative use options, changed from 0 to 0 for the Floodplain parameter.

6.0 DMMP LCR 2003 Report Progress **Vince Gardina**

6.1 Review process and discuss report preparation
Mr. Storms reminded BEWG of the deadline the Port was under last year to generate a report. This year the report will only be an update of the Harbor Team and Mid-Bay activities.

Mr. Storms stated BEWG must help the Harbor Team gather background material for the report. The matrix, caveats and definitions for both the mid-bay and harbor options will be appended to the Legislative Committee Report. The Harbor Team will use BEWG information to recommend placement options in the LCR.

The Management Committee will meet on September 29th and the Executive Committee will meet in December.

7.0 Mid Bay Packet Discussion **Vince Gardina**

7.1 Review and approval of Mid Bay packet to be included in LCR 2003
There was no formal discussion at the meeting.

7.2 Discussion of Harbor Team packet to be included in LCR 2003

There was no formal discussion at the meeting.

8.0 Other Updates & next meeting

The next BEWG meeting is October 7th, 1 pm at MPA Conference Room A.

DREDGED MATERIAL MANAGEMENT PROGRAM

Bay Enhancement Working Group Meeting Summary

October 7, 2003

1:00 PM, U.S. Army Corps of Engineers, Baltimore District, Conference Room 11710

U.S. Army Corps of Engineers, 10 S. Howard Street, Baltimore, MD

Attendees

Anne Arundel County: Keith Tate
Baltimore County Department of Environmental Protection and Resource Management (DEPRM): Candy Croswell
Baltimore City Planning Department: Duncan Stuart
EA Engineering, Science and Technology, Inc. (EA): Jane Boraczek
Ecologix Group: Bob Hoyt, George Chmael
Gahagan & Bryant Associates: Ed DeAngelo
Maryland Department of the Environment (MDE): John Hill
Maryland Department of Natural Resources (DNR): Roland Limpert, Dave Brinker
Maryland DMMP Citizens' Advisory Committee Facilitator: Fran Flanigan
Maryland Environmental Service (MES): Gwen Gibson, Cece Donovan, Amanda Ohler, Karen Cushman
Maryland Geological Survey (MGS): Jeff Halka
National Marine Fisheries Service, Habitat Conservation (NMFS): John Nichols
University of Maryland Center for Environmental Studies (UMCES): Elizabeth Price
USACE-CENAB: Jeff McKee, Michele Gomez, Scott Johnson
USACE-CENAP: Chip DePrefontaine
U.S. Fish and Wildlife Service (USFWS): Bob Pennington

Action Items

- Any members, who would like to be on Bob Hoyt's distribution list, please notify him by October 31. His e-mail address is bhoyt@ecologixgroup.com.

Executive Summary

1.0 Welcome and Global Information — Gwen Gibson

1.1 Meeting Goals

Ms. Gibson introduced herself as the new facilitator of BEWG meetings and everyone introduced himself or herself. Ms. Gibson stated the goals of this meeting are to receive updates on the mid-bay options, harbor team actions, innovative use, and the DMMP process.

1.2 Review & Finalize summary & actions items from September 9th

The action items from the September 9th meeting have been completed. There were no comments on the meeting summary from August 19th and if no comments are received by October 10th, then the meeting summary will be considered final.

1.3 New Information on Thom's Cove

To fulfill his action item from the September 9th meeting, Mr. Halka presented an update on his research of erosion rates in the Thom's Cove area. There has been no erosion in the past, and there is no current erosion in that area. The curved part of Thom's Cove that was initially in question, is actually accreted material. Mr. Halka also stated 92-93% of the shoreline is vegetated.

2.0 Mid-Bay Island Updated Presentations **Karen Cushman**

Ms. Cushman presented PowerPoint presentations with updates on the following mid-bay islands: James Island, Barren Island, Poplar Island, Lower Eastern Neck Island, and Holland Island. There were no questions or comments on the updated information provided.

3.0 Update on Harbor Team Actions **Bob Hoyt**

Mr. Hoyt provided an update on the harbor team actions. At the October 2nd meeting, the Harbor Team (HT) reviewed the draft Harbor Team Report. Revisions to the HT report will be completed before their October 23rd meeting. The final draft is scheduled to be completed by October 31st.

Mr. Hoyt expressed how appreciative the Harbor Team is of BEWG for providing all of the information they requested, and acknowledged the hard work of BEWG to complete the environmental ranking.

Mr. Hoyt reviewed the basic findings and recommendations of the HT report. The HT is recommending MPA utilize innovative use for 1/3 of the annual dredged material by the year 2023. This decision was made because sooner or later land and water options will be exhausted and to make innovative use cost effective, a large amount of material must be used.

The Harbor Team decided the enhancement options must protect human and environmental health at all times. The options must also provide public access to the water when possible and these options are viewed as a lifetime commitment.

Harbor Team members want the options to remain privately owned and they want to be allowed to provide input in option design and end use.

The following site-specific recommendations are made in the harbor team report:

- Masonville will be available by 2010 with a total cost of $130 million and $13 per cubic yard of material.
- Fairfield-Amoco will be available by 2016 with a total cost of $120 million and $25 per cubic yard of material.
- Sparrows Point options 1, 2, & wetland development will be available by 2016 with a total cost ranging from $80-280 million.

- Heritage Trail is the most important option to Baltimore County, it is planned to end on or near MPA property with an educational facility.
- Key Quay (Sollers Point East) needs to reduce water use space so that recreational boaters are not pushed into the main shipping channels.
- Jones Creek option is just a concept; the North Point community needs to get together to discuss their opinions.
- Harbor Team is in the process of discussing what the use of "clean" dredged material actually means.

The Harbor Team wants all of the options to move forward as a package, they do not want to see one option move forward and have the rest be forgotten.

4.0 Innovative Use Status **Cece Donovan**

Ms. Donovan presented the update on innovative use status in the place of Dr. Storms. The procurement action for innovative use of harbor material was terminated earlier in the year because MPA determined that it is not cost effective. The prices ranged from \$64 - \$300 per cubic yard of material. The MPA has decided the state procurement process is not the best method for designing and implementing innovative use projects, so they are searching for a new direction to enable innovative use of dredged materials. There will be a presentation developed on this information and it will be presented to BEWG at a later date.

5.0 Update on DMMP Process **Cece Donovan**

Ms. Donovan provided an update on the DMMP process for Dr. Storms. Ms. Donovan reminded BEWG members that last year there were 11 recommendations discussed in the report. This year a formal report is not required, but the MPA committed to providing one as an update. Ms. Donovan stated this year's report will discuss the progress on the 11 recommendations from last year. The three primary areas of work this year have been : increasing the number of options for harbor material placement; the process of narrowing the mid-bay island options from 100 to 10 to 2 final islands for feasibility study (James & Barren); and finally the recommendation to increase the capacity of Poplar Island and it's reevaluation process.

Ms. Donovan expressed the need for state agencies to brief their leadership on the DMMP process using past reports, since there are new people at the top of the state departments this year.

The executive committee will meet in early December.

6.0 Other Updates & Next Meeting **Gwen Gibson**

The next BEWG meeting is November 4th at 1 pm.
Tentatively, the meeting will be held at the MPA in Conference Room A. If the MPA conference room is unavailable, the USACE has reserved a conference room.

DREDGED MATERIAL MANAGEMENT PROGRAM
Bay Enhancement Working Group
Meeting Summary
November 4, 2003
1:00 PM, U.S. Army Corps of Engineers, Baltimore District, Conference Room 8510
U.S. Army Corps of Engineers, 10 S. Howard Street, Baltimore, MD

ATTENDEES

EA Engineering, Science and Technology, Inc. (EA): Jane Boraczek
Ecologix Group: Bob Hoyt, George Chmael
Maryland Department of the Environment (MDE): John Hill
Maryland Department of Natural Resources (DNR): Roland Limpert
Maryland DMMP Citizens' Advisory Committee Facilitator: Fran Flanigan
Maryland Environmental Service (MES): Gwen Gibson, Cece Donovan, Amanda Ohler, Karen Cushman, Stephanie Maihan
Maryland Geological Survey (MGS): Jeff Halka
Maryland Port Administration (MPA): Steve Storms
Moffatt and Nichol Engineers (M&N): Kristen Gaumer, Michael Herrman
National Marine Fisheries Service, Habitat Conservation (NMFS): John Nichols
National Oceanic and Atmospheric Administration (NOAA): Peter Bergstrom
University of Maryland Center for Environmental Studies (UMCES): Elizabeth Price
USACE-CENAB: Jeff McKee, Michele Gomez, Scott Johnson
USACE-CENAP: Chip DePrefontaine
U.S. Fish and Wildlife Service (USFWS): Bob Pennington
Weston Solutions, Inc.: Corinne Murphy, John Pauling, Kurt Frederick

Action Items

- MES will make CD copies of the LCR appendices and express mail them to BEWG members that requested a CD-rom version.

- BEWG members are asked to review the appendices to the LCR and submit comments to MES by November 18th.

1.0 Welcome and Global Information — Gwen Gibson

1.1 Meeting Goals

Ms. Gibson introduced herself as the new facilitator of BEWG meetings and everyone introduced himself or herself. Ms. Gibson stated the goals of this meeting are to receive updates on the harbor team actions, the DMMP management committee report, and to receive presentations on innovative use and the federal DMMP process.

1.2 Review & Finalize summary & actions items from October 7th

The action items from the October 7th meeting have been completed. There were no comments on the meeting summary and if no comments are received by November 12th, then the meeting summary from October will be considered final.

1.3 DMMP Studies Box Set Distribution

All of the final reports conducted on the mid-bay island options were put on CD and two copies were provided to each organization.

2.0 Update on Harbor Team Actions Bob Hoyt

Mr. Hoyt provided an update on the harbor team actions since the last BEWG meeting. The harbor team (HT) met on the October 23rd to finalize the HT report. The report was formally submitted to Frank Hamons on October 29th, 2003.

Mr. Hoyt noted the changes to the HT report since the October BEWG meeting. The HT is recommending:

- The Executive Committee establish a Committee of diverse interests that would create milestones and benchmarks required to meet the goal of using ½ mcy (500,000 cy) of dredged material in innovative use products by 2023.
- The Committee should have members from businesses, educational centers, environmental organizations, citizen groups, the maritime industry, and the scientific community. This committee should report to the governor and executive committee on a regular basis.
- The community enhancement options should improve water quality and other environmental parameters.
- Placement options should add value to the community, provide public access to the water when possible, and maximize local tax benefits.
- The harbor team understands that the options recommended for further study are not set in stone and are likely to change as ongoing studies provide more information.
- The Sparrows Point East (Shoreline Enhancement) was removed from the list of placement options recommended for further study because the watermen did not want to lose any additional water in that area. This option was moved to the community enhancement category.
- It was agreed that the Bear Creek/Jones Creek/Old Road Bay sediment enhancement option should not include a cost estimate at this time.
- Changes in legislation are needed for Sparrows Point to become a placement site.

Mr. Nichols stated his concern about removing the large wetland option in Sparrows Point East from the placement option list. Mr. Nichols wants the Sparrows Point East option to move forward and noted that this option scored high in the BEWG ranking. He would like to see wetlands created at this site and not just small fringe wetland areas. Mr. Hoyt stated that he would relay this recommendation to the Harbor Team.

Mr. McKee noted that the Sollers Point option is the only option with a full functioning wetland.

Mr. Hoyt said that the watermen and some other members of the Harbor Team are reluctant to agree to the replacement of shallow water habitat required to build a tidal wetland, and would prefer shoreline enhancement. However, Ms. Donovan and Mr. Hoyt suggested there may be room for negotiation at a future date regarding the size of any wetlands that my be built at Sparrows Point. Ms. Donovan asked what size wetland would Mr. Nichols prefer and Mr. Nichols stated that he would like to see a wetland developed that is no less than 30 acres vs. a fringe marsh.

3.0 Innovative Use Presentation — Steve Storms

Mr. Storms gave a presentation on the progress of innovative use of dredged material to date. The innovative use procurement process was cancelled earlier this year due to cost considerations. The MPA is still committed to innovative use of dredged material and it is understood that innovative use is the only long-term option for handling dredged material.

There were no questions or comments to Mr. Storms' presentation.

4.0 DMMP Management Committee Report — Steve Storms/Gwen Gibson

4.1 Update on Main Report

Mr. Storms noted that there is a Management Committee meeting November 5th at 10 am. During this meeting the Management Committee will approve their report to the Executive Committee and make any last minute changes to the report. The report will be sent to the Executive Committee by December 1st, 2003.

Mr. Storms stated the most controversial issue is the need for dredging. The DMMP addresses the placement options, but there are some feelings that an open forum to discuss why dredging federal channels into the port is needed.

4.2 Draft List of Appendices

Ms. Gibson informed BEWG members that there is a handout available with all of the LCR appendices listed and directions to access them on EA's ftp site. Ms. Gibson went through the list of appendices for review and Ms. Donovan reminded BEWG members that different ranking processes were used for the mid-bay options as compared with the harbor options. Ms. Gibson requested that the major focus of editing be placed on the synopsis report.

BEWG members that preferred the appendices on CD placed a star by their name on the sign in sheet and MES would mail out the CD version ASAP.

Comments on the LCR appendices are due by November 18th, 2003.

5.0 DMMP Presentation — Scott Johnson/Jeff McKee

Mr. Johnson gave a presentation explaining the federal DMMP process and their tentative schedule for completion. Mr. Johnson went through the similarities and differences of the state and federal DMMP processes.

The federal DMMP process presentation highlights:

- 20 year plan must be prepared
- Comprehensive process, including beneficial use
- There is a NEPA-required EIS
- The USACE wants to utilize committees that are already established to prepare their 20-year plan
- CENAB has contracted Weston Solutions for this project
- BEWG is requested to review and provide input with screening criteria at the January meeting
- Screened alternative options will be presented to BEWG in the March meeting, input on the application of the screening criteria will be requested from BEWG at this meeting
- The state DMMP focused on individual sites, the federal DMMP process will focus on types of projects that will spin off into sites
- Each individual site may then require a separate NEPA study, but the consideration of alternatives will be performed in the programmatic EIS for the entire DMMP program

Ms. Donovan brought up the possibility that the federal definition of beneficial use may not be exactly the same as the state definition. Mr. McKee agreed.

Mr. Nichols stated that essential fish habitat (EFH) development assessment is conducted at the top ranked option sites. Mr. McKee noted that the EFH must be addresses for each channel under federal jurisdiction.

6.0 Other Updates & Next Meeting **Gwen Gibson**

The next BEWG meeting is December 2nd at 1 pm in MPA Conference Room A.

DREDGED MATERIAL MANAGEMENT PROGRAM

Bay Enhancement Working Group (BEWG)

Draft Meeting Summary

January 6, 2004

1:00 PM, Maryland Port Administration Conference Room A

Maryland Port Administration, 2310 Broening Highway, Baltimore, MD

ATTENDEES

EA Engineering, Science and Technology, Inc. (EA): Jane Boraczek
Ecologix Group: Bob Hoyt
Gahagan & Bryant Associates (GBA): Richard Thomas, Ed DeAngelo
Maryland Charter Boat Association (MCBA): Russ Green
Maryland Department of the Environment (MDE): John Hill, Charles Poukish
Maryland Department of Natural Resources (DNR): Roland Limpert, Dave Brinker
Maryland DMMP Citizens' Advisory Committee Facilitator: Fran Flanigan
Maryland Environmental Service (MES): Gwen Gibson, Cece Donovan, Karen Cushman, Stephanie Maihan, Elizabeth Habic
Maryland Geological Survey (MGS): Bill Panageotou
Maryland Port Administration (MPA): Steve Storms
Moffatt and Nichol Engineers (M&N): Kristen Gaumer, Michael Herrman
National Marine Fisheries Service, Habitat Conservation (NMFS): John Nichols
National Oceanic and Atmospheric Administration (NOAA): Peter Bergstrom
University of Maryland Center for Environmental Studies (UMCES): Elizabeth Price, Lisa Wainger
U.S. Army Corps of Engineers - Baltimore District (USACE-CENAB): Jeff McKee, Michele Gomez, Scott Johnson, Gwen Meyer,
YaNeeke Feggins
U.S. Army Corps of Engineers - Philadelphia District (USACE-CENAP): Chip DePrefontaine
U.S. Fish and Wildlife Service (USFWS): Bob Pennington
Weston Solutions, Inc.: Corinne Murphy, John Pauling, Kurt Frederick, Barry Dubinski

Action Items

- BEWG members will review the presentation on the Corps' Dredged Material Management Program (DMMP) given by Weston and provide comments to Gwen Meyer by January 27th.
- MES will provide Weston with the coordinates for the Harbor sites, Site 92, and G-East.

1.0 Welcome and Global Information — Gwen Gibson

1.1 Meeting Goals

Ms. Gibson welcomed the group, and everyone introduced himself or herself. She informed the group that the goal of today's meeting is to receive updates on the state DMMP, the federal DMMP, Poplar Island Expansion, and Mid-Bay Islands.

1.2 Review & finalize summary & actions items from November 4th

Ms. Gibson informed the group that the action items from the November 4th meeting were completed, and the meeting summary was finalized after the group agreed that there were no further comments.

2.0 State DMMP Process Update — Steve Storms

Dr. Storms informed the group that 2003 was a success as far as MPA is concerned because MPA was able to accomplish what it attempted to do. Dr. Storms explained that the year culminated with the Executive Committee meeting in late December, at which time the committee approved the plan that the state put forward. The Executive Committee authorized that the harbor studies could move forward with projects at Masonville, Fairfield British Petroleum (BP), and Sparrows Point. The committee approved continued study on the Mid-Bay projects in conjunction with the USACE.

Mr. Hoyt clarified that the projects in the Harbor Team report were sent to the Executive Committee as a package deal that includes community enhancement projects. The harbor projects, including the community enhancement projects, were approved for further study.

Dr. Storms explained that the committee also approved continued participation in the Poplar Island Expansion Study, and the next step in this project will be to work with various teams to determine the best way to move forward.

Dr. Storms informed the group that the highest priority will be to move to feasibility level studies at Masonville because this property is already owned by MPA. He explained that Sparrows Point is still owned by International Steel Group (ISG), so moving forward with this site will be slightly more complicated. The studies at Fairfield BP will begin at reconnaissance level.

3.0 USACE DMMP Process Update — Weston, Inc.

3.1 Explanation of selection process

Ms. Murphy introduced herself as the project manager for the USACE's DMMP. She reminded the group that in November, they were presented with an outline, goals, and purpose for the study, and now she would like to discuss the placement alternatives. Ms. Murphy explained that this is a programmatic DMMP, which is similar to the State's DMMP. It is comprehensive to include the area from the mouth of the Bay to the Sassafras River. She informed the group that many alternatives are being considered to prepare a management plan to handle dredged material from Port of Baltimore channels for 20 years. An auxiliary goal of this project is to find beneficial uses for the dredged material. Ms. Murphy explained that the first step in the process was to divide the study area into four separate geographic areas: C & D approach channels, Baltimore Harbor, Chesapeake Bay Channels (MD), and Chesapeake Bay Channels (VA). ~~Ms. Murphy informed the group that the USACE's DMMP process is now at the step that includes the first opportunity for public input, at which time the screening criteria is developed.~~ Each of the four areas will now be looked at separately to determine what management options will work for each of the areas. Information regarding cost, capacity, constructability, operability, and impacts to surrounding areas was compiled for each alternative. With the exception of Mines and Quarries, only alternatives within the Chesapeake Bay watershed were examined. Those alternatives include:

- existing site expansion, large island restoration
- small island restoration (<200 acres historically)
- large island restoration (>200 acres historically)
- artificial island creation
- wetlands restoration
- shoreline restoration
- beach nourishment
- agricultural placement
- mines & quarries
- capping
- building products
- ocean open-water placement
- new confined disposal facility (harbor material only)
- new confined aquatic disposal facility (harbor material only)

Ms. Murphy then turned the presentation over to Mr. Frederick who discussed the development process of the sites. He explained that Weston used ARC IMS to identify potential locations, and then applied certain constraints to the locations. He discussed placement alternatives for the four different regional areas, and informed the group of the schedule the DMMP will follow. Mr. Frederick explained that comments from BEWG on this presentation should be sent to Gwen Meyer, the Baltimore District Project Manager, who will then forward the comments to Weston. A presentation on alternatives being looked at as part of the USACE's DMMP will be presented to the Citizens Advisory Committee (CAC) at the meeting scheduled for February 11, 2004.

Ms. Donovan asked why shoreline and wetland restoration areas were only shown in the south, and Mr. Frederick replied that they are shown in the south because that is the area where most of the erosion has been documented. Ms. Donovan suggested mentioning this to the citizens, as well as being prepared to discuss Aberdeen Proving Grounds because there is a lot of interest in using APG. Ms. Donovan also suggested that the Harbor sites and Pooles Island open water sites, including Site 92 and G-East should be added to the ~~presentation~~figure showing placement options and historic sites. MES will provide Weston with coordinates of these sites.

Ms. Boraczek mentioned that usually shoreline restoration, wetland restoration, and upland sites are not considered for projects using contaminated material.

Mr. Limpert asked how state restrictions on some of the recommended options are addressed. Mr. McKee responded that projects at these sites may be feasible, but the USACE does not plan to implement them due to state constraints. Mr. McKee explained that the Corps is required to show that all options have been examined.

Mr. Nichols asked how agricultural land would be chosen to receive dredged material, specifically if the land would be defined as excessively drained soils, having no nutrients, or areas that have lost topsoil due to erosion. Mr. Frederick responded that the land would be classified by soil type based on crop yield. Mr. Nichols asked if the dredged material would be tillable topsoil, and Ms. Wainger added that farmers do use dredged material, but it would be necessary to determine if farmers could use enough material to warrant a project of the proposed magnitude. Mr. Frederick agreed that that capacity is a big issue when looking at agricultural use of dredged material.

Mr. Thomas asked if confined aquatic disposal is allowed in the harbor even though it is not allowed in the bay, and Mr. McKee responded that the law reads that it is not allowed in the bay and in the tributaries.

The group was reminded that comments on this presentation are due to Gwen Meyer, gwendolyn.c.meyer@usace.army.mil, by January 27th.

3.2 *Potential future tasks for BEWG*

Mr. Frederick informed the group that a screening evaluation by BEWG of the proposed sites is slated for March 2004.

4.0 Poplar Island Expansion Study (PIES) Update Gwen Meyer

Ms. Meyer presented the group with background information on Poplar Island, and explained that the Corps is looking at existing projects to fulfill the dredging needs shortfall. She informed the group that the Corps is writing a General Reevaluation Report (GRR) to address the potential for Poplar Island expansion. Ms. Meyer explained that there are public meetings scheduled for January 12th (Queen Anne's County Library) and January 15th (Tilghman Island Elementary School) to share information on the potential project with the citizens. Ms. Meyer informed the group that there are several expansion alternatives that could increase the capacity of existing Poplar Island including lateral expansion and vertical expansion. The GRR will also investigate the project's potential for acceptance of material from additional locations, environmental enhancements, and recreational and educational opportunities. The public will be given the opportunity to comment on anything from the meeting until the end of February, and comments will be submitted to Ms. Meyer. The draft GRR is slated to be available for public comment in October 2005, following an internal review process.

Mr. Pennington asked when the proposed alignments will be available, and Ms. Meyers responded that alignments one through six are on the website along with the public notice of intent. Ms. Meyers explained that Alignment 8 is just a breakwater to protect Jefferson Island and the existing Poplar Harbor.

5.0 Mid-Bay Island Project Delivery Team (PDT) Update Scott Johnson

Mr. Johnson informed the group that study on the Mid-Bay Islands is still in the plan formulation process, but the islands moving forward for further study have been narrowed down to Barren Island and James Island. Presently, alternatives for each of the two islands, and alternatives for the two islands in combination are being examined. The next milestone in the project is the P7 meeting scheduled for the end of February, which is a Corps internal plan formulation meeting at which some of the persons responsible for moving the project forward are in attendance. Ms. Boraczek added that a questionnaire was sent out to experts regarding preferred habitat types of certain organisms, and the ideal habitat types for the island restoration projects are being designed based on the responses to the questions.

6.0 Other Updates & Next Meeting Gwen Gibson

The next BEWG meeting is February 3rd at 1 pm in MPA Conference Room A.

***Note: This meeting was cancelled and the next BEWG meeting is scheduled for March 2nd at 1 pm in MPA Conference Room A.

DREDGED MATERIAL MANAGEMENT PROGRAM
Bay Enhancement Working Group (BEWG)
Meeting Summary
March 2, 2004
1:00 PM, Maryland Transportation Authority's (MdTA) Training Center
Maryland Port Administration, 2310 Broening Highway, Baltimore, MD

ATTENDEES

Aberdeen Proving Ground (APG): Steve Wampler
EA Engineering, Science and Technology, Inc. (EA): Jane Boraczek
Ecologix Group: Bob Hoyt
Environmental Protection Agency (EPA): Bill Muir
Gahagan & Bryant Associates (GBA): Ed DeAngelo
Maryland Charter Boat Association (MCBA): Russ Green
Maryland Department of the Environment (MDE): John Hill, Matthew Rowe
Maryland Department of Natural Resources (DNR): Roland Limpert, Dave Brinker
Maryland DMMP Citizens' Advisory Committee Facilitator: Fran Flanigan
Maryland Environmental Service (MES): Gwen Gibson, Cece Donovan, Stephanie Maihan, Amanda Ohler, Mike Rooney
Maryland Geological Survey (MGS): Bill Panageotou, Jeff Halka
Maryland Port Administration (MPA): Nat Brown
Moffatt and Nichol Engineers (M&N): Pete Kotulak
National Marine Fisheries Service, Habitat Conservation (NMFS): John Nichols
University of Maryland Center for Environmental Studies (UMCES): Elizabeth Price, Lisa Wainger
U.S. Army Corps of Engineers - Baltimore District (USACE-CENAB): Jeff McKee, Scott Johnson, Mark Mendelsohn
U.S. Army Corps of Engineers - Philadelphia District (USACE-CENAP): Chip DePrefontaine
U.S. Fish and Wildlife Service (USFWS): Bob Pennington
Weston Solutions, Inc.: Corinne Murphy, Kurt Frederick

Action Items

- BEWG members will submit any comments on the January 6th meeting summary to Gwen Gibson by March 5th.
- MES will update the definition for commercially harvested species/habitat to include oyster sanctuaries.
- Weston will obtain historical information on SAV in the lower bay (Watt's Island, Tangier Sound).
- Mr. Pennington will obtain information on waterfowl use in the lower bay.

1.0 Welcome and Global Information Nat Brown/Gwen Gibson

1.1 Meeting Goals

Mr. Brown welcomed the group in Dr. Storms' absence, and everyone introduced himself or herself. He then handed the meeting over to Ms. Gibson. She informed the group that the goal of today's meeting is to receive updates on the Citizens Advisory Committee, the state Dredged Material Management Plan (DMMP), Mid-Bay Islands, Poplar Island Expansion, Poplar harbor morphological modeling, and review scoring of the federal DMMP matrix.

1.2 Review & finalize summary & actions items from January 6th

Ms. Gibson informed the group that the action items from the January 6th meeting were completed, and the meeting summary will be finalized if MES does not receive any further comments by March 5th.

2.0 State DMMP Process Update Cece Donovan

Ms. Donovan gave an update on the state DMMP from the management committee meeting in Dr. Storms' place. The MPA is moving forward with their plan to continue ongoing studies on Mid-Bay islands, Cox Creek, and Poplar expansion. The harbor team's recommendations went to the executive committee and are now waiting for a response from the governor and the legislature. The MPA is also moving forward with the required studies on the harbor options. The plan is to have all of the sites operational by 2010.

3.0 Mid-Bay Island Project Delivery Team (PDT) Update Scott Johnson

Mr. Johnson presented an update on the status of James and Barren Island. The PDT is still in the plan formulation stage and the USACE held a meeting with their management personnel at headquarters about the Mid-Bay island plan last week. The approach to developing the mid-bay islands has been approved and the current part of this development phase is coming to an end.

The next step is to finalize the environmental and engineering criteria and apply them to all possible alternatives for James and Barren Island. Then the alternatives will be screened down to a manageable number and will be evaluated through April 2004. There is a meeting with the watermen on March 10th. The project designs are on schedule to be developed this summer through the fall, with a public meeting in January 2005. The draft report is due out in August 2005 and the final report should be completed by December 2005.

Mr. Johnson reminded the group that the USACE is having funding difficulties this and next fiscal year, but James and Barren are still on track to be operational by 2010.

4.0 Poplar Island Expansion Study (PIES) Update Scott Johnson

Mr. Johnson updated the group on the Poplar Island expansion study. To date, two public meetings were held and went well, there was little negative response from the citizens. Tilghman Island had a low number of watermen represented at the meeting, so their input is being actively sought. The planning process is slightly behind the Mid-Bay PDT because it is following the same process. PIES is on schedule to have alternatives selected by May and a draft report by June 2005.

5.0 Poplar Harbor Morphological Modeling Update Pete Kotulak

Mr. Kotulak gave a presentation on Poplar Harbor morphological modeling. The area of Poplar Harbor was being investigated because some of the spillways were filling up with sand and sediment movement appeared to be prevalent. Moffatt & Nichol examined sediment erosion and accretion for pre and post construction scenarios at Poplar. Pre-construction conditions evaluated what would have happened if Poplar Island had not been built; post-construction conditions predict what will happen starting after construction of both phases of the project.

The model was run for a period of eight years to predict erosion and accretion in the vicinity of Poplar Island. Wind records from Tolchester were used as a basis for input to the model to generate wave conditions (height and direction). Waves are necessary to supply enough energy to erode sediment from the bottom – in general, in the Bay, currents alone are not strong enough to erode the bottom. The model showed a small amount of accretion of fine-grained cohesive material (i.e. clay) along the eastern shoreline of Poplar Island and in south Poplar Harbor near Coaches Island, but no significant change within the rest of Poplar Harbor following construction of the complete island.

Morphological changes from both conditions were compared. The results of the model showed without construction of Poplar Island, significant erosion and accretion would have continued to occur within Poplar Harbor and in the area under the footprint of Poplar Island. By constructing Poplar Island, erosion and accretion in the area within Poplar Harbor has been significantly reduced.

Ms. Donovan noted that Dave Meyer observed increasing turbidity and other researchers showed more clay and silt in Poplar Harbor.

Mr. Kotulak noted that the model results show that at the end of the eight year simulation, there is not a significant change to the bottom elevation within Poplar Harbor. He also noted that the Bay as a whole is turbid. Moffatt & Nichol will have the final version of this modeling report by the end of March.

6.0 Update on Citizens Advisory Committee 2/11 MTG Jeff Halka

Mr. Halka updated the group on the citizen's advisory committee meeting that took place on February 11th. The citizen's committee is staying informed of the studies in progress and BEWG's activities. They currently have no new site ideas or questions.

7.0 Review Scoring of Federal DMMP Matrix Corinne Murphy

Ms. Murphy stated that the group needed to go through the matrix and confirm or revise the scores for each option with a number. The options without numbers are to be used as a guide for scoring some of the new options.

Ms. Boraczek explained the assumption sheet, source document and color-coding of the matrix. The green scores were not scored previously by BEWG and the red scores also needed careful consideration by BEWG members. In all cases, the most conservative score was used.

Mr. Mendelsohn questioned why the heading "aquatic invertebrates" included things that were not invertebrates. The group decided to change the heading to "aquatic habitat".

Mr. Brown asked why Hart-Miller Island (HMI) expansion was on the matrix. Mr. McKee explained that the USACE has to consider it as an option in the federal DMMP.

The benthic community column was moved under the aquatic biology heading.

Mr. Mendelsohn asked how the group could ensure oyster sanctuaries are protected and recognized in the scoring. There was some discussion and the group decided oyster sanctuaries fall under the category of "commercially harvested species". Ms. Gibson proposed the definition for "commercially harvested species" have language added to it to include oyster sanctuaries and the group agreed.

Mr. Nichols stated that "Habitat of Particular Concern" and "Essential Fish Habitat" are part of the same law and wanted them listed next to each other, under the same heading on the matrix. The group agreed to move "habitat of particular concern" to the "aquatic biology" heading, next to "essential fish habitat".

The following scores were reviewed by BEWG:

<u>Agricultural Placement</u>:
Nutrient Enrichment- the scores for both MD & VA will remain **1**
Turbidity- the scores for both MD & VA will remain 0
Ground Water- MD is 0, and VA is <u>0</u>
Substrate/Soil Characteristics- the scores for both MD & VA will remain 1

<u>Artificial Island Creation- Lower Bay</u>:
SAV-- <u>0</u> more data needs to be obtained on historical SAV conditions in the Watt's Island/Tangier Sound vicinity.
Protected Species (RTE, SSPRA): -3 (2 turtles, 1 sturgeon)

Habitat of Particular Concern: 0 more SAV data is needed
Waterfowl Use: 0, pending information from Mr. Pennington
Fossil Shell Mining: 0

8.0 Other Updates & Next Meeting Gwen Gibson

There will be a meeting for the voting members of the group on March 16th at 9:30 at USFWS in Annapolis, MD to complete scoring of the matrix.

The next BEWG meeting is April 6th at 1 pm in MPA Conference Room A.

DREDGED MATERIAL MANAGEMENT PROGRAM

Bay Enhancement Working Group (BEWG)
Meeting Summary

March 16, 2004
9:30 AM, U.S. Fish and Wildlife Conference Room
USFWS Chesapeake Bay Field Office, 177 Admiral Cochrane Dr., Annapolis, MD

ATTENDEES

EA Engineering, Science and Technology, Inc. (EA): Jane Boraczek
Environmental Protection Agency (EPA): Bill Muir
Maryland Department of the Environment (MDE): Chris Luckett, Nick Kaltenbach
Maryland Department of Natural Resources (DNR): Roland Limpert
Maryland Environmental Service (MES): Gwen Gibson, Stephanie Maihan, Amanda Ohler
Maryland Geological Survey (MGS): Jeff Halka
National Marine Fisheries Service, Habitat Conservation (NMFS): John Nichols
National Oceanic and Atmospheric Administration (NOAA): Peter Bergstrom
University of Maryland Center for Environmental Studies (UMCES): Lisa Wainger, Dennis King
U.S. Army Corps of Engineers - Baltimore District (USACE-CENAB): Mark Mendelsohn
U.S. Fish and Wildlife Service (USFWS): Bob Pennington, John Gill, Doug Forsell
Weston Solutions, Inc.: Kurt Frederick

Action Items

- MES will add a contact for Blackwater Wildlife Refuge to the BEWG mailing list.
- Mr. Frederick will revise the assumptions chart to reflect changes discussed in the meeting.
- MES will revise the matrix, caveats, and parameter definitions.
- Ms. Boraczek will revise the scores for the base plans.
- Mr. Mendelsohn, Mr. Nichols, and Ms. Boraczek will research shark pupping grounds in the lower bay to be presented at the 4/6 BEWG meeting to determine scores for Habitat of Particular Concern (HAPC), Essential Fish Habitat (EFH), and Rare, Threatened, and Endangered (RTE) Species.
- Ms. Boraczek will research the potential recreational use in the vicinity of proposed option 16, large island restoration-lower bay.
- Mr. Nichols will try to find commercial and recreational harvesting information for the Rappahanock Shoals area.
- Mr. Nichols will continue to obtain a determination on short nosed sturgeon in the lower bay from NMFS headquarters (in MA).

- Ms. Boraczek will research thermal refuge information for female crabs in the lower bay. (This item was completed during the 3/16 meeting, female crabs do over-winter in the Rappahanock Shoals vicinity)
- Mr. Mendelsohn and Mr. Pennington will obtain more information on turtle nesting in the lower bay option areas. (This item was completed during the 3/16 meeting)

1.0 Welcome and Global Information — Gwen Gibson

1.1 Meeting Goals

Ms. Gibson welcomed the group and everyone introduced himself or herself. She informed the group that the goal of today's meeting is to complete the scoring of the federal Dredged Material Management Program (DMMP) matrix.

Mr. Gill stated Blackwater wildlife refuge would like to become more involved in the BEWG process by having a representative placed on the BEWG distribution list and attend meetings.

Mr. Mendelsohn stated that the USACE is aware of the refuge's interest in BEWG.

1.2 Review actions items from March 2nd

Ms. Gibson informed the group that the action items from the March 2nd meeting were completed. The revisions to the definitions concerning oyster sanctuaries were provided as a handout for members to review. Weston uploaded information on SAV to use during today's meeting and Mr. Doug Forsell will be called into the meeting to provide his expertise on waterfowl and wading waterbirds for the lower bay areas in Virginia.

2.0 Review Scoring of Corps DMMP Matrix — Kurt Frederick/Jane Boraczek

The following scores were discussed and changed in the corps matrix:

Agricultural Placement:

Ms. Boraczek asked why Public Health was scored as a 1. The group decided that the 1 came from a previous score that assumed dewatering at a different location. *Public Health* changed from 1 to 0 on all agricultural placement options.

Artificial Island

Mr. Gill noted that constructing an island on the windward side of an eroding island has the potential to enhance submerged aquatic vegetation (SAV), but placing the island on the leeward side would not provide much benefit.

Ms. Boraczek reminded the group that these options are not site specific, they are just large areas identified where a potential project could be located.

Mr. Gill reiterated that building an island west or east of an existing island could change the scoring drastically.

Ms. Boraczek noted that caveats might be appropriate in those cases.

Mr. Mendelsohn stated that it is difficult to lend support to the unknown.

Ms. Gibson reminded the group that they must be equally conservative when scoring each option.

Ms. Boraczek asked if there are resources in the area, should they be handled in the score or in a caveat?

Mr. Halka suggested scoring the options and then stipulating "provided the site does not directly effect SAV"

The group decided to add "ranked as if built leeward (east) of existing island" to the assumptions.

<u>Wading bird / Waterfowl</u>
Mr. Forsell was invited into the meeting to provide information on waterbirds and waterfowl in the vicinity of the option areas in the lower bay.

Mr. Forsell stated that surf scoters are found 10-11 miles offshore and dive 6-8 meters. He also noted that shorebirds would use any sandy beach area in the lower bay.

<u>*Large Island Restoration lower Bay (#16)/ Small Island Restoration Lower Bay (#27)*</u>
Waterfowl scored **1** with a caveat. The USFWS, EPA, and DNR felt that these options would not affect waterfowl habitat. However, NMFS, MGS, MDE, and the Corps felt that there is less potential for erosion on the western shore of the bay, so the most positive impact from a restoration project would be on the eastern shore.
Wading Birds remains 1 for both.

<u>*Artificial Island Creation Lower Bay (#3)*</u>
Ms. Boraczek reminded the group that they are scoring based on leeward placement of the island compared to existing islands.

Ms. Gibson stated that the group must assume there is not an erosion control benefit to the project.

Waterfowl remains –1
Wading Birds remains 0

Shoreline Restoration Lower Bay (#24)
Mr. Frederick stated that Weston chose sites that were eroded peninsulas along the bay.

Waterfowl remains 1
Wading Birds remains 1

Beach Nourishment VA (#5)
Wading Birds remains 1
Waterfowl changed from 0 to **0**, with a general caveat explaining that if the material used prevents taking the tops of the shoals, then it is a benefit to birds (i.e. scoters).

Confined Disposal Facility Lower Bay(#12)
Mr. Frederick stated that the assumption for this option is to expand Craney Island.

Waterfowl changed from 1 to –1
Wading birds remains 0

Capping VA & MD (#9 & #10)
Mr. Frederick explained that clean dredged material from the VA channels would be used for these options.

Mr. Mendelsohn noted that the Elizabeth River, VA is not currently attractive to waterfowl, and this option brings potential to attract waterfowl to the area.

Waterfowl remains 0
Wading birds remains 0

Rappahanock Shoal Open Water Site Expansion / Rappahanock Shoal Open Water Site (Existing) (#23 & #B5)
Waterfowl 0 for both
Wading birds remain 0 for both options

This concluded the scoring of waterfowl and wading birds for the lower bay. The group then went through each option, starting with option 3, and reviewed the scores in red, green and any other scores a member questioned.

Artificial Island Creation Lower Bay (#3)
Navigation 0

Ms. Boraczek encouraged the group to note that the percentage of minorities tends to increase and the per capita income tends to decrease when evaluating the trends from the upper bay to the lower bay, and this must be taken into consideration when scoring the environmental justice parameter.

Artificial Island Creation Upper Bay (#4)

Aesthetics –1	*Infrastructure* 0	*Commercial Socioeconomics* 0
Noise 0	*Community Socioeco.* 0	*Environmental Justice* 0
Air Quality 0	*Public Health* 0	*Public Safety* 0
Beneficial Use- Rec. Enhancement 0		

Beach Nourishment VA (#5)
Mr. Pennington noted that high-energy beaches are the ones that need nourishment and those high-energy beaches do not support SAV.

SAV changed from –1 to 0

There was discussion on the presence of turtles and turtle nesting in the option area. Mr. Pennington noted that turtles need beaches to nest, but they have to have the right material and contour at the correct time of year.

Mr. Mendelsohn expressed his concern for increased boating traffic causing harm to right whales.

Mr. Pennington stated that there shouldn't be a problem unless they are pumping from far offshore.

Mr. Nichols noted that there are strict rules and regulations the dredge operation must follow to prevent incidental takes.

Mr. Mendelsohn expressed that he would like to find out more information on turtle nesting in the lower bay vicinity.

RTE changed from –1 to **0** with a caveat stating that the incidental take statement must be strictly followed.

HAPC changed from –1 to 0

There was concern about sand bar shark pupping grounds, so Mr. Nichols and Mr. Mendelsohn are going to obtain more information.

Building Products (#6)
There were no scoring changes.

C&D Canal Upland Sites Expansion (#7)
Mr. Frederick stated that this option is the expansion of Pierce Creek. The plan is to raise the dike 10 feet.

Mr. Mendelsohn suggested renaming the option. The group decided to rename the option "C&D Canal Pierce Creek Upland Site Expansion" ok.

Aesthetics remains –1 *Public Health* changed from 1 to 0

Noise changed from 0 to –1
Air Quality remains <u>0</u>
Infrastructure changed from 0 to <u>0</u>
Recreational Value changed from –1 to 0
Ben. Use Rec. Enhance. changed from <u>0</u> to 0

<u>Capping-Landfill/Brownfields (#8)</u>
There were no scoring changes.

<u>Capping VA & MD (#9 & #10)</u>
There were no scoring changes.

<u>Confined Aquatic Disposal Pit- Patapsco River, MD (#11)</u>
Ms. Boraczek noted that studies on leeching should be conducted.

Mr. Halka stated that not much ground water is drawn in that area. He also stated that the hydrodynamics would not be affected if the area will be returned to its original state.

Mr. Pennington noted that it is difficult to cap harbor material due to its fine consistency.

Mr. Frederick noted that this option would only be utilized if there were a need to dig a pit in the first place.

SAV remains 0
Hydrodynamics changed from –1 to 0
Aesthetics changes from 1 to 0
Community Socio. changed from 1 to 0
Env. Justice changed from 1 to 0
Public Health changed from 1 to 0
Navigation changed from 1 to 0
Rec. Enhance. changed from 1 to 0

<u>Confined Disposal Facility Lower Bay (#12)</u>
Ms. Gibson stated that the group must assume a lateral expansion of Craney Island.

SAV remains 0
HAPC changed from 0 to <u>0</u>
RTE changed from –2 to –3

<u>Confined Disposal Shoreline Facility Patapsco River, MD (#13)</u>
There were no scoring changes.

<u>Cox Creek Expansion (#14)</u>
Dr. Wainger asked why public health was a **1**.

The group decided to change *Public Health* to 0.

<u>Hart-Miller Island Expansion (#15)</u>

Ms. Boraczek stated that this option includes a 300-acre vertical and lateral expansion to the south.

Mr. Frederick stated that it is assumed there is suitable substrate in the vicinity to build the dikes.

SAV remains 0
RTE changed from 0 to –1, because of the potential for sturgeon in the area.
Waterfowl changed from 1 to –1
Beneficial Use Upland and Wetland both scores changed from 1 to 0

Mr. Frederick will change the assumptions to state that there will be no beneficial use aspect to this option.

Mr. Halka stated that expanding Hart-Miller Island would provide protection to Pleasure Island.

Shoreline Protection changed from 0 to 1

<u>Large Island Restoration Lower Bay (#16)</u>
SAV remains –1
HAPC remains –1
RTE changed from 2 to –3
Existing land use, commercial socioeconomics, community socioeconomics, environmental justice, public health, and public safety all remain 0
Beneficial Use Rec. Enhancement changed from 0 to <u>0</u>
Aesthetics changed from 0 to <u>0</u>
Recreational Value changed from 1 to <u>0</u>
Navigation changes from **<u>0</u>** to <u>0</u>

<u>Large Island Restoration Mid Bay (#17)</u>
Ms. Boraczek stated that the scoring for this option was a blending of the most conservative scores for James and Barren Island.

Aesthetics changed from 0 to <u>0</u>

<u>Mine Placement Cecil County / Mine Placement Western MD (#18 & #19)</u>
Mr. Frederick explained that these options involve surface mines.

Ms. Gibson stated that the material will be dewatered and hauled by truck or rail. She also mentioned that the plan was to use the CSX rail from Cox Creek.

Mr. Pennington noted that new roads would have to be put in every year if trucks were used.

Mr. Muir stated that using rail creates a whole separate set of issues (i.e. new cars, covers, etc.).

Infrastructure changed from 0 to **–1**, with a caveat capturing the road wear caused by the volume of loaded trucks that would be needed for this option if rail or some other form of transportation was not used.

Mr. Luckett questioned why nutrient enrichment is 1.

Mr. Halka stated that nutrient enrichment is a 1 because nutrients are being removed from the bay.

Norfolk Ocean Open Water Placement (#20)
Mr. Pennington questioned why the score for substrate was –1.

Mr. Muir stated that the site was designed for silt and clay and is 80-95 feet deep.

Substrate/Soil Characteristics changed from –1 to 0
Air Quality, Infrastructure, Existing Land, Commercial Socioeconomics, Community Socioeconomics, Environmental Justice, Public Health, Public Safety, and Beneficial Use Recreational Enhancement all changed to 0.

Pooles Island Open Water Site Expansion (#21)
Mr. Halka stated that after placement the minimum depth of the site is14 feet mean lower low water (MLLW).

Mr. Nichols stated that this option defies regulatory reality.

Dissolved Oxygen and Nutrient Enrichment remain –1
Benthic Community changed from 0 to –1
Finfish Spawning changed from 0 to 0
Finfish Rearing changed from 0 to –1
Larval Transport changed from 0 to 0
Shell Mining changed from 0 to 0
Commercial Fisheries changed from 0 to –1
Recreational Fisheries changed from 0 to –1
RTE remained –1
HAPC remained 0
Salinity & Hydrodynamics changed from 0 to 0
Air Quality, Infrastructure, Commercial Socioeconomics, Community Socioeconomics, Environmental Justice, Public Health, and Public Safety remained 0, with no green shading.

Poplar Island Modification (#22)
Mr. Frederick stated that this option consists of a 600-acre expansion both vertically and laterally.

Aesthetics changed from 0 to –1
Air Quality, Infrastructure, Existing land, Commercial Socioeconomics, Community Socioeconomics, Environmental Justice, Public Health, and Public Safety remained 0, with no green shading.

All *Beneficial Use* parameters changed to a score of 0

It was noted that lateral expansion would protect Poplar Harbor.

Rappahanock Shoal Open Water Site Expansion (#23)
Commercial Fisheries remains 0; Mr. Nichols will obtain more information
Turbidity changed from 0 to –1
EFH changed from 0 to –1
Thermal Refuge changed from 0 to –1
Recreational Fisheries changed from 0 to –1
Benthic Community changed from 0 to –1
RTE changed from 0 to –3

Fossil Shell Mining changed from 0 to 0
Beneficial Use Recreational Enhancement remained 0
Air Quality, Infrastructure, Existing Land, Commercial Socio., Community Socio., Env. Justice, Public Health, and Public Safety changed to 0

The group decided to revise the definition of fossil shell mining to incorporate the Baylor Grounds.

Shoreline Restoration- Lower Bay, Mid Bay, & Upper Bay (#24, #25, & #26)
Turbidity 1 for all three options
SAV changed to –1 for all three options
Tidal Wetlands changed to 0 for all three options
Finfish Rearing –1 for all three options

Mr. Nichols noted that summer flounder spawn in the open waters of the Choptank River.

EFH –1 for mid and lower bay, 0 for upper
Thermal Refuge 0 for all three options
Recreational Fisheries 0 for all three options
RTE –3 for lower bay, -2 for mid bay, and –1 for upper bay
Substrate/Soil characteristics –1 for all three options
Prime or Unique Ag. Land 0 for all three options
Aesthetics 0 for all three options
Environmental Justice 0 for all three options
Navigation 0 for all three options

<u>Small Island Restoration Lower Bay (#27)</u>
SAV remains –1
HAPC remains –1
RTE changed from 2 to –3
Existing land use, commercial socioeconomics, community socioeconomics, environmental justice, public health, and public safety all remain 0
Beneficial Use Rec. Enhancement changed from 0 to <u>0</u>
Aesthetics changed from 0 to <u>0</u>
Recreational Value changed from 1 to <u>0</u>
Navigation changes from **<u>0</u>** to <u>0</u>

<u>Small Island Restoration MidBay (#28)</u>
Aesthetics from 0 to –1
Noise remained 0
Navigation remained 0
Beneficial Use Adjacent Habitat changed from 1 to <u>0</u>
Beneficial Use Recreational Enhancement changed from 0 to <u>0</u>
Air Quality, Infrastructure, Existing Land, Commercial Socioeconomics, Community Socioeconomics, Environmental Justice, Public Health, and Public Safety remained 0, with no green shading

<u>Wetland Restoration- Dorchester County, MD (#29)</u>
Mr. Pennington noted that the scores tend to be positive for this option and wanted to know what the reasoning for those scores were, since the options just seems like marsh replacement.

Ms. Boraczek explained that this option is restoring marsh that has eroded to almost open water.

Mr. Mendelsohn noted that the Corps is interested in "thick" rather than "thin" layering in wetlands.

The group decided to leave the current scores as they are and to remove the green shading.

Mr. Halka explained that salinity received a score of 1 because the marsh would be thicker and therefore less salt water intrusion would occur.

Mr. Nichols stated that the scores deal with the environmental impacts of the options, not the logistics.

<u>Base Plans</u>
Ms. Boraczek stated that the base plans need to be scored by BEWG for the cost comparison/analysis.

Ms. Boraczek stated that she would score the base plans based on BEWG's scores of other related options. She will then send them out to the BEWG voting members for review.

Mr. Pennington noted that he didn't think turbidity was affected with deep-water placement. He feels turbidity is more of a factor in shallow water placement where wave disturbance is more prevalent.

Ms. Boraczek noted that BEWG still scored turbidity as –1 for ocean placement options.

Mr. Pennington reminded the group that the department of the interior's e-mail and internet is down for an unknown amount of time, so correspondence will need to be faxed or mailed.

3.0 Other Updates & Next Meeting **Gwen Gibson**

The next BEWG meeting is on April 6, 2004 at 1 PM at the MPA conference room A.

DREDGED MATERIAL MANAGEMENT PROGRAM

Bay Enhancement Working Group (BEWG)
Meeting Summary

April 6, 2004
1:00 PM, Maryland Port Administration Conference Room A
Maryland Port Administration, 2310 Broening Highway, Baltimore, MD

ATTENDEES

EA Engineering, Science and Technology, Inc. (EA): Jane Boraczek
Ecologix Group: Bob Hoyt
Gahagan & Bryant Associates (GBA): Ed DeAngelo
Maryland Department of the Environment (MDE): Charles Poukish, Nick Kaltenbach
Maryland Department of Natural Resources (DNR): Roland Limpert, Dave Brinker
Maryland Environmental Service (MES): Gwen Gibson, Stephanie Maihan, Wayne Young, Michael Rooney
Maryland Geological Survey (MGS): Bill Panageotou, Jeff Halka
Maryland Port Administration (MPA): Steve Storms, Nat Brown
National Marine Fisheries Service, Habitat Conservation (NMFS): John Nichols
University of Maryland Center for Environmental Science (UMCES): Elizabeth Price, Lisa Wainger, Dennis King
U.S. Army Corps of Engineers - Baltimore District (USACE-CENAB): Michele Gomez, Scott Johnson, Gwen Meyer
U.S. Army Corps of Engineers - Philadelphia District (USACE-CENAP): Chip DePrefontaine
U.S. Environmental Protections Agency (USEPA): Bill Muir
Weston Solutions, Inc.: Corinne Murphy, Kurt Frederick

Action Items

- BEWG members will submit any additional comments to the March 2 and March 16 meeting summaries to Gwen Gibson by April 9, 2003.

- MES will revise the Cardiff Quarry presentation so that it can be made accessible by BEWG members who wish to review it.

Federal DMMP Matrix Scoring action items:

- Weston will have mapping performed to compare the boundaries of Federal DMMP Option #23 Rappahannock Shoal Open Water Site Expansion to the mapped HAPC boundaries for sandbar shark.

- Gwen Meyer will have Chris Spaur from the Corps contact John Nichols to discuss HAPC/ EFH resources in the Lower Bay for sandbar sharks. Mr. Nichols will use the information to determine if the 0 for option #5 should change.

- John Nichols will research commercial fisheries in the vicinity of options B3, New Open Water/ Deep Trough, and B4, Pooles Island Open Water Site.
- John Nichols will check over wintering crab densities for Wolf Trap, and Scott Johnson will check the date for the SEIS for Rappahannock Shoals.
- Mr. Nichols will check the incidental take statement for information on commercial fisheries in the vicinity of Rappahannock Shoals.
- Jane Boraczek will check the scores for larval transport and non-tidal wetlands to confirm that scores were applied to the alternatives consistently.
- BEWG members will submit any comments regarding the revised parameter definitions to Gwen Gibson or Corinne Murphy by April 20, 2003.
- Weston will revise the matrix as per the results of the April 6 BEWG meeting discussions.
- MES will revise the parameter definitions and caveats as per the results of the April 6 BEWG meeting discussions

1.0 Welcome and Global Information — Gwen Gibson

1.1 Meeting Goals

Ms. Gibson welcomed the group, and everyone introduced himself or herself. She informed the group that the goal of today's meeting is to receive updates on the state DMMP, the Mid-Bay Project Delivery Team, Poplar Island Expansion, and Cardiff Quarry.

1.2 Review & finalize summary & actions items from March 2nd and March 16th.

Ms. Gibson informed the group that the action items from the March 2nd and March 16th meetings were completed, and those that were not are on today's meeting agenda. Ms. Gibson asked the group to let her know by April 9th if there are any additional comments to the meeting summaries, and if none are received the summaries will be sent out as final. Ms Gibson added that Tom Eagle from USFWS Blackwater Refuge has been added to the BEWG email distribution list.

2.0 State DMMP Process Update — Steve Storms

Dr. Storms informed the group that there are several things currently happening in the state DMMP process. For the harbor sites, the MPA is working to initiate the process to hold public scoping meetings. Dr. Storms explained that MPA is working with MES and cooperating with the Corps so all of the federal requirements are met when the Corps is ready to join the process. MPA is also initiating the process to investigate the community enhancement projects, which are an integral part of the three harbor sites, Masonville, Sparrows Point, and Fairfield BP. The recommendations of the harbor sites by the harbor team and the executive committee include the community enhancement options as a package deal. All options are moving forward for further study, and MPA is also working with the Corps to cooperate on Poplar Island Expansion and the Mid-Bay Projects. There are two upcoming meetings that will discuss these projects, the Citizens Advisory Committee meeting on April 14th and the Management Committee Meeting on May 20th.

3.0 Mid-Bay Island Project Delivery Team (PDT) Update Scott Johnson

Mr. Johnson informed the group that the Mid-Bay PDT met this morning and they are well into the plan formulation process. The restoration projects have been narrowed down to James and Barren Island, and between them, there are 145 alignment options that are being considered. Mr. Johnson explained that these alignments should be narrowed down by the end of April and an alignment for each island should be selected by mid-May. A draft environmental report should be released in the summer of 2005, and the Corps will continue to work on the design of the alignments through the summer and fall of 2004.

4.0 Poplar Island Expansion Study (PIES) Update Gwen Meyer

Ms. Meyer gave a presentation updating the group on the Poplar Island Expansion Study. The goal of the study is to investigate alternative modifications to the existing Poplar Island Environmental Restoration Project to increase habitat restoration, provide additional dredged material capacity, and evaluate other project enhancements. Ms. Meyer presented the 8 alignments that are being considered for the expansion and explained that there are really 7 alignments, and the eighth is just a breakwater. The alignments range in size from 313 to 1,129 acres. The Corps held public scoping meetings for PIES at Tilghman Island and Kent Island in January 2004. Feedback indicates that the resources agencies and the citizens are in greater support of the northern expansion alternative. Ms. Meyer explained that when the best environmental project is determined, the cost/benefit economic analysis would begin. By mid-May the Corps would like to have the alternatives narrowed down to two, as well as the no action alternative. The draft General Reevaluation Report should be ready for internal review in summer 2005, and for public review in October 2005. If anyone has questions or would like to attend the team meeting, notify Gwen Meyer. The next Plan Formulation meeting is scheduled for April 20th at MPA.

5.0 Cardiff Quarry Presentation Wayne Young/Michael Rooney

Mr. Young informed the group that mines and quarries are possibly an effective end-use for dredged material. There is a large slate quarry in Harford County, Maryland that is being looked into as a dredged material placement site. Cardiff Quarry is a combination of three quarries, one of which has a potential capacity of 6 to 7 million cubic yards. Currently, the three quarries are filled with water and at this time it is uncertain whether this is due to rain or seepage. Property ownership could be an issue for the quarry because there is more than one owner and not all owners are listed. Cardiff quarry is approximately 22 miles from the nearest deep water access at Havre de Grace, there is no rail access, and road access is through mainly residential areas. There is a potential for groundwater effects from placing dredged material in the quarry, and there are also potential safety issues.

Mr. Muir asked why the owner was not interested in selling the property, and Mr. Young responded that he is using it for a profit recreation area for fishing and swimming.

Mr. Rooney explained the geologic conditions where the quarry is located, and the potential flow of the groundwater in the area. There are 125 permitted groundwater wells within a 1-mile radius of the quarry. Recently, the Pennsylvania Department of Environmental Protection approved the use of a dredged material mixture for abandoned mine reclamation, and this site may provide an opportunity to reclaim an abandoned mine using dredged material in Maryland.

Ms. Boraczek asked if the study included sediment quality, and Mr. Young responded that the study has not yet looked into that.

Mr. Muir asked if all three quarries are flooded, and Mr. Young responded that during the site visit only the largest quarry was looked at and that one was flooded. Mr. Limpert pointed out that pumping water out of the quarry would have to be studied because of the possible trout in the water, and Mr. Young responded that more studies are necessary for this.

Mr. Nichols asked if there is a connection between the wells and the quarry indicated by the well study, and Mr. Rooney responded that this could be an indication and further study is necessary. Harford County believes that there is a connection between the quarry and the groundwater.

6.0 Presentation of Scoring Matrix for Federal DMMP Alternatives

6.1 Presentation of Sandbar Shark Data for HAPC Scoring

Mr. Nichols and Ms. Boraczek gave an update regarding sandbar shark HAPC in the lower bay. A map of the sandbar shark HAPC boundaries provided by NOAA was presented, and Ms. Boraczek noted that all of the lower bay options were within the HAPC boundaries, with the exception of Rappahannock Shoals and the lower Rappahannock River. Mr. Nichols pointed out that NMFS rigorously protects HAPC habitat, and said that he is currently consulting with coworkers regarding any specific substrate or benthic preferences within the HAPC area. He suggested scoring the lower bay options within the HAPC boundaries as –1 for that parameter, unless more specific information was found.

Ms. Boraczek inquired if the Norfolk Open Water Placement site had potential HAPC impacts. Mr. Muir said that the site is located in approximately –75 feet of water, and that he does not know of any sandbar sharks being caught at that location. Mr. Nichols added that the site exists, and should not have additional impacts to HAPC.

Mr. Nichols asked why the HAPC score for Option 25-- Shoreline Restoration- Mid Bay was –1. Ms. Boraczek replied that the score was assigned due to the presence of red drum HAPC.

Mr. Johnson expressed concerns about assigning a score of –1 to the HAPC parameter for Option 5— Beach Nourishment- Virginia. Mr. Nichols replied that he has heard that there may have been some sandbar shark issues in the vicinity of that option. It was decided that Mr. Nichols would consult with USACE and other NMFS personnel regarding the potential HAPC impacts from that option.

Mr. Muir inquired why the EFH parameter for Option 23—Rappahannock Shoals was scored as –1. Ms. Boraczek replied that higher salinity areas were utilized by several EFH species.

- Due to the presence of sandbar shark HAPC, all of the lower bay options were scored as –1 for HAPC. The following sites are exceptions to this scoring trend: Option 5-- Beach Nourishment- Virginia, Option 9-- Capping- Elizabeth River, and Option 23—Rappahannock Shoals.
- Option 9--Capping- Elizabeth River, VA was scored as 0 due to doubts about the quality of the habitat in the vicinity of that option.
- Option 5— Beach Nourishment- Virginia was scored as 0 pending the results of research by John Nichols, and his consultation with USACE personnel.
- Option 23—Rappahannock Shoals was scored as 0 pending the results of mapping that will plot the location of the existing Rappahannock Shoals site compared to the mapped sandbar shark HAPC boundary.

6.2 Presentation of Recreational Utilization Data for Lower Bay Island Restoration Option Areas

Ms. Boraczek presented the information from a commercial website depicting locations of marinas and charter boat companies in the vicinity of Mobjack Bay—the area for the lower bay island restoration options. She pointed out that the Wolf Trap base plan option may have impacts to recreational fisheries due to relief in the area that was attractive to fish. She added that some areas of Mobjack Bay have high numbers of marinas. Mr. Nichols noted that some recreational fishing resources were located due west of the existing Wolf Trap option. Ms. Boraczek added that there was no expansion planned for this option.

The group discussed the recreational resources around Option B1--Dam Neck Ocean Open Water Placement. It was pointed out that the site is already an existing, permitted site. Mr. Nichols said that impacts would likely occur only if recreational use of the area was delayed. Mr. Muir said that there are a number of artificial reefs 10-12 miles offshore in the area, but this distance inshore of the Dam Neck site.

Mr. Nichols inquired about the status of the existing Wolf Trap placement sites, and the effects they may have on over-wintering crabs. Mr. Frederick explained that there is a primary site and deep alternate site for Wolf Trap, and that the alternate is not being used.

Mr. Muir stated that one site was used last year. This discussion was tabled until the next agenda item was presented.

The group discussed the recreational value parameter for Option B3-- New Open Water (Deep Trough), and Ms. Boraczek explained that this option is not currently implemented. Mr. Halka noted that the option area was a busy boating area. Ms. Boraczek said that the impacts would be short term and the score should be 0. A vote was taken with four agencies voting for a 0 score (EPA, MGS, DNR, USACE) and one agency voting for a score of –1 (USFWS).

- Options 27--Small Island Restoration- Lower Bay and B6--Wolf Trap Open Water Placement received a score of 0 for the recreational fishing and recreational use parameters due to inconclusive data as to the recreational resources in the area.
- Option B1--Dam Neck Ocean Open Water Placement was assigned a score of 0 for the recreational fishery and recreational use parameters.

6.3 *Presentation of Commercial and Recreational Fishery Data for Rappahannock Shoals*

Mr. Nichols presented information on commercial and recreational fishery data for Option 23—Rappahannock Shoals Expansion, B5--Rappahannock Shoal Open Water Site (Existing), and B6--Wolf Trap Open Water Placement. He said that there is a lot of commercial fishing activity in the vicinities of these options, including crab dredging during winter. Mr. Nichols explained that crab dredging occurred in areas over 20 feet deep, which would include the Rappahannock Shoals and Wolf Trap option areas.

Mr. Limpert asked if there were time of year restrictions for placement at these option areas that would prevent placement during the winter crab-dredging season. The group discussed whether placement at these option areas would impact over-wintering crabs, or if placement would be restricted to non-winter months by existing time of year restrictions. Mr. Nichols said that there was a take limit for turtles included in the York Channel biological opinion, and that the Wolf Trap area is likely to provide thermal refuge.

The group also discussed the commercial fisheries in the vicinities of Option B3--New Open Water (Deep Trough) and B4--Pooles Island Open Water Site (Existing). Mr. DePrefontaine stated that studies have indicated that there is no commercial fishing in those option areas. Mr. Nichols agreed with the group that a score of 0 would be appropriate for the commercial fisheries parameter, unless further research uncovered new information.

Mr. Johnson noted that the Supplemental EIS (SEIS) for the Rappahannock Shoals site indicated that there were not significant numbers of over-wintering crabs at that option area. It was decided that Mr. Johnson would check the date of the SEIS, and Mr. Nichols would check the incidental take statement for information on commercial fisheries in the vicinity of Rappahannock Shoals.

- B3--New Open Water (Deep Trough) and B4--Pooles Island Open Water Site (Existing) were scored as 0 for commercial fisheries.
- B5--Rappahannock Shoal Open Water Site (Existing) and B6--Wolf Trap Open Water Placement were scored as 0 for commercial fisheries.

6.4 Presentation of Federal DMMP Scoring Matrix

The group reviewed the remaining unresolved scores on the draft Federal DMMP Scoring Matrix. Mr. Johnson asked why the water quality parameter scores for Option #29--Wetlands Restoration were +1's. Ms. Boraczek explained that the scores reflected overall long-term water quality improvements, including nutrient uptake.

Ms. Boraczek explained to the group that Chesapeake Environmental Management, Inc. (CEM) had reviewed the matrix for scoring consistency, and had made some comments that the BEWG needed to discuss and resolve. The team also discussed any remaining scoring questions in the draft matrix. The following are scoring changes and comments in response to the CEM comments and the resulting discussions:

- Option #3--Artificial Island Creation- Lower Bay and Option #4--Artificial Island Creation-Upper Bay: The group agreed that the turbidity and nutrient scores for, respectively, should remain –1. Island creation would provide a potential nutrient and turbidity source where none had previously existed.
- Option #29--Wetland Restoration- Dorchester County, MD: A caveat was added to the salinity parameter explaining potential impacts to hydrology that would decrease salt water access to systems upriver of the restoration project. These impacts would depend on the scale of the project.
- Option B3--New Open Water (Deep Trough): The dissolved oxygen score was changed to 0.
- Option #1-- Agricultural Placement- Maryland & Option #2—Agricultural Placement-Virginia: The nutrient parameter score will remain +1 because the application of dredged material to agricultural fields is believed to reduce the need for further nutrient (fertilizer) applications to those lands.
- B4--Pooles Island Open Water Site (Existing): The recreational fishery parameter score will remain –1.
- Option B1--Dam Neck Ocean Open Water Placement: The RTE parameter score would remain 0, assuming that the current time of year restrictions will be followed for turtle protection.
- Option B2-- Hart-Miller Island (Existing): The SSPRA parameter score would change from +1 to 0, to be similar to the score given to Option #22-- Poplar Island Modification.
- Option #9-- Capping- Elizabeth River, VA, Option #10-- Capping- Patapsco River, MD, Option #11-- Confined Aquatic Disposal Pit- Patapsco River, MD: The substrate/ soil characteristics parameter for these options were changed from $\underline{0}$ to 0. This score reflects the layer of sand over dredged material to be used in the capping, as specified in the "Potential Alternatives" assumptions.

- B4--Pooles Island Open Water Site (Existing), B5--Rappahannock Shoal Open Water Site (Existing), and B6--Wolf Trap Open Water Placement: The fossil shell mining score was changed from 0 to 0, because the existing sites are expected to have no additional impact.
- Option #27-- Small Island Restoration- Lower Bay and Option #28-- Small Island Restoration- Mid Bay: The scores for non-tidal wetlands were changed to 0, because impacts are unknown due to the island site not being specified.
- Option #29— Wetland Restoration- Dorchester County, MD: The nutrient score was changed to +1 due to a recent study performed by Court Stevenson indicating that improvements to sulfur production would result in shallow water habitats due to reduction of saltwater intrusion.
- Option #7-- C&D Canal Pierce Creek Upland Sites Expansion: The score for community socioeconomics was changed from 0 to –1, due to the proximity of homes to the option area, and potential negative impacts to groundwater.
- Option #16-- Large Island Restoration- Lower Bay and Option #27-- Large Island Restoration- Upper Bay: The score for larval transport was changed to 0 to be consistent with the score given to Option #3--Artificial Island Creation- Lower Bay

7.0 Other Updates & Next Meeting Gwen Gibson

The next BEWG meeting is May 4th at 1 pm in MPA Conference Room A.

DREDGED MATERIAL MANAGEMENT PROGRAM

Bay Enhancement Working Group (BEWG)

Meeting Summary

May 4, 2004

1:00 PM, Maryland Port Administration Conference Room A

Maryland Port Administration, 2310 Broening Highway, Baltimore, MD

ATTENDEES

Gahagan & Bryant Associates (GBA): Ed DeAngelo, Richard Thomas
Maryland Department of the Environment (MDE): Matthew Rowe, Nick Kaltenbach
Maryland Department of Natural Resources (DNR): Roland Limpert
Maryland Environmental Service (MES): Gwen Gibson, Stephanie Maihan, Wayne Young, Michael Rooney, Elizabeth Habic
Maryland Geological Survey (MGS): Bill Panageotou, Jeff Halka
Maryland Port Administration (MPA): Steve Storms, Nat Brown
National Marine Fisheries Service, Habitat Conservation (NMFS): John Nichols
University of Maryland Center for Environmental Science (UMCES): Lisa Wainger
U.S. Army Corps of Engineers - Baltimore District (USACE-CENAB): Jeff McKee, Scott Johnson, Mike Snyder
U.S. Army Corps of Engineers - Philadelphia District (USACE-CENAP): Chip DePrefontaine
U.S. Fish and Wildlife Service (USFWS): Bob Pennington
Weston Solutions, Inc.: Corinne Murphy

Action Items

- John Nichols will research information on the area around Pooles Island in order to begin e-mail voting to complete the ranking of the matrix by May 12.
- John Nichols will send the Corps a copy of the VIMS report on Wolf Trap

1.0 Welcome and Global Information — Gwen Gibson

1.1 Meeting Goals

Ms. Gibson welcomed the group, and everyone introduced himself or herself. She informed the group that the goal of today's meeting is to receive updates on the state DMMP, the Mid-Bay Project Delivery Team, Poplar Island Expansion, the Citizens' Advisory Committee, Cardiff Quarry, and Site 92. Also, the Corps' matrix will be finalized at this meeting.

1.2 Review & finalize summary & actions items from April 6, 2004

Ms. Gibson informed the group that the draft meeting summary from the April 6th meeting was distributed to the team on April 29th. Comments on the draft are due to Ms. Gibson by Friday May 15th. Ms. Gibson pointed out that many of the action items from the April 6th meeting summary are captured in today's meeting agenda. The other action items have been completed.

2.0 State DMMP Process Update **Steve Storms**

Dr. Storms informed the group that the state is continuing to move forward on the DMMP, part of which is coordinating with the USACE on certain projects. Dr. Storms explained that there has been some progress made on the Harbor options. The MPA met with the Baltimore County Harbor Team and presented where the Port is in the process with particular focus on Sparrows Point and the associated community enhancement options. The Baltimore County Harbor Team is lead by David Carroll, and the Port needs to get that Team to tell MPA in detail what they would like to see for the community enhancements. There is another meeting with the Baltimore County Harbor Team on May 26th, and a meeting on May 19th with Baltimore City that will focus on Masonville. Present at these meetings are the MPA, MES, and the Joint Venture of GBA and Moffatt & Nichol. Dr. Storms added that MPA is continuing to work with Jeff McKee to bring the Corps into the process for the Harbor Sites.

3.0 Mid-Bay Island Project Delivery Team (PDT) Update **Scott Johnson**

Mr. Johnson informed the group that the Mid-Bay Islands are coming to the end of the plan formulation stage, and the goal is to be complete with this stage by the beginning of June. The cultural work is almost complete for James and Barren Island, and a draft report on the cultural studies should be available at the end of May. There are a couple of potential anomalies that may have to be investigated further.

4.0 Poplar Island Expansion Study (PIES) Update **Scott Johnson**

Mr. Johnson informed the group that the draft PIES cultural report is complete. The hydrodynamics and hydraulics (H&H) work is ahead of schedule for both the Mid-Bay Islands and PIES. A submerged aquatic vegetation (SAV) survey is scheduled for May 24th through 28th and finfish sampling is scheduled to begin on May 3rd. Mr. Johnson then turned the floor over to Mr. Snyder to explain the engineering design components of the study.

Mr. Snyder distributed summary spreadsheets for Poplar Island Expansion, existing Poplar Island, and the Mid-Bay Islands. He then went on to explain the series of assumptions and criteria used for the model.
The general assumptions are:

- Poplar Island needs to be able to handle 3.2 million cubic yards (mcy) of dredged material annually.
- Maximize efficiency and minimize cost.
- Upland elevations are 20 feet.
- The cardinal rule is not to overload the wetland cells.

- Initial placement in the wetland cell is approximately 70% of the total material that will ultimately end up there.
- Two wetland cells can be brought online per year.
- The optimum lift of the upland cells after decanting is 3 feet.

Mr. Snyder explained that the upland capacity needs to comprise 70-80% of total capacity in order to end placement in the upland and wetland cells at the appropriate time. Placement in the wetland cells needs to end several years before placement in the upland cells is complete. Mr. Snyder informed the group that from existing Poplar Island, the Corps learned that locating wetland cells over borrow areas is not a good option because this created a large hole in the cell. With the low elevation that wetland cells have, it is difficult to fill in a large hole and allow the material to settle to the appropriate height. The ideal size for wetland cells is 35-45 acres with the final elevation not to exceed one foot after placement is complete. If the cells have to be overloaded, the overload must go to the upland cells, not the wetland cells. The result of overloading would be a loss of capacity. The entire life cycle for a wetland cell is approximately six years. There are four years of placement followed by one year of grading and one year of planting. Water from the wetland cells needs to be decanted. Currently at existing Poplar Island, one wetland cell is being developed per year. The period of time that it takes to develop a wetland cell is also dependant on weather.

Mr. Snyder informed the group that the amount of material that will need to go to Poplar Island is 2 mcy per year until 2008, and then starting in 2009, that number will increase to 3.2 mcy. The increase in the amount of material will result in the overloading of cell 6.

Mr. Snyder explained that from what has been learned at Poplar Island, he has concluded that for the Mid-Bay Islands to be at a 50:50 upland: wetland ratio, they will need to be a minimum of 1400 acres in order to handle 3.2 mcy of material per year and be functional from an engineering standpoint. If borrow areas can be located in upland cells, more capacity will be gained so it is possible that there may be a higher percentage of wetlands.

Mr. Johnson added that what the Corps has learned so far is that at a 20-foot elevation, a 50:50 ratio is possible at 1400 acres. If the Mid-Bay Islands and Poplar Island work together, both projects will be more efficient. In general, approximately 60% wetlands may be the maximum size for efficiency of a project. Mr. Johnson explained that making a project larger does not necessarily gain wetlands. The percentage of wetlands will always be in the range of 50 to 60% or the project will be inefficient and not cost effective.

Mr. Pennington asked if all of this information is general, and Mr. Johnson responded that this is in general however it is a tool that can be used to optimize all projects. This information is based on existing Poplar Island, and ultimately it will be looking at an entire suite of options (existing Poplar Island, Poplar Island Expansion, and Mid-Bay Islands) all based on efficiency of material placed and cost effectiveness.

Mr. Young pointed out that this seems to validate the planning that was done for Poplar Island, and Mr. Johnson responded that it does other than Poplar Island is 1100 acres and ideally it would be 1400 acres. If Poplar Island would not have been overloaded with material from Tolchester and Brewerton Channels it would be optimal now.

Mr. Johnson pointed out that sufficient borrow sources for Poplar Island Expansion, James Island, and Barren Island have been found.

Mr. Pennington asked why it takes so long to fix a borrow area that was taken from a wetland, and Mr. Snyder responded that if there is a 20 foot hole next to an area that is only 6 feet deep, it takes 20 to 30 years to build that up.

Mr. Pennington asked how this information affects Poplar Island Expansion, and Mr. Johnson responded that if there is a vertical expansion, there might be a possibility for more wetlands in the expansion. 75 to 80% of the material has to be in upland cells in order for the project to work.

Mr. Snyder explained that this study is the result of seven to eight years of lessons learned at Poplar Island. Some of the other lessons learned include the access channel will be constructed in the middle of the site and the upland cells will be closed of in order to maximize usage.

Mr. Young asked why there is a difference in capacity before and after 2009, and Mr. Johnson responded that Pooles Island will be closing around that time so that adds an extra estimated 1.2 mcy. Poplar Island will be accepting 2.0 mcy annually from the outer channels and 1.2 mcy from the C & D Canal. No material will be from the Baltimore Harbor.

Mr. Johnson informed the group that the numbers indicate that by 2010 another site will be needed for placement of dredged material and this is the reason for the Poplar Island Expansion Study. Mr. Pennington asked what about the Mid-Bay Islands, and Mr. Johnson responded that they will probably not be on line until 2012 because of the studies that must occur before the projects are constructed and there is always the possibility that they may not occur. The spreadsheet that was distributed to the group demonstrates where projects need to come on line in order to maximize efficiency.

Dr. Storms suggested that this information be presented to the Management Committee in a simplified format using a bulleted list and fewer words.

Mr. Johnson asked that comments on the information distributed be directed to the Corps. MPA and GBA are currently in the process of reviewing this information.

Mr. Johnson pointed out that 1 mcy of dredged material is equivalent to approximately 0.7 mcy of placed material for the purposes of capacity calculations.

Mr. Rowe suggested that in order to minimize overloading, it may be beneficial to differently manage quantities that are dredged, and Mr. McKee responded that this is possible but that minimizes efficiency because the Corps will have to go back to that area sooner and dredge again.

5.0 Update on Citizens Advisory Committee April 14 Meeting Jeff Halka

Mr. Halka informed that there were no comments sent from the CAC to the BEWG. At CAC meeting, Ms. Murphy gave a presentation on the Corps DMMP and there were several comments on that from the citizens. Many of the comments were on issues the BEWG had been debating such as economics versus the environment. These questions will be able to be answered better as the process moves forward.

6.0 Cardiff Quarry Presentation Wayne Young/Michael Rooney

Mr. Young informed the group that mines and quarries are possibly an effective end-use for dredged material. There is a large slate quarry in Harford County, Maryland that is being looked into as a dredged material placement site. Cardiff Quarry is a combination of three quarries, one of which has a potential capacity of 6 to 7 million cubic yards. Currently, the three quarries are filled with water and at this time it is uncertain whether this is due to rain or seepage. Property ownership could be an issue for the quarry because there is more than one owner and not all owners are listed. Cardiff Quarry is approximately 22 miles from the nearest deep water access at Havre de Grace, there is no rail access, and road access is through mainly rural residential areas. There is a potential for groundwater effects from placing dredged material in the quarry, and there are also potential safety issues. Mr. Young explained that there were no cost estimates completed for this project. The cost estimate however, would have to include dewatering and processing of the material in the beginning and then transporting the material by road, which could get expensive.

Mr. Rooney explained the geologic conditions in area that the quarry is located and the potential flow of the groundwater in the area. There are 125 permitted groundwater wells within a 1-mile radius of the quarry. Recently, the Pennsylvania Department of Environmental Protection approved the use of a dredged material mixture for abandoned mine reclamation, and this site may provide an opportunity to reclaim an abandoned mine using dredged material in Maryland.

Mr. Pennington asked what the capacity of the mines is, and Mr. Rooney responded that there is approximately 7 to 9 mcy of capacity in the second quarry alone.

Mr. Pennington then asked where all the water that is currently in the quarries will go, and Mr. Rooney responded that it would have to be drained. Mr. Young explained that it is currently unknown whether or not there is a connection to the groundwater in the area. Mr. Brown pointed out that at this time it is not certain where the water would go once it is drained because there is not stream nearby and there are concerns about the possibility of groundwater contamination.

Mr. Pennington pointed out that in the process of moving the dredged material the roads in the area would be destroyed and that could bother people in the local communities. He explained that a limiting factor for this project could be there is no practical way to get the material to the site.

Mr. Johnson asked if the MPA anticipates this project going any further, and Mr. Brown responded that the MPA was required to look into this option because the site real estate agent approached the governor about the possibility of selling this land to the state. Potential problems with the project were quickly realized. Mr. Johnson suggested extrapolating costs and research from the Corps' DMMP and use those for further evaluation of the project.

Dr. Storms asked how the BEWG feels about this project. The BEWG voted and agreed that enough research has been done on the Cardiff Quarry site and more suitable sites could be pursued. The BEWG did not recommend further action or research on the Cardiff Quarry option.

7.0 Use of Dredged Material for Hurricane Isabel Repairs Steve Storms

Dr. Storms informed the group that MPA received a call from a landowner to see if the Port could help repair shoreline damage that occurred during Hurricane Isabel. Mr. McKee pointed out that the Corps does not fund projects on private property. Dr. Storms asked the BEWG if this is something that they would like the MPA to consider. The BEWG voted and did not recommend this option for further consideration.

8.0 Report on Pooles Island (Site 92) Disposal Site Elizabeth Habic

Ms. Habic informed the group that there is approximately 6 mcy of capacity remaining at the Pooles Island Open-Water Placement Site 92. Initial placement at this site began during the 1998/1999 dredging season. Monitoring at the site consists of bathymetric surveys done before, during, and after dredging and coring, which is done before and after dredging. Turbidity plume monitoring is conducted only if the placed materials exceed the authorized height of –14 feet Mean Lower Low Water (MLLW). The study team for the project includes MPA, CENAP, MES, MGS, and MDE.

9.0 Final Revisions to Scoring Matrix for Federal DMMP Alternatives John Nichols/Corinne Murphy

Mr. Nichols informed the group that he contacted sources at VIMS concerning sandbar sharks in the lower bay. He concluded from his research that the score for beach nourishment in Virginia (Option #5) should be a 0 for HAPC because sandbar sharks reside primarily in deep water, and only enter shallow water to feed. They would probably be rare in an area that is being considered for beach nourishment. The score for beach nourishment in Virginia (Option #5) EFH should be 0. The BEWG agreed with these scores.

Mr. Nichols suggested that the score for Capping of the Elizabeth River, VA (Option # 9) HAPC should be 0 because the neonates are sensitive to pollution so they are not in that area.

Mr. Nichols explained that for Wolf Trap Open Water Placement (Option #B6) the score for commercial fishing and thermal refuge should be –1. This area is used for crab dredge fishery and breeding migratory female crabs utilize the area. Mr. McKee asked if this area is deep enough for thermal refuge, and Mr. Nichols responded that it is deep enough at 20 to 30 feet. Mr. Halka asked if thermal refuge would apply in this area because warm water will have moved up the Bay by the winter. Mr. Nichols responded that VIMS recommends that this area not be used during the winter. The BEWG voted to change these scores to –1.

Mr. Nichols informed the group that he does not have information on Pooles Island or Deep Trough commercial fisheries (options #B3 and B4). Mr. Johnson suggested that an email vote be conducted as soon as Mr. Nichols has this information available. Mr. Nichols will get this information by the middle of next week and the vote should take place at the end of the week.

10.0 Other Updates & Next Meeting **Gwen Gibson**

The next BEWG meeting is June 8th at 1 pm in MPA Conference Room A.

DREDGED MATERIAL MANAGEMENT PROGRAM

Bay Enhancement Working Group

Meeting Summary

June 8, 2004

1:00 PM, Maryland Port Administration Conference Room A

Maryland Port Administration, 2310 Broening Highway, Baltimore, MD

ATTENDEES

EA Engineering, Science and Technology, Inc. (EA): Jane Boraczek
Ecologix Group: Bob Hoyt
Gahagan & Bryant Associates (GBA): Dennis Urso, Ed DeAngelo, Richard Thomas
Maryland Department of the Environment (MDE): Matthew Rowe, Charles Poukish
Maryland Department of Natural Resources (DNR): Roland Limpert
Maryland Environmental Service (MES): Gwen Gibson, Stephanie Maihan, Tim Scripko
Maryland Geological Survey (MGS): Bill Panageotou, Jeff Halka
Maryland Port Administration (MPA): Nathaniel Brown, Steve Storms
National Oceanic and Atmospheric Administration (NOAA): Peter Bergstrom
University of Maryland Center for Environmental Science (UMCES): Lisa Wainger, Elizabeth Price, Dennis King
U.S. Army Corps of Engineers - Baltimore District (USACE-CENAB): Scott Johnson, Mark Mendelsohn, Christopher Spaur
U.S. Army Corps of Engineers - Philadelphia District (USACE-CENAP): Chip DePrefontaine
U.S. Environmental Protections Agency (USEPA): Bill Muir
U.S. Fish and Wildlife Service (USFWS): Bob Pennington
Weston Solutions, Inc.: Corinne Murphy

Action Items

- The BEWG will provide comments to Ms. Murphy regarding the Federal DMMP presentation by Tuesday June 15th.

1.0 Welcome and Global Information — Gwen Gibson

1.1 Meeting Goals

Ms. Gibson welcomed the group, and everyone introduced himself or herself. Ms. Gibson informed the group that the goal of today's meeting is to receive updates on the state DMMP, federal DMMP, Mid-Bay Project Delivery Team and the Poplar Island Expansion Study. There will also be a presentation on economic trade-off analyses.

1.2 Review & Finalize Summary & Action Items from May 4, 2004

Comments are due to Ms. Gibson soon on the draft meeting summary from the May 4th BEWG meeting, so the summary may be finalized. Ms. Gibson mentioned the first action item was completed. She stated that an email had been sent out informing all

BEWG members that the results of the email vote for Deep Trough and Pooles Island commercial fisheries were that both parameters had been scored -1. Ms. Gibson informed the group that if anyone needed another copy of that email to let her know. Ms. Gibson stated she is unaware of completion of action item two, which concerned Mr. Nichols forwarding a report to the USACE. Mr. Nichols was not present to say whether action item two is complete or not, and Mr. Johnson did not know if a report had been received.

2.0 State DMMP Process Update **Steve Storms**

Dr. Storms informed the group that security levels at MPA will be increasing next week. There will be a guard posted in the lobby and a photo id will be required for entry.

Dr. Storms explained three areas have been highlighted in the Harbor for further study: Sparrows Point, Masonville, and BP Fairfield. The Harbor JV is currently working on feasibility level studies for these sites. Dr. Storms informed the group that sand would be needed from borrow sources for the potential Baltimore Harbor placement facilities. Dr. Storms then turned the floor over to Mr. Urso.

Mr. Urso stated reconnaissance studies are finished and feasibility studies are underway. An EIS still needs to be completed. The main question with this project is from where to borrow sand, especially for the Sparrows Point option. Mr. Urso informed the group of the conditions and requirements at each potential site. Sparrows Point would require approximately 6 mcy of borrow and BP Fairfield would require approximately 2 mcy of borrow. Masonville has some sand available within and near the footprint, however 2-3 mcy are still needed from elsewhere.

Mr. Pennington asked what was meant by elsewhere. Mr. Urso explained that sand had to be brought in from some other source.

Mr. Urso stated Sparrows Point currently has unsuitable foundation, which is very soft and deep, and would need a lot of sand in order to improve the foundation for dike construction. Mr. Urso informed the group that there are other technologies that can be employed to form a suitable foundation. One technology is a cement-type material, however it is costly.

Mr. Pennington stated that this seems like it will be twice the budget for the Mid-Bay Islands and that is costly. Mr. Urso explained the conceptual studies for BP Fairfield are not yet complete.

Mr. Urso informed that group that one alternative source for the sand needed for these sites may come from Site 1. During the Upper Bay Island studies a lot of sand was found at Site 1.

Mr. Pennington stated that Site 1 is an open water site. Mr. Muir stated that EPA would be adamantly opposed to using Site 1 as a borrow source, and Mr. Pennington concurred explaining that is the position of USFWS as well. Dr. Storms responded that Site 1 was just one of the alternatives and that there are others. Mr. Pennington then asked why should we dredge 1500 acres in the middle of the Bay. Mr. Urso explained that another option under consideration for borrow source is material from the Craighill Channel.

Mr. Limpert clarified that if the Craighill Channel is dredged to –60 feet or below to obtain borrow, that this depth will not be maintained. Mr. Johnson responded that the channel will not be maintained to a depth of -60 feet, and the channel would continue to be maintained to a depth of –50 feet. Mr. Urso pointed out that the same thing was proposed for borrow for Poplar Island.

Dr. Storms stated that it seems like the BEWG has no objection to using channels as borrow sites and open water sites do not need to be considered, and the group agreed.

Mr. Johnson asked what the break-even point is, and Mr. Urso responded that it differs from site to site.

Ms. Gibson asked if there are any more questions or comments, and there were none.

3.0 Federal DMMP Process Update **Corinne Murphy**

Ms. Murphy informed the group of her goals for the June 8th meeting, which include reviewing the environmental scoring and costing, review of the trade-off analysis, presenting suites of alternatives for each geographic area, and updating the schedule, Ms. Murphy gave an update as to what is completed, what is underway, and what still has to be done.

Ms. Murphy presented a ranking of potential sites based on the BEWG scores. The list is organized in descending order with the sites that scored highest at the top.

Ms. Boraczek asked why the existing sites are rolled into the potential sites list. Ms. Murphy responded that the base plans were mixed into the potential sites list because they can still take material. Ms. Boraczek then stated that she thought the base plans were going to be separate so the potential sites could be compared to them. Ms. Murphy stated the base plans being included does not directly impact the potential sites list. Ms. Boraczek then stated the base plans seem to be scored low.

Ms. Murphy then gave the floor to Dr. King to explain the strengths and weaknesses of the BEWG scoring.

Dr. King stated that the BEWG scoring has several strengths, which include:
- Comprehensive treatment of environmental/habitat issues
- Capable of dealing with wide range of placement sites/methods
- BEWG had full representation of public agencies, not just scientists
- “Professional judgment” about importance used to assign weights
- Considered socio-economic as well as bio-physical end points
- Effective at consensus building and overall scoring of options

Dr. King stated that the BEWG scoring also has several weaknesses, which include:

- No accounting for size magnitude of project (e.g. habitat acres impacted/created)
- No accounting for technical or logistical feasibility
- No accounting for costs, risks, or timing issues
- No accounting for opportunities to mitigate adverse impacts
- Some options ranked on presumed "harm avoided" from removing dredged material, not actual "bay enhancement"

Dr. King then explained his conclusions about the BEWG scoring:

- BEWG indicators provide the only acceptable basis for comparing "environmental benefits" of placement options
- Empirical error in BEWG indicators is random, not "biased"
- Introducing "magnitude" is preferred to ignoring it
- Absolutely no tampering with final BEWG scores
- Options with BEWG scores based exclusively on "harm avoided" (removing sediment from bay) should be treated separately from those with scores based on actual environmental creation, restoration or enhancement

Ms. Boraczek asked if examples of options based on "harm avoided" could be given, and Dr. King replied examples would be building materials, agricultural placement and ocean placement.

Dr. King informed the group that assumptions have to be made in order to use the BEWG scores. One assumption is that the BEWG scores are a measure of environmental gains/losses per unit area (acre). A second assumption is the alternative must create, restore, or enhance some type of habitat to generate environmental benefit. Dr. King then suggested the BEWG scores be normalized to all positive numbers in order to decrease confusion about negative numbers.

Mr. Mendelsohn asked if this meant removing toxins from the Bay was not going to be counted as enhancing the Bay. Mr. Johnson replied that the removal of dredged material gets toxins out of the Bay.

Dr. King suggested changing the wording to include the fact that all dredged material removes toxins from the bay. Mr. Johnson asked for the BEWG to approve the assumptions needed to determine the Total Environmental Benefits of each alternative previously scored by BEWG. This score would be determined by multiplying the BEWG score by the acres of habitat that will be created.

The first assumption discussed regarded normalizing the environmental matrix scores, so no numbers were negative. The group voted and agreed to adjust the scale of the scores to have all positive numbers.

Ms. Murphy asked about the assumption that the alternative must create, restore or enhance a habitat. Mr. Pennington voiced concerns about this assumption.

Mr. Pennington pointed out that the disposal of dredged material may cause environmental impacts and sites on which there would be little or no negative impact need to be considered, even if they are not "beneficial use".

Ms. Murphy stated that in order to go to the next step all sites have to be compared on a common measure. Dr. King added that multiplying the BEWG scores by acre impacted could do this. The impact area would equal created habitat. If no habitat is created there is no impact area, resulting in a score of 0, which is neutral.

Mr. Limpert stated that he thought a tiered system was going to be used, and Ms. Murphy responded that this was somewhat captured in the matrix scores. Ms. Murphy stated the potential sites have to have all alternatives on the same "playing field." In order to have all the alternatives on the same playing field the BEWG scores have to be multiplied by impact area.

Mr. Halka asked if habitat protection is being dropped as a Bay enhancement, and Dr. King answered those alternatives that are presumed to enhance the Bay by removal of dredged material alone will be dropped.

Mr. Pennington asked what the Corps thought, and Mr. Johnson replied that capacity and economics have to be looked at, as well as the environment.

Ms. Boraczek pointed out that some of the alternatives went against Maryland regulations. Mr. Johnson replied all alternatives have to be looked at for the federal process, even those that are not legal under state law.

Ms. Gibson initiated a vote on the assumption that the alternative would have to create, restore, or enhance habitat and the group agreed. Mr. Muir stated that the EPA would like a caveat included which takes into account Brownfield and strip mine reclamation.

Ms. Boraczek suggested adding a caveat to the text in regards to the removal of toxins by all dredged material. Mr. Pennington suggested that the statement was not very defined.

Please Note: After the meeting concluded, it was decided that Weston would revise the text of their presentation to reflect the above discussion instead of developing a formal caveat.

Ms. Murphy suggested moving on to voting on the third assumption: adjusting BEWG scores by multiplying by acreage (or comparable units) of environmental benefits.

Mr. Pennington asked if shoreline enhancement projects were included, and Ms. Murphy stated that shoreline enhancement was counted in acreage.

Mr. Muir asked if the building products score could include the value of the product. Mr. Johnson stated there is too much uncertainty about the value of the product to be included.

Mr. Pennington asked what the big expenditure is for agricultural placement. Mr. Johnson replied that transportation costs are high because the sites are inland.

Mr. Pennington asked if the dredged material was usable for making bricks. Mr. Mendelsohn responded that bricks are already being made with material from other ports.

Mr. Muir informed the group that New York Harbor has already made bricks from their dredged material. Mr. Muir then asked if the possible future benefit from Brownfields was looked at, and Mr. Johnson replied that it was not, since Brownfield landowners would be the only ones to profit.

Ms. Murphy then began to explain the concept of suites. Each suite is a group of alternatives that meets the capacity needs in four geographical regions. The four areas are Baltimore Harbor, C & D approach, Chesapeake Bay (MD) and Chesapeake Bay (VA).

- Harbor – 30 mcy
- C & D Approach – 24 mcy
- Chesapeake Bay (MD) – 40 mcy
- Chesapeake Bay (VA) – 10 mcy

Ms. Murphy stated these capacity requirements meet the dredging needs of the federal government for the next 20 years. Some suites only consist of one alternative, because the alternative meets the capacity requirements by itself. Other suites have groups of alternatives organized in several ways. Ms. Murphy pointed out that only federal constraints are being taken into consideration as of right now. Mr. Johnson added that no possibilities could be ruled out.

Ms. Murphy then presented graphs comparing the suites by cost and environmental benefit, based on the previously discussed assumptions. She explained the next steps of the trade-off analysis and gave a schedule of important dates for the group to keep in mind. Ms. Murphy asked if the group could comment on the suites and what they thought was best as soon as possible.

Ms. Gibson asked the group to vote on multiplying the BEWG scores by acreage of impacted area. Mr. Limpert stated that he could agree and suggested changing the wording of the Federal DMMP assumption that the BEWG scores could be used as a measure of environmental impact if multiplied by acreage, however the BEWG scores were not created with this intent. Everyone in the group voted yes to using the multiplier but the wording should be changed.

4.0 Economic Trade-Off Analysis Presentation Dennis King

Dr. King stated he would keep the presentation short, because most of it was covered in the previous presentation. He explained that there are two factors to consider in a restoration process, benefits and costs. He added that once this gets to the political arena, political rules might override economic rules. Dr. King stated this occurs because there is limited funding for many projects. Dr. King concluded by stating the BEWG can and should do a trade-off analysis. There are two questions remaining for the future: what additional criteria will political leaders need and what additional information is needed.

5.0 Mid-Bay Island Project Development Team (PDT) Update Scott Johnson
&
6.0 Poplar Island Expansion Study (PIES) Update Scott Johnson

Mr. Johnson gave a brief update covering the Mid-Bay Island and the Poplar Island Expansion Studies. Mr. Johnson explained that the plan formulation for both studies would move forward pending the outcome of the federal DMMP analyses. Currently the Mid-Bay options have been narrowed down to a stand-alone James Island, a 1,400-acre Barren Island, and a combination of James Island and a small Barren Island. The PIES has narrowed down their consideration to a 450-500 acre northern expansion and possible dike raising. Mr. Johnson suggested presenting details at the next meeting.

7.0 Other Updates and Next Meeting ` Gwen Gibson

The next BEWG meeting is July 6th at 1pm in MPA Conference Room A. Ms. Gibson stated that there is a CAC meeting June 9th. Ms. Gibson reminded the group of the extra security precautions next time and to remember to bring photo identification.

DREDGED MATERIAL MANAGEMENT PROGRAM

Bay Enhancement Working Group

Meeting Summary

July 6, 2004

1:00 PM, Maryland Port Administration Conference Room A

Maryland Port Administration, 2310 Broening Highway, Baltimore, MD

ATTENDEES

Citizens Advisory Committee (CAC): Fran Flanigan
EA Engineering, Science and Technology, Inc. (EA): Jane Boraczek
Gahagan & Bryant Associates (GBA): Ed DeAngelo
Maryland Department of the Environment (MDE): Matthew Rowe
Maryland Department of Natural Resources (DNR): Roland Limpert
Maryland Environmental Service (MES): Gwen Gibson, Stephanie Maihan, Tim Scripko, Cece Donovan
Maryland Geological Survey (MGS): Bill Panageotou
Maryland Port Administration (MPA): Nathaniel Brown
University of Maryland Center for Environmental Science (UMCES): Lisa Wainger, Elizabeth Price
University of Maryland Wye Research and Education Center (UMD-WREC): Ken Staver
U.S. Army Corps of Engineers - Baltimore District (USACE-CENAB): Scott Johnson
U.S. Army Corps of Engineers - Philadelphia District (USACE-CENAP): Chip DePrefontaine
U.S. Environmental Protections Agency (USEPA): Bill Muir
U.S. Fish and Wildlife Service (USFWS): Bob Pennington
Weston Solutions, Inc.: Corinne Murphy

Action Items

- MES will verify that the final report on agricultural placement can be sent out to the BEWG.
- The BEWG will provide comments to Ms. Murphy regarding the Federal DMMP presentation by July 21st.
- Mr. Johnson will send a summary of the Federal DMMP preferred alternatives to the BEWG members.

1.0 Welcome and Global Information — Gwen Gibson

1.1 Meeting Goals

Ms. Gibson welcomed the group and informed everyone that the sign-in sheet had a new format. Ms. Gibson informed the group that the goal of today's meeting is to receive updates on the state DMMP and federal DMMP. There will also be a presentation on the agricultural application of dredged material. Ms. Gibson informed everyone that Ms. Donovan would be giving the state DMMP update instead of Dr. Storms.

1.2 Review & Finalize Summary & Action Items from June 8, 2004

Comments are due to Ms. Gibson by July 13th on the draft meeting summary from the June 8th BEWG meeting, so the summary may be finalized. Ms. Gibson mentioned the only action from last meeting was to send comments to Ms. Murphy about her presentation by June 15.

2.0 State DMMP Process Update Cecelia Donovan

Ms. Donovan stated that on July 22, 2004 there would be a public information session for Cox Creek. The session will give the public information on the facility. The Mid-Bay EIS is underway, with the first sections drafted. The Poplar Island Expansion SEIS is proceeding. Ms. Donovan informed the group that the study on the harbor sites is continuing. The state is continuing their studies and is waiting for the USACE to be ready to begin participation on NEPA study of the Harbor sites. Mr. Johnson replied that the USACE and federal government could probably begin their study in Fall 2004 or in 2005, after the federal DMMP is out.

3.0 Agricultural Application of Dredged Material Presentation Ken Staver

Dr. Staver began his presentation by reviewing potential uses of dredged material on agricultural land. Topsoil is being taken away in a variety of ways, including erosion. When trees are sold, the balls wrapped in burlap bags also contain a large amount of topsoil. Another way topsoil is being lost is in sod production. When sod is cut, topsoil gets taken with the grass.

Dr. Staver is conducting research on using dredged material as a plant growth material. A logistical problem that Dr. Staver came across was how to obtain the dredged material. Trucks were used to transport the dredged material. Upon arrival the dredged material was 80% water and 20% solids. Dewatering had to take place in order to use the dredged material in a mixture with other crop soils. Mixing the dredged material with crop soils became a problem. The dredged material had to be crushed into smaller pieces in order to create a mixture. The dredged material was crushed through a 1-inch diameter screen and then was mixed with two different types of crop soils in four different ratios for two years of trials.

Dr. Staver's study became two fold. The feasibility of using dredged material for plant growth and the environmental impact of the application of dredged material were both studied. Leachate from the dredged material was one area of study. Dr. Staver informed the group that he refers to leachate as the runoff from a heavy rain.

Dredged material is a fine particle sediment. Fine particles provide a water holding capacity. The water holding capacity provides a reservoir for plants to obtain water in times of little rain.

Dr. Staver stated that the leaching of chlorides is of concern. Chlorides are present in the dredged material due to contact with tidal waters, and initially leach the chlorides easily. Over time the amount of chlorides that leach out of dredged material lessens, and the concentrations are similar to cropland.

The leaching of sulfates is also of concern. As the dredged material oxidizes, the sulfides become sulfates and this results in the pH of the dredged material becoming acidic. This in turn increases the concentrations of metals in the leachate or runoff from the dredged material.

Dr. Staver's initial study was with 2½ ft. containers. The crops were taken through a complete cycle to harvest. Soybeans were used in both years and wheat was added the second year. The soil used in the containers was one that had poor pore-water holding capacity. Leachate was collected from the containers. Mixing dredged material into the soil helped it hold more water.

Dredged material has to be neutralized or else its pH will drop. After oxidization, lime can be added to neutralize the dredged material. Neutralizing the dredged material only has to be done once, since the lime will continue to keep the pH from dropping in subsequent seasons.

Metals are of a concern if the pH of the dredged material drops. The main metals of concern are nickel, copper, and cadmium. Neutralizing the dredged material would not allow the pH to drop, thus there would be no leaching of metals.

Dr. Staver combined dredged material with other common fertilizers to see how they compared. The dredged material only treatment fell in the optimal range of fertility for Mg, P, K, and Ca. Dredged material is beneficial as a fertilizer and for its water holding capacity when used in a 20% mixture.

Another study was conducted with field plots. Dredged material was delivered in the winter from the Swan Point Channel. The dredged material again consisted of 80% water and 20% solids. The dredged material was spread out in a layer 1 ft. thick. Dr. Staver planned to make a 50/50 mixture with the native soil and the dredged material, but mixing 2 ft. of surface soil was found to be difficult. The field was planted in fall, but the plants did not grow well. After two years there was some growth present. Dr. Staver pointed out that these two years were dry years.

Dr. Staver conducted another study with field plots. This time the dredged material was already dewatered and contained no salts. The dredged material was spread out 1 ft. lifts and was then limed. The first year after planting was dry, however the plants grew well.

Dr. Staver then gave a summary of his presentation. The first point is that dredged material is a great material for agriculture. The oxidation of dredged material lowers the pH. Metals can leach out if the dredged material is untreated and the pH drops.

Ms. Gibson asked the group if there were any questions or comments on the presentation.

Mr. Muir asked how thick the salt was on top of the dredged material. Dr. Staver responded that it depends on the conditions and that it is best to allow the dredged material to go through the winter cycle to allow the salts to flush out.

Ms. Donovan stated the next level of study is demonstration field test. Another aspect of future studies will be to gain a regional perspective on soil and sediment sources and uses. Ms. Donovan stated there are some questions that need to be answered; such as is there a need for a dewatering site and if so what are the best locations for this? Ms. Donovan informed the group that the next study will begin after a proposal from Dr. Staver is received.

Dr. Staver stated there is a question of whether dredged material could be considered a soil. Ms. Donovan replied that there has been some discussion that dredged material may not meet State Highway Administration or ASTM topsoil standards or definitions.

Ms. Donovan stated that another part of the next step is to answer some economic questions.

Ms. Boraczek asked if the next phase was going to look at the uptake of metals in plants by tissue analysis. Dr. Staver responded that it was. Plants known to have potential to take up metals are going to be planted, such as lettuce. Dr. Staver proceeded to inform the group that plants uptake of metals is limited at neutral pH and metals generally do not go into the grains that they harvest.

Ms Boraczek asked how much the CAC has seen of this presentation and when should the group show them. Ms. Donovan responded that the CAC should see it soon. Ms. Flanigan stated that the CAC has already seen the presentation two years ago, however there are some small differences.

Mr. Pennington asked how many acres of sandy areas there are that could act as potential agricultural sites for dredged material. Dr. Staver responded that he was unsure.

Ms. Donovan stated another question to be looked at is getting the dredged material to the sites economically. Mr. Pennington informed everyone that one truckload is one thing, but the number needed to do this is another. Dr. Staver stated that the one thing that is known is that the dredged material should not be shipped until after dewatering.

Mr. Muir asked if neutralizing the dredged material was required once and then done. Ms. Donovan responded that enough lime is required to neutralize all of the oxidized sulfates, and once that much is added, that is enough. Dr. Staver further stated that most agricultural operations in the region need to lime annually as part of their land management practices for optimum production and pH control.

Mr. Muir asked if there was a final report on this. Ms. Donovan responded that there is. Ms. Gibson asked if it could be sent out. Ms. Donovan responded that MES would check with MPA.

4.0 Federal DMMP Process Update Corinne Murphy/ Scott Johnson

Ms. Murphy informed the group of what is going to be included in the July 6th presentation. Ms. Murphy gave an update as to what is completed, what is underway, and what still has to be done.

Ms. Murphy stated that the last time the BEWG met three assumptions were decided upon. One assumption was that the BEWG score is a measure of environmental benefit.

Mr. Limpert stated that this assumption was supposed to be reworded to reflect the feelings of the BEWG. The assumption should state that the BEWG score "could" be used as a measure of environmental benefit, however was not created with that specific use in mind. Ms. Murphy responded that Mr. Limpert was correct and that she would change it.

Ms. Murphy stated that another assumption the BEWG agreed upon was to take into account the magnitude of the site. The score would be relative to acreage.

Ms. Murphy informed the group that the management roundtable held a meeting on June 16th and 29th. Representatives from the Corps and MPA were present and considered experts on the subject matter. The management roundtable ranked technical and logistical risk on a scale from 1-5. One was considered routine with a high probability of success in managing a predetermined volume of dredged material during the 20-year management period, and five was considered basic scientific research. All of the options fell between 1 and 4. The roundtable determined that there was too great of a risk if a score was greater than 3. Ms. Murphy gave some examples of options that received a score greater than 3. Those examples are agricultural placement, building products, and mine placement, which were not fully developed technologically. Ms. Murphy informed the group that the management roundtable then scored the likelihood the option would be prohibited. The scores again ranged from 1 to 5. One was considered to have no laws prohibiting and low public/regulatory issues and five was considered to have laws prohibiting and high public/regulatory issues. The roundtable decided scores ranking higher than 2 were too risky.

Mr. Muir asked why greater than 2 was decided upon instead of keeping it consistent and making it greater than 3 like the technical and logistical risk analysis. Ms. Murphy responded that the committee thought that greater than 2 would delay the project too long and it would not be able to be completed successfully in 20 years.

Ms. Murphy gave examples of options that received scores greater than 2. Examples of these scores are creation of an artificial island, Cox Creek Expansion, Hart-Miller Island Expansion and a new open water site.

Ms. Murphy informed the group that suites were created to reach capacity needs. An algorithm was developed which was based on total need and existing capacity. Ms Murphy stated that any suite that reached the capacity and up to 50% over capacity over 20 years was considered. Anchor alternatives (large capacity) were combined with small capacity options to meet the capacity needs.

Mr. Pennington stated that he thought the Deep Trough option was already out. Ms. Murphy responded that all options were kept in for the first step.

Step two was to reduce the number of suites by eliminating suites that were clearly inferior. This brought the number of suites down from 14,000 to 590. Ms. Murphy stated that step three was to eliminate suites with unacceptable risk for legal or political reasons. All options with a score of greater than 2 were removed. This brought the number of suites down form 590 to 92 for the C&D approach and the Chesapeake Bay approach.

Ms. Murphy informed the group of the recommended plan selection. Since the Chesapeake Bay approach (VA) has zero net need their recommendation is to continue existing conditions. Ms. Murphy explained that the harbor channels had contaminated material capacity requirements. All of the suites have some site that can take contaminated material. Confined disposal on the Patapsco River was their only option left and was their recommendation.

Ms. Boraczek asked when the technical and logistic risks were taken out. Ms. Price responded that too risky sites were taken out at the beginning. Ms. Boraczek asked if they were taken out before the suites were made. Ms. Murphy responded that they were.

Dr. Staver asked if agricultural placement was thrown out because it had no benefit to the bay. Ms. Murphy responded that it was not felt that it could handle the volume needed within the time frame stated. There will be a re-evaluation process for the federal DMMP at some defined interval. Options that were previously discarded could come far enough that they could be added in the next re-evaluation.

Ms. Boraczek stated that it scored lower because of no direct benefit. Dr. Staver responded that there is a benefit; rehabilitation of SAV and oyster reefs is dependent on removal of nutrients. Ms. Donovan stated that the BEWG only looked at direct benefits and not indirect benefits.

Dr. Wainger stated that, in various presentations to the BEWG, Dennis King has made the point that environmental harms that are presumed to be avoided solely by removing clean sediment from the Bay cannot be considered environmental restoration benefits as part of a federal DMMP. Ms. Murphy stated that the option had to create direct benefits to habitat within the Bay.

Dr. Staver stated that nutrients are still the cause of SAV and oyster bed destruction. Mr. Pennington asked how net removal of nutrients from the Bay would be attained, if they were constantly added even when you remove material from the Bay. Ms. Boraczek stated that in order to take the project to the next level the BEWG had to refine their scores for a federal cost/benefit analysis.

Ms. Murphy informed the group of the recommended plan selection for the C&D approach and the Chesapeake Bay (MD) approach. Alternatives that cost more to attain the same or levels of environmental benefit were eliminated bringing the number of suites down to 20.

Ms. Boraczek asked if the Corps had authorization to use the Norfolk option. Mr. Johnson responded that they did, but the Corps only wants to use it as a fall back option.

Ms. Murphy presented the group with a chart showing the suites cost vs. environmental benefit.

Ms. Donovan asked why the suites seemed to fall out into three clusters. Ms. Price stated that this occurred because there are only so many ways suites could be formed to meet capacity requirements.

Ms. Murphy informed the group that their recommendation would be to combine the least costly/ least beneficial option with the most environmentally beneficial option. This would be the Poplar Island Expansion, large island restoration – Mid-Bay, and a wetland restoration.

Ms. Boraczek asked if the wetland restoration was incorporated in the large island restoration. Ms. Murphy responded that it was separate.

Ms. Donovan asked if the wetland restoration would use thin layer placement. Mr. Johnson replied that there is no way thin placement could be used because there would be too much dredged material to use. Ms. Price explained that the wetland restoration option contained the assumption that there would be 2ft. of placement over 1000 acres.

Mr. Johnson informed the group that the wetland restoration is recommended for future study since it has five times the environmental benefits of any other option. Ms. Donovan asked if the BEWG had scored this as a 2 ft thick placement option. Ms. Murphy responded that the BEWG already has.

Mr. Limpert stated that this all comes back to building large islands. Ms. Boraczek responded that the Corps now has the math to back it up.

Ms. Murphy stated that studies of other options could also be pursued for possible future use. Agricultural placement would be an example of this.

Ms. Murphy presented the schedule of upcoming events and meetings. Comments should be sent to Ms. Murphy on the Federal DMMP presentation by July 21st.

Ms. Boraczek asked if she could be emailed a summary of the presentation for her comment. Ms. Murphy replied that the presentation can be found the Corps' website. Mr. Johnson stated that a text summary of the Federal DMMP preferred alternatives would be sent to the BEWG members.

5.0 Other Updates and Next Meeting **Gwen Gibson**

Ms. Gibson informed the group of a CAC meeting on 8/11/04 and that the next BEWG meeting would be held on 8/03/04.

Ms. Boraczek asked if the group had anything to accomplish at the next meeting, and suggested canceling. Ms. Gibson responded that she was unsure and that she would check with MPA.

Ms. Donovan stated that there is a Management Committee meeting on 8/18/04 (the August Management Committee meeting was subsequently cancelled).

Mr. Johnson informed the group that the scheduling of the management and citizens meetings next month might be shuffled around, due to the federal DMMP development schedule (the August BEWG meeting was subsequently cancelled).

DRAFT
SUMMARY OF THE DREDGED MATERIAL MANAGEMENT PROGRAM
CITIZENS' ADVISORY COMMITTEE MEETING
August 11, 2004, 7:00 PM
2310 Broening Highway, Conference Room A
Baltimore, Maryland

Attendees:

Alliance for the Chesapeake Bay: Charlie Conklin
Baltimore County Department of Environmental Protection and Management (DEPRM): Candy Croswell
Blasland, Bouck, and Lee: Tim Donegan
Chesapeake Bay Foundation: Beth McGee
Cecil County: John Williams
Dorchester County: Bruce Coulson
Ecologix Group: Bob Hoyt
Essex/Middle River Civic Council: George Frangos
Facilitator: Fran Flanigan
Gahagan & Bryant Associates (GBA): Ed DeAngelo
Greater Dundalk Community Council: Thomas Kroen
General Physics Corporation: Sarah Coffey
Greater Pasadena Council: Rebecca Kolberg
Hart Miller Island Oversight Committee: Fred Habicht
Maryland Conservation Council: Mary Marsh
Maryland Department of Natural Resources/Maryland Geological Survey (MGS): Jeff Halka, Bill Panageotou
Maryland Environmental Service: Cecelia Donovan, Michael Rooney, Wayne Young
Maryland Port Administration (MPA): Frank Hamons, Steve Storms, John Vasina, Nathaniel Brown, Katrina Jones
North County Land Trust: Ed Garcia
North Point Community Council: Francis Taylor
Turner Station Heritage Foundation: Courtney Speed
Turner Station Recreation and Parks: Gloria Nelson
US Army Corps of Engineers, Baltimore District (CENAB): Scott Johnson, Mark Mendelsohn, Gwen Meyer
Weston Solutions, Inc.: Corrine Murphy

Action Items:

1. Notify CAC as soon as a date has been set for innovative use workshop
2. Notify CAC of date, time and place for upcoming Executive Committee meeting
3. CAC members to provide any additional comments to Corps on draft DMMP by August 25.

Statements for the Record:

1. None.

1.0 Convene, Welcome, Introductions

Meeting Summary and Action Items **Fran Flanigan**

Ms. Flanigan, facilitator of the Citizens' Advisory Committee (CAC), convened the meeting at 7:00 pm in the absence of chair Greg Kappler and welcomed all of the committee members. Ms. Flanigan requested that everyone state their name and whom they represent. The committee members took turns introducing themselves and stating their affiliations. Ms. Flanigan stated that copies of the revised April 14, 2004 CAC meeting were available for anyone that did not receive a copy. Mr. Frangos made a motion to accept the meeting summary as written. Ms. Marsh seconded the motion and the motion unanimously passed.

Ms. Flanigan provided a status update for the Action Items identified during the April 14, 2004 CAC meeting. The first action item called for information to be provided to the CAC with regard to the results of the C&D Analysis by John Martin. Ms. Flanigan stated that the analysis is ongoing and a status update will be provided later in the meeting. The second action item was to report to the CAC on the results of the Corps' DMMP options selection process. Ms. Flanigan reported that an e-mail was distributed to the CAC members with information detailing the Corps' selected options. More information will be provided with regard to the process and selected options during the Corps' presentation.

2.0 Innovative Use

Plans for Innovative Use Forum **Frank Hamons**

Mr. Hamons reported that an Innovative Use Forum is being planned for the first week of December 2004. Coordination is ongoing to establish a list of speakers and experts in innovative uses that will be able to attend the forum. Presentations will be given detailing different innovative use options that could be implemented with dredged materials, with special attention given to processes that are not currently being used with dredged material. Mr. Hamons explained that the Forum will be a daylong event and it has not yet been determined if the Forum will be held during the week or if it will take place on a Saturday. As soon as a date, time and location are established, the CAC members will be notified. CAC members advised MPA to hold the forum on whichever date is most likely to result in the best attendance of key people like legislators.

Dr. Williams questioned the objective of the Forum. Mr. Hamons explained that two objectives will be set for the Forum. The first objective is to educate interested persons on the types of innovative uses that may be applicable for dredged materials. Mr. Hamons stated that it would be helpful to generate good debate and discussion amongst all interested parties. Mr. Hamons explained that the second objective is to help focus the MPA's efforts in narrowing and identifying appropriate innovative uses for dredged material, as was previously directed by the Executive Committee and recommended by the Harbor Team.

Report on Cardiff Slate Quarry **Michael Rooney**

Mr. Rooney provided a presentation on the preliminary geologic and hydrologic assessment that was completed at the Cardiff Quarry Site by MES. The site was evaluated as a potential innovative use placement location for dredged material. Mr. Rooney detailed the location and history of the site, site visit observations, transportation issues, cost issues, site terrain issues, and ownership concerns.

Mr. Rooney informed the CAC members that the results of the preliminary assessment were presented to the Bay Enhancement Working Group (BEWG) in April. Based on the results of the assessment BEWG recommended that no further work or studies be performed at this time due to concerns associated with the study area. Concerns cited included potential traffic congestion on two lane roads not designed for industrial traffic and passing through small towns; potential effects to local aquifers, wells, and streams; effects of dewatering the quarry on local ecosystems; high cost of using remote location with relatively small capacity; and potential conflicts with local land usage. The potential estimated capacity in the second quarry would have been approximately 6.8 million cubic yards (mcy).

Dr. Williams asked when the quarries were last functional for slate purposes, and if the owner is currently under any pressure to remediate the area. Mr. Rooney responded that the mines have not been operational for approximately 30 to 40 years. During mining activities, only two mines were active. Mr. Rooney explained that the Cardiff Quarry site originated in 1734, and mining reclamation regulations were not put into effect until 1977. Therefore, the landowner is not required to cleanup the site.

Ms. Flanigan questioned what prompted MES to specifically investigate the Cardiff Quarry Site. Mr. Hamons explained that the MPA was approached by Mr. Bob Freeze, a commercial realtor representing the owners, to investigate the site as a potential placement location for dredged material. Ms. Flanigan requested an explanation of the concern reported as "potential effects to local aquifers, wells, and streams", and she questioned if potential leaching problems into the groundwater could result from the placement of dredged material. Mr. Rooney stated that the information reviewed from the Maryland Geologic Survey (MGS) with regard to the site was not site-specific to the Quarry location. There was not enough information available to determine if the wells, aquifers, and quarry were interconnected.

Ms. Flanigan noted that recently a general permit was issued by the Pennsylvania Department of Environmental Protection (DEP) for the use of a dredged material mixture for abandoned mine reclamation in Pennsylvania. Ms. Donovan explained that the Pennsylvania mining operations involved strip mining. The issue existing with using the Cardiff Quarries is that the quarries would be drained before placement of dredged material could take place. It is not known if draining the quarries would, in turn, drain the surrounding wells.

Ms. Flanigan questioned if, based on the results of the Cardiff Quarry preliminary assessment, the CAC should draw the conclusion that mines and quarries are a bad idea with regard to placement of dredged materials. Mr. Hamons stated that only this particular site has been determined to be inappropriate for the placement of dredged materials. Other mines or quarry locations may be deemed appropriate for placement. Mr. Rooney added that based on the amount of dredged material that could be placed at the Cardiff Quarries, it would require approximately 225 trucks per day every day all year to transport the dredged material to the site. Mr. Young added that additional costs would accrue due to the fact that the dredged material must be dewatered at a separate location before being trucked to the placement location.

Dr. Williams speculated that dredged material placement at the Cardiff Quarries could be easily compared to the Corps' Option 19 (mine placement – Cecil County, Maryland). Dr. Williams stated that the estimate for the Corps' option was approximately $50/yard, which would be mechanically similar to placement at Cardiff. Mr. Hamons disagreed and stated that the location for the Corps option is closer to the water, and therefore costs would be lower to transport the material to the mine location. Dr. Williams agreed, stating that based on the high cost associated with dredged material placement at Cardiff, it is wise to look elsewhere for a placement location. Mr. Hamons agreed, adding that many other factors, in addition to cost, were used in the decision to not recommend this site for further studies.

3.0 Corps of Engineers DMMP — Corrine Murphy

Ms. Murphy provided a presentation on Corps of Engineers, Baltimore District DMMP. A summary was provided of the presentation given at the April 14, 2004 CAC meeting. Ms. Murphy also highlighted current activities in the Federal DMMP process, reviewed the habitat index, reviewed the results from the quantitative analysis, presented the results of the qualitative risk analysis, discussed the alternative suite development process, discussed the selection of the Recommended Plan, and updated the schedule.

With regard to the qualitative risk analysis, Dr. Williams expressed his opinion that Rankings 2 and 3 should be reversed. Ranking 2 was presented as an alternative that requires development of specialized techniques and materials, and Ranking 3 was presented as an alternative that requires the standardization of methods. Dr. Williams stated his belief that a standardization of methods would be easier to achieve than the development of specialized techniques and materials. Ms. Murphy stated that, during the management roundtable, several alternatives were clearly Ranked 1 (alternative that is routine and cost-effective), while others were easily Ranked 4 (alternative that is in initial implementation stages) or 5 (alternative that is in basic science, engineering, and experimental stage). Ms. Murphy added that much discussion ensued during the ranking with regard to options being placed as Rank 2 or 3. In the end, only sites with a risk ranking of greater than 4 were eliminated from consideration.

Mr. Frangos expressed his opinion that that Ranking 3 could be encompassed within Ranking 1. Ms. Murphy explained that standardization of methods would be applicable for a technology that could be implemented across the board at multiple locations. It would not be possible to be routine and cost effective if the alternative hadn't already be standardized. Mr. Young added that the sites that are being evaluated under the DMMP are all different, with unique characteristics. Therefore, given the standard of variability within the sites, it appears that Ranking 2 would be easier to achieve than Ranking 3, which is hard to do with so much variability.

Ms. Marsh questioned the reasoning behind the risk rankings. She explained that, during the BEWG analysis, a higher number is representative of more benefit being achieved, making the option more desirable. But with the qualitative risk analysis, a higher number represents a higher risk, making the option less desirable. Ms. Murphy agreed that the number scale could have been reversed. Ms. Murphy added that the scale was used only as an "in or out" decision. If the risk was greater than or equal to 4 the option was not carried further, and any rankings less than 4 were carried forward. The rankings were not used in any further analysis. Ms. Meyer explained that the ranking system was developed by Mr. Dennis King of the University of Maryland. The same ranking system has been used at other locations throughout the country. Ms. Meyers thanked everyone for their input and assured committee members that, during the management roundtable, the same issues were discussed regarding Rankings 2 and 3.

Dr. Williams expressed concern over the logic used to compute the habitat index scores for the different suites of alternatives. Dr. Williams was concerned that the acreage used in the calculation of the index was not representative of the habitat of all options within a suite, and that, by using the calculation, one acre of wetland habitat would appear to yield the same benefit as one acre of upland habitat. Ms. Murphy explained that the BEWG ranking took into account weighting of certain factors of habitat benefit including criteria such as wetlands, uplands, birds, etc. Dr. Williams stated that he understood the process used in calculating the habitat index, but he reiterated his concern with the logic used to create the index.

Dr. Williams stated that according to Ms. Murphy 4,000 suites were created on the assumption that a total of 40 mcy of placement capacity was needed. Dr. Williams questioned how the capacity need was established. Ms. Murphy stated that the amount of need was based on the past dredging averages for existing channels from 1996 to 2003. Based on the past information, a forward projection was made for all Federal, and State channels. Dr. Williams questioned if the need was based on the Federal and State channels being dredged to fully authorized depths. Ms. Murphy explained that the assumption was that the channels would continue to be dredged in the same manner as they have been dredged over the past seven years.

Dr. Williams questioned if an economic analysis had been completed that supported the aforementioned assumptions outlined by Ms. Murphy, and determined that the dredging is economically justified. Ms. Murphy responded that a study is currently being performed by Mr. John Martin to evaluate the economic benefits of dredging. Due to the Martin study being currently incomplete, the presumption of need for the Corps DMMP was based on the Preliminary Assessment. Dr. Williams added that the Preliminary Assessment did not address the Northern Access Channel. Ms. Murphy agreed, but clarified that the Preliminary Assessment completed by the Philadelphia District Corps did address the dredging of the Northern Access Channel. Dr. Williams disagreed, stating that Philadelphia's Preliminary Assessment only addressed a portion of the Northern Access Channel.

Dr. Williams stressed that the Phase I of the Corps' DMMP included a step to complete an economic analysis of dredging need. Dr. Williams questioned if that economic analysis has been completed. Mr. Johnson stated that the economic analysis being done by the Corps is still in progress. Dr. Williams asked if the Corps' economic analysis will be in conjunction with, or separate from the economic analysis being completed by Mr. Martin. Mr. Johnson stated that the Corps' analysis will be separate from the Martin study due to the different criteria used when completing the analysis from the Federal perspective. Dr. Williams expressed great concern that the DMMP would have been completed in vain if in fact the economic studies conclude that dredging of the Northern Access Channel to authorized depths is not economically feasible. Mr. Johnson stated that if the economic analysis comes to that conclusion, the DMMP would then be reevaluated. Dr. Williams also expressed concern that the Corps did not follow their Project Management Plan in completing the economic analysis in the first phase of the DMMP. Mr. Johnson stated that in order to complete the DMMP in a timely fashion, it was necessary to proceed with the DMMP while the economic analysis was ongoing.

Ms. McGee asked for an explanation as to why sites with a zero habitat index (such as building bricks) due to having no acres associated with the alternative, were carried forward for consideration. Ms. Murphy explained that those alternatives could be mixed with other alternatives within a suite. Therefore, the suite would derive benefit from the other alternatives included within the suite, resulting in a non-zero habitat index.

Dr. Williams asked for an explanation between the C&D and Chesapeake Bay (MD) suites LP and PC. Ms. Murphy explained that they both involve a large island restoration in the mid-bay, and a Poplar Island modification. The only difference between the two is the order in which the projects would be implemented. For Suite LP, the large island restoration would be first followed by a Poplar Island modification, and Suite PC would be a reverse of LP.

Ms. Marsh asked for an explanation of the wetland restoration alternative. Mr. Mendelsohn explained that the alternative would include restoration of deteriorating wetlands, and prevention of degradation of other wetlands. Ms. Kolberg asked if, for wetland restoration, if the dredged material would be put on before or after dewatering. Mr. Halka explained that the dredged material would be applied in a wet state. Ms. Donovan added that the demonstration projects using wetland restoration have worked very well.

Mr. Garcia asked, with regard to the Recommended Plan for the Harbor Channels, if the multiple confined disposal facilities within the Patapsco have been identified. Ms. Murphy explained that the Corps DMMP did not identify specific locations, but rather an area of locations within the Patapsco that have potential for placement of Inner Harbor dredged materials. Mr. Johnson explained that after the DMMP is finished, the Corps will need to obtain authority to complete studies on specific areas within the Patapsco to evaluate if they will be appropriate placement locations. Mr. Garcia questioned if the Corps studies will tie into the sites that have already been identified by the CAC and Harbor Team during the State DMMP process. Mr. Johnson confirmed that those sites previously identified will most likely be considered for further studies. Mr. Johnson added that a meeting was held with the higher authority within the Corps to obtain permission to begin studies in advance of the finalization of the DMMP. No response has been received.

Ms. Murphy requested that any further comments with regard to the Recommended Plan be submitted to the Corps no later than August 25, 2004. The Draft DMMP and Tiered Environmental Impact Statement (EIS) will be completed and delivered to the public record in November or December 2004. The Final DMMP and Tiered EIS are expected for completion in May 2005, with a Record of Decision being completed in July 2005.

Ms. Flanigan encouraged anyone with comments or concerns about the Corps' Recommended Plan to submit them to the Corps as soon as possible. Ms. Flanigan added that anyone with citizens groups or community organizations that would like to receive a presentation from the Corps should contact her to coordinate with the Corps.

Ms. Marsh expressed concern that any misassumptions made during the Tiered EIS and DMMP process could negatively effect decisions made in the future with more specific studies. Mr. Johnson stated that a supplemental EIS could be prepared to address any new information identified in conflict with the assumptions made for the Tiered EIS. Ms. Donovan added that part of the DMMP will recommend five-year reviews of the Recommended Plan.

Ms. McGee questioned if the BEWG was comfortable with the habitat index computation, as all the work they put into the rankings could be negated by multiplying the ranking by a zero acreage. Mr. Johnson explained that the Corps met with BEWG and explained the methodology of calculating the habitat index, and they agreed that the method was appropriate. Ms. Donovan added that, under the Federal process, the avoidance of harm is not allowed to be perceived as a beneficial use. Ms. Murphy added that the habitat index was a relative scale that allowed for a comparison of like alternatives.

Ms. Marsh asked if the material from smaller dredging projects would be allowed to be placed at any of the larger proposed placement locations. Mr. Johnson stated that the issue is being addressed within the mid-bay Island study with the possibility of placing dredged materials from small dredging projects at either James or Barren Islands. Mr. Johnson speculated that the placement should not pose a problem as long as the material to be placed meets the quality of material placed at the location from Federal channels. Mr. Hamons cautioned that some Authorizations, such as the Authorization for Poplar Island, include mandates that specify the areas from which dredged materials can originate.

4.0 Update on Other DMMP Business

Harbor Team Progress — **Bob Hoyt**

Mr. Hoyt explained that the Harbor Team is currently working on identifying specific community enhancements for different Harbor placement locations. Much progress has been made due to the great efforts from the communities involved. Based on community input, consultants are ready to begin designing enhancements for the North Point Community and Sollers Point area. Mr. Hoyt stated that by Fall 2004, the community enhancements should be very well defined and be moved forward for further studies. Mr. Hoyt reported that a meeting to discuss the Masonville Cove Area is scheduled for Saturday, August 14, 2004 at the Brooklyn Church of God from 10:00 am to 12:00 pm.

Needs Study by John Martin — **Bob Hoyt**

Mr. Hoyt reported that Mr. John Martin is completing an economic justification analysis for dredging the C&D Canal to current depths. Mr. Martin has completed information collection and is in the process of drafting the analysis. Mr. Hoyt explained that Secretary Flanagan authorized the report during the Executive Committee Meeting in December 2003, and mandated that the report go through peer-review before being distributed. Once the report has gone through peer review, the findings will be reported to the Executive Committee and then to all other DMMP Committees.

Executive Committee Meeting — **Frank Hamons**

Mr. Hamons stated that the next Executive Committee meeting is being scheduled for September 2004, possibly on the 16^{th} or 21^{st} of the month. A finalized date, time, and location of the meeting will be distributed to the CAC members as soon as possible. Mr. Martin's report is expected to be completed before the Executive Committee meeting.

Dr. Williams questioned if the peer review will be completed before the report is presented at the Executive Committee meeting. Mr. Hamons speculated that the peer review would be completed after the initial presentation of the results. Dr. Williams asked who would complete the peer review. Mr. Hamons stated that a selection process would be completed to find an appropriate person to complete the peer review.

Fall Schedule **Fran Flanigan**

Ms. Flanigan stated that the next CAC meeting will involve a presentation and discussion of Mr. Martin's report. Ms. Flanigan thanked all the participants for their generous contributions. Ms. Flanigan reported that the next CAC meeting is scheduled for Wednesday, October 13, 2004, and the final CAC meeting for 2004 will take place on the second Wednesday of December.

Dr. Williams asked if any reports are going to be complied and submitted to the Executive Committee, Governor, and Legislature. Mr. Hamons explained that the MPA has no Legislative obligations to submit a report. Likely a status report will be prepared detailing DMMP efforts during 2004 and will be submitted to the Executive Committee for review.

The meeting was adjourned at 9 pm.

SUMMARY OF THE DREDGED MATERIAL MANAGEMENT PROGRAM CITIZENS' ADVISORY COMMITTEE MEETING
August 13, 2003, 7:00 PM
2310 Broening Highway, Conference Room A
Baltimore, Maryland

Attendees:

Anne Arundel County Land Use: Betty Dixon
Association of Maryland Pilots: William Band
Baltimore County Department of Environmental Protection and Management (DEPRM): Candy Croswell
C & D Canal League: Bill Jeanes
Cecil County: John Williams
Coastal Conservation Association (CCA): Bud Waltz
Coastal Watershed Resources Advisory Committee (CWRAC): Greg Kappler
Congressman Dutch Ruppersberger: Edward Novak
Chesapeake Yacht Clubs Association: Don Burton
Dorchester County Shoreline Erosion Committee: Bruce Coulson
Dundalk Renaissance Corporation: Dan Krepp
Ecologix Group: Bob Hoyt
Essex/Middle River Civic Council: George Frangos
Facilitator: Fran Flanigan
Gahagan & Bryant Associates (GBA): Ed DeAngelo
General Physics Corporation: Sarah Coffey
Greater Dundalk Alliance: Carolyn Jones, Darlene Stauch
Greater Dundalk Community Council: Thomas Kroen
Kent County Watermen: Doug West
Maryland Department of Natural Resources/Maryland Geological Survey (MGS): Jeff Halka, Bill Panageotou
Maryland Environmental Service: Rebecca Farris
Maryland Port Administration (MPA): Frank Hamons, Steve Storms, Bill Lear, Katrina Jones, Nathaniel Brown, John Vasina, Rick Sheckells
North County Land Trust (NCLT): Ed Garcia
North Point Peninsula Community Coordination Council: Francis Taylor
Turner Station Heritage Foundation: Courtney Speed, Gloria Nelson, Dunbar Brooks
US Army Corps of Engineers, Baltimore District (CENAB): Mark Mendelsohn; Scott Johnson, Gwen Meyer
Weston Solutions, Inc.: Corinne Murphy, Kurt Frederick

Action Items:

1. Investigate the issue of e-mails not reaching all CAC members.
2. Investigate to ensure that meeting summaries are being made available on the MPA's DMMP web site.
3. Provide handouts to all CAC members not in attendance for the June 14, 2003 tour of Inner Harbor Sites.

4. Provide a presentation regarding innovative use technologies and how the technologies are being used at other ports around the world.
5. Provide results of sediment quality sampling from the harbor that was prepared by MES for the Harbor Team.

Statements for the Record:

1. None.

1.0 Convene, Welcome, Introductions — Greg Kappler

Approval of Meeting Summary

Mr. Kappler, co-chair of the Citizens' Advisory Committee (CAC), convened the meeting at 7:00 pm and welcomed all of the committee members. Mr. Kappler requested that everyone state their name and whom they represent. The committee members took turns introducing themselves and stating their affiliations.

Mr. Kappler asked for any comments or changes to the summary from the April 12, 2003 meeting. Several committee members stated that they did not receive the e-mail containing the draft meeting summary, and requested copies. Mr. Kappler stated that copies of the summary will be distributed to the committee members. A motion will be made at the October 2003 CAC meeting to accept the meeting summary, to allow for all CAC members to have an opportunity to review the meeting summary.

Mr. Williams expressed concern that copies of the draft meeting minutes were not available for review on the Maryland Port Administration (MPA) Dredged Materials Management Program (DMMP) website. Ms. Flanigan explained that the meeting minutes are not made available on the website until they are approved by the CAC. Mr. Hamons stated that he will investigate the issue of Committee members not receiving all e-mail correspondence, and he will check on the status of having meeting summaries on the website.

Report on Meeting with Department of Natural Resource (DNR) Secretary

Mr. Kappler reported that he met with DNR Secretary Franks in June to discuss the activities of the CAC. Mr. Kappler said that Sec. Franks was very congenial and approachable. The main topics discussed with Sec. Franks included dredging programs, what materials are going into the Bay, where the dredged material is being placed, and oysters in the Bay. Sec. Franks will be co-chairing the Executive Committee with the Secretary of the Department of Transportation. Mr. Kappler stated that he provided Sec. Franks with a copy of the CAC membership list, and updated him on the formation and progress of the Harbor Team.

Mr. Kappler stated that Sec. Franks said that he had heard from several sources that a general feeling exists that the MPA is very arrogant in their handling of dredging issues. Mr. Kappler informed Sec. Franks of his personal opinion that the MPA has made valiant efforts, especially during the past three years, to be forthright and open about all dredging issues. Mr. Kappler invited Sec. Franks to attend any future CAC meetings.

Report on Harbor Tour

Mr. Kappler reported that a Harbor Tour was held on June 14, 2003. Mr. Kappler asked for feedback from any Committee members who attended the tour. Ms. Nelson reported that the tour was a great experience and provided very informative information about each of the potential dredged material placement sites. Mr. Williams commented that the handouts and maps distributed on the tour were very detailed and informative. He suggested that the handouts and maps be made available to those CAC members that were unable to attend the tour. Mr. Kappler agreed.

Plans for Tour of Hart-Miller Island
Ms. Flanigan stated that a tour of Hart-Miller Island has been scheduled for Saturday, August 16, 2003 from 1:30 p.m. until 4:00 p.m. An e-mail notification was sent to Committee members, but anyone who did not receive the e-mail is still welcome to attend the tour. With regards to transportation, those attending can meet the group at the land base for Hart-Miller Island, or at the MPA building on Broening Highway for transportation to the site.

2.0 Update on Harbor Team

Overview of Options **Bob Hoyt**
Mr. Hoyt reported that the Harbor Team has been meeting every three weeks, and attendance has been astounding. Potential Inner Harbor placement options have been forwarded to the Bay Enhancement Working Group (BEWG) for evaluation and ranking within the BEWG matrix. The BEWG ranking will be similar to the ranking completed for the original 27 sites considered under the DMMP. Additional Harbor-specific parameters were established for inclusion in the matrix.

The options forwarded to the BEWG for evaluation included the Masonville area, Amoco site, Dead Ship Anchorage, Thoms Cove, Sparrows Point, Cox Creek, and several innovative use options (i.e., landfill capping, using material to construct bricks, agricultural uses, and mines and quarry reclamation). Mr. Hoyt provided a brief description of the potential projects that may be implemented at each placement location such as fast land construction, shoreline enhancement, beneficial use, and innovative reuse projects.

BEWG Evaluation Process **Jeff Halka**
Mr. Halka reported that the BEWG is comprised of representatives from various Governmental agencies and non-governmental agencies. The members provide technical expertise in evaluating all potential dredged material placement options. The BEWG developed a ranking matrix to score potential dredged material placement locations based on environmental parameters. The BEWG has held five meetings since the April 2003 CAC meeting, with a majority of work being completed with the Harbor Team. A total of 18 options for Inner Harbor dredged material placement are being evaluated. Several locations have different potential projects to use the dredged material, and thus are evaluated separately within the matrix.

Mr. Halka reported that several parameters were added to the original matrix to address the Harbor-specific issues. A total of 52 parameters are being evaluated for each site. Added parameters included commercial and community socioeconomics, public health, public safety, beneficial use, and recreational enhancements.

Mr. Halka stated that when the Harbor Team was established, a discussion was held to potentially develop a subgroup of the BEWG to address the Inner Harbor options. No subgroup was developed, and the entire BEWG has been working to evaluate the Harbor options. As new information becomes available, the matrix and scoring of the parameters will be adjusted. The next BEWG meeting is scheduled for August 19, 2003, and will involve scoring the non-site specific options such as the innovative reuse projects. Mr. Halka thanked all the committees and groups involved in the Harbor options selection process and commended everyone for their hard work.

Team Perspectives on the Process

Mr. Kappler asked for feedback from the CAC members that also serve on the Harbor Team with regards to the process for selecting Harbor Options. Mr. Taylor stated that a great deal of information has been provided to the Harbor Team through very detailed presentations on topics such as the quality of the sediments being dredged from the Harbor. All comments and questions submitted to the BEWG participating agencies were answered to provide the communities with additional information. Ms. Nelson added that the process appears to be going very smoothly and allows for a great amount of community input. The communities around the Harbor are very concerned and interested in what benefits will be received by the areas in close proximity to dredged material placement options. Ms. Nelson's community had an opportunity to hold a meeting and have presentations from members of the Harbor Team to further explain options and issues dealing with Inner Harbor dredged materials.

Mr. Kroen stated that the process is more streamlined than the process used to identify placement options for Bay materials. The process allows for the focus to be concentrated on a much smaller area to identify potential placement locations. Mr. Kroen stated that the Harbor Team has a good representation of groups and community organizations from the surrounding communities and neighborhoods. Mr. Garcia stated that the Harbor Team also has good representation from the corporate business community.

Ms. Stauch expressed her support that the Harbor Team is considering innovative use options along with containment facility options, stressing her support of using dredged materials for use in mine and quarry reclamations. Ms. Speed stated that a team from the University of Maryland is in the process of obtaining a grant to allow children from the community (elementary, middle, high school, and college students) to participate in scientific evaluations. This interaction with the children of the community may increase the support and confidence the community members have in the scientific evaluations being completed.

Next Steps **Bob Hoyt**

Mr. Hoyt stated that the Harbor Team members will continue to provide feedback from their communities to ensure that when a placement location project is recommended, the project will receive support from the surrounding communities. The next meeting is scheduled for August 21, 2003. The meeting will allow for the BEWG to present environmental rankings and evaluations that have been completed for some of the placement options. A presentation regarding the geotechnical evaluations for several of the placement options will be made. Mr. Hoyt stated groups such as Living Classrooms, the Baltimore Aquarium, and the U.S. Fish and Wildlife Service will discuss potential partnership and education opportunities for projects at the placement locations.

Mr. Hoyt reported that additional Harbor Team meetings will involve writing the draft report. The goal is to complete a final report of recommendations for Inner Harbor placement options by October 31, 2003. The report completed by the Harbor Team will serve as an appendix or attachment to any report prepared by the CAC, Management, or Executive Committees. The report will be available for review by those committees, but will remain as written by the Harbor Team.

Mr. Hoyt thanked everyone involved in the process of forming, and working with the Harbor Team. A great deal of effort has been given to ensure that all interested community members are involved in the process before recommendations are forwarded to the Legislature. Mr. Kappler commended Mr. Hoyt for his dedication and hard work in leading the Harbor Team.

Mr. Williams stated that, based on a discussion from the April 2003 meeting regarding sediment contamination, a representative from the Maryland Environmental Service was going to provide a summary report of sampling results. Mr. Hamons stated that a copy of the summary report would be forwarded to the CAC members.

Ms. Kolberg asked for the status of the innovative use projects. Mr. Sheckells explained that the innovative use contracts are still under procurement process, thus restricting the MPA from discussing any details. The MPA has gone through the entire procurement process, and is in the process of determining whether or not to go forward with the contract. Once the contract is accepted or the procurement process is ended by the MPA all information can be discussed publicly. The MPA will make a decision, and detailed information regarding the innovative use projects will be discussed at the October 2003 CAC meeting.

Mr. Kappler questioned if budgetary constraints were a main factor in deciding to accept the contract being considered by the MPA. Mr. Sheckells explained that a number of issues were being evaluated, and the current budgetary constraints do not constrain the Port's long-term commitment to innovative use.

Mr. Williams suggested that a presentation be given to the CAC detailing information gathered regarding innovative use projects, and projects being implemented by other ports around the world. Mr. Hamons reported that a presentation was given at an innovative uses seminar, summarizing different technologies and the benefits and problems associated with each. Mr. Hamons stated that a similar presentation can be scheduled for a future CAC meeting.

Mr. Hamons and Mr. Sheckells stressed that the MPA is evaluating the procurement process for the innovative use contracts. Mr. Hamons stated that the procurement process was prolonged due to the process being open for any contractor to submit a proposal for any process that would be applicable in the Baltimore Harbor, and allowing the possibility for having more than one contract being awarded.

3.0 Report on the Corps of Engineers DMMP

New Web Page **Gwen Meyer**

Ms. Meyer presented a walk-through demonstration of the website developed for the Corps of Engineers DMMP (http://www.nab.usace.army.mil/projects/Maryland/DMMP/index.html). She demonstrated the different options within the site including sections for placement sites, maps, public involvement, and timeline.

Overview of Scope of Work and Schedule **Gwen Meyer**

Ms. Meyer reported that the Preliminary Assessment was completed in September 2001 and the public scoping meetings were started in June 2002. A draft DMMP with a tiered Environmental Impact Statement (EIS) will be completed and sent out for public review in October 2004. The final DMMP and tiered EIS are planned for completion in May 2005.

Mr. Williams expressed concern that the Project Management Plan (PMP) is not available for review on the Corps DMMP website. Ms. Meyer stated that the PMP is a "living document" and therefore is not on the website for review, but the document was distributed to the public. Mr. Johnson explained that the document is constantly changing as new information becomes available, making it difficult to keep an accurate copy on the website for public review.

Mr. Williams suggested that a list of citizen questions submitted during the public review process, along with the Corps's responses, be included on the DMMP website. Ms. Meyers explained that a list of frequently asked questions is included on the website, but additional questions may be added in the future if necessary. Ms. Meyers also stressed that the Corps can be contacted directly from the website for any questions, suggestions, or concerns.

Role of Local Sponsor **Frank Hamons**

Mr. Hamons explained that the Corps has been actively involved in the State DMMP process since the beginning by means of attending committee meetings and providing input with regard to placement options. As the Corps began their DMMP process, the MPA was invited to participate in the Corps process through committee support. When a placement location is ultimately selected and recommended for further action, both the MPA and Corps will have to agree for a formal cost-sharing agreement to be implemented.

Mr. Burton expressed concern about the MPA DMMP and the Corps DMMP concluding with different recommendations. Mr. Hamons explained that, through close coordination between the Corps and MPA in both DMMP processes, it is unlikely that there will be two radically different sets of recommendations. If conflicting recommendations do arise, the Corps and MPA will have to work together to determine a solution and chose a placement location that can be agreed upon.

Role of BEWG **Jeff Halka**

Mr. Halka reported that, when ranking potential placement options for the Corps DMMP, the BEWG used the same ranking matrix as was used during the State DMMP process, with several new parameters added. The parameters added included infrastructure, socioeconomics, air quality, public health, and public safety. Also, aesthetics and noise were considered as separate parameters for evaluation.

Mr. Coulson asked if the environmental ranking matrix was available for review on the website. Ms. Farris explained that the matrix is generally only handed out during committee meetings due to the matrix changing frequently as new information becomes available. Also, handing out the matrix allows an opportunity for full explanation of the ranking process and caveats that accompany the matrix. Mr. Halka stressed that the matrix is not a stand-alone document. In addition to the ranking, it is important to understand how the options were scored, and what caveats and other documentation were used during the ranking process.

Progress on Poplar Island **Gwen Meyer**

Ms. Meyer reported that the PMP for Poplar Island will be signed on August 25, 2003. The Corps, contractors, and the public have had an opportunity to review the document. Different options for expanding Poplar Island include laterally in a direction based on available resources, or by raising the dikes above the current 20-foot authorization.

Progress on Mid Bay Islands **Mark Mendelsohn**

Mr. Mendelsohn reported that the mid-bay Island study has been narrowed to focus on James Island and Barren Island. Three alignments are being evaluated for Barren Island, ranging in size from 1,000 to 1,700 acres. The alignments being considered for James Island range in size from 980 acres to 2,200 acres. Final alignments will be selected by the end of the summer 2004, with detailed designs being completed by the end of 2004. The draft public report is expected to be completed during the summer 2005, and the final report would be completed during the fall 2005. Authorization could be awarded during 2006, with construction starting in 2009.

Mr. Frangos questioned if both Islands could be recommend as placement locations. Mr. Mendelsohn confirmed that both Islands could be recommended; the decision would ultimately be made based on how much funding is made available.

Mr. Taylor expressed his opinion that the study should evaluate future uses of the placement locations, after placement of dredged materials is complete. Mr. Mendelsohn explained that the study will consider potential future uses for the sites. For example, Poplar Island was originally designed with future uses for wildlife.

Corps of Engineers Base Plan

Ms. Meyers presented a slide with the Federal definition of a base plan, or Federal standard: "Federal Standard means that dredged material disposal alternative or alternatives identified by the Corps which represent the least costly alternatives consistent with sound engineering practices and meeting the environmental standards established by the 404(b)(1) evaluating process or ocean dumping criteria".

Mr. Burton asked if the base plan includes State and Local input. Mr. Johnson stated that, as part of the National Environmental Policy Act (NEPA) process, all public comments are considered when developing the DMMP and the identification of the base plan, but the base plan option must meet the criteria that are outlined by Federal Law. Mr. Johnson explained that the Federal Government pays 100% of costs associated with disposing of dredged materials at the base plan option. Any costs above the cost of placing the material at the base plan option, or those costs associated with placing dredged materials at another location is the responsibility of the State. In general, the base plan is used as an economic consideration in establishing cost-sharing agreements.

Mr. Kappler questioned the effect on an open water placement base plan if the Environmental Protection Agency (EPA) requires states to have Total Maximum Daily Loads (TMDLs), and does not allow for open water placement. Mr. Johnson stated that the EPA is responsible for determining if the Corps base plan is environmentally acceptable. If the EPA requires the State to have TMDLs, the possibility exists that the deep trough would no longer be the most environmentally acceptable option, and therefore the base plan would be changed.

Ms. Meyer explained that four base plans are currently in use. For example, Hart-Miller Island is the base plan for Harbor sediments, Pooles Island is the base plan for the C&D approach channels, and the deep trough is the base plan for Poplar Island. Mr. Johnson stressed that the deep trough is not being used, but the costs associated with the base plan for Poplar Island are used to establish the cost-sharing agreement for dredged material placement.

4.0 Wrap-Up and Next Steps **Greg Kappler and Frank Hamons**

Mr. Hamons stated that a report must be completed and submitted to the Governor and Legislature by the end of 2003. All draft reports from all committees should be completed by October 31, 2003 to allow time for distribution to all committees for review and comment.

5.0 Next Meeting

Mr. Kappler thanked all the participants for their generous contributions. Mr. Kappler reported that the next meeting of the CAC is scheduled for October 8, 2003. At this meeting CAC will receive a report from the harbor team on their draft recommendations.

DRAFT
SUMMARY OF THE DREDGED MATERIAL MANAGEMENT PROGRAM CITIZENS' ADVISORY COMMITTEE MEETING
October 8, 2003, 7:00 PM
2200 Broening Highway, 1st Floor Conference Room
Baltimore, Maryland

Attendees:

Association of Maryland Pilots: William Band
Baltimore County Department of Environmental Protection and Management (DEPRM): Candy Croswell
Baltimore County Waterman's Association: Blair Baltus
Cecil County: John Williams
Coastal Conservation Association (CCA): Bud Waltz
Coastal Watershed Resources Advisory Committee (CWRAC): Greg Kappler
Congressman Dutch Ruppersberger: Christine Botta
Chesapeake Yacht Clubs Association: Don Burton
Dorchester County: Joe Coyne
Dundalk Renaissance Corporation: Dan Krepp
Ecologix Group: Bob Hoyt
Essex/Middle River Civic Council: George Frangos
Facilitator: Fran Flanigan
Gahagan & Bryant Associates (GBA): Ed DeAngelo
General Physics Corporation: Sarah Coffey
Greater Dundalk Alliance: Carolyn Jones, Darlene Stauch
Greater Dundalk Community Council: Thomas Kroen
Greater Pasadena Council: Rebecca Kolberg
Maryland Department of Natural Resources/Maryland Geological Survey (MGS): Jeff Halka, Bill Panageotou
Maryland Environmental Service: Gwen Gibson, CeCe Donovan
Maryland Port Administration (MPA): Frank Hamons, Steve Storms, Bill Lear, Paul Harris, Rick Sheckells
North Point Peninsula Community Coordination Council: Francis Taylor
Turner Station Heritage Foundation: Gloria Nelson
US Army Corps of Engineers, Baltimore District (CENAB): Scott Johnson, Gwen Meyer

Action Items:

1. Provide comments to MPA regarding the Management Committee's Report to the Executive Committee.
2. Greg Kappler is to attend the last meeting of the Harbor Team and extend an invitation to them to join CAC.
3. MPA is to present a background briefing on the innovative reuse options at the next CAC meeting.
4. CAC members are to forward ideas and suggestions on the proposed dredging needs forum to Fran.
5. CAC members are to forward ideas for future topics for CAC to Fran.

Statements for the Record:

1. None.

1.0 Convene, Welcome, Introductions Greg Kappler

Approval of Meeting Summary

Mr. Kappler, co-chair of the Citizens' Advisory Committee (CAC), convened the meeting at 7:00 pm and welcomed all of the committee members. Mr. Kappler requested that everyone state their name and whom they represent. The committee members took turns introducing themselves and stating their affiliations.

Mr. Kappler asked for any comments or changes to the summary from the August 13, 2003 meeting. Mr. Frangos made a motion to accept the minutes as written. Mr. Kroen seconded the motion and the motion passed unanimously.

Update on Isabel

Mr. Hamons reported that Hart-Miller Island suffered little damage as a result of Hurricane Isabel. Damage reported included several planks missing from the personnel pier, light poles knocked down, and a small amount of erosion was observed on several ramps. With regards to the Cox Creek site, the storm surge came as high as the riprap, resulting in a small amount of washout. A number of plants were lost from the wetland mitigation portion of Cox Creek, and will be replaced.

Mr. Hamons reported that some of the dikes in the wetland cells at Poplar Island, at elevations of 8 to 10 feet, were washed out as a result of the storm. Cell 1 experienced approximately 150 feet of washout with a complete loss of riprap, and Cell 5 experienced approximately 450 feet of washout with loss of a portion of the riprap. Some sediment from Cell 6 may be used to restore other areas that experienced washout. Surveys are being completed around Poplar Island to accurately assess the amount of sediment lost as a result of the storm. Mr. Halka added that a survey is being completed for the oyster bars to the Northeast and East of the Island to ensure that the movement of sediment has not adversely affected the oysters.

Mr. Hamons speculated that approximately 10,000 cubic yards (cy) of soil were displaced during the storm. Less damage was observed at Hart-Miller Island due to the high elevation of the dikes at the containment facility. Mr. Johnson explained that Poplar Island was designed for a 25-year storm event. Hurricane Isabel resulted in a storm surge elevation of approximately 7.25 feet, with 40 to 50 mile per hour (mph) sustained winds causing three to four foot waves, increasing the total water elevation to 10 or 11 feet. Preliminary results from the storm indicate that Isabel will be classified as a storm of record, exceeding water elevations observed in 1933. Mr. Johnson expressed pleasure that Poplar Island faired well in a storm that was 4 times as strong as it was designed for. The Corps was surprised by the way the failure of the dikes occurred, with the waves coming over the dike and washing them from the inside out. No armor stones were found out of place.

Mr. Burton asked if the same storm damage could be expected in the future once Poplar Island is closed to the placement of dredged materials. Mr. Johnson explained that after the closure of Poplar Island, the wetland cells will be covered with plants and grasses that will provide extra support and structure. The extra support would reduce the impact of any future storm surge. Mr.

Hamons stated that no damage was observed at Poplar Island in the areas covered by vegetation. Ms. Meyers added that the grass mixture used on the dikes is a combination of warm and cool season native grasses. The grasses are drought tolerant and have a fibrous root system extending 3 to 6 feet into the ground.

Ms. Kolberg asked if local watermen were being contacted to determine if they had observed any differences in the waterways with regards to excess sediment as a result of the storm. Mr. Hamons stated that no reports have been received to date with regards to problems being encountered by watermen. Mr. Johnson stated that post-storm surveys are being completed throughout the Bay channels and in the Harbor. An aerial survey was completed before the storm, and post-storm aerial photographs will be taken. A comparison between the surveys will be completed to observe any changes.

Mr. Burton asked if any significant damage was observed in any of the Bay channels. Mr. Hamons stated that, due to the nature of the storm damage being a result of storm surge as opposed to run-off and erosion, the total effects of the storm may not be observed for several years. Mr. Johnson stressed that the surveys being completed have not identified any safety concerns, and the dredging contractor has not reported encountering more material than originally anticipated.

2.0 Update on Recent Activities and Meetings

Report on Trip to Hart-Miller Island **CAC Members**

Mr. Kappler asked the CAC members that participated in the Hart-Miller Island trip to provide feedback on their experience. Mr. Waltz stated that the trip was excellent and very informative. Ms. Nelson stated that the trip was a pleasant experience, but due to the storm the group was not able to tour around the entire Island. She requested that another tour be scheduled to view the entire Island. Mr. Hamons stated that another tour could be scheduled in the Spring when the weather is warmer.

Ms. Nelson added that several individuals attended the tour that had preconceived perceptions about Hart-Miller Island and the on-going operations. As a result of the tour and the information provided to those individuals, perceptions were changed, giving those individuals a better understanding of the project.

Report on Bay Enhancement Working Group (BEWG) **Jeff Halka**

Mr. Halka reported that the BEWG has held three meetings since the August 13, 2003 CAC meeting. The BEWG forwarded the final matrix and the associated supporting documentation to the Harbor Team for review in August. The Team had minor changes to the matrix that were incorporated into the matrix by BEWG during September. Mr. Halka noted that only a few substantive comments were received with regard to the matrix and supporting documentation, showing the good committee structure set up by the Maryland Port Administration (MPA). Mr. Halka commended the hard work and communication completed by all committees and groups involved in the DMMP process.

Mr. Halka reported that the BEWG meeting held on October 7, 2003 shifted focus to the mid-Bay Island Study and Corps DMMP. The group began focusing efforts on those projects while incorporating the work already completed during the state DMMP process.

Report on Management Committee **Frank Hamons**

Mr. Hamons reported that the Management Committee held a meeting on September 29, 2003, and covered many of the same issues as being discussed during the CAC meeting. A schedule was established to prepare the Management Committee's Report to the Executive Committee. The schedule was presented as follows: October 8, 2003 – draft report forwarded to the Management Committee and CAC members for review; October 15, 2003 – all comments regarding the draft report due to MPA; October 22, 2003 – revised draft report will be distributed for final comments; October 29, 2003 – all comments regarding the revised draft report due to MPA; November 5, 2003 – Management Committee meeting to discuss final comments and prepare final report to be forwarded to the Executive Committee.

Mr. Hamons stated that the draft report is organized to emphasize the Management Committee's recommendations for 2004. The report also addresses progress made for each of the 11 recommendations made by the Executive Committee in their report from 2002. The report also includes a background of the work completed to date for the entire DMMP process. Mr. Hamons briefly summarized the progress made during 2002 for the 11 recommendations of the Executive Committee.

Ms. Flanigan asked to whom the comments regarding the report should be sent. Mr. Hamons stated that all comments should be sent to him or Ms. Katrina Jones. Mr. Kappler urged all CAC members to review the report and provide comments where necessary. He reiterated that the Management Committee's Report to the Executive Committee, upon approval from the Executive Committee, will be forwarded to the Governor and Legislature. Mr. Hamons provided hard copies of the report to CAC members without e-mail access.

Update on Innovative Use RFP **Rick Sheckells, Paul Harris**

Mr. Sheckells reported that the innovative use process was finished and an evaluation was made with the assistance of the Maryland Department of Transportation (MDOT) regarding if the $2 million cost was justifiable for the product resulting from the process. A collective decision was made by the MPA and MDOT not to continue forward with the procurement. The project involved a demonstration-scale contract to use 30,000 cy of dredged material for an innovative use.

Mr. Sheckells introduced the procurement specialist hired by MPA, Mr. Paul Harris, to provide a presentation on the procurement process and the results of the process. Mr. Harris presented a history of the MPA's innovative use project, detailing the scope, history, and timeline of the project. A summary of the proposed innovative uses and associated costs was also presented. Mr. Harris requested that copies of the presentation be provided to the CAC members. Mr. Hamons reiterated that during the procurement process, the MPA was forbidden by Maryland State Law to discuss the details of the process.

Mr. Harris reported that a total of four companies completed the procurement process and presented final innovations and costs. The lowest price proposed was $64/cy. With a total quantity of 30,000 cy, the project would cost approximately $2 million. The high cost estimates may have been driven by the quantity constraint established on the request for proposal. Mr.

Hamons explained that a comparison could be made to Poplar Island, which costs approximately \$10/cy.

Mr. Williams asked for an explanation of the technical scores reported on the summary chart of proposed innovative uses. Mr. Harris explained that the highest possible score was 1,200 and was based on the scope of work that was outlined in the request for proposal.

Mr. Burton and Mr. Williams questioned the value of the final product in the market place. Mr. Harris stated that the companies submitting proposals did not provide market value costs. Mr. Storms explained that an assumption was made that once the material became a final product, it was no longer the property of the MPA, but became the property of the vendor and was theirs to resell. Mr. Sheckells stated that the costs presented reflected the cost to the State from the contractor to take the material from the MPA, out of the Cox Creek facility.

Mr. Sheckells reiterated that the technical scores for each innovative use proposal were completed before the cost prices were submitted. The combination of technical score and cost estimates determined the final rankings. It was coincidence that the lowest cost estimate correlated with the highest technical score.

Ms. Kolberg questioned if any other ports are currently incorporating dredged material recycling. Mr. Hamons stated that ports in New York and New Jersey are working on innovative uses; he has information about the projects and can present the information to the committee at a future meeting. Ms. Kolberg asked if the costs associated with innovative uses are decreasing over time. Mr. Hamons explained that generally to date, the costs have not been decreasing, but staying relatively stable.

Mr. Sheckells stated that the MPA and MDOT are now trying to determine how to take basic technologies and find a cost effective way to employ those technologies. A cost-reasonable option must be determined to make the costs justifiable. Mr. Sheckells asked for suggestions from committee members as to how to move forward with the innovative use options.

Ms. Jones strongly suggested evaluating the use of railroad lines to move the material out of the area, such as shipping the material to Pennsylvania for use in mines and quarries. Ms. Kolberg suggested going to the Federal level and trying to enter into a pilot project similar to those projects offered by the Environmental Protection Agency to power plants. Ms. Kolberg also suggested funding the development of the technology in an attempt to reduce the final costs. Mr. Hamons stated that the MPA will take all suggestions into consideration and will continue to evaluate innovative use options. Mr. Hamons reiterated that he attended a workshop on innovative uses and will provide a detailed report from that workshop at the next CAC meeting.

3.0 Draft Recommendations from the Harbor Team — Bob Hoyt

Mr. Hoyt reported that the Harbor Team received a presentation from Mr. Ed DeAngelo (Gahagan & Bryant Associates) regarding capacity and costs for the different Harbor options. The September 11, 2003 Harbor Team meeting involved a discussion leading to a list of sites recommended for further study. A draft report was prepared and circulated for comments. The October 2, 2003 meeting involved a discussion for revisions to be incorporated into the Harbor Team's report. Currently, a second draft is being prepared and will be circulated for additional comments. The report will be finalized during the October 23, 2003 meeting and submitted by October 31, 2003. Mr. Hoyt thanked all committees, agencies, and companies involved in the process for all their hard work and determination in preparing a report of recommendations to address the dredged material placement for Inner Harbor materials.

Mr. Hoyt explained that the Harbor Team's recommendations were separated into two sections including innovative reuses (policy and specific recommendations) and placement options for community enhancement recommendations. Mr. Hoyt read the policy recommendations for the innovative reuse options and stated that specific recommendations included Cox Creek, mines and quarries, landfill usage, aggregates, bricks, and agricultural uses. Mr. Hoyt also read the policy recommendations for the community enhancement recommendations. Site specific recommendations for community enhancement were outlined in a presentation and included: Cox Creek, Masonville, Masonville Cove, Fairfield Amoco, Sparrows Point 1 and 2, Sparrows Point Wetland, Sollers Point Wetland, Sollers Point Key Quay, Heritage Trail – Colgate Creek, Jones Creek Shoreline, and Bear Creek.

Mr. Hoyt stated that a discussion remains as to the status of the Harbor Team after the submission of their recommendations, and how the Harbor Team can become involved with the CAC. Mr. Kappler is scheduled to attend the next Harbor Team meeting to discuss the issue.

Mr. Kappler thanked Mr. Hoyt, the Harbor Team, and all others involved for the great amount of hard work and dedication completed to come up with their recommendations for Inner Harbor dredged material.

4.0 Report on Corps of Engineers Mid-Bay Island Study — Corps Staff

Mr. Johnson reminded the committee members that the mid-Bay island study screened a total of 105 islands, resulting in two islands, James and Barren Islands, moving forward for further study. Additional data is being gathered for each island, and the study is currently undergoing plan formulation. The plan formulation is expected to be completed in November 2003. The islands are being individually evaluated and a separate evaluation is being completed for a scenario combining the two islands.

5.0 Next Steps

Report to the General Assembly **Rick Sheckells**

Mr. Kappler reiterated the importance of the CAC members reviewing the Management Committee's report to the Executive Committee. All comments and concerns should be forwarded to the MPA as soon as possible. Ms. Donovan asked the committee members in which form they would prefer to receive the final version of the Report, either hard copy or on CD. Ms. Flanigan stated that she would poll the committee members to determine which form each member would prefer.

Corps DMMP Schedule **Corps Staff**

Mr. Johnson stated that Weston Solutions, Inc. was contracted in July 2003 to assist in the preparation of the DMMP. Representatives from Weston are currently gathering background data and information from the Norfolk, Baltimore, and Philadelphia Corps of Engineers Districts. Representatives are also collecting all information already completed during the State DMMP process to incorporate in to the Corps DMMP. The information will be used in the preparation of the tiered Environmental Impact Statement (EIS).

Mr. Johnson stated that the Corps would like to incorporate the CAC into the Corps process as an advisory committee. Incorporation of the CAC would allow for the members to stay intimately involved with both the State and Corps DMMP processes. The Corps is planning a presentation to the BEWG on November 4, 2003 to detail plans for the DMMP process moving forward. The Corps would also like to make a presentation at the next CAC meeting to explain, in detail, plans for the future with regard to the Corps DMMP and how it will incorporate the work already completed during the State DMMP process.

Mr. Williams and Mr. Burton questioned the status of the cost justification being completed as part of the Corps DMMP. Mr. Johnson explained that the economic justification is not part of the contract with Weston, but Dr. Dennis King of the University of Maryland has been contracted to quantify the benefits from different types of habitats that may be implemented in an island restoration project. The overall economic evaluation will be completed within the Corps District. The economic evaluation will look at the costs associated with continued maintenance needs as based on historical data that has been collected. The historic information includes Federal, State, and private dredging amounts.

Ms. Flanigan distributed copies of the letters of concern he submitted to the Corps regarding their DMMP process. The responses prepared by the Corps were distributed in the package with Mr. Williams' letters.

Dredging Needs Forum **Rick Sheckells**

Mr. Sheckells reported that the MPA made a commitment to address the amount of yearly dredging planned. The MPA has tasked Mr. George Chmael (Ecologix Group) to plan a forum to discuss the dredging needs. Anyone with ideas or input regarding the forum should contact Ms. Flanigan so she can forward the information to Mr. Chmael. Mr. Sheckells stated that the forum will likely be scheduled before the end of 2003.

Meeting of Executive Committee **Rick Sheckells**

Mr. Sheckells reported that, due to a new administration, the Executive Committee will have several new members for 2003. A meeting of the Committee is anticipated for the beginning of December 2003.

6.0 Roundtable Discussion — Fran Flanigan

Mr. Kappler and Ms. Flanigan asked for suggestions from the committee members for ideas for topics to be briefed at future CAC meetings. Ms. Flanigan reiterated that Mr. Johnson suggested that the CAC also serve as an advisory committee for the Corps throughout their DMMP process. Ms. Kolberg expressed concern over who would drive the agenda, the MPA or the Corps, and if more frequent meetings would be required. Ms. Flanigan explained that a more detailed discussion regarding any added responsibilities will be discussed during the December 2003 CAC meeting, allowing for more time for comments from CAC members.

Ms. Flanigan stated that Mr. Hoyt had mentioned the possibility that the Harbor Team be adopted by the CAC throughout the future of the DMMP process. This would allow for the

Harbor Team members to stay involved and informed about the progress of the process. No CAC members expressed concern regarding the adoption of the Harbor Team.

Ms. Flanigan asked for any other suggestions for future topics or issues that need to be addressed. Mr. Kappler suggested that the topic of costs associated with dredged materials seems to be of great interest to committee members. A discussion of the costs and how they were derived could provide committee members with a better understanding of the economics of the process.

Ms. Kolberg also suggested that the CAC members be briefed regarding Port trends, similar to the business report provided to the Legislature on a yearly basis. Ms. Flanigan also suggested that a tour be scheduled for committee members to visit Poplar Island. Mr. Williams suggested that the MPA provide brief updates at future meetings on existing projects such as Cox Creek and Poplar Island. Anyone with additional suggestions for topics to be discussed during 2004 should forward ideas to Ms. Flanigan.

7.0 Next Meeting

Mr. Kappler thanked all the participants for their generous contributions. Mr. Kappler reported that the next meeting of the CAC is scheduled for December 10, 2003.

Meeting adjourned at 8:50 PM.

DRAFT
SUMMARY OF THE DREDGED MATERIAL MANAGEMENT PROGRAM CITIZENS' ADVISORY COMMITTEE MEETING
December 10, 2003, 7:00 PM
2310 Broening Highway, Conference Room A
Baltimore, Maryland

Attendees:

Anne Arundel County: Betty Dixon
Baltimore County Department of Environmental Protection and Resource Management (DEPRM): David Carroll, Candy Croswell
C & D Canal League: Bill Jeanes
Cecil County: John Williams
Coastal Watershed Resources Advisory Committee (CWRAC): Greg Kappler
Chesapeake Bay Yacht Clubs Association: Don Burton
Dorchester County: Bruce Coulson
Ecologix Group: Bob Hoyt, George Chmael
Facilitator: Fran Flanigan
Gahagan & Bryant Associates (GBA): Ed DeAngelo
General Physics Corporation: Sarah Coffey, Chelsea Bennet
Greater Dundalk Alliance: Carolyn Jones
Greater Dundalk Community Council: Thomas Kroen
Hart Miller Island Oversight Committee: Fred Habicht
Kent County Waterman's Association: Doug West
Maryland Department of Natural Resources/Maryland Geological Survey (MGS): Jeff Halka, Bill Panageotou
Maryland Environmental Service: Melissa Slatnick
Maryland Port Administration (MPA): Frank Hamons, Steve Storms, Bill Lear, John Vasina Dave Bibo, Rick Sheckells, Nathaniel Brown, Katrina Jones
OA Systems Corporation: Ron Vann, Norman Francingues
Rukert Terminals: Bud Nixon
University of Maryland: Dennis King
US Army Corps of Engineers, Baltimore District (CENAB): Scott Johnson, Mark Mendelsohn, Jeff McKee

Action Items:

1. None.

Statements for the Record:

1. None.

1.0 Convene, Welcome, Introductions — Greg Kappler

Approval of Meeting Summary

Mr. Kappler, co-chair of the Citizens' Advisory Committee (CAC), convened the meeting at 7:00 pm and welcomed all of the committee members. Mr. Kappler requested that everyone state their name and whom they represent. The committee members took turns introducing themselves and stating their affiliations.

Mr. Kappler asked for any comments or changes to the summary from the October 8, 2003 meeting. Mr. Williams noted two errors. The words "innovative uses" appear twice in one sentence on Page 5, paragraph three. The first use of "innovative uses" should be changed to "costs". On Page 7, the sentence stating, "Mr. Williams distributed copies" should be changed to "Ms. Flanigan distributed copies of letters of concern that had been submitted to the Corps concerning their process". Letters had been sent to the Corps from a number of parties, not solely Mr. Williams. Mr. Kroen made a motion to accept the minutes as amended. Ms. Dixon seconded the motion, and the motion unanimously passed.

Mr. Hamons introduced Mr. Francingues to provide a presentation on the innovative use of dredged materials. Mr. Hamons met Mr. Francingues at the Corps Waterways Experimentation Station (WES) in Vicksburg, Mississippi. Mr. Francingues was conducting research, investigations, and evaluations on innovative uses of dredged material, which was relevant to the Maryland Port Administration's (MPA) concerns in the 1980's. While working at WES, Mr. Francingues has consulted on, and contributed to a large amount of dredged materials activity in Maryland for many years, and he is a recognized expert in the field of innovative or beneficial uses of dredged material..

Mr. Kappler stated that the innovative use of dredged material presentation is very relevant to current MPA activities. The Harbor Team's largest message stated that eventually locations for the placement of dredged material would run out, and innovative uses for that material would be required. Mr. Kappler distributed handouts of Mr. Francingues' biography.

2.0 Presentation on Innovative Use of Dredged Material — Norm Francingues

Mr. Francingues provided a presentation on the potential beneficial uses of dredged materials. Handouts of the presentation were provided to all CAC members. Mr. Francingues' presentation detailed justifications, applications, advantages, cost comparisons, challenges to implementation, and potential solutions for beneficial uses. The presentation also summarized several existing projects with beneficial uses of dredged material including: New York HARS (Historic Area Remediation Site) Capping, Houston Ship Channel Deepening Project, Pennsylvania Mines Demo, and manufacturing of raw material bricks in Hamburg, Germany. Mr. Francingues stressed that, when implementing beneficial uses, it is essential to have the right material, for the right application, for the right project.

Mr. Williams asked for a cost estimate for the Bark Camp mining project in Pennsylvania. Mr. Francingues explained that he has attempted several times to obtain the cost estimates for the mining project, but was unsuccessful. The absolute minimum cost would be $56/yard because, that is the cost paid by New York to have it hauled to the Pennsylvania facility. Other cost factors would also have to be incorporated into the total cost including excess handling fees, dredging, and transportation costs. Mr. Francingues speculated that the cost for the Bark Camp mining project could be estimated at $50 to $100/yard.

Mr. Halka requested an explanation of subtidal coastal uses of dredged material. Mr. Francingues explained that the dredged material is placed on the bottom to bring the elevation up in an effort to create subtidal habitats.

Mr. Carroll asked if any Ports around the country currently employ beneficial use as their principal strategy for handling dredged materials. Mr. Francingues stated that the Port of Houston uses the principal strategy of implementing beneficial use before any other placement options for dredged material. Mr. Hamons added that the Port of Houston is using dredged material placement to create marshes as their beneficial use. Mr. Sheckells clarified that the State of Maryland's definition of beneficial uses does not include the creation of artificial islands.

Mr. Hoyt stated that the Harbor Team put forth a recommendation to establish a committee of diverse stakeholders to develop a strategy to address the issue of innovative uses. Mr. Hoyt questioned what key stakeholders should be included in the committee. Mr. Francingues stated that stakeholders should include Federal, Local, and State representatives; marketing representatives; public and private sector business representatives; technical representatives; and individuals familiar with obtaining funding for projects and developing creative procurements.

Mr. Vann cautioned that, in some cases, the goal of beneficial uses may be counterproductive from an environmental and economic point of view. The answer would be "the right project at the right place, at the right time with the right application of dredged material." Mr. Francingues stressed that it is important to include a technical representative on any committee dealing with innovative uses to ensure that a specific technology would be feasible at a specific location.

Mr. Williams requested contact information for Mr. Francingues. Mr. Francingues provided business cards to Mr. Williams and Ms. Flanigan. The information will also be provided to any other interested Committee Member.

3.0 Update on Current Placement Sites — Melissa Slatnick

Ms. Slatnick provided a presentation on current operations being conducted at Poplar Island. Handouts were provided to the CAC detailing the operations, monitoring, and habitat development of flora and fauna conducted from September through November 2003. Ms. Slatnick reported that the Poplar Island Environmental Restoration Project received the Coastal America Partnership Award. The Award recognizes outstanding partnership efforts for projects that preserve, protect, and restore the Nation's coastal ecosystems.

Mr. Kappler questioned if the large bird population on the island threatened the Diamondback Terrapin population that is using Poplar Island as habitat. Ms. Slatnick explained that herons are a natural predator for the turtles, but efforts are made to protect the terrapin population. Efforts include placing fences around terrapin nests in an attempt to reduce predation.

Mr. Kappler asked, in regard to the large number of flora and fauna species observed at Poplar Island, if similar numbers were observed at Hart-Miller Island. Ms. Slatnick explained that Poplar Island was designed and built as an environmental restoration facility, whereas Hart-Miller Island was built as a containment facility. Therefore, monitoring programs were not implemented until more recently, as a result of the phragmites problem and other issues. A monitoring program for the South Cell at Hart-Miller Island is currently underway.

4.0 Report on Dredging Needs Forum — George Chmael

Mr. Kappler reported that a forum was held on Monday, December 8, 2003 to discuss the issue of dredging needs. Mr. Kappler stated that the forum was extremely informative and well attended. After the forum, a number of people expressed interest for the dialogue and debate over dredging needs to continue in the future due to the complexity of the issue.

Mr. Chmael reported that the forum provided an opportunity for representatives with different views of dredging need to provide presentations and discuss the issue. Approximately 100 people attended the event. Feedback received since the forum has been positive; attendees were pleased at the informative nature of the forum. Presentations were provided by Mr. John Martin (expert on seaport industry), Mr. Jeff McKee (Baltimore District Corps of Engineers), Mr. Chip DePrefontaine (Philadelphia District Corps of Engineers), and Mr. Rick Sheckells (MPA). A general stakeholders panel included Mr. John Williams (CAC), Ms. Theresa Pierno (Chesapeake Bay Foundation), and Mr. Bob Pennington (U.S. Fish and Wildlife Service). Legislative speakers included Senator E. J. Pipkin, and Delegate Mary Roe Walkup. A maritime trades panel included Mr. Rupert Denney (C. Steinweg (USA) Inc.), Mr. John Yonosko (CNX Marine Terminal), and Mr. Eric Nielsen (Association of Maryland Pilots).

Mr. Chmael stated that a summary of the day's events and copies of all presentations will be compiled and placed on the MPA's website. Mr. Chmael is continuing to follow up with all attendees to obtain their impressions of the forum.

At the conclusion of the meeting Mr. Williams requested an opportunity to comment on the needs forum. Mr. Williams stated that the forum was very productive and provided a good opportunity for exchange of information regarding dredging needs. He expressed interest in future opportunities to continue the dialogue. Mr. Williams reported that he provided all forum attendees with a 40-page handout including his views on the needs issue. Copies of the handout can be provided to any interested CAC member. Mr. Williams expressed at the forum that an issue has not been openly discussed with regard to dredging needs. The issue deals with the two different channel systems for the Port of Baltimore. Mr. Williams stated that his analysis indicated a lack of economic justification for dredging the entire Northern Access Channel. If the Corps acts on that analysis and reaches the same conclusions, the demand side of the dredging equation would be transformed. Mr. Williams explained that dredging demand would be reduced from 4.5 million cubic yards (mcy) to 1 mcy each year. With the decreased demand, it would not be necessary to raise the dikes at Poplar Island or restore James or Barren Islands. The decreased demand would allow for the current capacity of Poplar Island to serve the needs of the Port's dredging perhaps until 2035. Mr. Williams reiterated the importance of continued dialogue with regards to dredging needs issues.

Mr. Kappler added that the forum provided an opportunity for Mr. Williams to present his economic analysis, and others to provide differing opinions. The forum was very beneficial for the exchange of information and differing opinions.

Update on the Final Report of the Harbor Team **Bob Hoyt**

Mr. Hoyt reminded CAC that the charge developed for the Harbor Team was to, by October 31, 2003, recommend for further study options to manage 1.5 mcy per year of dredged material from the inner Harbor for the next 20 years. Mr. Hoyt then provided a presentation detailing the recommendations included in the Harbor Team's report.

Mr. Hoyt explained that the recommendations were separated into two sections including innovative reuses (policy and specific recommendations) and placement options for community enhancement recommendations. The report recommended that by 2023. 0.5 million cubic yards (mcy) per year of Inner Harbor dredged material should be managed by innovative uses. Te report recommends that a committee be immediately convened to develop a strategy to achieve the goal.

Mr. Hoyt read the remaining policy recommendations for the innovative reuse options and stated that specific recommendations include, but are not limited to, Cox Creek; mines and quarries; landfill usage; aggregates; bricks; and agricultural uses. Mr. Hoyt also read the policy recommendations for the community enhancement piece. Site specific recommendations for community enhancement were outlined in a presentation and include: Cox Creek; Masonville; Masonville Cove; Fairfield BP Amoco; Sparrows Point 1 and 2; Sparrows Point wetland; Sollers Point Wetland; Sollers Point Key Quay; Heritage Trail; Colgate Creek; Jones Creek shoreline; and Bear Creek.

Mr. Hoyt reported that the next steps for the Harbor Team include their report and presentation to the Executive Committee, blending the Harbor Team with the CAC, outreach on projects in their local jurisdictions and oversight committees. The Management Committee reviewed the Harbor Team's report and supported the recommendations. The Harbor Team's report was included, in its entirety, as an attachment to the Management Committee's Report.

5.0 Update on Corps DMMP **Scott Johnson**

Mr. Johnson reported that Weston Solutions, Inc. is under contract to collect data and develop preliminary options and applicable screening criteria in support of the Corps DMMP process. The preliminary screening criteria will be presented to the Bay Enhancement Working Group (BEWG) in January 2004, and presented to the CAC in February 2004. The evaluation of the alternatives will begin in March 2004, with a draft Environmental Impact Statement (EIS) being completed by October 2004. The public comment period will begin in October or November 2004, and the Final EIS is expected to be completed in April 2005.

Ms. Flanigan asked if the Corps' DMMP work would be included in all CAC meetings for 2004. Mr. Johnson agreed, and added that a newsletter updating the progress of the Corps DMMP has been completed and was mailed out. All CAC members are on the Corps mailing list.

6.0 Update on State DMMP/Upcoming Executive Committee Meeting **Frank Hamons**

Mr. Hamons explained that the State is currently addressing placement options for the Bay by participating in the Mid-Bay Island Study. The Study has narrowed down the options to James Island and Barren Island. With respect to placement options for Inner Harbor dredged materials, a joint venture contract is moving forward to evaluate the options put forward by the Harbor Team's report. Mr. Hamons explained that the steps the MPA will take moving forward will depend on the response received from the Executive Committee, Governor, and Legislature. If the Executive Committee takes the same approach as during 2002, they will cover the Management Committee's Report and Harbor Team's report with their own brief report supporting the recommendations presented. In December 2002 the Executive Committee put together a list of 11 recommendations for the Management Committee to address during 2003.

Mr. Hamons reported that the Executive Committee will be provided with a brief overview of the Management Committee's Report and the response to the 11 recommendations from 2002. The meeting will also involve briefings from Mr. Hoyt on the Harbor Team's Report, from Mr. Kappler on the status of the CAC, and from Dr. Don Boesch (University of Maryland Center for Environmental Science) who serves as the liaison from the Management Committee. The Executive Committee will then discuss the recommendations and may provide direction for future actions.

Mr. Hamons speculated that, starting in the Spring 2004, the State may be able to move forward to start investigations into all of the recommendations included in the report or expanding on the investigations so that Feasibility Studies and engineering design can be completed as quickly as possible. The recommendations would then be narrowed down into what projects may actually be implemented. All future actions will be based on the recommendations of the Executive Committee.

Ms. Flanigan asked for the time and location for the Executive Committee meeting. Mr. Hamons explained that the meeting is scheduled for 12:30 pm on Monday, December 15, 2003 at the headquarters for the Maryland Department of Transportation located near the Baltimore/Washington International Airport.

7.0 Next Meeting

Mr. Kappler thanked all the participants for their generous contributions. Mr. Kappler stated that the next meeting of the CAC is scheduled for February 11, 2004.

Mr. Sheckells extended thanks from Secretary Robert Flanagan, Mr. Jim White, Ms. Kathy Broadwater, MPA's Harbor Development Team, and others at MPA for all of the hard work and dedication that the CAC has put into the DMMP process over the past year.

The meeting was adjourned at 9 pm.

DRAFT
SUMMARY OF THE DREDGED MATERIAL MANAGEMENT PROGRAM CITIZENS' ADVISORY COMMITTEE MEETING
February 11, 2004, 7:00 PM
2310 Broening Highway, Conference Room A
Baltimore, Maryland

Attendees:

Anne Arundel County: Betty Dixon
Association of Maryland Pilots: Bill Band
Baltimore County Department of Environmental Protection and Management (DEPRM): Candy Croswell
C & D Canal League: Bill Jeanes
Cecil County: John Williams
Chesapeake Yacht Clubs Association: Don Burton
Coastal Watershed Resources Advisory Committee (CWRAC): Greg Kappler
Coastal Conservation Association: Bud Waltz
Cox Creek Citizens Oversight Committee: Marcia Drenzyk
Dorchester County: Bruce Coulson, Joseph Coyne
Ecologix Group: Bob Hoyt,
Essex/Middle River Civic Council: George Frangos
Facilitator: Fran Flanigan
Gahagan & Bryant Associates (GBA): Ed DeAngelo
General Physics Corporation: Chelsea Bennet
Greater Dundalk Community Council: Thomas Kroen
Harbor Team: Lester Ettlinger
Kent County Waterman's Association: Doug West
Maryland Department of Natural Resources/Maryland Geological Survey (MGS): Jeff Halka
Maryland Environmental Service: Gwen Gibson, Melissa Slatnick
Maryland Port Administration (MPA): Steve Storms, Bill Lear, John Vasina Dave Bibo, Nathaniel Brown, Katrina Jones
US Army Corps of Engineers, Baltimore District (CENAB): Scott Johnson, Mark Mendelsohn, Jeff McKee
Weston Solutions: Kurt Frederick, Corinne Murphy, John Pauling

Action Items:
1. Obtain information on House Bill 21, and provide the information to CAC Members.
2. Provide a synopsis of 2004 Legislative bills to CAC Members.
3. Determine if a letter of recommendations was sent to the Legislature at the end of 2003.
4. Provide CAC Members with information on the Final Groundwater Report for Hart Miller Island.
5. Provide CAC Members with requested Corps of Engineers website addresses.

Statements for the Record:
1. None.

1.0 Convene, Welcome, Introductions Greg Kappler

Approval of Meeting Summary

Mr. Kappler, co-chair of the Citizens' Advisory Committee (CAC), convened the meeting at 7:00 pm and welcomed all of the committee members. Mr. Kappler requested that everyone state their name and whom they represent. The committee members took turns introducing themselves and stating their affiliations.

Mr. Kappler asked if everyone had received a copy of the minutes from the December 10, 2003 CAC Meeting, and had any changes to make. Mr. John Williams noted one error. On page 4, section 4, paragraph 4, there was a statement that dredging demands would be reduced from 4.5 million cubic yards to 1 million cubic yards a year. The statement should be corrected to say that it was reduced by 2.2 million cubic yards per year. Mr. Tom Kroen made a motion to accept the minutes as amended. Ms. Betty Dixon seconded the motion, and the motion unanimously passed.

Update on General Assembly Issues Steve Storms

Mr. Steve Storms stated that two bills currently in the General Assembly relate to the Maryland Port Administration (MPA). Senate Bill 18, sponsored by Senator Pipkin, primarily relates to port security, and does not have much impact on harbor development. Senate Bill 19, also Senator Pipkin's bill, involves changing the way the Executive Committee works, and is opposed by the MPA. Several groups, including a private sector corps of representatives, testified against the bill at a hearing in Annapolis, MD a few weeks ago. Only Senator Pipkin testified in favor of the bill. The number of bills related to the MPA this year is much lower than in previous years.

Mr. Williams asked about House Bill 21, related to the value in having an independent port authority. Mr. Bill Band mentioned that many ports on the eastern coast are privately run, instead of state run. Suggestions have been made that less delay would occur in port infrastructure at a privately run port, as opposed to the bureaucracy encountered at a state run port. Mr. Kappler stated that he would gather information on the topic, and provide it to CAC Members. Mr. Jeff McKee stated that he has a synopsis of all the bills, and can provide it to CAC Members.

Report on December Executive Committee Meeting Steve Storms

Mr. Storms stated that, at the December 15, 2003 Executive Committee Meeting, Mr. Frank Hamons updated the committee on the progress of the Dredged Material Management Program (DMMP) in 2003, and Mr. Bob Hoyt updated them on the progress of the Harbor Team's work, including the team's recommendations for harbor options as well as their recommendation that more emphasis be placed on innovative uses. The port will continue public outreach activities, including the Harbor Team and CAC. The entire Harbor Team was invited to attend the February CAC Meeting, and participation from the Harbor Team on CAC will continue to be encouraged. Mr. Hoyt will periodically call the Harbor Team together to review issues.

Mr. Storms stated that, with regard to the Harbor Team and individual community groups, the Port is working with Ecologix and Ms. Fran Flanigan, to form a more detailed outreach effort to assure that no groups are overlooked in the process. The Executive Committee looked favorably on work that had been conducted, and approved the implementation of recommendations from the Management Committee's report to the Executive Committee.

Mr. Williams commented that presentations at the Executive Committee Meeting were clear, but it was unclear as to where committee members stood on issues, how much pre-meeting discussion had occurred, and what was actually concluded. Large documents were brought to the meeting, and members accepted and received them without any discussion or discernable action.

Mr. Kappler noted that the meeting minutes have not yet been distributed, and asked why there is a delay. Mr. Storms stated that the minutes are still being reviewed by the Executive Committee, and are not ready for release to the public. In 2003, the Department of Natural Resources (DNR) chaired the committee, and was responsible for the minutes review and circulation. The previous committee meeting was the first under the new Administration, and was joint-chaired by the Maryland Department of Transportation (MDOT) and DNR. Circulation of the minutes was delayed due uncertainty as to how the minutes would be reviewed by the new Executive Committee. The issue will be resolved, and the minutes made available in the near future.

Mr. George Frangos asked for the rationale behind a joint chairmanship. Mr. Kappler stated that the former governor appointed the chair from DNR. Under the new Governor, Secretary Flanagan felt that the chairmanship should be joint, as the MPA is under MDOT.

Mr. Scott Johnson noted that, based on his personal notes from the Executive Committee meeting, a vote appears to have been conducted to approve committee reports. Mr. Jeff McKee stated that the reports, and presumably all recommendations contained therein, were unanimously approved. Recommendations included the pursuit of innovative uses, and indicated that Secretary Flanagan would continue efforts with groups already established. The value of the Harbor Team and their contribution, as well as the CAC, was recognized.

Mr. Williams asked if the Executive Committee would issue an explicit report of recommendations for 2004. Mr. Kappler stated that explicit recommendations were voiced in December 2003. Secretaries Franks and Flanagan need to be asked if a letter was sent to the Legislature, and details regarding recommendations forwarded should be requested.

2.0 Progress Report on Hart Miller Island — Melissa Slatnick

Ms. Melissa Slatnick provided an update on placement at Hart Miller Island, and plans for the south cell. Under state law, HMI can only accept 100 million cubic yards of material, and cannot accept dredged material after January 1, 2010. Currently, HMI is 88 percent full.

Ms. Slatnick stated that the most recent inflow of material was completed in November 2003, and the next inflow will occur in late February 2004. HMI operations consist of two phases, the inflow phase and crust management phase. Crust management activities are usually scheduled for the summertime, to maximize use of the sun. The more water that is discharged from HMI, the better consolidation is achieved, thus enabling more material to fit into HMI.

Ms. Slatnick stated that the south cell restoration project is authorized under the Water Resources Development Act (WRDA), and is funded by DNR. The south cell will be designed for bird habitats, including the creation of 200 acres of mudflats, 100 acres of upland grass areas, and a tidal pond. The mudflats will be controlled by a unique low maintenance trickle system, whereby water will be actively pumped according to a set schedule from the bay to the mudflats. The area will be flooded in coordination with migratory patterns.

Mr. Williams voiced a concern about evaporation in the mudflats resulting in the accumulation of salts. Ms. Slatnick stated that a monitoring plan would be established to monitor accumulations. The area is planned to work as a natural wetland, but will also serve as a learning experience.

Mr. Kroen asked if the restoration project would fall under the MES discharge permit. Ms. Slatnick stated that spillway 3 is currently under the permit. The monitoring plan will evaluate water quality to anticipate discharge quality.

Ms. Slatnick stated that construction of the bird habitat island was completed in the summer of 2003. During the Fall 2003, the area was flooded, and dormant upland species were planted. The project, including the boardwalk and trickle system, is scheduled for completion in March 2004.

Ms. Slatnick stated that a south cell restoration-working group has developed a monitoring plan for the site, with the goal of creating a usable habitat. Monitoring of sediment, vegetation, water, fish, and benthic tissue will be conducted both inside and outside of HMI, though many activities will not begin until vegetation and the flooding cycle have been established. Water quality monitoring has already begun, and soil studies will begin in the Spring 2004.

Ms. Slatnick stated that Phragmites control is ongoing at HMI, especially at the south cell where encroachment on the natural marsh habitat had occurred. Exercised control measures included the application of herbicide on marsh areas, and flooding. Marsh seeding combined with Phragmites control has yielded good progress, and eventually natural habitat will be regained in the south cell.

Ms. Slatnick reported that a large amount of environmental monitoring is ongoing at HMI, with positive results. Outfall discharges are monitored, and an ongoing study has involved contaminant analysis of vegetables grown in the south cell. Studies on low pH control were conducted, and a neutral pH is maintained in the south cell by flooding. Other pH control measures, such as liming and flooding, will be considered for the north cell. Additional efforts include algae monitoring, safety monitoring at the beach, exterior monitoring, and benthic monitoring. No significant differences, or variation from expected results have been observed between the interior and exterior monitoring of HMI.

A groundwater characterization study led to the installation of 34 wells around the dike, in pairs of shallow (25 to 40 feet) and deep (65 to 115 feet) wells, and the implementation of quarterly sampling. Groundwater pH has ranged from 6.5 to 8.5, and water quality detection levels have ranged in the primary and secondary MDE cleanup standards. Most groundwater detections were typical of bay water, and water quality is relatively good. Groundwater migrates from HMI outward at 3 feet per day, and from the north cell to the south cell at 5 feet per day. An anoxic groundwater study with regard to metals is also ongoing. A groundwater report is currently in draft, and a final report will be available in March 2004.

3.0 Update on Corps of Engineers' DMMP **Weston Solutions & Corps Staff**

Development of Alternatives Corinne Murphy, Kurt Frederick

Ms. Corinne Murphy began the presentation on the Corps of Engineers, Baltimore District (CENAB) DMMP for the Port of Baltimore. The goal of the federal DMMP is to maintain channels necessary for navigation in the Port of Baltimore, and to conduct dredged material placement in the most environmentally sound and beneficial manner. The DMMP Preliminary Assessment completed in September 2001 documented dredging needs for the next 20 years, and concluded that a shortfall in placement capacities will occur, with insufficient time to develop new placement sites; this assessment triggered the need for a DMMP.

Ms. Murphy provided a detailed explanation of the DMMP process. The CENAB DMMP differs from the State DMMP in that the process is tiered, programmatic, requires a NEPA evaluation, addresses Virginia Channels, and is evaluated from a national interest perspective. The CENAB DMMP process includes input from numerous stakeholders, including federal and state agencies, public committees, and committees established by the State DMMP process. However, the process is constrained by Maryland state laws, bay communities, and environmental considerations. Thus far in the DMMP process, four major geographical areas of study have been identified, and efforts have moved into the alternatives identification stage.

Mr. Kurt Frederick continued the presentation and stated that possible alternatives are identified for each geographic area, based on relative capacity, cost, accessibility, constructability, operability, and impacts. Unreasonable alternatives, and alternatives involving locations outside the Chesapeake Bay Watershed Area are eliminated. Dredged material placement alternatives could include existing site expansion, large island restoration, small island restoration, artificial island creation, wetlands restoration, shoreline restoration, beach nourishment, capping, creation of building products, and creation of a confined disposal facility (CDF). Dredged materials could be placed at agricultural sites, mines, quarries, the ocean, in open water, and in new confined aquatic disposal (CAD) sites.

Mr. Frederick provided an explanation of the alternatives development process. Potential locations for the use of alternatives are identified, and constraints are applied according to the nature of the alternative. A list of DMMP potential alternatives for the Baltimore Harbor and channels was presented. Each alternative will be screened using BEWG criteria for environmental factors, technical feasibility, cost, capacity, time frame, and risk involved.

Mr. Frederick presented a schedule for CENAB DMMP activities. Comments on the alternatives presentation from CAC will be received until March 3, 2004. BEWG and CAC screening evaluations are scheduled for March 2004 and April 2004, respectively. The Draft DMMP and tiered Environmental Impact Statement (EIS) are scheduled for October 2004. The Final DMMP and tiered EIS are scheduled for April 2005. A record of decision (ROD) is expected in May or June 2005. For additional information, Ms. Gwen Meyer at CENAB or Frank Hamons at MPA should be contacted.

Update on Poplar Island Expansion Study and Mid-Bay Islands Study Scott Johnson

Mr. Scott Johnson provided handouts of the Poplar Island Expansion Study and Mid-Bay Islands Study presentation to all CAC Members. The two primary initiatives of the DMMP are the

Poplar Island expansion and the Mid-Bay Island study. The Poplar Island study began in January and March 2003, and two public scoping meetings have been held.

Mr. Johnson stated that the expansion of Poplar Island could include lateral and vertical expansion, the acceptance of material from additional locations not originally authorized, environmental enhancements, or the addition of recreational and educational opportunities. Potential alignments in lateral expansion would expand the existing footprint by 300 to 1,100 acres, and include the addition of upland and wetland habitats. Currently, eight to ten proposed alignments for Poplar Island's expansion have been developed. Vertical expansion will be considered for upland areas only, and upland dikes will be evaluated for raising to approximately 40 feet. A Notice of Intent was issued in June 2003, a Draft Report is scheduled for October 2005, and a ROD for the entire study is scheduled for February 2006. Comments or questions can be sent to Ms. Meyer, or Mr. Nat Brown with the MPA.

Mr. Johnson stated that the Mid-Bay Study is further along than the Poplar Island Study. Public scoping meetings for the Mid-Bay Island Project were held in March 2003. James Island and Barren Island are being considered for restoration by dredged materials. Current activities are in the plan formulation process, with proposed alignments for each island. Habitat ratio alternatives for each island will be screened from 199 alternatives to a manageable number based on benefits, capacity, cost, and constructability. Alternative Plan Development is scheduled for February 2004, alternatives evaluation will begin in April 2004, and a Draft Report is scheduled for July 2005.

Mr. Kappler voiced concern about how Homeland Security, Federal navigation channels, and a decrease in Federal funding to the Corps budget would affect studies. Mr. Johnson stated that Poplar Island would not be affected, and other high priority projects should not experience funding difficulties. The Corps was under funded for 2004, and Congress contributed additional funds to the Corps budget. For 2005, the budget is also under funded for study completion, but more funding may be made available based on capability evaluations and study priorities. The U.S. is in a wartime environment, but Homeland Security has not yet had an effect on this study, though future funding may be affected. Scheduled milestones present a general idea of activities that need to be completed.

Mr. Williams asked for an update on WRDA 06. Mr. Johnson stated that HMI is closing in 2009, and Poole's Island is closing in 2010. At that time, all material would go to Poplar Island, which is not equipped to efficiently handle such a large amount. As a result, the site would be overloaded, or dredging would need to be decreased. The construction of a new placement site would require authorization, appropriations, and budget development. Assuming that authorization is received under WRDA 2006, funding for construction would likely be provided in Federal Fiscal Year (FY) 07 or FY08. Final design and contract solicitation would take a year to a year and a half and construction would take approximately two to three years. This assumes that annual appropriations are sufficient to design and construct in an efficient manner. Therefore, the site may not be operational until 2012. There is risk that in 2010 no locations for material placement will be available. Therefore, plans need to be established in advance to address such a risk. Failure to get authorization in WRDA 06 would only compound the risk and uncertainty.

4.0 Update on MPA Progress on Bay and Harbor Options Steve Storms

Mr. Storms stated that the State DMMP is cost sharing 50/50 with the Corps on the Mid-Bay Island Study, and is involved with the Poplar Island Expansion Study. The State is in the process of contracting with Ecologix to continue dialog on the need for dredging. The State DMMP is in the process of wrapping up the Recon Level Studies that the MPA contracted with the Harbor Joint Venture (Gahagan & Bryant Associates, and Moffatt & Nichols Engineers) at Sparrows Point and Masonville, and those reports will be available for public review in the near future. The State is still under contract with the Harbor Joint Venture, and is moving ahead to have a Desktop Survey of the BP Fairfield Site conducted, followed by feasibility studies (FS) for Sparrows Point and the Masonville Site. Community enhancement projects associated with the Sparrows Point, Masonville, and BP Fairfield sites, will be evaluated.

5.0 Report on CAC Survey Fran Flanigan

Ms. Flanigan stated that preliminary feedback received from the survey distributed in January 2004 has been wonderful, and thanked those who took time to return the surveys. Many helpful comments and suggestions, and complementary remarks have been received thus far. Those who have not yet returned their surveys are encouraged to do so. Mr. Rick Sheckells has asked that a briefing on the survey be provided by the end of February 2004, and Ms. Flanigan would like to include as many CAC Members as possible. A written summary will be provided to CAC Members once all comments have been received.

6.0 Next Meeting

Mr. Kappler thanked all the participants for their generous contributions. Mr. Kappler reported that the next Management Committee meeting is scheduled for February 27, 2004, and the next meeting of the CAC is scheduled for April 14, 2004.

DRAFT
SUMMARY OF THE DREDGED MATERIAL MANAGEMENT PROGRAM CITIZENS' ADVISORY COMMITTEE MEETING
April 14, 2004, 7:00 PM
2310 Broening Highway, Conference Room A
Baltimore, Maryland

Attendees:

Alliance for the Chesapeake Bay: Charlie Conklin
Anne Arundel County: Betty Dixon
Association of Maryland Pilots: Bill Band
Baltimore County Watermen's Association: Blair Baltus
C & D Canal League: Bill Jeanes
Cecil County: John Williams
Coastal Conservation Association: Bud Waltz
Coastal Watershed Resources Advisory Committee (CWRAC): Greg Kappler
Chesapeake Bay Yacht Clubs Association: Don Burton
Dorchester County: Bruce Coulson, Joseph Coyne
Ecologix Group: Bob Hoyt
Facilitator: Fran Flanigan
Gahagan & Bryant Associates (GBA): Ed DeAngelo, Jim Runion
General Physics Corporation: Sarah Coffey
Kent County Watermen's Association: Doug West
Maryland Department of Natural Resources/Maryland Geological Survey (MGS): Jeff Halka, Bill Panageotou
Maryland Environmental Service: Gwen Gibson, Elizabeth Habic
Maryland Port Administration (MPA): Rick Sheckells, Frank Hamons, Steve Storms, Bill Lear, John Vasina, Dave Bibo, Nathaniel Brown, Katrina Jones
North Point Community Council: Francis Taylor
T. Parker Host of Maryland: Don Carroll
Turner Station Development Corporation, Inc.: Jennifer Harris
Turner Station Heritage Foundation: Courtney Speed, R. Elmore
Turner Station Recreation and Parks: Gloria Nelson
US Army Corps of Engineers, Baltimore District (CENAB): Scott Johnson, Mark Mendelsohn, Jeff McKee, Gwen Meyer
Weston Solutions, Inc.: Kurt Frederick, Corrine Murphy

Action Items:

1. The transmittal letter for the DMMP and Harbor Team reports forwarded to the Governor will be posted on the MPA website.
2. Committee asked that a copy of HB 1471 be provided to them.
3. Minutes from the watermens meetings regarding MidBay Island and Poplar expansion will be provided to Mr. Williams.
4. The Corps DMMP presentation will be made available on the Corps website.
5. The Harbor options presentation will be provided to Mr. Carroll.

Statements for the Record:

1. None.

1.0 Convene, Welcome, Introductions

Meeting Summary and Action Items **Greg Kappler**

Mr. Kappler, co-chair of the Citizens' Advisory Committee (CAC), convened the meeting at 7:00 pm and welcomed all of the committee members. Mr. Kappler requested that everyone state their name and whom they represent. The committee members took turns introducing themselves and stating their affiliations. Mr. Kappler stated that copies of the February 11, 2004 CAC meeting were available for anyone that did not receive a copy.

Ms. Flanigan provided a status update for the Action Items identified during the February 11, 2004 CAC meeting. Information regarding House Bill 21 was sent out to all CAC members. An update on the bill and all other dredging related 2004 Legislative bills will be provided during the April 2004 CAC meeting. An update will also be given regarding the letter of recommendations submitted to the Governor and Legislature at the end of 2003. With regard to the requested final Groundwater Report for Hart-Miller Island, Ms. Melissa Slatnick (Maryland Environmental Service) is completing the report and will provide copies to the CAC members upon completion. Ms. Flanigan stated that the Corps of Engineers website address will be provided to any interested persons.

Update on Report to Governor and Legislature **Frank Hamons**

Mr. Hamons distributed copies of the transmittal letter that was submitted to the Governor and Legislature. The letter was submitted along with copies of the Final Report of the Harbor Team, Report of the Management Committee, and comments from the CAC. A copy of the letter and related documentation were forwarded to Governor Ehrlich, the President of the Senate, and Speaker of the House of Delegates. Mr. Hamons stated, to date, no feedback has been received from the Governor or Legislature. After confirming that the interested parties have completed their review of the report, and if no feedback is received by the end of April 2004, the MPA will move forward with the recommendations.

Dr. Williams asked if the transmittal letter and associated reports would be available on the MPA website. Ms. Jones replied that all the reports are currently available on the MPA website, and the transmittal letter will be scanned and made available as well.

Report on MPA Issues in Legislature **Frank Hamons**

Mr. Hamons reported that Senate Bill 19 (Environment - Dredged Material Management - Duties of the Executive Committee) received an unfavorable report from the Committee and died at that point. The MPA opposed Senate Bill 19 based on the fact that an existing system was put into place based on the Dredged Material Management Act of 2001. The MPA feels that the system has worked well to date and should not be altered.

Mr. Hamons reported that House Bill 1263 (Dredged Deposits - Creation of Artificial Islands in the Chesapeake Bay – Prohibited Use as Part of Management Plan) received an unfavorable report in the House and died in committee. The MPA opposed House Bill 1263 on the basis that the language was broad and sweeping in nature. The Bill would have eliminated a lot of potential, innovative, and creative ways that dredged material could be used in various places around the bay. The MPA opposed the Bill because it was a blanket prohibition on a category as opposed to prohibiting specific projects.

Mr. Burton expressed his belief that the spirit of House Bill 1263 was to prohibit the construction of another disposal site similar to Hart-Miller Island. Mr. Hamons clarified that Hart-Miller Island would qualify as an island restoration site. Mr. Burton expressed concern that the eight locations originally identified for potential island creation sites are still included in the State's DMMP report. Mr. Hamons explained that all of the original placement locations are still included in the report as background information. None of the island creation sites were recommended for further study. Mr. Kappler added that the DMMP process is ongoing and all sites are maintained in the report to allow for them to be recommended for further study in the future if necessary.

Mr. Hamons reported that the third reading of House Bill 1471 (Dredged Material Disposal Alternatives Act of 2004) was passed. Mr. Hamons explained that the Bill provides for a Dredged Materials Disposal Alternatives program within the Department of Business and Economic Development. The bill would allow for the innovative use alternatives program to be implemented after the other State DMMP options are in place to provide for 20 years of placement capacity for the Port of Baltimore.

Dr. Williams asked if the alternatives program would be implemented after the DMMP program is in place, or after the DMMP options are in place. Mr. Hamons explained that the alternatives program would be implemented after the DMMP options are in place. Mr. Hamons added that the Executive Committee directed the MPA to reinvestigate innovative use options. The investigation is ongoing and more information regarding innovative uses will be provided during the next CAC meeting. A task force is being compiled to further investigate potential innovative use options.

Mr. Kappler asked if the MPA supported House Bill 1471. Mr. Hamons stated that the MPA supported the Bill with amendments. Dr. Williams requested a copy of House Bill 1471. Mr. Hamons stated that he would provide Dr. Williams with a copy of the Bill.

Report on Watermen's Meetings **Fran Flanigan**

Ms. Flanigan reported that two meetings were held on the Eastern Shore of Maryland to discuss the Mid-Bay Island and Poplar Island Expansion studies with watermen. The meetings were held on Tilghman Island and on Hooper's Island. Members of the CAC also attended the meetings including Mr. Baltus at the Tilghman Island meeting, and Mr. Coulson and Mr. Coyne at the Hooper's Island meeting. Ms. Flanigan stated that the meetings went well, and were informal, allowing for ample opportunity for discussion and dialogue with the watermen. Ms. Flanigan reported that not all feedback was positive, and a number of issues were raised at the meeting on Tilghman Island.

Ms. Flanigan stated that the Corps of Engineers sponsored the meetings. Similar meetings can be scheduled for any community groups or organizations that are interested in receiving presentations regarding the DMMP, Mid-Bay Island and Poplar Island Expansion studies. Ms. Flanigan encouraged any interested groups to contact her to arrange a meeting.

Dr. Williams requested a copy of the meeting minutes from the Hooper's Island meeting. Ms. Flanigan stated that she would provide a copy of the meeting summary to Dr. Williams.

Mr. Mendelsohn reported that additional outreach meetings have been scheduled including: Coastal Conservation Association on April, 26, 2004, Maryland Saltwater Sportfishermen's Association on June 1, and the Executive Board for Charter Boat Captains on July 6, 2004.

Report on CAC Survey **Fran Flanigan**

Ms. Flanigan distributed copies of the feedback from the CAC survey questions that were completed in January and February. Approximately 75% of the active CAC members responded to the survey. Ms. Flanigan stated that very positive and honest comments were received, and she thanked everyone for their participation. A briefing regarding the survey was provided to the MPA and Corps of Engineers. An ongoing effort is being made to respond to the comments and suggestions made on the surveys. For example, new CAC members have been recruited as a response to comments. Anyone with additional comments or suggestions is encouraged to contact Ms. Flanigan to discuss them.

2.0 Corps of Engineers DMMP — Corrine Murphy

Ms. Murphy provided a presentation on the Corps of Engineers, Baltimore District DMMP. A summary was provided of the presentation given at the February 11, 2004 CAC meeting. Ms. Murphy also highlighted current activities in the Federal DMMP process, revisited alternatives under consideration, reviewed the screening process for alternatives, described the Bay Enhancement Working Group (BEWG) scoring process, presented BEWG scoring results, presented the approach for costing each alternative, and presented an updated schedule. Ms. Murphy reiterated that 29 alternatives and six base plans were being considered for four geographic areas, creating a total of 77 alternatives to be evaluated. The four geographic areas included Harbor Channels, C&D Approach Channels, Chesapeake Bay Channels in Maryland, and Chesapeake Bay Channels in Virginia.

Dr. Williams requested clarification regarding the number of alternatives being evaluated. Ms. Murphy clarified that there are 35 different alternative site types. In those 35 site types, material may come from any of the four geographic areas, thus creating up to four different alternatives. Therefore, based on the location that the material comes from and the different site type, a total of 77 alternatives evolve.

Dr. Williams questioned, with regard to cost estimates, if different contingency factors were used based on the quality of information that was available for the alternative. Ms. Murphy stated that the contingency factor is not based on the quality of data itself, but is based more on the risk associated with the alternative based on existing and potential technologies. Dr. Williams asked if different contingency factors would be used for the each alternative. Ms. Murphy stated that different contingency factors would be used, but will be relatively the same. For example, innovative use is still a fairly new, untested alternative, and therefore would have a higher contingency factor.

Mr. Kappler asked if the DMMP alternatives trade-off analysis has been completed for any other Ports in the United States. Ms. Murphy responded that other Corps Districts have completed DMMPs, but no other District has completed an analysis at such a detailed level.

Dr. Williams questioned the base plan that is applicable for the region of the C&D Approach Channels. Ms. Murphy stated that only one base plan is applicable, but other alternatives could be considered for the region. Dr. Williams expressed concern that the chart displayed for the analysis for the C&D Approach Channels lists a total of five base plans. Mr. Frederick agreed, and suggested that the chart be modified to reflect only one base plan, and for the other four alternatives to be moved above the base plan heading in the chart.

Dr. Williams expressed his understanding that some computation is required to transform the environmental score and include the size of the project, but he expressed concern that a linear multiplication is a first approximation. Dr. Williams added that all of the factors that are considered in the establishment of the environmental score do not scale in proportion to the size of the area of the project. Dr. Williams suggested that a second level of thought may be needed. Dr. Williams speculated that, no matter what type of analysis or calculation is made, certain alternatives may rank high, while others will rank poorly, making them unworthy of analyzing with an improved level of modeling. Ms. Murphy stated that the analysis will be evaluated after all initial scores are completed. Some alternatives may stand out and groups may become evident. For example, groups of alternatives may include sites that are extremely expensive with very little benefit, others that have average cost and average capacity, and some that have low cost and high capacity.

Mr. Kappler requested that Ms. Murphy reiterate the goal of the Corps DMMP. Ms. Murphy stated that the amount of material from existing and new projects for the next 20 years has been projected. It is the goal of the Federal DMMP to provide placement alternatives to meet that 20-year goal in each of the four geographic areas.

Ms. Murphy presented a schedule of upcoming events for the Corps DMMP including: receive comments on the environmental screening from CAC members by April 28, 2004, alternatives evaluation presentation to BEWG on June 8, 2004, alternatives evaluation presentation to CAC on June 9, 2004, completion of draft DMMP and tiered Environmental Impact Statement (EIS) in October 2004, completion of the final DMMP and tiered EIS in April 2005, and completion of the Record of Decision in May or June 2005.

Mr. Kappler asked for the slide presentation to be made available to the CAC members. Ms. Murphy stated that the presentation, in addition to the February 11, 2004 presentation, will be accessible on the Baltimore District Corps website.

3.0 MD Port Administration DMMP — Jim Runion

Mr. Runion provided a presentation on the status of the State DMMP work on Harbor sites. Reconnaissance level studies for Masonville and Sparrows Point were completed in January 2004. On going studies include an interim feasibility study for an expanded footprint at Masonville, an interim feasibility study at Sparrows Point, and a reconnaissance study for the BP Fairfield site. Total capacities for the sites include 9 million cubic yards (mcy) at Masonville, 12.8 mcy for Masonville expanded, 29 mcy for Sparrows Point, and 9 mcy at BP Fairfield.

Dr. Williams questioned the dike heights presented (10, 20, and 30 feet) at Masonville and which dike height relates to the capacities of 9 mcy and 12 mcy as presented. Mr. Runion explained that the presented heights are the initial dike heights, meaning a cost analysis is completed to construct the dikes to each of the three levels. Ultimately, each of the Masonville alignments are planned to carry forth to a finished dike height of approximately 40 feet. Dr. Williams questioned if the same 40-foot dike height is planned for Sparrows Point. Mr. Runion explained that all alignments at Sparrows Point plan for a finished dike height of 10 feet due to the existing potential for marine terminal operations.

Mr. Taylor expressed concern over pleasure boat safety, and asked for the distance between the Sparrows Point southern dike perimeter and the shipping channel. Mr. Runion stated that the distance to the edge of the channel is approximately 250 feet. No ships would be berthing along the southern dike perimeter, as only armored dikes (not cofferdams) would be constructed in that area.

Mr. Jeanes expressed concern over the opinion of ISG with regard to the proposed alignment at Sparrows Point. Mr. Runion stated that ISG is currently active in the slip at the Sparrows Point Channel and barge operations in the turning basin are ongoing. Mr. Runion stated that the operational needs for ISG are being considered, and a concept is being evaluated that will allow for operations to continue at the finger pier with a relocation of barge operations. Mr. Hoyt added that representatives have visited the site and spoken to ISG personnel to discuss the situation and the needs of ISG. A meeting has been scheduled for April 21, 2004 with the Baltimore County Group to discuss the options for the Sparrows Point area. Mr. Hoyt stated that the presentation given to the CAC was a broad "big picture" view of the potential projects and more detailed presentations are planned for individual jurisdictions.

Ms. Nelson requested that Mr. Runion provide to Mr. David Carroll handouts of the presentation that will be given next week to the Baltimore County Group. Mr. Runion stated that he will forward a copy of the presentation to Mr. Carroll.

4.0 MES Report on Pooles Island Disposal Site — Elizabeth Habic

Ms. Habic provided an update on Year 6 of the Pooles Island Disposal Site. Pooles Island, also known as Site 92, is an open water placement area that is approximately 934 acres in size. The remaining capacity of Pooles Island is approximately 6 mcy. Ms. Habic provided an update on the history of Site 92, agency involvement, regulatory compliance, coordination of operations, monitoring, and a placement overview.

Mr. Kappler asked if core sampling is completed to monitor for compaction purposes, or if the sampling is completed for an analysis of chemicals or hazardous materials. Ms. Habic explained that no analysis is completed for contaminants. The core samples are used to evaluate the success of placement and to ensure the materials remain in the placement locations.

Mr. Jeanes asked if the yearly reporting documents are public information. Ms. Habic stated that the reports are public information. Mr. Jeanes requested a copy of the latest reporting document. Ms. Habic explained that the placement consolidation and erosion studies are not completed until nine months after material placement is completed. Placement for 2003 was completed in

December, so Year 6 reports won't be ready for another nine months. Mr. Jeanes stated that he would like copies of the completed reports from the past years.

Mr. Burton asked for a description of the berms around the placement location. Ms. Habic stated that a berm was placed on the northern end of the site. Mr. Bibo explained that the berms, or underwater dikes, were installed around the placement location. The berms are made of dredged materials and do not contain any rocks or hard materials. Mr. Jeanes questioned if the berms have ever overflowed due to the placement of dredged materials. Mr. Bibo explained that after the material is placed, monitoring is completed to determine if the material remained within the desired location. The material is subject to water currents, thus creating potential for movement.

Mr. Burton questioned if the dikes meet the minus 14 feet height requirement, thus making it safe for pleasure boats in the area. Mr. Bibo stated that there is enough depth for the pleasure boats to safely operate. The main concern in the area of Site 92 is tugboat traffic, and the height of the berms is in compliance with the height requirement for tugboats.

Mr. Conklin inquired as to the rate of sedimentation entering the Chesapeake Bay and the rate at which the shipping channel is filling in. Mr. Conklin expressed concern regarding the amount of sedimentation piling behind the Susquehanna dam. Mr. Hamons explained that the dredged material being removed from the channels is monitored and studies have been completed to determine the rate of shoaling. Mr. Hamons and Mr. Halka agreed that the sedimentation in the Bay and in the Susquehanna River is a complex issue. Mr. Conklin agreed and suggested that the sedimentation issue should be investigated in the future.

5.0 Committee Announcements, New Business, Next Meeting

Committee Meetings **Greg Kappler**

Mr. Kappler reported that the next CAC meeting is scheduled for Wednesday, June 9, 2004. The next Management Committee Meeting is scheduled for Wednesday, May 20, 2004 at the World Trade Center at 10:00 a.m. Mr. Kappler stated that all CAC members are welcome to attend the Management Committee meeting.

Plans for Site Tours **Fran Flanigan**

Ms. Flanigan asked for a show of hands for any CAC members that are interested in attending a tour of Poplar Island, Hart-Miller Island, or other placement locations. A number of members expressed interest in attending a tour of Poplar Island; no one expressed interest in attending a tour of Hart-Miller Island. Mr. Hoyt added that a group from the City of Baltimore has expressed interest in seeing the Masonville location from the water. Ms. Flanigan reported that she would compile a list of potential dates and locations for boat tours and contact the CAC members to see how many people would be interested in attending.

New Business

Dr. Williams inquired as to the status of the follow-up activities from the Dredging Needs Forum that were contracted to Ecologix. Mr. Sheckells explained that Ecologix was only contracted to conduct the forum. Mr. Sheckells added that Secretary Flanagan had asked for a follow up from the forum. The follow up is ongoing and will be reported to the Executive Committee upon completion. No plans have been made to schedule another forum. Dr. Williams questioned the status of the synopsis that was requested to be completed by Sec. Flanagan. Ms. Jones stated that meeting summary and notes from the forum are available on the MPA's website.

Dr. Williams made a motion to accept the meeting summary from the February 11, 2004 CAC meeting as written. Mr. Jeanes seconded the motion and the motion unanimously passed.

DRAFT
SUMMARY OF THE DREDGED MATERIAL MANAGEMENT PROGRAM
CITIZENS' ADVISORY COMMITTEE MEETING
June 9, 2004, 7:00 PM
2310 Broening Highway, Conference Room A
Baltimore, Maryland

Attendees:

Baltimore County Department of Environmental Protection and Management (DEPRM): Candy Croswell
C & D Canal League: Bill Jeanes
Coastal Conservation Association: Bud Waltz
Coastal Watershed Resources Advisory Committee (CWRAC): Greg Kappler
Dorchester County: Bruce Coulson, Joseph Coyne
Ecologix Group: Bob Hoyt
Essex/Middle River Civic Council: George Frangos
Facilitator: Fran Flanigan
Gahagan & Bryant Associates (GBA): Ed DeAngelo
General Physics Corporation: Chelsea Bennet
Greater Dundalk Alliance: Carolyn Jones, Darlene Stauch
Greater Pasadena Council: Rebecca Kolberg
Hart Miller Island Oversite Committee: Fred Habicht
Kent County Waterman's Association: Doug West
Maryland Conservation Council: Mary Marsh
Maryland Department of Natural Resources/Maryland Geological Survey (MGS): Jeff Halka, Bill Panageotou
Maryland Environmental Service: Gwen Gibson
Maryland Port Administration (MPA): Steve Storms, Bill Lear, John Vasina Dave Bibo, Rick Sheckells, Nathaniel Brown, Katrina Jones
T. Parker Host of Maryland: Don Carroll
Terminal Shipping: Rick Wolfe
University of Maryland Center for Environmental Science: Dennis King
US Army Corps of Engineers, Baltimore District (CENAB): Scott Johnson, Mark Mendelsohn, Gwen Meyer
Weston Solutions, Inc.: Kurt Frederick
Williams Associates: Wamahdri Williams

<u>Action Items:</u>

1. Provide information to the Citizens' Advisory Committee (CAC) on the results of the C&D Canal Analysis by John Martin at the earliest appropriate time.
2. Report to the CAC on results of Corps' DMMP options selection process and decide if an interim CAC meeting is needed.

<u>Statements for the Record:</u>

1.

1.0 Convene, Welcome, Introductions

Meeting Summary **Greg Kappler**

Mr. Kappler, co-chair of the Citizens' Advisory Committee (CAC), convened the meeting at 7:00 pm and welcomed all of the committee members. Mr. Kappler requested that everyone state their name and whom they represent. The committee members took turns introducing themselves and stating their affiliations.

Mr. Kappler stated that copies of the April 14, 2004 CAC meeting minutes were available for anyone that did not receive a copy. Mr. Kappler asked for any comments or changes to the summary. Mr. Jeanes made a motion to accept the minutes as written. Ms. Croswell seconded the motion and the motion unanimously passed.

Mr. Kappler noted that the format of the Agenda had changed, including the insertion of a section at the top outlining the objectives for the meeting. The objectives for the June 2004 CAC were presented: to get a basic understanding of how costs for placement sites will be factored into the selection process – "the trade-off analysis"; and to better understand the schedule and process for the Corps DMMP, with a focus on how the Corps' list of options will mesh with the MPA list.

Logistics for Poplar Island Trip

Ms. Flanigan stated that anyone going who would like transportation for the Poplar Island Boat Trip should meet at the MPA building to leave for the trip at 8:30 am on Saturday, June 12, 2004. Ms. Flanigan reported that, for any trip attendees not traveling in the MPA vans, maps can be provided showing the parking areas. The proposed schedule for the day includes the boat departing from Sparrows Point at 10:30 am and return by approximately 2:00 pm. Anyone interested in riding in the MPA vans should contact Ms. Flanigan.

2.0 Update on MPA Progress on Harbor Options **Bob Hoyt**

Mr. Hoyt reported that current activities involve intensified outreach with Harbor communities to solidify community recommendations for the community enhancements proposed for each placement location, and to receive community feedback with regard to proposed footprints and alignments at potential placement locations. Community meetings are being held with groups such as Baltimore County, ISG, and the Dundalk community. Mr. Hoyt provided a brief description of potential community enhancements at several proposed placement locations. Placement locations discussed included Sparrows Point, Bear Creek, Masonville, and Cox Creek.

Ms. Jones expressed concern regarding the number of slips located in Bear Creek. Mr. Hoyt stated that the MPA completed a survey of the slips in Bear Creek to identify outstanding sediment contamination issues. A total of about 1,200 slips are located in Bear Creek, with approximately 55% currently vacant.

Mr. Brown reported that a public information meeting for the Cox Creek Dredged Material Containment Facility project has been tentatively scheduled for Thursday, July 22, 2004. A notice will be distributed to CAC members and the public after confirmation of the date. The meeting will be held at the Orchard Beach Volunteer Fire Department.

Mr. Hoyt introduced Mr. Wamahdri Williams of Williams Associates. Mr. Williams will be working on the innovative reuse issue. Mr. Hoyt reminded the CAC members that the Harbor Team was very adamant that by 2023 at least one third of the material dredged from the Inner Harbor should be used for innovative reuses.

Mr. Jeanes questioned the status of the development of a task force to identify potential innovative reuse options. Mr. Hoyt explained that a determination was made that another approach may be more appropriate to identify innovative reuse options instead of a task force. One suggestion under consideration is to conduct an innovative reuse forum, similar to the forum that was held to discuss dredging needs. Mr. Hoyt assured the CAC members that all progress with regard to the innovative uses will be reported to the Committee.

Mr. Mendelsohn asked how much community support was received for the proposed community enhancements at the Sparrows Point placement location. Mr. Hoyt stated that, to date, a great amount of community support has been given for the proposed projects at the Sparrows Point location. Ms. Kolberg suggested that the MPA present the proposed enhancements to other areas, further away from the placement locations to gain additional feedback.

Mr. Kappler asked how many public outreach meetings are scheduled for each proposed placement location. Mr. Hoyt explained that three meetings were held to address the Baltimore County placement locations, and one meeting was held to discuss the Masonville location. Mr. Hoyt stressed that additional meetings can be scheduled based on community interest and requests.

3.0 New Business — Greg Kappler

Mr. Kappler encouraged any new members to express their suggestions and concerns during all CAC meetings. Mr. Kappler also reminded all CAC members that it is their responsibility to take all information back to their constituents to keep them informed. Mr. Kappler suggested that, during the August CAC meeting, time be set aside to hold a discussion regarding different ways in which CAC members can keep their communities informed of DMMP issues and activities.

Mr. Jeanes questioned the status of the follow up studies from the Dredging Needs Forum. Mr. Johnson stated that the Corps is working with the MPA and expect to complete a report on dredging needs by August 2004. Mr. Jeanes requested a presentation to the CAC upon completion of the study. Mr. Johnson stated that a presentation will be given to all DMMP committees to report on the findings of the dredging needs study before completion of the report.

Mr. Sheckells reminded the CAC members that the co-chairs of the Executive Committee, the Secretary of Transportation and the Secretary of the Department of Natural Resources, tasked the MPA to complete an economic analysis of the C&D Canal System to assess needs. Mr. Johnson clarified that the Corps and the State evaluate dredging needs from different perspectives. The Corps and State are working together to gather all necessary information needed to complete an economic analysis. Mr. Sheckells added that opportunities for input from CAC members will be available.

4.0 Corps of Engineers Presentation Kurt Frederick

Mr. Frederick provided a presentation on the status of the Corps DMMP process. Copies of the presentation were provided to all CAC members and other meeting attendees. Mr. Frederick presented the screening criteria approach, Bay Enhancement Working Group (BEWG) environmental scoring, alternative costing, draft DMMP alternatives analysis, comparison of alternative suites, DMMP trade-off analysis, and the upcoming DMMP schedule. The DMMP Study is currently in the alternatives evaluation and trade-off analysis phases.

The DMMP covers four geographic areas including: Inner Harbor Channels, C&D Approach Channels, Chesapeake Bay Channels (MD), and Chesapeake Bay Channels (VA). Each alternative is being screened for environmental factors as scored by BEWG, cost, and capacity. Alternative suites were developed for each geographic area and all suites meet the current and future dredged material capacity requirements for the Federal and non-Federal channels in each respective area. To achieve capacity, some alternatives were combined. Mr. Frederick presented the Suites identified for each geographic area, with suites being combined for the C&D Canal and MD approach channels.

Ms. Kolberg expressed concern over the fact that information such as endangered species at the Masonville location was not considered during the ranking. Mr. Frederick reiterated that the Corps does not evaluate site-specific options, but rather evaluates on a basis of a suite of options. More site-specific information, including endangered species will be evaluated if the site is recommended for a reconnaissance study.

Mr. Jeanes questioned the basis for determining the distance for transport of dredged materials within the geographic areas to a specific placement location. Mr. Frederick explained that a general distance was calculated by choosing a central location within all channel reaches within each of the geographic areas.

Ms. Kolberg asked for an explanation of the Confined Aquatic Disposal Pit alternative. Mr. Frederick stated that confined aquatic disposal involves the placement of contaminated dredged material in an underwater pit that is then covered with several feet of clean dredged material. Ms. Kolberg asked for a location where the Confined Aquatic Disposal Pit may be implemented. Mr. Frederick stated that the alternative is not site-specific, but the data obtained by the Corps suggested implementation in a location such as the Sollers Point area.

Ms. Kolberg asked for an explanation of the Cox Creek Expansion alternative. Mr. Frederick explained that the Cox Creek expansion would take the site beyond the currently permitted elevation for the site, which is +36 feet. From a Federal perspective, the Cox Creek expansion being evaluated under the Corps DMMP involves raising the dikes at the site.

Ms. Kolberg expressed concern over the BEWG process including how the group was formed, the selection of members, and to whom BEWG reports. After a group discussion, Ms. Kolberg was informed that the BEWG was formed as an independent advisory group to provide environmental rankings during the State DMMP process. The BEWG was responsible for reporting their rankings to all State DMMP committees, and is now being utilized by the Corps in their DMMP process. The Corps used the BEWG to align the Corps and State DMMP processes.

Ms. Marsh explained that when as the State DMMP plan was being developed the BEWG was formed to serve as an advisory committee to the Management Committee and perform an environmental analysis of the options. When the Corps began their DMMP process, they utilized the BEWG and the ongoing environmental analysis that was being completed.

Ms. Kolberg and Mr. Habicht expressed concern that some placement options included within the Corps DMMP were not previously presented to the CAC and associated community groups. Mr. Kappler and Ms. Flanigan assured the CAC that the Corps has provided numerous updates at past CAC meetings, and made any applicable information available for citizen review. Mr. Frederick reiterated that the Corps DMMP is not evaluating site-specific placement locations, but is instead evaluating overall placement suites.

5.0 Trade-Off Analysis in the DMMP Process — Dennis King

Dr. King provided a presentation on the tradeoff analysis being used for the Corps DMMP. The presentation included information regarding the criteria and focus of the analysis, how to characterize tradeoffs, and an introduction of economic decision rules. The three primary considerations of the tradeoff analysis include placement capacity, environmental benefits, and costs. The purpose of tradeoff analysis is to clarify differences between suites of alternatives in terms of environmental benefits and costs, to assess tradeoffs associated with choosing one suite over another, and to test the sensitivity of tradeoffs to help focus research and policy questions.

Mr. Frederick reported that the next steps to be completed in the trade-off analysis will involve a management evaluation of the suites, selection of a recommended plan for each geographic area, and a presentation of the recommended plan at the August 11, 2004 CAC meeting. Mr. Frederick stated that the Draft DMMP and Tiered Environmental Impact Statement (EIS) are scheduled for completion in October 2004, the Final DMMP and Tiered EIS are scheduled for completion in April 2005, and the Record of Decision will be completed in May or June 2005.

Ms. Jones expressed concern that health and quality of life are not evaluated under the Corps DMMP, and not deemed important. Mr. Frederick explained that those issues were captured as an environmental parameter within the BEWG evaluation process. An extensive amount of analysis will be completed, for health and quality of life, under the National Environmental Policy Act (NEPA) process. Mr. Kappler suggested that, if necessary, a copy of the BEWG parameters used in the analysis could be provided to committee members.

Ms. Jones stated that concern was previously expressed during the BEWG analysis with regard to the ranking of health and quality of life issues, and the BEWG only used age ranges of one to four years old and over 65 years old. Ms. Jones questioned the impact on those people with ages in-between the aforementioned age ranges. Ms. Jones suggested that, during the Corps presentations to the public, more emphasis be given to the fact that health and quality of life were considered in the evaluation. Mr. Frederick stated that the Tiered EIS, as mandated by NEPA, will address many human health issues, and other factors as well. Mr. Mendelsohn explained that the EPA requires use of the specific age ranges to consider the most sensitive receptors. The determined risk would therefore encompass any risk to all other age ranges. Ms. Kolberg suggested that, when doing pubic meetings, the Corps should provide a detailed explanation of the NEPA process to assure complete understanding by all community members.

6.0 Next Meeting — Greg Kappler

Mr. Johnson informed the CAC members that the Corps would present another DMMP status report during the August 2004 CAC meeting. If necessary, the Corps is willing to provide additional information before the August meeting by way of e-mail, supplemental meetings, or additional means. Mr. Johnson encouraged everyone to provide any comments and feedback as quickly as possible. The Corps will be finalizing recommendations by the end of June 2004.

Ms. Kolberg suggested that the CAC members should have an opportunity to be able to get feedback from their respective community organizations. Ms. Kolberg requested that additional information be e-mailed to CAC members to use in meetings with their community organizations.

Mr. Kappler suggested, that due to the accelerated Corps schedule, it may be necessary to hold an additional CAC meeting in July to discuss the progress made on the Corps DMMP. Mr. Coulson suggested that copies of the Corps recommendations be sent out to the CAC members and then poll the members to decide the necessity of scheduling a July meeting. Ms. Flanagan stated that she would contact the CAC members to gain perspective as to whether it will be necessary to schedule an additional meeting. A final decision on scheduling an additional meeting will be made after the Corps develops preliminary recommendations.

Mr. Johnson provided an example of how the Corps will further evaluate the suites of placement options. For the C&D Canal and Maryland Approach suites, after removing all those options that are not legal, only four suites remain. Most likely, the two most expensive options would be dropped, leaving Suite I (large island restoration – mid-Bay; Poplar Island modification) and Suite J (two large island restoration – mid-Bay). Mr. Johnson explained that risks associated with those suites will then be evaluated.

Mr. Habicht asked, by law, what the Corps is responsible for paying with regard to dredging costs. Mr. Johnson stated that the Corps is responsible for paying for the maintenance dredging of all Federal navigation channels. The Corps pays 100% of the cost to dredge the material and to transport it to the least cost placement option.

Mr. Habicht asked if the Corps is involved in cost-share agreements for containment facilities. Mr. Johnson stated that a formula exists to calculate the cost-share agreement, and is mainly based on the depth of the material. On average the cost-share agreement is 75/25. Mr. Habicht asked what type of material can be placed in a containment facility such as Cox Creek. Mr. Johnson explained that Cox Creek can accept contaminated material from the Inner Harbor. As part of the study, the Corps identified a cost-share agreement that out of every 6 million cubic yards (mcy) of dredged material, 5 mcy would come from Federal Channels, and 1 mcy would come from State or Local channels. Mr. Johnson added that laws exist that restrict the Corps from paying any more per cubic yard than a State or Local agency. For example, if the State is charging \$5/cy, the Corps cannot charge any higher amount. Therefore, cost-share agreements are subject to change.

Mr. Sheckells reminded the Committee that unlike the State DMMP, the Corps, in the Federal DMMP process, is required to evaluate ALL environmentally responsible placement alternatives, including those that are not allowable in Maryland law. Mr. Sheckells commended the Corps for their continued involvement with all committees from the State DMMP process, including the CAC, BEWG, Management, and Executive Committees, and emphasized the importance of all committees providing input to the Corps' decision making process with regard to the Federal DMMP.

Mr. Sheckells stressed that the State DMMP recommendations to the Governor and Legislature – which all CAC members received a copy of – included seven candidate options (those being Baltimore Harbor sites at Sparrows Point, Masonville, and Fairfield as a package with community enhancements, along with innovative reuse, and Bay options including consideration of a modest expansion at Poplar Island, and consideration of James and Barren Islands as new island restoration locations for placement of dredged materials). Those seven are the only options that the MPA is authorized to spend State funding for feasibility studies. That said, the Federal DMMP is a very important companion to the State DMMP, because it is essential that Federal funding be made available in the future for any projects that are recommended for construction through a collaborative decision between the Corps and the State.

DRAFT
SUMMARY OF THE DREDGED MATERIAL MANAGEMENT PROGRAM
CITIZENS' ADVISORY COMMITTEE MEETING
August 11, 2004, 7:00 PM
2310 Broening Highway, Conference Room A
Baltimore, Maryland

Attendees:

Alliance for the Chesapeake Bay: Charlie Conklin
Baltimore County Department of Environmental Protection and Management (DEPRM): Candy Croswell
Blasland, Bouck, and Lee: Tim Donegan
Chesapeake Bay Foundation: Beth McGee
Cecil County: John Williams
Dorchester County: Bruce Coulson
Ecologix Group: Bob Hoyt
Essex/Middle River Civic Council: George Frangos
Facilitator: Fran Flanigan
Gahagan & Bryant Associates (GBA): Ed DeAngelo
Greater Dundalk Community Council: Thomas Kroen
General Physics Corporation: Sarah Coffey
Greater Pasadena Council: Rebecca Kolberg
Hart Miller Island Oversight Committee: Fred Habicht
Maryland Conservation Council: Mary Marsh
Maryland Department of Natural Resources/Maryland Geological Survey (MGS): Jeff Halka, Bill Panageotou
Maryland Environmental Service: Cecelia Donovan, Michael Rooney, Wayne Young
Maryland Port Administration (MPA): Frank Hamons, Steve Storms, John Vasina, Nathaniel Brown, Katrina Jones
North County Land Trust: Ed Garcia
North Point Community Council: Francis Taylor
Turner Station Heritage Foundation: Courtney Speed
Turner Station Recreation and Parks: Gloria Nelson
US Army Corps of Engineers, Baltimore District (CENAB): Scott Johnson, Mark Mendelsohn, Gwen Meyer
Weston Solutions, Inc.: Corrine Murphy

Action Items:

1. Notify CAC as soon as a date has been set for innovative use workshop
2. Notify CAC of date, time and place for upcoming Executive Committee meeting
3. CAC members to provide any additional comments to Corps on draft DMMP by August 25.

Statements for the Record:

1. None.

1.0 Convene, Welcome, Introductions

Meeting Summary and Action Items **Fran Flanigan**

Ms. Flanigan, facilitator of the Citizens' Advisory Committee (CAC), convened the meeting at 7:00 pm in the absence of chair Greg Kappler and welcomed all of the committee members. Ms. Flanigan requested that everyone state their name and whom they represent. The committee members took turns introducing themselves and stating their affiliations. Ms. Flanigan stated that copies of the revised April 14, 2004 CAC meeting were available for anyone that did not receive a copy. Mr. Frangos made a motion to accept the meeting summary as written. Ms. Marsh seconded the motion and the motion unanimously passed.

Ms. Flanigan provided a status update for the Action Items identified during the April 14, 2004 CAC meeting. The first action item called for information to be provided to the CAC with regard to the results of the C&D Analysis by John Martin. Ms. Flanigan stated that the analysis is ongoing and a status update will be provided later in the meeting. The second action item was to report to the CAC on the results of the Corps' DMMP options selection process. Ms. Flanigan reported that an e-mail was distributed to the CAC members with information detailing the Corps' selected options. More information will be provided with regard to the process and selected options during the Corps' presentation.

2.0 Innovative Use

Plans for Innovative Use Forum **Frank Hamons**

Mr. Hamons reported that an Innovative Use Forum is being planned for the first week of December 2004. Coordination is ongoing to establish a list of speakers and experts in innovative uses that will be able to attend the forum. Presentations will be given detailing different innovative use options that could be implemented with dredged materials, with special attention given to processes that are not currently being used with dredged material. Mr. Hamons explained that the Forum will be a daylong event and it has not yet been determined if the Forum will be held during the week or if it will take place on a Saturday. As soon as a date, time and location are established, the CAC members will be notified. CAC members advised MPA to hold the forum on whichever date is most likely to result in the best attendance of key people like legislators.

Dr. Williams questioned the objective of the Forum. Mr. Hamons explained that two objectives will be set for the Forum. The first objective is to educate interested persons on the types of innovative uses that may be applicable for dredged materials. Mr. Hamons stated that it would be helpful to generate good debate and discussion amongst all interested parties. Mr. Hamons explained that the second objective is to help focus the MPA's efforts in narrowing and identifying appropriate innovative uses for dredged material, as was previously directed by the Executive Committee and recommended by the Harbor Team.

Report on Cardiff Slate Quarry **Michael Rooney**

Mr. Rooney provided a presentation on the preliminary geologic and hydrologic assessment that was completed at the Cardiff Quarry Site by MES. The site was evaluated as a potential innovative use placement location for dredged material. Mr. Rooney detailed the location and history of the site, site visit observations, transportation issues, cost issues, site terrain issues, and ownership concerns.

Mr. Rooney informed the CAC members that the results of the preliminary assessment were presented to the Bay Enhancement Working Group (BEWG) in April. Based on the results of the assessment BEWG recommended that no further work or studies be performed at this time due to concerns associated with the study area. Concerns cited included potential traffic congestion on two lane roads not designed for industrial traffic and passing through small towns; potential effects to local aquifers, wells, and streams; effects of dewatering the quarry on local ecosystems; high cost of using remote location with relatively small capacity; and potential conflicts with local land usage. The potential estimated capacity in the second quarry would have been approximately 6.8 million cubic yards (mcy).

Dr. Williams asked when the quarries were last functional for slate purposes, and if the owner is currently under any pressure to remediate the area. Mr. Rooney responded that the mines have not been operational for approximately 30 to 40 years. During mining activities, only two mines were active. Mr. Rooney explained that the Cardiff Quarry site originated in 1734, and mining reclamation regulations were not put into effect until 1977. Therefore, the landowner is not required to cleanup the site.

Ms. Flanigan questioned what prompted MES to specifically investigate the Cardiff Quarry Site. Mr. Hamons explained that the MPA was approached by Mr. Bob Freeze, a commercial realtor representing the owners, to investigate the site as a potential placement location for dredged material. Ms. Flanigan requested an explanation of the concern reported as "potential effects to local aquifers, wells, and streams", and she questioned if potential leaching problems into the groundwater could result from the placement of dredged material. Mr. Rooney stated that the information reviewed from the Maryland Geologic Survey (MGS) with regard to the site was not site-specific to the Quarry location. There was not enough information available to determine if the wells, aquifers, and quarry were interconnected.

Ms. Flanigan noted that recently a general permit was issued by the Pennsylvania Department of Environmental Protection (DEP) for the use of a dredged material mixture for abandoned mine reclamation in Pennsylvania. Ms. Donovan explained that the Pennsylvania mining operations involved strip mining. The issue existing with using the Cardiff Quarries is that the quarries would be drained before placement of dredged material could take place. It is not known if draining the quarries would, in turn, drain the surrounding wells.

Ms. Flanigan questioned if, based on the results of the Cardiff Quarry preliminary assessment, the CAC should draw the conclusion that mines and quarries are a bad idea with regard to placement of dredged materials. Mr. Hamons stated that only this particular site has been determined to be inappropriate for the placement of dredged materials. Other mines or quarry locations may be deemed appropriate for placement. Mr. Rooney added that based on the amount of dredged material that could be placed at the Cardiff Quarries, it would require approximately 225 trucks per day every day all year to transport the dredged material to the site. Mr. Young added that additional costs would accrue due to the fact that the dredged material must be dewatered at a separate location before being trucked to the placement location.

Dr. Williams speculated that dredged material placement at the Cardiff Quarries could be easily compared to the Corps' Option 19 (mine placement – Cecil County, Maryland). Dr. Williams stated that the estimate for the Corps' option was approximately $50/yard, which would be mechanically similar to placement at Cardiff. Mr. Hamons disagreed and stated that the location for the Corps option is closer to the water, and therefore costs would be lower to transport the material to the mine location. Dr. Williams agreed, stating that based on the high cost associated with dredged material placement at Cardiff, it is wise to look elsewhere for a placement location. Mr. Hamons agreed, adding that many other factors, in addition to cost, were used in the decision to not recommend this site for further studies.

3.0 Corps of Engineers DMMP — Corrine Murphy

Ms. Murphy provided a presentation on Corps of Engineers, Baltimore District DMMP. A summary was provided of the presentation given at the April 14, 2004 CAC meeting. Ms. Murphy also highlighted current activities in the Federal DMMP process, reviewed the habitat index, reviewed the results from the quantitative analysis, presented the results of the qualitative risk analysis, discussed the alternative suite development process, discussed the selection of the Recommended Plan, and updated the schedule.

With regard to the qualitative risk analysis, Dr. Williams expressed his opinion that Rankings 2 and 3 should be reversed. Ranking 2 was presented as an alternative that requires development of specialized techniques and materials, and Ranking 3 was presented as an alternative that requires the standardization of methods. Dr. Williams stated his belief that a standardization of methods would be easier to achieve than the development of specialized techniques and materials. Ms. Murphy stated that, during the management roundtable, several alternatives were clearly Ranked 1 (alternative that is routine and cost-effective), while others were easily Ranked 4 (alternative that is in initial implementation stages) or 5 (alternative that is in basic science, engineering, and experimental stage). Ms. Murphy added that much discussion ensued during the ranking with regard to options being placed as Rank 2 or 3. In the end, only sites with a risk ranking of greater than 4 were eliminated from consideration.

Mr. Frangos expressed his opinion that that Ranking 3 could be encompassed within Ranking 1. Ms. Murphy explained that standardization of methods would be applicable for a technology that could be implemented across the board at multiple locations. It would not be possible to be routine and cost effective if the alternative hadn't already be standardized. Mr. Young added that the sites that are being evaluated under the DMMP are all different, with unique characteristics. Therefore, given the standard of variability within the sites, it appears that Ranking 2 would be easier to achieve than Ranking 3, which is hard to do with so much variability.

Ms. Marsh questioned the reasoning behind the risk rankings. She explained that, during the BEWG analysis, a higher number is representative of more benefit being achieved, making the option more desirable. But with the qualitative risk analysis, a higher number represents a higher risk, making the option less desirable. Ms. Murphy agreed that the number scale could have been reversed. Ms. Murphy added that the scale was used only as an "in or out" decision. If the risk was greater than or equal to 4 the option was not carried further, and any rankings less than 4 were carried forward. The rankings were not used in any further analysis. Ms. Meyer explained that the ranking system was developed by Mr. Dennis King of the University of Maryland. The same ranking system has been used at other locations throughout the country. Ms. Meyers thanked everyone for their input and assured committee members that, during the management roundtable, the same issues were discussed regarding Rankings 2 and 3.

Dr. Williams expressed concern over the logic used to compute the habitat index scores for the different suites of alternatives. Dr. Williams was concerned that the acreage used in the calculation of the index was not representative of the habitat of all options within a suite, and that, by using the calculation, one acre of wetland habitat would appear to yield the same benefit as one acre of upland habitat. Ms. Murphy explained that the BEWG ranking took into account weighting of certain factors of habitat benefit including criteria such as wetlands, uplands, birds, etc. Dr. Williams stated that he understood the process used in calculating the habitat index, but he reiterated his concern with the logic used to create the index.

Dr. Williams stated that according to Ms. Murphy 4,000 suites were created on the assumption that a total of 40 mcy of placement capacity was needed. Dr. Williams questioned how the capacity need was established. Ms. Murphy stated that the amount of need was based on the past dredging averages for existing channels from 1996 to 2003. Based on the past information, a forward projection was made for all Federal, and State channels. Dr. Williams questioned if the need was based on the Federal and State channels being dredged to fully authorized depths. Ms. Murphy explained that the assumption was that the channels would continue to be dredged in the same manner as they have been dredged over the past seven years.

Dr. Williams questioned if an economic analysis had been completed that supported the aforementioned assumptions outlined by Ms. Murphy, and determined that the dredging is economically justified. Ms. Murphy responded that a study is currently being performed by Mr. John Martin to evaluate the economic benefits of dredging. Due to the Martin study being currently incomplete, the presumption of need for the Corps DMMP was based on the Preliminary Assessment. Dr. Williams added that the Preliminary Assessment did not address the Northern Access Channel. Ms. Murphy agreed, but clarified that the Preliminary Assessment completed by the Philadelphia District Corps did address the dredging of the Northern Access Channel. Dr. Williams disagreed, stating that Philadelphia's Preliminary Assessment only addressed a portion of the Northern Access Channel.

Dr. Williams stressed that the Phase I of the Corps' DMMP included a step to complete an economic analysis of dredging need. Dr. Williams questioned if that economic analysis has been completed. Mr. Johnson stated that the economic analysis being done by the Corps is still in progress. Dr. Williams asked if the Corps' economic analysis will be in conjunction with, or separate from the economic analysis being completed by Mr. Martin. Mr. Johnson stated that the Corps' analysis will be separate from the Martin study due to the different criteria used when completing the analysis from the Federal perspective. Dr. Williams expressed great concern that the DMMP would have been completed in vain if in fact the economic studies conclude that dredging of the Northern Access Channel to authorized depths is not economically feasible. Mr. Johnson stated that if the economic analysis comes to that conclusion, the DMMP would then be reevaluated. Dr. Williams also expressed concern that the Corps did not follow their Project Management Plan in completing the economic analysis in the first phase of the DMMP. Mr. Johnson stated that in order to complete the DMMP in a timely fashion, it was necessary to proceed with the DMMP while the economic analysis was ongoing.

Ms. McGee asked for an explanation as to why sites with a zero habitat index (such as building bricks) due to having no acres associated with the alternative, were carried forward for consideration. Ms. Murphy explained that those alternatives could be mixed with other alternatives within a suite. Therefore, the suite would derive benefit from the other alternatives included within the suite, resulting in a non-zero habitat index.

Dr. Williams asked for an explanation between the C&D and Chesapeake Bay (MD) suites LP and PC. Ms. Murphy explained that they both involve a large island restoration in the mid-bay, and a Poplar Island modification. The only difference between the two is the order in which the projects would be implemented. For Suite LP, the large island restoration would be first followed by a Poplar Island modification, and Suite PC would be a reverse of LP.

Ms. Marsh asked for an explanation of the wetland restoration alternative. Mr. Mendelsohn explained that the alternative would include restoration of deteriorating wetlands, and prevention of degradation of other wetlands. Ms. Kolberg asked if, for wetland restoration, if the dredged material would be put on before or after dewatering. Mr. Halka explained that the dredged material would be applied in a wet state. Ms. Donovan added that the demonstration projects using wetland restoration have worked very well.

Mr. Garcia asked, with regard to the Recommended Plan for the Harbor Channels, if the multiple confined disposal facilities within the Patapsco have been identified. Ms. Murphy explained that the Corps DMMP did not identify specific locations, but rather an area of locations within the Patapsco that have potential for placement of Inner Harbor dredged materials. Mr. Johnson explained that after the DMMP is finished, the Corps will need to obtain authority to complete studies on specific areas within the Patapsco to evaluate if they will be appropriate placement locations. Mr. Garcia questioned if the Corps studies will tie into the sites that have already been identified by the CAC and Harbor Team during the State DMMP process. Mr. Johnson confirmed that those sites previously identified will most likely be considered for further studies. Mr. Johnson added that a meeting was held with the higher authority within the Corps to obtain permission to begin studies in advance of the finalization of the DMMP. No response has been received.

Ms. Murphy requested that any further comments with regard to the Recommended Plan be submitted to the Corps no later than August 25, 2004. The Draft DMMP and Tiered Environmental Impact Statement (EIS) will be completed and delivered to the public record in November or December 2004. The Final DMMP and Tiered EIS are expected for completion in May 2005, with a Record of Decision being completed in July 2005.

Ms. Flanigan encouraged anyone with comments or concerns about the Corps' Recommended Plan to submit them to the Corps as soon as possible. Ms. Flanigan added that anyone with citizens groups or community organizations that would like to receive a presentation from the Corps should contact her to coordinate with the Corps.

Ms. Marsh expressed concern that any misassumptions made during the Tiered EIS and DMMP process could negatively effect decisions made in the future with more specific studies. Mr. Johnson stated that a supplemental EIS could be prepared to address any new information identified in conflict with the assumptions made for the Tiered EIS. Ms. Donovan added that part of the DMMP will recommend five-year reviews of the Recommended Plan.

Ms. McGee questioned if the BEWG was comfortable with the habitat index computation, as all the work they put into the rankings could be negated by multiplying the ranking by a zero acreage. Mr. Johnson explained that the Corps met with BEWG and explained the methodology of calculating the habitat index, and they agreed that the method was appropriate. Ms. Donovan added that, under the Federal process, the avoidance of harm is not allowed to be perceived as a beneficial use. Ms. Murphy added that the habitat index was a relative scale that allowed for a comparison of like alternatives.

Ms. Marsh asked if the material from smaller dredging projects would be allowed to be placed at any of the larger proposed placement locations. Mr. Johnson stated that the issue is being addressed within the mid-bay Island study with the possibility of placing dredged materials from small dredging projects at either James or Barren Islands. Mr. Johnson speculated that the placement should not pose a problem as long as the material to be placed meets the quality of material placed at the location from Federal channels. Mr. Hamons cautioned that some Authorizations, such as the Authorization for Poplar Island, include mandates that specify the areas from which dredged materials can originate.

4.0 Update on Other DMMP Business

Harbor Team Progress **Bob Hoyt**

Mr. Hoyt explained that the Harbor Team is currently working on identifying specific community enhancements for different Harbor placement locations. Much progress has been made due to the great efforts from the communities involved. Based on community input, consultants are ready to begin designing enhancements for the North Point Community and Sollers Point area. Mr. Hoyt stated that by Fall 2004, the community enhancements should be very well defined and be moved forward for further studies. Mr. Hoyt reported that a meeting to discuss the Masonville Cove Area is scheduled for Saturday, August 14, 2004 at the Brooklyn Church of God from 10:00 am to 12:00 pm.

Needs Study by John Martin **Bob Hoyt**

Mr. Hoyt reported that Mr. John Martin is completing an economic justification analysis for dredging the C&D Canal to current depths. Mr. Martin has completed information collection and is in the process of drafting the analysis. Mr. Hoyt explained that Secretary Flanagan authorized the report during the Executive Committee Meeting in December 2003, and mandated that the report go through peer-review before being distributed. Once the report has gone through peer review, the findings will be reported to the Executive Committee and then to all other DMMP Committees.

Executive Committee Meeting **Frank Hamons**

Mr. Hamons stated that the next Executive Committee meeting is being scheduled for September 2004, possibly on the 16th or 21st of the month. A finalized date, time, and location of the meeting will be distributed to the CAC members as soon as possible. Mr. Martin's report is expected to be completed before the Executive Committee meeting.

Dr. Williams questioned if the peer review will be completed before the report is presented at the Executive Committee meeting. Mr. Hamons speculated that the peer review would be completed after the initial presentation of the results. Dr. Williams asked who would complete the peer review. Mr. Hamons stated that a selection process would be completed to find an appropriate person to complete the peer review.

Fall Schedule **Fran Flanigan**

Ms. Flanigan stated that the next CAC meeting will involve a presentation and discussion of Mr. Martin's report. Ms. Flanigan thanked all the participants for their generous contributions. Ms. Flanigan reported that the next CAC meeting is scheduled for Wednesday, October 13, 2004, and the final CAC meeting for 2004 will take place on the second Wednesday of December.

Dr. Williams asked if any reports are going to be complied and submitted to the Executive Committee, Governor, and Legislature. Mr. Hamons explained that the MPA has no Legislative obligations to submit a report. Likely a status report will be prepared detailing DMMP efforts during 2004 and will be submitted to the Executive Committee for review.

The meeting was adjourned at 9 pm.

to COL John B. O'Dowd, District Engineer, at the above address.

Luz D. Ortiz,

Army Federal Register Liaison Officer.

[FR Doc. 02–13042 Filed 5–23–02; 8:45 am]

BILLING CODE 3710–06–M

DEPARTMENT OF DEFENSE

Department of the Army; Corps of Engineers

Intent To Prepare a Draft Environmental Impact Statement for a Dredged Material Management Plan for the Port of Baltimore, Chesapeake Bay, MD

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DoD.

ACTION: Notice of intent.

SUMMARY: In accordance with the National Environmental Policy Act (NEPA) of 1969, the Baltimore District, U.S. Army Corps of Engineers (USACE) will conduct a study to evaluate the dredged material placement needs and opportunities for the Port of Baltimore, Maryland and develop a Dredged Material Management Plan (DMMP). The study area encompasses the Baltimore Harbor and the Chesapeake Bay approach channels, which extend from the mouth of the Bay in Virginia to Chesapeake and Delaware Canal, in the upper Bay, Maryland/Delaware. The purpose of the plan is to develop a long-term strategy for providing viable placement alternatives that meet the dredging needs of the Port of Baltimore Federal channels and include consideration of state and local dredging needs. The DMMP study will be evaluated through the preparation of a tiered EIS. As part of the process, the goals and objectives of the study will be clearly determined by all study participants. The DMMP will identify the quantity of material to be dredged from the Federal channels and how the dredged material can be managed in an economically and environmentally acceptable manner. Priority will be given to beneficial uses of the material. Beneficial uses include, but are not limited to, restoration of underwater grasses, islands, wetlands, shorelines, or fish and shellfish habitat. The DMMP will identify,evaluate, screen, prioritize, and ultimately optimize placement alternatives resulting in the recommendation of a plan for the placement of dredged materials for at least the next 20 years. The Baltimore District is actively seeking public opinion and advice to be incorporated into the plan. To this end, three public scoping meetings are planned throughout the study area. The meetings are tentatively scheduled at 7:00 p.m. for the following dates, in the following locations: Wednesday, June 12, 2002 at Queen Anne's County Library in Stevensville, MD; Tuesday, June 18, 2002 at Community College of Baltimore County, Dundalk Campus, Campus Community Center, in Baltimore, MD; and Thursday, June 20, 2002 at Anne Arundel Community College, Lecture Hall 101, in Arnold, MD.

The study will be conducted in compliance with Section 404 and Section 401 of the Clean Water Act, Section 7 of the Endangered Species Act, the Clear Air Act, the U.S. Fish and Wildlife Coordination Act, Section 106 of the National Historic Preservation Act, Prime and Unique Farmlands, the Magnuson-Stevens Fishery Conservation and Management Act, and National Pollutant Discharge Elimination System Act. All appropriate documentation (i.e., Section 7, section 106 coordination letters, and public and agency comments) will be obtained and included as part of the Environmental Impact Statement (EIS).

FOR FURTHER INFORMATION CONTACT: Questions about the proposed action and draft EIS can be addressed to Ms. Michele Bistany, U.S. Army Corps of Engineers, ATTN: CENAB–PL, 10 South Howard Street, PO Box 1715, Baltimore, MD 21203–1715, telephone 410–962–4934; e-mail address: *michele.a.bistany@usace.army.mil*.

SUPPLEMENTARY INFORMATION:

1. The Baltimore District Corps of Engineers is responsible for the maintenance of navigation channels in the Chesapeake Bay and Patapsco River known as the Baltimore Harbor and Channels project. Maintenance of these channels requires the annual placement of approximately 4.5 million cubic yards of dredged material. The DMMP study will include an associated programmatic tiered EIS to allow for identification of a suite of options or projects for future detailed study in order to provide for long-term optimized capacity of dredged material. The tiered EIS allows all interested parties the opportunity to participate in the process from inception. It also includes adequate environmental analysis so that future NEPA documentation can be based on a solid foundation.

2. The USACE, Engineering Regulation (ER) 1105–2–100 mandates that the Corps Districts develop DMMP plans for all Federal harbor projects where there is an indication of insufficient capacity to accommodate maintenance dredging for the next 20 years. The ER further states that the Districts are encouraged to consider options that provide opportunities for beneficial uses of dredged material for environmental purposes including habitat restoration. The DMMP process began with a Preliminary Assessment that was completed in September 2001. The Preliminary Assessment identified placement option shortfalls within the next 8–10 year time frame.

3. As part of the EIS process, recommendations of placement sites and options for dredged material management will be based on an evaluation of the probable impact of the proposed activity on the public interest. The decision will reflect the national concern for the protection and utilization of important resources. The benefit, which may reasonably be expected to accrue from the proposal, will be balanced against its reasonably foreseeable detriments. All factors that may be relevant to the proposal will be considered, among there are wetlands; fish and wildlife resources; cultural resources; land use; water and air quality; hazardous, toxic, and radioactive substances; threatened and endangered species; regional geology; aesthetics; environmental justice; and the general needs and welfare of the public.

4. The draft EIS for the DMMP is expected for public release in late 2004.

Mr. Kevin Bunker,

Assistant Chief, Planning Division.

[FR Doc. 02–13048 Filed 5–23–02; 8:45 am]

BILLING CODE 3710–41–M

DEPARTMENT OF DEFENSE

Department of the Army; Corps of Engineers

Intent To Prepare an Integrated Draft Project Implementation Report/Environmental Impact Statement for the Southern Golden Gate Estates Hydrologic Restoration

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DoD.

ACTION: Notice of intent.

SUMMARY: The U.S. Army Corps of Engineers (Corps) Jacksonville District intends to prepare an integrated Draft Project Implementation Report/Environmental Impact Statement (DPIR/EIS) for the Southern Golden Gate Estates Hydrologic Restoration (SGGEHR). This DPIR/EIS is a cooperative effort between the Corps and the South Florida Water Management District (SFWMD). The SGGEHR planning process is authorized

US Army Corps of Engineers
Baltimore District

Notice of Public Scoping Meetings

Dredged Material Management Plan

The U.S. Army Corps of Engineers will conduct a series of three public scoping meetings for the initiation of a dredged material management plan (DMMP) study to evaluate the dredged material placement needs and opportunities for the Port of Baltimore.

The scoping meetings have been scheduled as follows:

Wednesday, June 12, 2002	**Tuesday, June 18, 2002**	**Thursday, June 20, 2002**
7:00 p.m. Queen Anne's County Library – Kent Island 200 Library Circle Stevensville, MD	7:00 p.m. The Community College of Baltimore County, Dundalk Campus Dining Area, College Community Center 7200 Sollers Point Road Baltimore, MD	7:00 p.m. Anne Arundel Community College Lecture Hall 101 Florestano Building (West Arnold Campus) 101 College Parkway Arnold, MD

The U.S. Army Corps of Engineers, Baltimore District, invites all interested parties to attend one of the three public scoping meetings. The purpose of the scoping meetings is to solicit input to the plan from any and all interested parties. The input generated at these meetings will be used to help establish the goals and objectives of the DMMP, issues to be considered, and potential placement options.

The purpose of the plan is to develop a long-term strategy for providing viable placement alternatives to meet the dredging needs of the Port of Baltimore channels, including State and local dredging needs, for a minimum of the next 20 years. The DMMP study will evaluate how the dredged material can be managed in an environmentally and economically acceptable manner, with emphasis on beneficial uses of the material. Beneficial uses may include, but are not limited to, ecosystem and habitat restoration, innovative uses, shoreline stabilization, and upland use. A tiered Environmental Impact Statement (EIS) will be prepared in accordance with the National Environmental Policy Act (NEPA) to document this process. It is anticipated that this study will conclude in late 2004. Any alternative recommended in the DMMP will not be implemented without additional detailed study and appropriate site-specific NEPA documentation.

Displays regarding the history of the Port of Baltimore, information on dredged material and beneficial uses, potential alternative dredged material placement options under consideration, and the current placement sites at Poplar Island and Hart-Miller Island will be available for review at 6:00 p.m., approximately one hour prior to the scoping meetings. The meetings will also include a presentation by the Corps and allow for open discussions and public comment on the DMMP study.

Oral or written comments may be provided for determination of the scope of the study at the public scoping meetings. Written comments may also be submitted to the Corps up to July 19, 2002. Written comments may be mailed to the U.S. Army Corps of Engineers - Baltimore District, CENAB-PL, Attn: Michele A. Bistany, P.O. Box 1715, Baltimore, Maryland 21203-1715 or e-mailed to michele.a.bistany@usace.army.mil.

If you have questions concerning the scoping meetings, please contact Ms. Michele A. Bistany at (410) 962-4934 or e-mail at the above address.

Robert W. Lindner
Chief, Planning Division

Summary Report
Public Scoping Meetings – June 2002
Dredged Material Management Plan
U.S. Army Corps of Engineers – Baltimore District (CENAB)

1.0 Introduction to Public Scoping Meetings

1.1 Purpose of the Public Scoping Meetings

The purpose of the meetings is to solicit input to the Dredged Material Management Plan (DMMP) study from any and all interested parties. The input generated at these meetings will be used to help scope the DMMP and begin to establish the goals and objectives of the DMMP, issues to be considered, and potential placement options. CENAB welcomes ideas and suggestions and believes the meetings will produce a list of comments and concerns that can be incorporated into the study.

1.2 Public Meeting Agenda

Each of the three meetings followed the same agenda:

7:00 Welcome and Introductions – Daniel Bierly, CENAB
7:05 Study Purpose and Overview – Daniel Bierly
7:30 Public Comments – facilitated by Daniel Bierly

A copy of Mr. Bierly's PowerPoint presentation is presented in Attachment A of this summary report. For an hour prior to each meeting, CENAB hosted an open house consisting of various topics, handouts, and displays. The following topics were covered at the open house:

- History of the Port
- Hart-Miller Island Dredged Material Management Facility
- Poplar Island Environmental Restoration
- CSX/Cox Creek Containment Facility
- Dredged Material Placement Options
- Environmental Monitoring
- Restoring the Chesapeake

The following handouts were provided:

- Public Scoping Meeting PowerPoint Presentation
- USACE Environmental Operating Principles
- DMMP Project Summary
- History of the Port
- Baltimore Harbor Chronology
- Hart-Miller Island
- Hart-Miller Island South Cell Restoration Project

- Hart-Miller Island Environmental Monitoring
- Restoring Poplar Island . . . A National Model for Beneficial Use of Dredged Material
- Poplar Island – A Brief History
- Poplar Island Restoration Project
- Poplar Island Environmental Monitoring
- CSX/Cox Creek Dredged Material Containment Facility Project
- Examples of Placement Options of Dredged Material
- Restoring the Chesapeake . . . working to meet the goals of the Chesapeake 2000 Agreement

A court reporter attended each meeting and prepared verbatim transcripts. Comment cards (prepared as a self-mailer) were distributed at the sign-in table for interested parties to submit their ideas and concerns in writing. The deadline to submit comments regarding the DMMP study was Friday, 19 July 2002.

1.3 Purpose of the Dredged Material Management Plan

The DMMP is a study conducted to develop a long-term strategy for providing viable placement alternatives that meet the dredging needs of the Port of Baltimore Federal Channels and includes consideration of state and local dredging needs. The study area encompasses the Baltimore Harbor and the Chesapeake Bay approach channels, which extend from the mouth of the Bay in Virginia to the Chesapeake and Delaware Canal in the upper Bay, Maryland/Delaware. The DMMP study will be evaluated through the preparation of a tiered Environmental Impact Statement. The DMMP will identify the quantity of material to be dredged from the Federal channels and how the dredged material can be managed in an economically and environmentally acceptable manner, with emphasis on beneficial uses of the material.

1.4 DMMP Schedule

- September 2001 Preliminary Assessment
- May 2002 Notice of Intent
- June 2002 Public Scoping Meetings
- July 2002 Comments for Inclusion into the Public Record
- September 2002 Finalize DMMP Project Management Plan
- September 2002 Initiate DMMP Study
- June 2004 Draft DMMP/Tiered Environmental Impact Statement to Public
- September 2004 Final DMMP/EIS

2.0 Public Scoping Meeting – 12 June 2002

2.1 Meeting Overview – 12 June 2002

The first public scoping meeting for the DMMP was held on Wednesday, 12 June 2002 at the Queen Anne's County Library – Kent Island in Stevensville, MD. Sixteen citizens attended the meeting. The meeting was adjourned at 8:10 p.m.

2.2 Oral Questions and Responses per Transcripts – 12 June 2002

MR. SOSSI: Dick Sossi. On the slide it says in the Port of Baltimore. Should that be to the Port of Baltimore?

MR. BIERLY: The Port of Baltimore is considered the entire system, so it's all the channels that service the Port of Baltimore. That's a good question. Baltimore Harbor would be sort of the proper area where the commerce is. The Port of Baltimore is the entire system.

MR. GILL: Who is paying for this study?

MR. BIERLY: This study is 100% funded by the Federal Government. That's an important point, very important point. This is purely a federal study. This is a study that we are conducting because we have a responsibility to maintain channels.

MR. COALSON: Bruce Coalson. When you said "local dredging projects," where do you solicit that information from? I mean do you go to the state for that? Say in Dorchester County we have several creeks that need some dredging work. They have been submitted to the RCD group as being projects identified. Where do you get this information from so you know what local problems, what local dredging needs to be done?

MR. BIERLY: The DMMP is conducted for any harbor that pays into the harbor maintenance trust fund. So Dorchester County projects would likely not be included; however, let me point out that should we build a project down near Dorchester County and the locals there come up to us and say we would like to put some local material in here, too, that's probably not going to be a problem.

MR. BRODERICK: Jack Broderick. The option of open water placement and you mentioned Pooles Island –

MR. BIERLY: Pooles is closing, but it's active right now.

MR. BRODERICK: When is that supposed to close?

MR. BIERLY: 2010.

MR. BRODERICK: Is that still a future viable option after Pooles Island closes? Is that placement option still something that –

MR. BIERLY: Do you mean the concept of open water placement?

MR. BRODERICK: The concept of open water placement in the bay.

MR. BIERLY: I'll make a broad statement here. This is the federal dredged material management plan; therefore, state law will not impact what this plan says; however, if something is against state law, it's not very likely we're going to be able to do it. That's when the plan hits reality because the state is involved, maybe not in the Inner Harbor dredging, but certainly the outer harbor dredging.

MR. COYNE: My name is Joe Coyne. I'm just curious if you could explain how you bring in the data that is being gathered by the MPA people in their process, citizens committees and management committees. How do you bring that into your consideration?

MR. BIERLY: You notice I didn't mention the state process. The reason I didn't mention the state process is because I want everyone to understand that our process is fully independent. Having said that, we would be pretty foolish if we threw away all that hard work. We sit on the committees, the state DMMP. We still call it DNPOP just because otherwise we would drive ourselves mad. But we sit on those committees. We have all of their data. We have all of the data that they distribute, and we will get more when it's ready. The engineering studies, for example, that they've done, we're definitely going to use all of that. The input that has come from the agencies, we'll definitely use that, too.

We're not out to reinvent the wheel, but by the same token we must do our own independent evaluation because, A, we're supporting a NEPA document; B, we need to take the national perspective, whereas the state takes the state perspective naturally, and there was probably a C there, but I've forgotten it. No one's hard work will be lost, but we are a separate entity, a separate process.

MR. SOSSI: About five years ago I decided to run for the House of Delegates, and we pay attention when a current delegate will make comments or pronouncements of various things, and, to be honest, I started paying attention to the issue about the dredged spoils as a result of one of those comments where he thought it was a great idea to dump these 18 million cubic yards of dredged spoils because he was going to get a whole dollar a yard for oysters. So, at any rate, as a result I went to one of the first meetings. It was held over in Anne Arundel County in a school over there, and I have to say I'm always amazed by the state's -- and you're not the state, of course, and maybe that's the difference, but they still outnumbered us, but it was only by one or two, and you guys can take us on easily with one hand behind your back.

But there were three people there, the head of the local Chamber of Commerce, myself, and a gentleman by the name of Pipkin, the father. At any rate, the whole idea didn't smell very good to me, and I have to say I was one of the people to write in in opposition. Dredged spoils means silt, and that's not good for the bay. It's bad for grasses. Of course, E.J. Pipkin got riled up about it and was able to bring new sources and grass roots organizations there. I personally mailed out in my campaign about 20,000 pieces of mail objecting to the project.

What I'm getting at with all of that is there are a lot of us who have a lot of memory of this whole issue, and we're not the lambs that we were when it first started. One of the things that came out clear to us in that process -- a couple of things. One was that it seemed pretty clear to us after a while that it was a done deal. All the protestations to the contrary, we were proven right. It was basically a done deal from that standpoint. Fortunately, people weren't going to put up with it, and they kept fighting, and it was changed.

The other thing I have to tell you is that the Corps did not fare very well in terms of the research concerning the deepening of the C & D Canal. They were proven wrong a couple of times. Their report on the toxicity of the dredged spoils was found to be grossly in error. So it worries me when you say things like probably toxic. I challenge you to go to the Patapsco, catch a fish, and eat it. You won't have to put it on the stove. You can just leave it on the plate. It will cook itself.

MR. BIERLY: People do. I've seen them fishing.

MR. SOSSI: All I'm saying is that any talk or considerations -- I'm not asking about reinventing the wheel. I just don't want you to ignore the wheel. We have been there, and we don't want any type of dumping in the Chesapeake Bay. It's just a bad idea.

MR. BIERLY: Thank you for your comment. Anyone else?

MR. GILL: John Gill, U.S. Fish and Wildlife Service. A real quick question: Is this study just looking at mainstem shipping channels or are you going to consider any of the smaller federally authorized channels?

MR. BIERLY: Do you mean like the local marinas?

MR. GILL: I'm talking like the Knapps Narrows, the Kent Narrows, the Honga River.

MR. BIERLY: No. Once again, like I said before, if we have a project constructed close to those and it becomes an economically viable thing, then potentially they can use the project. For example, Poplar Island right now, only material from certain channels can go to Poplar, but that's because that's the way the cooperation agreement was written. We could write an agreement that says this will also accept from such and such a county or from such and such an area. If appropriate, we may do that. Most of the small projects can't really afford the distance that it would likely be from there.

MR. GILL: And that's why I'm asking because, as you know, the islands which make up my refuge are a long way from the central area where you're dredging, and it's really the smaller channels that often lend themselves, but the smaller channels don't generate the dollars that your effort is going to generate. Hence, the question.

MR. BIERLY: That's true. I refer you to the thin layer placement discussion we had earlier. If it is considered a good idea by enough people to use some mainstem material, then that can be done.

MR. GILL: That's a long way to haul it.

MR. BIERLY: That is a long way to haul it, which is why I'm not going to say yes, we'll do that. If enough people think it's a good thing to do, and obviously we're not going to get huge capacity out of these either, and then the corollary to that is, are you going to use the material from the small channels to play with.

MS. AIOSA: Jennifer Aiosa with the Chesapeake Bay Foundation. I just had a question. The question that I want to ask is you have repeated on a couple of occasions that this process is independent from the state's process, and that while you will use input from the state's process, you need to make an independent decision on a variety of factors, and so what I wanted to know is how does the Corps go about determining what the dredged material need is?

MR. BIERLY: One of the first tasks of the DMMP will be to establish the need. What I presented to you this evening was the maintenance need. We've taken that from the historic dredging data, and so we felt pretty comfortable with that and confident in that. We also will do an economic reevaluation of the port. Having said that, we're currently out there building a project which took an economic evaluation of the port. If the port is viable enough to improve upon, certainly it's viable enough to maintain if it can be maintained relatively cheap to do it; however, that will be done.

What I know you're more concerned about is but what new projects lie out there in the future? We're not naive. We understand that the Corps can't sit still. We've got some really cool pictures back there of the port, and we've got a chronology laid out of what is happening. If you go back far enough, the port had a 22 foot channel, and by golly that was enough in 1830. It's fine. You have 20 feet of water now and you will get sailboats and that's about it. So we know there is going to be something out there. What we are going to do -- I can't say that because I don't know what we're going to do. We've floated around some concepts of what we're going to do. Do we take an average number and apply it per year? Do we make some sort of projections? Are there projects that we know about? Maybe.

We don't have any federal projects on the burner right now. The last ones are being done right now, so we know what that's going to be. The state is talking about improvements. Are they going to tell us exactly what they're going to do? No. Competitively that will kill them. They're running a business. We've got to understand that. They're running a business; however, we're going to need to make some estimates and we're going to need to decide what is reasonable and not reasonable. Yes, it's going to have to be considered. I just can't tell you how yet. We need to work on that.

MR. SOSSI: You seem to poo-poo the idea of the recycling -- my comment is it seemed like it was downgrading the importance of recycling material into bricks and other things.

MR. BIERLY: No. In fact, I've heard some really interesting concepts about that, people who think they can get substantial yardage and do something like that with it. On the one hand, I'm all for that. On the other hand, depending on the process, what is the process going to generate? Is it a chemical process with a waste product? Is it an incineration with an air quality issue? So all of these things need to be worked together, but if the output from such a process was acceptably clean and we could take this material a million yards at a time and turn it into lightweight aggregate, which we would then do what we normally do with mined quarry material, I think that would be great. One thing I will say is you can't bet your future on something that may or may not be viable, so there is a cautionary side to that. If down the road such a thing is viable economically and physically, then that's great. Scott, do you want to pipe in here?

MR. JOHNSON: (Scott Johnson, CENAB) The bottom line right now is we are not aware of a proven technology out there. That's what we're hoping somebody will come forward and say here it is and here is an economically viable, environmentally acceptable, innovative use of the process that you can apply at our port. Great.

MR. SOSSI: As a delegate, the mayor has been pushing that plan and it is an economically viable operating system for years in Germany.

MR. BIERLY: I've heard a little bit about that.

MR. SOSSI: The real concern is the state is supposed to be doing something in the way of capacity, and it doesn't seem like you guys -- you don't like the idea or you seem not to like the idea or whatever. So there is really not a whole lot -- how long does it take to do studies to find out that there is a viable option?

MR. BIERLY: Economic viability is an interesting concept because it depends where you are. Economically viable in New York is $60 a cubic yard. That's not economically viable in Baltimore. Economically viable in Germany is extremely expensive because this is a land locked country with rivers flowing through it and the ports are developed all around. What are you going to do with the stuff? You kind of have to do something with it, and so if the price goes up, that's okay. It's worth it. That having been said, I don't want anyone leaving here thinking that any of these innovative uses are not being taken very seriously by us because I would love to see the future where we have to stop worrying about where we're going to put this stuff and just turn it into something useful and use it. That would be great.

MR. COYNE: In your plan are you taking into account what I've heard is a tremendous amount of siltation built up in Pennsylvania and the upper watershed in the dams of the Susquehanna? How are you dealing with that?

MR. BIERLY: We're struggling a bit with exactly how to quantify that. It's very difficult. For those who are not aware, although based on the questions I think I've got a presently well-informed crowd here, the hydroelectric dams on the Susquehanna River, the main branch, Conowingo in Maryland, and another one in Pennsylvania, effectively trap about half the sediment that comes down the Susquehanna River. The sediment, therefore, is not lined up in the bay and potentially in the federal channels that needs to be dredged. There is only about 15 or 20, 25 years or so give or take of capacity left behind those dams before they fill up and reach a steady state, in which case all the material that comes down the Susquehanna will go into the bay, effectively doubling the sediment load. Don't take this as factual. Take this as theoretical.

Another big problem with the dams is you've got this huge slug of material sitting there. Another Agnes comes down, and a lot of that material gets resuspended and dumped down in one enormous slug. That is a definite problem. We currently are working -- this year in fact we got the authority to study that problem separately from this effort, and we're currently working with some folks here in Maryland and in Pennsylvania about scoping out a study of what to do. That study, I've seen some preliminary concepts -- and nothing has been signed, nothing has been agreed upon -- I can say with some certainty that that plan is going to include thinking about ways to keep the material up on the land or at least not let it get down to the mainstem of the Susquehanna, and can we physically remove some of that material and maintain, if not increase, our capacity? As these dams come closer to the steady state or filled state, they will effectively travel a lower and lower percentage because of the less settling time.

So I haven't gotten to your question. That study should help us to determine what impact those dams in the Susquehanna have on what we're doing right here, but I've got to tell you that's some pretty tricky science, how much of that material ends up where it is. I've sat in a lot of meetings on this topic, and even the experts can't figure it out. There is a thing called a turbidity maximum, blah, blah, blah. Most of it drops out north of there. The sediment from the Susquehanna is generally not felt down to the Bay Bridge or even a bit north of there. So here is another nonanswer, but we're well aware of it. We're working on the issue, but how exactly to quantify it I'm not sure.

MR. SOSSI: So it's reasonable to say that part of the mission is preventative. In other words, if you could find a way to keep it from getting into the Susquehanna or coming into the bay --

MR. BIERLY: What I discussed there was just the dams issue. We also have a study, and Steve is heading this one up, to study shoreline erosion in the Chesapeake Bay proper and in fact all the tidal influenced areas and all the tributaries as well to determine what impact is that material having on the aquatic ecosystem and how can we keep as much of that material there as possible. Where are the worst areas? Maybe we can do something in those areas. This goes well beyond the dredging issue, of course. It's really -- it's a bad grasses issue. Turbidity cuts down on the grasses, et cetera. John can tell you all about a nice project we should have going at Smith Island fairly soon where we're doing just that. We are halting erosion of land for the express purpose of clarifying the water and allowing bay grasses to grow. We hope to get 1,900 acres out of that.

MR. BRODERICK: I do have a comment I would like to make. I live here on Kent Island. I'm the president of the Kent Island Civic Federation, which is made up of a number of communities throughout Kent Island. We speak out on various issues of concern to Kent Island and our quality of life here. We were frankly amazed and very disappointed a couple of years ago when we found ourselves here on the island in what seemed like a battle where we kind of pitted the health of the Chesapeake Bay against the Port of Baltimore, and some of the big players here were the Port of Baltimore, the State of Maryland, and the Corps of Engineers. As Dick said, there really is a public trust issue here that is still hanging out there. So I just want to say I hope that we have better experiences this go around than we did the last go around on these issues.

I applaud your goal statement that mentioned twice that dredged spoils will be placed using environmentally sound measures or in an environmentally sound manner. Again, I think the devil is in the details, what is environmentally sound. I can recall the disappointment that we had several years ago when we read the Corps' environmental impact statement regarding the proposal for Site 104 when the major argument seemed to be to us the socioeconomic impact of not dredging the port. That really isn't something that I think ought to be part of an environmental impact statement, but that was a major thrust of it. So we go beyond all of that heartache and that frustration and we realize we have a state law right now that hopefully will prevent open bay dumping in the future, open water dumping, but let's hope that we can work together in the future in how we do this.

I want to say a couple of things very strongly in favor of the island restoration approach that you guys are doing. We think that's great. It just makes a lot of sense. Many of us have seen those islands get smaller and smaller, and in some cases some of them around here disappear certainly within our lifetime. Shoreline protection is also -- shoreline restoration is one that just makes a great deal of sense. In terms of whether or not the birds in the area like those islands and need those islands, I would ask anybody who would ever have the opportunity to go out and look at an existing tiny island not far from here down in Eastern Bay, Bodkin Island. My son and I were by there the other day, and there were somewhere between probably 500 and 1,000 birds on maybe less than an acre, a tiny island, and they are just crowded in nests on there like these seats are in here. Those islands are really popular with our birds in the bay. By restoring places like Poplar Island it can only benefit not only the bay, but can benefit the wildlife and habitat in the area. So we applaud that very much. We look forward to a very positive, solid working relationship with all of you in the future, and we appreciate this opportunity for public comment.

MR. BIERLY: Thank you.

MR. WEST: Doug West, president, Kent Conservation, and I'm a waterman from Kent County. I would just like to say that since the open water placement appears to be not an option anymore as far as the state is concerned, that I would like to see -- I would like to urge the Corps to make Poplar Island their base plan placement option, and I think in doing that it would really help encourage the restoration of other islands down the bay. If we had an island up here in the Upper Bay that was eroding as those are, I would be all for working on that, too. People say, well, it's not in your backyard. Well, if it was, I would be right there wanting to get it done. So thanks.

MR. BIERLY: We've actually heard from -- I cannot speak for people in Dorchester County, but there is interest down there in restoring some of those islands. So I certainly believe you when you say it's a it's not in my backyard situation. You bring up an extremely important point about this base plan, and I want to explain that a little bit. Once again you're a savvy group; you might know about this. As part of the study we will establish or re-establish the base plan for dredging. The base plan is an economic tool. It decides where federal operation and maintenance funding stops and federal project funding begins. If the base plan is overboard dumping, then the government will pay based on that 100% 50/50 slide I had up before -- will pay let's say 100% of what it would cost theoretically to do that.

If you're going all the way to Poplar Island, you have got transportation and construction and everything that goes on on the island, and that's a cost, and that cost is shared 75/25 in that case from then on. So it's federal O & M funding, which could well be 100%. In fact, when we maintain channels in Maryland waters, it is 100% federal O & M. That's just the way it worked out. So up to the base plan it's 100% federal funding, and then the cost sharing starts. So to change the base plan -- the biggest point to make is if you can change the base plan to something that's more expensive, the state cost share is less and that's a purely economic point of view, but that's what the base plan is all about. Of course, there are two. There is one for clean material and there is one for Inner Harbor material, and they're different base plans.

2.3 Written Questions and/or Comments – 12 June 2002

FRANCES FLANIGAN: Meeting had a nice, non-bureaucratic tone. Dan Bierly did a good job leading it. Still lots of questions about relationship between two planning processes and the fact that they seem to be on different timelines.

Frances Flanigan
6305 Blenheim Road
Baltimore, MD 21212-2206

JOSEPH COYNE: Strongly support restoration of islands! Wildlife and habitat need help. Anything you can do to help us in terms of stopping/slowing shore erosion (in Dorchester County). Provide on-going information via newsletter or similar communication. Sponsor a public meeting from time-to-time.

Joseph Coyne
913 Parsons Drive
Madison, MD 21648

3.0 Public Scoping Meeting – 18 June 2002

3.1 Meeting Overview – 18 June 2002

The second public scoping meeting for the DMMP was held on Tuesday, 18 June 2002 at The Community College of Baltimore County, Dundalk Campus (College Community Center Dining Area) in Baltimore, MD. Twelve citizens attended the meeting. The meeting was adjourned at 7:55 p.m.

3.2 Oral Questions and Responses per Transcripts – 18 June 2002

MR. WELSH: My name is Patrick Welsh. I just have a couple of questions. One, I noticed under the placement options example you have on here as a potential use open water placement.

MR. BIERLY: Yes. I'm glad you reminded me of that. It's something I didn't harp on, and Scott would have my head if I didn't mention it. The Corps of Engineers by guidance, by policy takes a national perspective on any problem we study, so when we come into a situation such as this, we have to open up to the whole world of possibilities. Understanding open water placement is currently ongoing at Pooles Island; however, that site will close in 2010, and it's currently against state law, that's correct; however, we can't rule it out yet just because it's against state law, and let me tell you why. To play devil's advocate, the state could say we make everything illegal except taking this material down to Norfolk and dumping it into their channels. Obviously that's ridiculous, but they could legislate us into a corner, if you will. Now, having said that, open water placement is in fact against state law, and therefore, it's not going to happen unless the law changes; however, we can put it out there theoretically and say it's a viable option. Norfolk does it. San Francisco does it. We could do that.

MR. WELSH: You stated earlier that in dredging the 500,000 cubic yards in the Inner Harbor –

MR. BIERLY: Annually.

MR. WELSH: -- that by law that must be contained.

MR. BIERLY: Correct.

MR. WELSH: Are you also looking at the potential open water placement for that?

MR. BIERLY: No, absolutely not. Somebody could easily say that line that separates contaminated from clean, that's a state law, too. Yeah, but it's also a convenient line, to tell you the truth. It's conservative, which makes it a good planning vehicle. Anywhere in the country we the Corps of Engineers or we anybody cannot anywhere in the country place material that is contaminated in an open water site. It goes through what is called the inland testing manual. It must pass an exhaustive list of criteria that has been established by the EPA and the Corps of Engineers. The Inner Harbor material, if you take some hot stuff right by the terminals, it wouldn't pass. So, no; contaminated material would not under any circumstances totally regardless of state law be placed in open water.

MR. WELSH: So if you found clean material in the Inner Harbor --

MR. BIERLY: Then it goes back to the state law question.

MR. WELSH: So your view is that the Corps of Engineers could ignore Maryland state law.

MR. BIERLY: Most likely we could not. We still need to get permitted by the State of Maryland for anything we do, a water quality certificate. I'm looking to Scott to see if he wants to add anything on that. You think that's good? Okay.

MR. WELSH: Thank you very much.

MR. BIERLY: Thanks for your comments.

MR. STANCILL: My name is Terry Stancill. My wife and I live in Harford County near the Susquehanna River, and I've got a few questions. You've mentioned the term "economic" a number of times this evening. What does "economic" mean in connection with the whole dredging question?

MR. BIERLY: The Corps of Engineers needs to satisfy several criteria, and one of them is always the benefit-cost ratio. If you get more benefits from the project than it costs, then economically speaking it's a good project. In environmental restoration you're not necessarily talking monetary benefits. We still consider it an economic exercise because there are environmental benefits. When you're talking navigation, you're talking economic benefits. If a channel is 42 feet deep, what is the anticipated economic impact of that compared to 41, 43, or anything like that? So if we maintain a channel, it needs to be economically appropriate to maintain that channel. Does that answer your question?

MR. STANCILL: Yes. So the maintenance of the channel for shipping is the primary economic reason even though there may be economic benefits from environmentally improving an area or enhancing habitat or other less easily quantifiable areas of benefit.

MR. BIERLY: Correct.

MR. STANCILL: The next question is are there any plans or are there any discussions being considered to dredge above the Conowingo Dam to intercept the silt that's coming down the Susquehanna River in that catch basin?

MR. BIERLY: I could give you the long five-hour answer or the quick one. I'll do something in between. Yes, that's a big issue, and we're well aware of it. At the last meeting someone asked the same question, and so what I did was I gave a brief overview of it. I'll try to be a little less verbose than I was the last time. There are four hydroelectric dams on the Susquehanna River, for those of you who don't know, between Harrisburg and the bay, and each one of those has been trapping material that naturally comes down the Susquehanna River. Of course, human development has increased the amount that comes down, but even naturally a lot of it comes down. Approximately half of that material, sand, silts, clays, whatever it is, gets trapped behind these dams before it hits the bay, and so speaking from the environmental point of view of sediments or the dredging point of view, this has been a good thing that we're not getting all that down here.

In about the next 15 or 25 years, depending on who you ask and when you ask them, the last dam of Conowingo, the one furthest to the south, will be filled, if you will, reach steady state is what the scientists like to say, so that as much material that is coming down the river will go over the dam and come down eventually into the bay. This is of great concern, not just from the dredging aspect, but from the environmental aspect. So the Corps currently has what we call a study authority. Congress has told us to undertake a study. What it is is a two-parter actually. One part of it, the part you're asking about, is for us to consider the material behind the dams and decide what to do with it. They are still, going back to the scoping word, they're still scoping that. The Susquehanna River Basin Commission, the State of Maryland, and some others are interested in partnering with us on this one because it's a very big issue.

There is about 200 million cubic yards as I understand it trapped behind these dams. The reason we care about material that's currently trapped as well as material that will be trapped is every time a big storm -- and I don't mean a couple of inches rain; I mean a big storm -- comes through it actually scours some of the material out and more material comes down the bottom than would have naturally. So that's a big issue. But this study when it gets going, which hopefully will be fairly soon -- there was a big meeting in our office today actually -- will look at that issue and try to come to some tough conclusions such as do we dredge some of this material out to maintain some capacity, some trapping capacity, if you will? Is that the best way to go? Do we go up into the watershed and try to -- you know, you've got a vacuum cleaner, a sandy beach, and you try to hold the sand down there. Is that the best thing to do -- don't take that as an editorial comment -- or a combination, which makes sense to me. That's being looked at.

How does that refer back to our DMMP? The question at the last meeting was are you considering that material -- are you trying to hang a number on it? In other words, ten years out what is going to be the contribution or extra contribution from those dams into the channels? It is an amazingly difficult thing to determine. For a year and a half I sat on the task force which looked at this issue that's chaired by the Susquehanna River Basin Commission, and you get the smartest people in the world in the room, and the consensus was I don't know. The other consensus, by the way, was that sediment can't move upstream, but that wasn't real tough to agree upon. We have what we call a turbidity maximum. Where most of the material drops out, it's almost always above the Bay Bridge.

I know I'm skirting your question, but we're aware of it. We're trying to quantify it through another study. The best thing we can do right now over the course of the next two years my guess, unless they hit on something good in this other study, is for us to look at dredging from prior years and to see if we can notice a trend because the more full these dams become, the lower their trapping efficiency, and so if we see some patterns there, maybe we can see where we're headed. So we're aware of it. We're going to try to deal with it, but I can't promise that we're going to hang a real number on it.

MR. STANCILL: Another related question is in the Corps' deliberations about sediments upstream from Conowingo has the responsibility of the various utilities been considered, their responsibilities to share in the cost of maintaining those pools such as Conowingo Dam, Safe Harbor, Peach Bottom Atomic Plant, which needs water for cooling, and who else? But anyway those several utilities --

MR. BIERLY: Three Mile Island.

MR. STANCILL: Three Mile Island. It would seem to me that they should have some responsibility for sharing in finding a solution to and sharing in the cost of that problem because they need those pools to generate electricity or to provide cooling water.

MR. BIERLY: Right. The folks from Conowingo, Holtwood, and Safe Harbor were on the task force I alluded to before. The topic of who is responsible honestly didn't come up. What did come up was that there is a whole lot of coal trapped behind these dams, a whole lot of coal. In some places they think maybe 40% of it is coal, and there has been talk about actively mining that material. In fact, either Holtwood or Safe Harbor -- since I'm being recorded, I'm not going to choose one because I'm not sure -- but historically before Agnes did actually dredge and use coal from their pool. The president of one of the dams up there, he wants the mineral rights, but honestly when it comes to responsibility and things like that or whether they will participate economically or financially hasn't come up.

MR. STANCILL: There may be something -- and I just want to put this in the record -- there may be something in the original licensing agreements for those facilities which speaks to the responsibility of maintaining the depth of the pools. I would think especially Peach Bottom Atomic Plant, which is the Nuclear Regulatory Commission, because that's a safety issue, but they have been hopefully making money all of these years off of the water that has been coming down the Susquehanna, and there may be something in some old agreements that speaks to their responsibility to maintain the depth of the pools.

MR. BIERLY: That's a good comment. I'm going to pass that on to Amy Guise, who is our study manager on that effort. The one thing you said about -- another comment, I'm not sure I replied to it, but for the function of the hydroelectric dam they don't need to maintain a pool because the turbines are at the bottom of the dam and the scour keeps it clean. This might be tough to visualize, but if this is the dam and the original river went like that, the river now goes like this. The reservoir is filled up with sediment, but right next to the dam it's still deep because turbines are at the bottom and rushing water keeps it clean. So if it fills up, operationally it makes no difference, but I will bring up that point. That's a good one.

MR. STANCILL: How about Aberdeen Proving Ground? There are many thousands of acres. A lot of it not usable for much. I know Scott is aware of it.

MR. BIERLY: Yes.

MR. STANCILL: There is unexploded ordnance up there, but an awful lot of land that would seem to me would be an ideal location to consider for placement especially in shallow lifts of dredged material.

MR. BIERLY: That one is on our list.

MR. JOHNSON: I can elaborate a little bit. It is on our list. Right now the discussions we have had with Aberdeen Proving Ground, we're kind of waiting on a national policy on how to deal with unexploded ordnance. Until that can get resolved -- I'm talking at the Department of Defense level -- the liability issues working with that are currently insurmountable.

MR. BIERLY: The location is very attractive, though.

MR. STANCILL: Thanks very much.

MR. BIERLY: Would anybody else like to say something?

MR. MENDELSOHN: On the economic use, how navigation channels were evaluated for economics, but the restoration projects are evaluated differently, can you provide a little bit more information? I think that's what you were getting at, wasn't it?

MR. STANCILL: Yes.

MR. BIERLY: Do you want me to expand on that a little bit?

MR. MENDELSOHN: If you don't mind. Thanks.

MR. BIERLY: When we maintain a channel, when we construct a channel, we need to do an economic evaluation of that channel. This includes determination of traffic, determination of the value of the goods, the tonnages, what have you, that go through this channel. We do it on large navigation projects such as the Port of Baltimore. We do it on small navigation projects such as the scores, if not hundreds we have around the State of Maryland, 6-, 7-foot channels that service watermen. How much cash do they bring in? If the channel shoals and they sustain damage to their engines or rudders or something like that, what is the value of that and how much money have we saved if that channel is cleaned?

It's the exact same thing on the large projects. If this channel is allowed to shoal in for maintenance or for construction if this channel is not constructed, what do we project will be the future situation economically? What tonnages would be lost? Conversely what tonnages will come? You can pretty accurately hang a value on that monetarily because these goods as they come in -- you can do it one of a few ways. You can either go -- well, you can probably do both.

What is the value of the goods and what is the value of the time? For example, the Baltimore anchorages project is currently under construction. We didn't deepen any channels. We deepened some anchorages, but the fact is we didn't deepen any channels. So it isn't just a matter of what happens when you get to the port; it's wasn't getting to the port. What we did was since you can't assume that we're going to attract deeper ships because we didn't deepen anything, the channels anyway, what could you do? Well, you could save them a whole lot of time. You could make it more efficient, and you can hang a dollar value on that time, the value of their time. For example, when this project is completed, many, many ships that now anchor all the way down by Annapolis are going to be able to anchor right up in the harbor, a stone's throw from the terminal that they're going to call on. So if there is a ship at their berth that they need to get to, they're not going to have to wait anymore for that ship to chug all the way out of the Inner Harbor and all the way down past the Bay Bridge before they start to gear up because they probably can't time the pass.

There are a lot of different parts of navigation that cost money. Conversely, generate money. I'm no economist. I've seen the process happen, and it will give you a headache. It's really something. But that's what we'll do. So maintenance will say what if this maintenance isn't done? What if navigation as it now occurs cannot happen? What is that going to cost versus what does it cost to maintain that channel? Now, the basis of that is what is called the base plan. For example, what is the least expensive environmentally -- what is the word -- suitable, acceptable -- least costly environmentally acceptable way to dispose of that material or to place that material, and that is the cost of the project.

Poplar Island is an extra cost, which is why it's cost shared with the state, but the determination has been made that the environmental benefits that we get, the created habitat that we get from constructing that island is worth that extra expense. Any Corps of Engineers environmental restoration project, and we're doing them all over the place right now, navigation is just one small area. We've got tons of them. They all go through the same process, very similar to the economic process that I vaguely stumbled through earlier, and that is what is the future condition if we don't do anything? Well, Poplar Island would have eroded away and been gone. That's it. There is no question about it. What is the future going to be if we do this project? Well, what the future is going to be is it's going to be some nice uplands, and Scott is our expert and he can tell us, but hundreds of acres of marshland as well, some great habitat. We've already got turtles laying eggs out there. What is the cost of it? Is it worth it? It's a harder question because you can't hang a dollar on it. But it's a very similar process. I feel like I haven't said anything new, but just added more words. Have I clarified that? My phone number is on the first slide if you have insomnia. Anyone else?

3.3 Written Questions and/or Comments – 18 June 2002

No written questions or comments were submitted at the 18 June 2002 meeting.

4.0 Public Scoping Meeting – 20 June 2002

4.1 Meeting Overview – 20 June 2002

The third and final public scoping meeting for the DMMP was held on Thursday, 20 June 2002 at the Anne Arundel Community College (West Arnold Campus, Florestano Building, Lecture Hall 101) in Arnold, MD. Fourteen citizens attended the meeting. The meeting was adjourned at 8:25 p.m.

4.2 Oral Questions and Responses per Transcripts – 20 June 2002

MR. WILLIAMS: My name is John Williams. I'm from Elkton, Maryland, in Cecil County. I am here because of my general concerns about the dredging and dredged material placement in the Chesapeake Bay. My comments have already been submitted in -- initial comments have certainly been submitted in writing this evening to representatives of the Corps, but they arise from my involvement over the past six years with a number of the projects and issues associated with the navigation channels in the Chesapeake Bay.

I speak as a private citizen tonight and not representing any particular group, but I have been an active member of both the C & D Canal Working Group, appointed to that task by Congressman Gilchrest, and the Citizens Advisory Committee of the MDHD program, appointed to that by the commissioners of Cecil County. In addition your record will show I have reviewed and commented on a number of the dredging projects undertaken by both the Philadelphia and the Baltimore Districts.

My general comments this evening would be first when it comes to disposal options, to urge you to avoid creating artificial islands and focus your attention on the other options. I think there is a significant distinction between the creation of a new island and the restoration of an historically existing island. With regards to the scope of the dredged material management plan that you're undertaking, I believe that you should clarify and enlarge the scope of that activity to explicitly consider all of the access channels serving the Port of Baltimore, and by that I mean you should consider the full length of both the southern access channel coming up from Cape Henry and the northern access channel, which initiates at Ready Point in the Delaware River. So that when you do the analysis, you consider all of the dredging that is necessary for both of those access routes as well as the commerce and the relative commerce to each of those waterways.

I believe that when you consider the commerce and the dredging requirements for each of those waterways, you will begin to see significant distinctions so that when you perform a more careful detailed economic analysis, I believe it will suggest to you that there are opportunities that need to be very thoughtfully examined which would enable reducing the demand and the need for the large quantity of dredging that's currently projected for maintenance activity going forward.

In particular, I have found by looking at these matters that the net benefits at the current time to deep draft shipping vessels using the northern approach to the Port of Baltimore are in the range of about a million dollars per year of net cost to those shipping companies compared to the alternative of using the longer route via Cape Henry, but more expensive in terms of the pilotage cost. The net on that works out to be about a million dollars a year. In exchange for that taxpayers are currently burdened with the expenditure of between 6 and 10 million dollars for dredging that or maintenance of that northern channel. If that channel were not maintained at the full authorized depth, but allowed to naturalize at a depth of about 22 feet or so, that would still provide for all of the barge commerce, which is indeed a significant fraction of it, as well as all the recreational activity.

It just strikes me that this is an opportunity that warrants consideration since well over half of the dredged material from the access channels is associated with the northern route. Indeed some of the analyses that I've seen suggest that two-thirds of the material that has its access in the channels that we have to cope with in some manner comes from that waterway. Comments with regards to the preliminary assessment that the District issued last year. I find in reviewing it that there was inadequate consideration of the northern access channel. It did not include all of the dredged quantities or the costs associated with that, and I believe that economic justification should be reworked.

Further, the particular economic justification used appeared to mirror that which had been used in the general design memorandum for the 50 foot project which issued in 1981, you will recall. That project was to deepen the southern route to a 50 foot depth. While the analysis appears to be similar, close scrutiny of numbers finds that the definitions for commodities were not consistent, and that needs to be rectified because that's a significant difference in total coal used and handled in the ports and export coal, which was the justification for the 50 foot project.

Finally, I would raise a question for you to ponder in that regard and it's also in my submitted comments is that it puzzles me as to how you can rationalize first with a set of benefits to deepening of the southern route to 50 feet and then come back and use the same economic justification now to rationalize the maintenance. It seems to say you're using the same benefits to accomplish two different objectives, and those benefits were already consumed in the rationalization and justification of the 50 foot project. I think there needs to be some improved understanding in the public domain about the concept of a base plan, what that is, and how it plays out in your considerations because it is the subtlety that is lost on 99-1/2% of the populus, I believe. In particular, I think you should address such issues as to how the Corps utilizes that and who is responsible for what costs for what kinds of projects. For example, if you do a beneficial -- in this case, as I understand it, the base plan is dumping the material into the deep trough. Perhaps placing it is a more PC way to say that. Nevertheless, the question that occurs in my mind is if you consider one of these so-called beneficial use options, how are the costs then allocated between the federal and the nonfederal sources? Those are the sorts of things which I think cry out for some public consideration.

Finally I would ask that there be multiple opportunities for the public to participate in this process as you go forward over the next several years. I don't know what your plans are in the way of a newsletter or such to keep the public informed, but it would be a shame for you to wait until you reach the end of the DMMP and issue a document for review by the public and by agencies and then have people express all kinds of concerns. It seems to be more productive to keep people involved in expressing themselves as you work yourselves through the process. Thank you.

MR. BIERLY: I totally agree with the public involvement comment. There is no question about that. I will discuss the base plan very briefly because I think most people probably don't know what it is. The base plan is defined as the least costly environmentally acceptable placement option. You have to understand that when the Corps does this type of study or any study really, we're looking from the national perspective; we're not looking from the local perspective. We have to apply the same criteria here that we do on the other side of the country because it all goes through our headquarters, and these are the same people looking at all the projects. So once a project is defined as the base plan, then that is the point of economic reference. The cost sharing is based on that.

So let's take Poplar Island for example. The Corps of Engineers I said pays 100% of maintenance dredging to the base plan, whatever that would theoretically cost. Additional cost is charged toward, if you will, the environmental restoration project of Poplar Island, and that is a cost shared project, 75% federal, 25% state. So the base plan, therefore, is the point where the project, the placement project, begins and, therefore, the cost sharing begins. So in a nutshell that's what the base plan is all about. I think you're very right, probably most people don't know that. There is much more to it than that, and, to be quite honest, we are going to be looking at the base plan in this DMMP, but first before I say anything more about it because I don't know what I can or cannot say -- I don't mean that from secrets; I mean we're trying to get guidance from headquarters on exactly how do you go about defining a base plan, what needs to be considered, et cetera. So if I was to say anything more than I probably already have, I would probably be speaking for headquarters. But the base plan is a very important issue. I agree with you.

MS. ROSSO: I'm State Delegate Mary Rosso, but I'm also an interested citizen from an area that has been designated as an artificial island, and I do appreciate your comments, Mr. Williams. Your expertise blows me away. I have been to a few meetings and followed some legislation on open dumping and artificial islands and where to put the dredged material since our county is targeted, and we have been working with the Corps on the Cox Creek innovative use of dredged material. We do have some problems with other uses on the site that the Corps is using or leasing to a recycling facility that came up. We just found out this year, and that's a concern of ours, and it's local, but yet there was lack of communication between I think the local officials -- I know there was lack of communication, and so we were surprised to find out there was a facility on site down there at the Cox Creek plant. That's one thing I want to bring out for the record because I think it's important. We have had a meeting with the Corps on that. That's not my main purpose for being here. It's really to get educated. The base plan explanation, I'm glad you gave that because my feeling has always been it seems it's the least costly environmental plan. I mean that seems to be the way a lot of these decisions are made when locally the way we protect our bay we don't feel that the least costly environmental way is the way to go because to us it's the most expensive way to go if we lose the bay or if we lose our resources here. So I will just make that comment and I'll pass it on to No. 3, but that's my concern, and going to be following this as well as the citizens here that are interested.

MR. BIERLY: Thank you very much. Like I said, the base plan and everything else we do goes on a national perspective, and open water placement is common throughout the country. In other areas -- the Chesapeake Bay is not the only area that is tightening down on that. Maybe there will be some change nationwide and they will say no, let's not do that anymore. I don't know, but for right now it needs to be considered because it is out there as a base plan. Thank you.

MS. DRENZYK: I'm Marcia Drenzyk. I live in Pasadena. I am the chairperson of the Cox Creek Advisory Committee for the Cox Creek dredge disposal site, and I'm here as an interested party to hear what you have to say. I'm here to also tell you that the Corps of Engineers does not have a stellar reputation. You probably already know that. They have been caught with their finger on the meter one time too many pushing the scales to where they want the solution to be rather than analyzing where it should be. Also I would mention that you were saying about 25% of the base plan. 25% of it is federal, 75% of it is state. I would remind you 100% of it is tax dollars. So that I would say that Mr. Williams' comments about the necessity and the economics of what we should and should not be dredging should be the problem -- it should be part of the solution, and I'm not certain if the Corps is capable of making that decision because the Corps in and of itself is self-perpetuated by dredging. So therefore -- I mean this is not to get into an argument with you, but this is simply to make a statement that it's sort of like asking the fox to watch the chickens.

Your reason for being is dredging, and so therefore geez, we've got to dredge. Well, it may be that some of these channels do not require the level of dredging that they have been getting, and maybe we don't need as many placement sites and maybe -- there are like a whole lot of things out there, and I could say some nasty things about the Port of Baltimore. Maybe it's not that huge economic engine that they pretend to be. Everybody is a little overblown about what they are and how much good they're doing, and I think they need to have a serious reality check. So that would be the nasty portion of my comments. Then what I would like to say is that the Corps and the Port also have to think about the communities that they're asking to work with them.

As I said, I am the chair of the Cox Creek Advisory Committee. I was appointed by Governor Glendening. Well, right there in Northern Anne Arundel County we're already cooperating. You have the dredge cells there. The citizens are supportive. There are supposed to be innovative uses happening at that site, and so you have communities in Northern Anne Arundel County that are supporting you, and the next thing you know we hear you want to build an artificial island, too. Well, I would suggest that you don't look a gift horse in the mouth. Not that many communities are running around raising their hands going bring me dredged material. So you better think real carefully before you start inflicting one area with one thing after another or you may find that people just go, you know what? Take that dredge and get it all the hell out of here. So I would advise you to think very carefully before you start trying to push people around. You've got support for the Cox Creek dredge disposal site, but I would not push my luck any further if I were you, and I would say that very strongly. This lady who is taking the notes, put it in bold italics: Don't push your luck. So that's what I have to say. Thank you.

MR. BIERLY: I'm not responding to your editorial comments, but the first comment about the cost sharing, it's the total cost that is evaluated in the economic evaluation. Then when all is said and done, the cost sharing is broken out. So it doesn't matter if it's state or federal money. It's money. I will say that.

MS. KOLBERG: Hello. I'm Rebecca Kolberg, and I'm here tonight on behalf of the Greater Pasadena Council, and I am also co-chair of Citizens Against the Pasadena Dredge Island. I'll start with the specifics. Specifically the Greater Pasadena Council and Citizens against Pasadena Dredge Island are opposed to the concept of Site 170, an artificial island in the mouth of the Patapsco. We've received without even a major petition drive more than 2,000 signatures just without standing on the street corners, just community organizations. What I have been proud of the people I have been working with is we also don't say well, okay, build an artificial island down the road.

People are pretty much opposed to the idea of building an island where one has never existed I guess since European settlement and have been very supportive of island restoration in areas where citizens support island restoration. We have had communications with county commissioners in Dorchester County, you know, in areas where people are seeking islands to be restored, kind of working in partnership with them, and I think that's one thing citizens have problems comprehending is why the local economics aren't taken into account in the economic analysis. If you're protecting a shoreline in an area and saving a campground and saving an area that people want as opposed to building something that might cause increased flooding, increased erosion, damaged property values, any number of citizens have really advocated for inclusion of the local economics as part of the package because you're talking about impact on say ten marinas in each vicinity, positive in one area and negative on the another. Some of these costs might be almost -- you know, they're getting up there with the Port of Baltimore in terms of recreational use of the waterways in the Chesapeake Bay, which I think has risen in importance with each passing year.

I think the other thing -- this is just myself personally, not the group's -- I would encourage the Corps to rethink or relook at the base plan about open water dumping estuaries, which I think is becoming increasingly regarded as not desirable environmentally, at least I know in the Delaware River and some areas by New York that are more not open ocean placement. So I think environmental science does change with time, so using something that's perhaps 20 years old, it may be time to rethink that because doctors used to encourage patients to smoke. You know, before asthma, tobacco was regarded as therapeutic at one time. That has changed environmentally, so what was environmentally acceptable 20 years ago may not be environmentally acceptable today and maybe kind of artificially making better environmental options appear expensive. That's my comment.

MR. BIERLY: By the way, open bay dumping is against state law, so it's not going to happen, but the base plan in this case would still be an economic tool, and, yes, we're going to revisit the base plan. I'm not going to say we're going to change it. We're going to revisit it based on the ideas that we get, and we'll see what happens.

MR. WILLIAMS: It's against the state law to dump in Maryland. That does not preclude you from continuing to do open bay dumping in Virginia.

MR. BIERLY: Well, correct. There is a current open bay site in Virginia. That's correct.

MR. WILLIAMS: And you use it when needed.

MS. HAMILTON: First of all, let me tell you I've got this in writing for you. I'm Melinda Hamilton. I am the legislative assistant to Councilwoman Shirley Murphy, who represents the Pasadena Lake Shore Area where a lot of this goes on, the Cox Creek area, and I am very proud of the four or five people that spoke who work with us on almost a daily basis on this issue and are all constituents of Mrs. Murphy and Delegate Rosso. She wrote something because she's at an equally important meeting and asked me to read it, and if you will bear with me, that will be the fastest way to do this.

"To the Army Corps of Engineers: I am a member of the Anne Arundel County Council. Our council has gone on record two separate times opposing the dumping of dredge spoils at specific sites in the Chesapeake Bay; namely, Site 104 and Site 170. In those resolutions we call for eliminating the creation of islands for dumping in the Chesapeake Bay.

"When I spoke before the House Environmental Matters Committee on behalf of House Bills 402 and 527 relating to the redeposit of dredge spoil in the Cox Creek area, I had the support of a number of colleagues whose districts also border the Chesapeake Bay. In fact, Dr. Thomas Flowers, chair of the County Commissioners of Dorchester County, gave me permission to offer both St. James and Barren Islands as repositories for dredge spoils from the Port of Baltimore." They are desperately looking for dredge spoils, as you probably already know.

"It may be that because of the distance to that area it is a little more expensive to deliver the spoils; however, we also have to look at the economic loss to a jurisdiction due to the creation of dredge islands. My district is much closer to the port, but we have some public safety issues with high rates of erosion, public health issues due to some very shallow drinking wells, concerns about protected spawning areas and other habitat, and our tourism and housing industries will suffer from shore erosion and siltation near restaurants and marinas.

"I would ask the Corps of Engineers to support dredge spoil placement only to build up existing abandoned islands in the Chesapeake Bay. I would like to see a ban on using such spoils to create artificial islands.

"Sincerely, Councilwoman Shirley Murphy, District 3."

MR. BIERLY: Thank you. I would like to state that the Corps of Engineers looks at any and all economic benefits or costs. We do as part of a thorough analysis. Sometimes it requires or certainly it's helpful for the locals to point them out sometimes, but any and all economic benefits can and are considered.

Now, on our smaller projects where someone tries to justify a project purely on recreation, we can't do that. The administration dating back several administrations said you can't do a project for the sole purpose of recreation; however, recreational benefits can be added on top of commercial benefits. So if there is an island proposed for restoration, creation, or whatever or any project, the engineering question will be asked, will this have impact to the shoreline flooding, erosion, what have you, plus or minus. Down in Dorchester County, for example, they want those islands restored because they're sick and tired of losing shoreline. If those islands were back, that would offer them some protection. This is a benefit, especially since most of the shoreline is habitat, valuable marshland. So if we're protecting shoreline, that can be considered a benefit. If we're eroding shoreline, that's going to be considered a cost, and these things are factored in.

Does anybody else have a question or comment?

MR. BURTON: I didn't sign up to speak, but I have a question. My name is Don Burton. I live in Chesapeake City, Cecil County. I'm a member of the canal bank study committee appointed by the Cecil County Commissioners. I was a member of the working group appointed by Congressman Gilchrest that studied the C & D Canal project. I'm on the board of the Chesapeake Bay Yacht Clubs Association. So I am a little bit familiar with some of this.

On the DMMP, the dredged material management plan, it sounds like a very comprehensive type of program that you're instituting here. You go into great detail on the environmental acceptability of the various options, you look at the cost effect of the various options, but you leave out what several people have talked about here, the need to dredge. It's almost like it's a given, top dollar, top number, and you're forced to find a place that you can put it. Why doesn't a comprehensive plan include the need for dredging various parts of these channels that we're addressing? I guess it's more a question than a comment.

MR. BIERLY: It's the fourth and third to the last slides. Both mention -- the one mentions documenting it, factoring in need, and in one of them, the six-step planning process, it also says to identify it, but what that means is there is economic justification that is required as part of establishing the needs. Every channel before it's dredged undergoes an economic reevaluation.

Now, Mr. Williams' contention was that flawed, old data would have -- you should take out a magnifying glass and redo that, but the justification of the needs is considered part of this analysis. I didn't hit upon it, however.

MR. BURTON: I know on the C & D Canal project the economic justification was several years old when it went into the system it seemed, and it was flawed badly and, of course, the whole project was reviewed and put in suspension because of the economic data. It had nothing to do with the environmental or the dredge costs or anything else. Is this group or the next tier up going to allow for public input on the economic justification?

MR. BIERLY: Public input is warranted at any and all steps throughout the process.

MR. BURTON: But is there a provision where we can do it, like a forum like this?

MR. BIERLY: Absolutely. NEPA requires it by law, and we will do it because it's good practice. So this is not the first and last meeting rest assured.

MR. BURTON: But when the public got involved in the C & D Canal project, it was through the auspices of the Congressman Gilchrest and several others that we went to the chief engineer of the Corps and had to get him to make a decision that the Philadelphia District and the New York District opened up their books, so to speak, to let us be involved, and when we did get involved, I think we came up with more accurate data and the results were what they were.

MR. BIERLY: Two things on the C & D Canal, and don't construe the first one as a cop out, but Philadelphia District did that study, and the reason I say that is because to tell you I don't know the details. I honestly don't. I didn't work on it.

MR. BURTON: I don't think I would be far from wrong to say that the Philadelphia District used the Port of Baltimore's numbers for economic justification.

MR. BIERLY: Sure. The other thing I was going to say is that the C & D Canal was an analysis for new construction deepening above and beyond the maintenance. The economic threshold, if you will, for maintenance is far less. It's like saying do I get the hole in my roof patched or rip it off and build a whole new one? Are you maintaining or are you building new?

MR. BURTON: I would compare that to the Arkansas River project. They're dredging one portion of the river for one barge a month. How much maintenance do you do for how much business?

MR. BIERLY: Right.

MR. BURTON: I don't look at that as a whole bunch different than the new project work.

MR. BIERLY: Well, a similar analysis has to be undergone, but the cost of the maintenance is much less than the cost of deepening. That's the big thing.

MS. KOLBERG: When there is only one barge, should you even be maintaining at all?

MR. BIERLY: I would say no.

MS. KOLBERG: Exactly. Does the Corps say never mind? This is hypothetical here. Just taking his example, if you find that there is one place where the amount of traffic on that channel does not justify it, are you going to go we shouldn't be dredging? Is that ever going to be the answer?

MR. BIERLY: We have deauthorized channels in the past. We have not deauthorized channels in the Port of Baltimore. We have deauthorized small channels in the past. It can be done.

MR. WILLIAMS: For the record, we're not talking in this particular case about one barge. The traffic through the northern access channel to the Port of Baltimore is one deep draft vessel per day each way.

MS. ROSSO: It's an interesting discussion on dredging and maintenance. What if you were to decide to look at maintenance-only dredging and not deepening of the channel; would you do an analysis based on how much placement you would need, how many cubic yards of dredged material would be required for -- do you have that figured out? Do we only maintain; we don't deepen?

MR. BIERLY: That's the 4-1/2 million yards I mentioned. For placement what we get is a cost per cubic yard of what it costs to place, and so you multiply the amount you're going to dredge and measure the project cost and do you have the economic benefits to justify the expenditure at that point then.

MR. WILLIAMS: You might want to mention this will be available if anyone has questions about this.

MR. BIERLY: The preliminary assessment? This preliminary assessment is an internal Corps document, but we're a public agency; therefore, we can provide it. It didn't hit the public because it's an internal document. All it did was to convince the Corps that we needed to go further, but if you want to see it, you're welcome to it.

MS. MARSH: Mary Marsh with the Maryland Conservation Council.

MR. BIERLY: I would like to thank you all for introducing yourselves, by the way. I neglected to say that, but that is very important.

MS. MARSH: We've done this many times. First off, I wanted to clarify that this dredging included Potomac River dredging?

MR. BIERLY: No.

MS. MARSH: So it does not. Secondly, on the base plan at the time when -- first off, when was the last environmental analysis done of the base plan at the deep trough?

MR. BIERLY: The last analysis that included the deep trough was the base plan, Scott, would have been Poplar? The last time we defined it as the base plan would have been during the Poplar Island study.

MS. MARSH: 1986 about?

MR. BIERLY: No; 1996.

MS. MARSH: At that time were other federal department and agency costs of money put into basically restore the bay taken into effect at that time? I haven't seen that study.

MR. BIERLY: I'm not sure I understand.

MS. MARSH: Well, for instance, we have EPA costs coming in with the Chesapeake Bay program, you have U.S. Fish and Wildlife, you have NOAA, you have all of these different amount of monies coming from other federal departments and agencies, and I'm just wondering if those -- and many times they're being put in in order to restore and deal with items such as sedimentation nutrients in the bay that in some cases would come from disposal of dredged material through open water dumping. Were they taken into effect? That's the only thing that I'm trying to make sure because if they weren't, I mean that right there is a real reason for doing a new study specifically on the base plan because if you have the open water disposal at the deep trough, it's a very cheap and easy method, and there are many of these other beneficial uses that are not only just restorative, but they're good for the environment and probably good for the economics, but because of the cost, they tend to be more prohibitive because everybody looks at the cost share and they don't actually look at what other items and what other agencies and departments are having to put in more money in order to take care of the problems that are coming from something else.

MR. BIERLY: Right. I think I understand. Well, as I said back on the goal slide, that we are to look at a few things. First of all, we are to give beneficial uses of dredged material every consideration. In fact, if you look at the list of options that are, I will say, out there since we haven't developed our own list yet, a good portion of those are environmental projects, and they are the ones quite honestly that are going to the top of this analysis that the state is doing.

Also there are many agencies out there doing good for the bay, and we're one of them. We have a lot of environmental restoration projects out there, and we have a lot more that will be coming shortly, including one called the Chesapeake Bay shoreline erosion study, which I guess you've heard of, which will look at the marine impact to the erosion that we see on land and the sedimentation, the runoff that we get from the land and what can we do about it.

That's going to be a big program. So if your overall statement here is let's do something good with dredged material, I don't think anyone is going to argue with that. I would like to say one more thing about cost share. If the cost share of an environmental restoration project is 75/25 or 65/35 and the cost of maintenance dredging is 100% federal, there are three ways to look at that. Overall cost because we're all taxpayers is extremely important, and that's what all the justification is based on. Then there is the state perspective and federal perspective. Both parties want to pay the least possible. We're humans. Humans don't like to part with money. Right now navigation is cost shared from the federal perspective at a higher rate than anything else we do. There are some movements afoot to maybe change that cost sharing down so the state is sharing more. What difference will this make? Well, I hope when it comes to an environmental restoration project, it makes no difference. We pay for the proper projects. But I guess that's Dan speaking. I can't start grandstanding for agencies, but I just want to point out that aspect of cost sharing. Beach nourishment is I believe 50/50. Flood control is 65/35, and we don't do recreation projects. So cost sharing, we have a million different cost sharing formulas, and navigation is the most favorable to the locals.

MS. MARSH: I did have one follow-up question. Back during the -- I was, of course, involved in the Site 104 issue, and I remember that Region 3 EPA had put forward that there was supposed to be a study done within the C & D Canal area. Whatever happened with that study? I know that a consultant was hired, but I've never seen anything since then.

MR. BIERLY: C & D proper or approach channels?

MS. MARSH: It was Brad Campbell when he was at EPA. I know it was on the C & D. I think it was on the C & D proper.

MR. BIERLY: The C & D proper I'm afraid I don't know about.

MS. MARSH: There was an economic study, if I remember, to look further even into the economics.

MR. WILLIAMS: EPA retained a consultant. The EPA Region 3 retained a consultant for the purpose of reviewing the economic analysis that was to have been produced by the Philadelphia District relative to reworking of the economics for the deepening of the C & D Canal. Because the project has been suspended, that report never came to fruition, never exists. There is no document for that consultant to review. So that part is moot.

MR. BIERLY: Thank you. Any other questions or comments?

MR. WILLIAMS: I keep thinking of them. How will the MPA's DMMP impact the activities and schedule of the Corps's DMMP?

MR. BIERLY: That is an excellent question, and it's still being worked out exactly, but from our perspective we need to maintain a national perspective on this. We will not take whatever the MPA comes up with and just slap a cover on it and say this is the Corps' document because this did not go through our process and this is not our document. Also the Corps of Engineers needs to tie into a NEPA document environmental impact statement, which we're going to do. That being said, I don't want anyone to think that we're being wasteful and ignoring all of that good work that is going on and going off totally on our own and being redundant. We're not going to do that. We estimate 90%, probably 95% of the work that has been done can fold directly into our effort. What we want to do is to take the MPA or the state's report and use that as input to our report. The conclusions of the report will be, if you will, the viewpoint and opinion of these agencies, but behind that a lot of good engineering work has been done. We're not going to resurvey an area that has been surveyed. That's just wasteful. We're not going to redesign the same exact layout that they have already designed. Why do that? If we go into a detailed feasibility, yes, you need to redesign because that's a different level, but for now, no way. If the agencies have provided information, if they've provided an opinion, if they've said something in a meeting, if they've made a stand, if they've provided a letter, we're going to roll that right in as being that agency's input. We'll go and ask for more, but we're going to take that, and that's how we see our process meshing with the state. We're on very different time frames here. They need to wrap up by the end of the year. We've got two years and we're going to be going through the EIS process. But what they have been through will not go for naught, and, quite honestly, it's going to save us time and money, which is a good thing.

MR. BURTON: One of my concerns is that if the MPA gives you the economic data that they used in the C & D Canal project, it's going to be wrong, and, of course, the C & D Canal project is part of the total economic effect at the Port of Baltimore. It took us three years to delve into their data to find out why it was flawed and where the assumptions were bad and so forth. Will we get that amount of time to look into data that they supply you that we can say challenge or at least review for accuracy?

MR. BIERLY: Their data, their report will be made available for public comment when they're finished with it, and I can't say when that is because it's their document. I don't know how much economics work they've done per se beyond cost per cubic yard for placements, but once again I'm not going to speak for them.

MR. BURTON: But their data, to give you a little perspective on this, weighed about five pounds and was about 6 inches thick, so it took a little time to delve into their reports and their analysis.

MR. BIERLY: Our report will finish up two years after theirs.

MS. KOLBERG: Rebecca Kolberg, and I had two quick points that I forgot to mention. One, I know residents of my community association, which is Venice Civic Association, have written letters. We strongly oppose dredge disposal options that would increase flooding potential because we understand that's one of the missions of the Corps of Engineers is to help reduce flooding risk. Sometimes, you know, a few small communities getting flooded more severely, you know, it might be worth it to the Port of Baltimore, but for an overall mission of the Corps to reduce flooding, I think that's one of its priorities, and I also would hope -- and this is for all sites no matter that environmental justification concerns would be taken into account, that low income communities or communities of color or different ethnicity wouldn't be unfairly burdened.

MR. BIERLY: That is a topic in any EIS. Also on the socioeconomic, take away the economic and you're left with the social impacts, are also considered. We have projects, a flood control project, for example. If you build a levy around one town, it's no surprise when the town across the river gets more water. So that is in the environmental impact statement and what you do about it. Well, if it creates too much of a problem, well then, maybe it will bring the first project and make it unjustified because what you have to factor in is the cost to mitigate what you've created. We are currently raising the levies at Wyoming Valley in the Scranton area, and money has been provided to communities downstream based on how much they will be impacted. This is mitigation funds, and they're free to do with that money what they will. They can buy up properties. They can create their own protection, just for example. So if a project was built and the design was such that the analysis showed that this is going to impact something or someone, then it's going to need to be mitigated, and that mitigation has a cost, and that cost goes against the project.

MR. WILLIAMS: How will the comments that have been made this evening and at the other public scoping meetings as well as those which are submitted to you in writing -- how will those be consolidated and the answers to those questions, how will that be distributed? Will it be made available to the public and, if so, on what timing?

MR. BIERLY: Well, to be determined, I guess, is the answer there. Our document -- and I know that's not until the end of the line, but our document will include everything.

MR. WILLIAMS: That's September then.

MR. BIERLY: Pre-September '04. We're going to have to work on that. Like I said, we will have a web site set up. That's our plan. We will have notices, letters, newsletters. I'm going to have to leave that one alone. I don't exactly know.

MS. ROSSO: In other words, we won't get a copy of whatever was discussed tonight until 2004.

MR. BIERLY: You can request it. This is a public meeting. You can have it verbatim.

MS. ROSSO: Sometimes we have had problems when we've gone to hearings and there are certain deletions and inaudible things.

MR. BIERLY: We've actually hired a contractor, who went and hired our court reporter here, and so verbatim transcripts, if you want them, you can have them. We're also going to get summaries of these meetings worked up for us, and we plan to have those on the web site.

MS. ROSSO: So you recommend we request. It's not automatically sent.

MR. BIERLY: How many letters did we send out, 6, 8 hundred, something like that? We sent out about 1,000 public notices. We're not going to send out 1,000 transcripts. You don't want to kill that many trees.

MS. MARSH: Mary Marsh. I will say that during Site 104 and the EIS or DEIS of Site 104 that the Corps did an extremely good job of keeping things up to date on line and all the literature there for a long period of time, and also I do appreciate that the Corps had put the DEIS onto a compact disk; therefore, making less paper being used and also easier to find it, too, on computer. So I will say a very good job there.

MR. BIERLY: Thank you. That's pretty much standard now. We put our reports on CD.

4.3 Written Questions and/or Comments – 20 June 2002

2 Woodbine Circle
Elkton, MD 21921
June 20, 2002

Ms. Michele A. Bistany
U.S. Army Corps of Engineers
Baltimore District, CENAB-PL
P.O. Box 1715
Baltimore, MD 21201-1715

SCOPE OF DREDGED MATERIAL MANAGEMENT PLAN (DMMP): QUESTIONS AND COMMENTS

Dear Ms. Bistany:

In accord with the public notice announcing public scoping meetings and soliciting comments relative to the initiation of a DMMP study for the dredged material placement needs and opportunities for the Port of Baltimore, appended are my comments and questions relative to the proposed activity.

These comments arise from my involvement in the past 6 years with a number of the projects and issues associated with dredging of the shipping channels in the Chesapeake Bay. I have been an active member of both the C&D Canal Working Group (appointed by Cong. W.T. Gilchrest) and the Citizens' Advisory Committee to the MPA's DMMP program (appointed by the Commissioners of Cecil County). Additionally, as the record will show, I have reviewed, analyzed and commented on a number of the dredging projects to expand the shipping channel system.

Because I am concerned that any and all actions for dredging, and the subsequent material placement, be performed only in situations that are both economically warranted and environmentally responsible. I remain keenly interested in all plans proposed or permitted by the Corps for such actions. Consequently, once the District has completed the DMMP study scope (Project Management Plan), I would appreciate receiving a copy of that document as well as any subsequent reports ... including draft versions.

Thank you for consideration of my comments and questions; I look forward to the study scope and the District's responses to this letter and the other comments proffered by the public. If, in the interim, there are any questions about this letter ... or if I can be of any assistance ... please do not hesitate to contact me at either (410) 398-6844 or jmjwilliams@dol.net.

Sincerely,
John M. Williams

Copy: Congressman Wayne T. Gilchrest

JOHN WILLIAMS: Questions:

1. The announcement for public comments on scoping mentions a "tiered Environmental Impact Statement". What, exactly, is a tiered EIS? What are the underlying concepts and how will it be developed?
2. How will the public and agencies participate in the development of the DMMP beyond the scoping meeting and an opportunity in 2004 to comment on the completed DMMP?
3. Will the Baltimore District's DMMP be including the project to deepen the C&D Canal? Why?
4. If the DMMP will include the C&D Canal project, what scope and timing are anticipated? Who does CENAB believe will pay for the project?

JOHN WILLIAMS: Comments and Questions:

1. **"SCOPE OF DMMP":** Two lengthy access channels, both of which require substantial maintenance dredging, uniquely serve the Port of Baltimore (POB). Consequently, the scope of the DMMP should include the <u>full</u> length of <u>both</u> channels to Baltimore.

   Comment: The *Preliminary Assessment* (July 2001) explicitly declined to address the northern portion of the C&D Canal route to and from the Port of Baltimore. That is inconsistent with the *General Design Memorandum* (GDM) (August 1981) that outlined significant, long-term disposal of maintenance dredgings to be placed in the containment sites along the C&D Approach Channel.

   Comment: In September 1995, the Philadelphia District (CENAP) completed a Preliminary Assessment for the navigation channels in the <u>upper</u> Chesapeake Bay and concluded that "A Dredged Material Management Study was needed in order to identify a disposal plan."

   Notwithstanding that conclusion – and the clear directives of the *Planning Guidance Notebook* – the Philadelphia District elected to take <u>no action</u> but instead chose to rely upon the MPA and the Baltimore District to perform the requisite dredged material management study. [Per letter from Deputy District Engineer (CENAP), 7 Dec 2000.]

   Comment: The economic justification for continued maintenance of channels in the *Preliminary Assessment* relies upon 'benefiting' commerce to the POB via all routes, yet only included a <u>portion</u> of the total dredging and maintenance costs by excluding the full maintenance of the northern access channel (C&D Canal route). This misstates (and overestimates) the apparent 'benefits-to-costs' ratio (BCR).

2. **"SPECIFICS OF DMMP":** The economic justification in the DMMP for continued maintenance dredging and placement should be based on the commerce and vessel traffic using each route (not the total POB traffic). Further, the DMMP should detail the annual maintenance quantities from each reach of both access channels as well as the vessel traffic, and should ascertain the incremental benefits of maintaining all channels at full authorized depths vs. shallower depths. For the northern access channel in particular, the consideration of shallower depths should extend all the way to the 'natural depths' (approx 20-22 ft) that would result from no maintenance dredging and yet would accommodate most barge and recreational vessel traffic.

   Comment: Consider a simple analysis for the northern access channel to the Port of Baltimore:

   If the channel were to be maintained at a 25-ft depth instead of the current 35-ft depth, about 784 vessels (1998 actual USACE count of 636 'foreign' and 148 'domestic') would have been obliged to use the longer Cape Henry route to access more northern ports. Those vessels would have experienced an increased sailing time averaging 5½ hours. As for the value of that time, the vessels in the fleet calling at the Port of Baltimore experience an increased operating cost averaging about $300/hour when sailing "at sea" versus sitting "in port" time (based on USACE-IWR vessel operating cost values).

   Hence, for the 784 vessels that would be obliged to use the longer route if the northern access channel were not dredged the annual increased cost to the shipping companies calculates to be $1.3 million. (Not including the differential pilotage costs which would lower the increased costs to about $1.0 million.)

   That compares to annual dredging costs of about $6-10 million to maintain the 35-ft depth instead of the 25-ft depth.

   Thus US taxpayers are annually paying at least 5 times as much for the Corps to dredge the channel as is saved by the (foreign) shipping companies!

3. **"PRELIMINARY ASSESSMENT":** The section on Dredged Material Management Plans (DMMP) in the Corps' basic reference, *Planning Guidance Notebook*, ER 1105-2-100, 22 Apr 2000 states:

   > "E-15. Dredged Material Management Plans. All Federally maintained navigation projects must demonstrate that there is sufficient dredged material disposal capacity for a minimum of 20 years. A preliminary assessment is required for all Federal navigation projects to document the continued viability of the project and the availability of dredged material disposal capacity sufficient to accommodate 20 years of maintenance dredging. If the preliminary assessment determines that there is not sufficient capacity to accommodate maintenance dredging for the next 20 years, then a dredged material management study must be performed."

That seems to clearly say that a 'preliminary assessment', and perhaps a 'dredged material management study', <u>must</u> be in place for all Federally maintained navigation projects.

Question: Why did CENAB not perform even a 'Preliminary Assessment' for the Baltimore Harbor and Channels project until just last year?

4. **"PRELIMINARY ASSESSMENT":** The *Preliminary Assessment* (July 2001) states that "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."

   Question: Since there is no supporting analysis in the document for that channel, how can that be asserted?

   Question: The phrasing of the assertion raises the question that, even if such maintenance where justified at this time, will the combination of <u>decreasing</u> vessel traffic and <u>increasing</u> disposal costs for dredged material render maintenance of the northern route to Baltimore economically unjustifiable in the near future? An analysis of this possibility should be incorporated in the DMMP.

5. **"PRELIMINARY ASSESSMENT":** The economic justification in the *Preliminary Assessment* (PA) examined the volume of traffic for different commodities that were deemed to benefit from the project (50-ft) by updating the analysis used in the *General Design Memorandum* (August 1981). However, these two analyses did <u>not</u> utilize the same basis! The *General Design Memorandum* (GDM) justified the deepening of the channel to 50-ft using "export" coal … and the PA relied on the 'total' quantity of coal handled at the Port (import + export + domestic). In 1999, for example, 'export' coal was only 1/3 of the 'total'. Further, of the 'total' coal handled through the Port, about 20% moved via the C&D Canal route … <u>not</u> the 50-ft channel for which the PA attempts to justify continued maintenance. These distinctions need to be correctly incorporated into the economic analysis in the subsequent DMMP to ascertain if continued channel maintenance can really be economically justified.

   Question: The GDM justified that <u>major</u> capital expense of deepening the southern channel to the Port of Baltimore from 42 ft to 50 ft on the estimated 'savings' realized by handling 5 specific commodities. [It also concluded there would be no significant incremental maintenance dredging required in the Maryland channels.] How is it rational to use the same 'benefits' that were employed in 1981 to justify the <u>deepening</u> to now justify the <u>maintenance</u> dredging?

6. **"BASE PLAN":** In discussing the details of a management plan study, the Corps' *Planning Guidance Notebook* guidelines specify the establishment of a "Base Plan" for disposal of dredged material. Specifically:

   a. Policy.

(3) Base Plan. It is the Corps of Engineers policy to accomplish the disposal of dredged material associated with the construction or maintenance dredging of navigation projects in the least costly manner. Disposal is to be consistent with sound engineering practice and meet all Federal environmental standards including the environmental standards established by Section 404 of the Clean Water Act of 1972 or Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended. This constitutes the base disposal plan for the navigation purpose. Each management plan study must establish this "Base Plan", applying the principles set forth below.

Question: What is the 'Base Plan' for disposal of dredge spoils from the navigation channels in the Chesapeake Bay? Is it simply dumping those materials into the area of the Bay known as the 'Deep Trough' because that would be the least expensive means of disposal? When was that determined to be the 'Base Plan'?

Question: If State law or regulation precludes placement via a 'Base Plan', how are the costs for either the DMMP studies or the actual placement of dredged material anywhere other than the Base Plan allocated between Federal sources and the project's local sponsor? To what extent is placement in 'beneficial uses' – a non-Federal responsibility?

7. **"ENVIRONMENTAL":** There is ample evidence of leaching of heavy metal contaminants from dredge spoil disposal sites around the Bay (Pearce Creek, Courthouse Point, Summit, Hart-Miller Island, etc.). The pivotal factor is the release of free acid by the gradual air-oxidation of the naturally occurring iron pyrites in the dredge spoils. This issue should be specifically addressed in the Environmental Impact Statement (EIS) for any proposed disposal site with an upland component.

5.0 Questions and Comments Submitted Separate from Public Scoping Meeting and Prior to 19 July 2002

5.1 Jennifer Aiosa, Senior Scientist, Chesapeake Bay Foundation (CBF)

July 2, 2002

Ms. Michele A. Bistany
U.S. Army Corps of Engineers – Baltimore District
P.O. Box 1715
Baltimore, MD 21203-1715

Re: General Comments on Corps Dredged Material Management Plan (DMMP)

Dear Ms. Bistany:

The Chesapeake Bay Foundation appreciates the opportunity to comment on the process currently being undertaken by the Baltimore District to develop a federal DMMP for Port of

Baltimore dredged material. Having attended the first public scoping meeting on June 12 on Kent Island, I offer this letter as formal comments on behalf of CBF's membership in Maryland. While it is certainly laudable that, as the Federal agency most directly involved with dredged material management for the Port of Baltimore, the Baltimore District of the Corps of Engineers undertake a comprehensive approach to forecasting dredging yields and disposal needs into the future, the Chesapeake Bay Foundation has several concerns about the outlined process.

1) CBF has worked with many State and Federal agencies, including the Corps, in good faith to help the Maryland Port Administration improve their process for evaluating and selecting dredged material disposal capacity. After years of mistrust and poor communication, that process is slowly evolving and gaining support. After more than a year and half of State-led effort, the Corps begins a separate, though similar, process confusing the general public and leaving many participants in the State's process to wonder how much of their work will have been in vain. While CBF recognizes the Corps' responsibilities under Federal guidelines, we request the Baltimore District utilize to the fullest extent possible, the work that has gone into the ongoing State efforts. Also recognizing that time represents one of the greatest obstacles to meeting future disposal capacity, capitalizing on sound information developed and discussed among a myriad of State, Federal and private sources would save valuable time and resources and continue forward progress.

2) CBF also understands the subtleties associated with the Corps' ability to evaluate open water disposal and other State-barred disposal options as part of the federal DMMP process. However, publicly perpetuating the idea that open water disposal could be used in Maryland for Port dredged material undermines extensive work on the part of many of your Federal, State and local partners. Unfortunately, discussing open water disposal, even in terms for developing a federal base plan and determining cost-share ratios, gets lost in translation for many citizens and leads to confusion, or worse, mistrust.

3) CBF firmly believes that the Corps of Engineers should capitalize on the current opportunity to more closely evaluate the actual dredging need than relying solely on the Maryland Port Administration's assessment of dredging demand. Dredged material disposal capacity should be recognized as a finite resource and allocated accordingly. Dredging projects with questionable merit or economic justification should be, at the very least, postponed until reasonable dredged material capacity can be developed and brought online to accommodate maintenance dredging.

Though dredged material management for the Port of Baltimore poses an increasingly complex challenge, the Chesapeake Bay Foundation firmly believes it can be accomplished without compromising the health of the Chesapeake Bay. Thank you again for the opportunity to offer these comments.

Sincerely,
Jennifer Aiosa
Senior Scientist

5.2 Rebecca Kolberg, Greater Pasadena Council

From: Rebecca Kolberg

Sent: Wednesday, July 10, 2002 2:34 PM
To: Bistany, Michele A
Subject: DMMP Scoping Meeting -- Greater Pasadena Council Comments

U.S. Army Corps of Engineers-Baltimore District
Attention: Michele Bistany
P.O. Box 1715
Baltimore, MD 21203

The Greater Pasadena Council (GPC), which represents more than 30 communities in the Pasadena area of Anne Arundel County, Maryland, understands the Army Corps is seeking comments on dredged material placement needs and opportunities for the Port of Baltimore. As GPC's representative to the Maryland Port Administration's Dredged Material Management Program's citizen's committee, I was asked at GPC's June 27 meeting to submit written comments on behalf of the council.

GPC believes the first thing the Army Corps should consider in selecting sites is proximity to residential areas, and whether residents of such areas support the concept of a dredge-disposal site. Wouldn't it make sense to first try to dispose of dredge spoil where citizens want it (restoring islands in Dorchester County) rather than where citizens oppose it (creating an artificial island in the mouth of the Patapsco)?

GPC believes the Army Corps should pay close attention to human health and safety early in the site-selection process. A simple site visit and review of flood maps in the Pasadena area would show that many neighborhoods are extremely prone to flooding, which could be aggravated by building an artificial dredge island that would block much of the Patapsco River channel and alter the flow of water near the mouths of creeks. Also, a site visit would have revealed that most of us depend on shallow wells for drinking water - wells already at high risk for radium contamination due to acid groundwater.

GPC believes the Army Corps should not build artificial dredge-spoil islands where no islands have existed before. Such islands could amount to costly, dangerous experiments. Some long-time Pasadena residents who have weathered hurricanes like Hazel and Agnes are convinced a man-made island would suffer serious damage under such conditions, unleashing devastation upon the community we have worked so hard to maintain and improve.

GPC believes the Army Corps should closely analyze and prioritize the Port of Baltimore's dredging needs in the context of the entire U.S. port network to ensure that precious dredge disposal capacity-and thereby taxpayers' money-is not wasted on needless or economically marginal dredging projects. GPC thanks the Army Corps for this opportunity to share our views.

Sincerely,
Rebecca Kolberg
7605 Bay St.
Pasadena, MD 21122
410 439-4971

5.3 Faion Lott (per 20 June 2002 meeting comment card)

Make the meeting better by increasing public awareness of proposed meetings – newspapers, radio, and TV, etc.

Please mail me a copy of the June 20 DMMP scoping meeting minutes. Dan did a very good presentation – interesting and informative.

I am against the creation of any artificial islands. I am fore existing island restoration.

Use dredge material to make bricks – add straw – other additives like the Egyptians and Southwest Indians did.

Faion Lott
2000 Kurtz Avenue
Pasadena, MD 21122
410-437-6306

5.4 Gregory Kappler, Co-Chair, Citizens' Advisory Committee to Maryland's Dredged Material Management Program

July 11, 2002

Ms. Michele A. Bistany
U.S. Army Crops of Engineers
Baltimore District, CENAB-PL
P.O. Box 1715
Baltimore, MD 21203

Dear Ms. Bistany:

We are pleased to have the opportunity to offer comments to the U.S. Army Corps of Engineers as you initiate your Dredged Material Management Plan (DMMP) for the Baltimore Harbor and approach channels. Some member of our committee attended your recent public meetings and offered comments then. The purpose of this letter is to summarize the views of the committee for the record.

Our committee serves in an advisory capacity to the State of Maryland and its Dredged Material Management Program. We represent a broad spectrum of stakeholder, citizen and community groups as well as local governments. We attempt to advise the State on how proposals may affect specific locales, and we offer our views on the various technical and policy issues which must be considered.

We have appreciated efforts by some Corps staff to aid us in understanding the very complicated connections between the State's work and that of the Corps. We are just beginning to get a sense of how the two efforts intersect. We plan to invest additional effort in further understanding these programs and the mandates that underlie them. In the meantime, we offer the following comments:

- Both the State and the Corps need to do a better job communicating the relationship between the two DMMPs.
- Projects which provide "beneficial use" for the Bay and the Bay watershed are generally viewed more favorably by this committee than projects which do not.
- This committee favors the restoration and protection of eroded islands as a technique for managing dredged material while simultaneously providing beneficial habitat to the Bay.
- All members of this committee are opposed to the creation of new islands for disposal of dredged material.
- The committee strongly supports research into innovative uses of dredged material and hopes that this work will be included in all future plans, with the idea that someday a significant portion of the material dredged from our channels will be creatively reused.
- We have expressed concerns about the long timetables related to dredging projects. We understand the complications of producing Environmental Impact Statements and dealing with Congress, but we urge diligence in the development of your DMMP.
- The costs of managing dredged material and the environmental complexities are much greater than they used to be. Therefore, public debate about what constitutes the best mix of approaches is vital, to ensure that there is strong public support and the ability to pay for whatever set of management options ultimately gets selected.
- We believe that the public as well as the business interests who rely on the Port of Baltimore would be better served by greater transparency in the planning process of the Corps of Engineers. We would urge that you be forthcoming with information as you develop it and that you make more effective and more timely efforts to keep the public apprised of your progress.
- Finally, we recognize that this is a political as well as a technical issue, and we recommend full and open disclosure to all elected officials. Elected officials serve the public interest best when they are fully aware of technical, economic and political issues related to complicated projects such as this. The Corps and all the other agencies involved in the dredging of Maryland's channels must do more to keep elected officials accurately informed.

We appreciate the opportunity to comment and look forward to working with your staff as the planning process evolves.

Sincerely,
Gregory Kappler, Co-Chair
Citizens' Advisory Committee

Attachments: Membership list *(Not included in this summary report)*

Mission statement *(Not included in this summary report)*

5.5 John Williams, Additional Comments to Original 20 June 2002 Submittal

2 Woodbine Circle
Elkton, MD 21921
July 18, 2002

Ms. Michele A. Bistany
U.S. Army Corps of Engineers
Baltimore District, CENAB-PL
P.O. Box 1715
Baltimore, MD 21203-1715

SCOPE OF DREDGED MATERIAL MANAGEMENT PLAN (DMMP): ADDITIONAL QUESTIONS AND COMMENTS

Dear Ms. Bistany:

On June 20, in accord with the public notice soliciting comments relative to the initiation of a DMMP study for the dredged material placement needs and opportunities for the Port of Baltimore, I submitted some comments and questions relative to the proposed activity. This letter will augment and extend those comments.

A. "Economic Assessment:" The "Economic Assessment" of the *Preliminary Assessment*; July 2001 (PA) appears to be seriously flawed as outlined below:

1. Comments on 'Maintenance Costs and Quantity by Fiscal Year' for maintenance dredging of Baltimore Harbor and Channels as summarized in Table 5 of the PA:
    1. The calculations for the average Quantity and average Cost are both wrong and understate the correct values.
    2. The cited dredged quantities (and costs) are inconsistent with the dredging data provided by the USACE – Institute of Water Resources (www.iwr.usace.army.mil/ndc). Please explain why the values do not match.
    3. The tabulation and attendant analysis do not appear to include either the quantities or the costs of maintaining the Virginia portion of the 50-ft channel or the upper Bay portion of the 35-ft channel (maintained by CENAP). Since Baltimore maritime commerce utilizes those channels, please explain the apparent omissions.

2. Extension of Comment No. 5 (June 20, 2002 Letter): The analysis in the Economic Assessment of the PA attempts to follow that used in the GDM (*General Design Memorandum*; 1981). However, the definitions of benefiting commerce categories are not strictly followed. The GDM focused on the categories of commerce carried by deep-draft, ocean-going vessels that would require a deep access channel. Those categories were Iron Ore (Import), Residual Fuel (Import), Coal (Export), Grain (Export) and Sugar (Import) … all "Foreign Commerce". The PA, however totals all Coal movements (Import + Export + Domestic + Coastwise) … not just the export coal. Further, the PA totals all residual fuel oil AND all distillate fuel oil … and calls the total "Residual Fuel". Similarly, for Grain and for

Sugar, the analysis in the PA appears to total all commerce movements … Foreign + Domestic … Import and Export.

This distinction is of consequence because "Foreign Commerce" will be transported via large ocean-going vessels … requiring a dredged channel. However, "Domestic Commerce" is either 'coastwise' or 'internal' – and generally transported by barges and tugs. The latter are shallow draft vessels not requiring an extensive, deeply dredged channel system.

By not restricting the economic assessment to the quantities of "Foreign Commerce", the analysis significantly over calculates the total tonnage of benefiting commerce by about 100%. To illustrate, in Table 2 of the PA Total Traffic in FY 1999 was computed to be 19,802,000 tons. Using the criteria of the GDM for commerce handled by deep-draft, ocean-going vessel, the Total Traffic would be 10,038,000 tons … or only 50.7% of the PA values. [Data source: *Waterborne Commerce of the United States, 1999*; IWR-USACE.] Thus the computed benefits of Table 4 (Computation of Benefits by Commodity) also are too high by about a factor of 2 (two). Performing the calculation for FY 1999 (the most recent data year in the PA), I calculate Total Savings of $17,504,000. Compared to the cited maintenance cost of $17,621,300 produces a BCR (Benefit-to-Cost Ratio) of 0.99 versus the value of 2.0 cited in the PA.

On the basis of only the foregoing critique one might reasonably conclude that maintenance of the channels is potentially unwarranted. However, that analysis (and the one used in the PA) was too simplistic and did not consider the other (significant) commerce using the waterways in question. Furthermore, some of the maintenance costs cited in Table 5 are associated with the 35-ft channel (Brewerton Extension, Swan Point and Tolchester channels). Nevertheless, given the present uncertainties, **continued maintenance of two access channels to Baltimore at their full authorized depths is clearly questionabl**e – and thus warrants careful, appropriate analysis. Such analysis would seem to be an essential prelude to the DMMP study, as it would help define the scope, schedule and magnitude of needed dredged material disposal capacity.

B. Continued Maintenance and Alternatives: Based on my reading of standard Corps' guidance, there appears to be an imperative for some specific considerations that do not seem to have been previously addressed. The section on Dredged Material Management Plans (DMMP) in the Corps' basic reference, *Planning Guidance Notebook*, ER 1105-2-100, 22 Apr 2000 states:

> e. Study Components.
>
> (1) Alternatives. Management plan studies shall consider the full range of measures for dredged material management including: management of existing disposal sites to extend their life; various combinations of new disposal sites involving different disposal methods, disposal area locations, and periods of use; and, measures to reduce dredging requirements, including reduced dimensions. The Federal interest in continued O&M of an existing project for its navigation purpose is defined by that project of maximum scale and extent, within project authorization, for which continued maintenance is warranted in terms of vessel traffic and related factors.

1. Question: As part of the forthcoming DMMP study activity, how does the District intend to address the requirement to consider "measures to reduce dredging requirements, including

reduced dimensions"? Will the District assess separately the two alternative routes to and from the Port of Baltimore and examine the benefits and consequences of smaller or fewer channels?

2. Question: As part of the forthcoming DMMP study activity, how will the District perform the requisite economic assessments to ascertain "that project of maximum scale and extent, within project authorization, for which continued maintenance is warranted" for both the Cape Henry and the C&D Canal routes? [Note that the analysis employed in the PA appears to have been flawed and inadequate.]

3. Question: The main 50-ft channel to Baltimore services only a small number of really deep-draft vessels (draft > 45 ft) … about 1 vessel per week. How will the District determine if it is really economically beneficial to maintain the channel depth at 50 ft instead of 46 ft … or some similar value?

C. Cost Sharing: It is unclear how the forthcoming DMMP being prepared by CENAB will be funded and how it will be integrated, or coordinated, with the DMMP activities being undertaken by the Maryland Port Administration (MPA) in response to a directive from the State legislature. The 'cost sharing' portion of the section on Dredged Material Management Plans (DMMP) in the Corps' basic reference, *Planning Guidance Notebook*, ER 1105-2-100, 22 Apr 2000 states:

> f. Cost Sharing and Financing.
>
> (1) Management Plan Studies.
>
> (a) Existing Projects.
>
> (1) General. The cost of Management Plan studies for continued maintenance of existing Federal navigation projects are O&M costs and shall be Federally funded. For harbor projects, including inland harbors, such costs shall be reimbursable from the Harbor Maintenance Trust Fund, subject to the following:
> (a) …..
> (b) Budgeting priority for the navigation purpose is limited to the Base Plan. Therefore, the cost for any component of a management plan study attributable to meeting local or state environmental standards that are not provided for by the requirements of Federal laws and regulations, shall be a non-Federal cost.

1. Question: How will the costs of preparing the Management Plan, including the various study costs, be allocated between the Corps of Engineers and the local sponsor (MPA)?

2. Question: As part of their work to develop a DMMP, the MPA has already undertaken a number of 'reconnaissance studies' on various dredged material disposal options. Will any of those studies, which are currently being performed (and funded) by the MPA, be utilized by CENAB in its DMMP? If so, how will the costs be shared?

As I indicated in my prior letter, I appreciate the opportunity to submit comments and questions relative to the development of the scope for the District's DMMP study. I continue to look forward to receiving a copy of the study scope and the supporting documents in September.

Sincerely,
John M. Williams

Copy: Congressman Wayne T. Gilchrest

US Army Corps of Engineers
Baltimore District

December 2003

Newsletter
Dredged Material Management Plan

Why is the Corps preparing a DMMP for the Port of Baltimore?

Maintenance of the channels leading to the Port of Baltimore is key in maintaining the viability of the port. The U.S. Congress, in 1824, designated the U.S. Army Corps of Engineers (USACE) as the federal agency responsible for channel maintenance through its dredging of the navigable federal channels. In a single year, USACE dredges 4.5 million cubic yards of sediment to maintain the approach channels to the Port of Baltimore south of the Sassafras River. An additional one-half million cubic yards of dredged material is generated annually by the State of Maryland and private entities through their dredging of berthing areas and non-federal channels. A major challenge is where to put the dredged material generated from the Port of Baltimore approach channels in an economically and environmentally sensible manner.

The Dredged Material Management Plan (DMMP) is important to the Port of Baltimore, one of the busiest ports on the East Coast of the United States. From autos to zinc, the port handles more than 40 million tons of cargo per year from around the world. The success of the port is important because it:

- Generates $1.4 billion in revenue.
- Employs 18,000 direct workers to move cargo and passengers through the port.
- Sustains almost 27,000 additional jobs through direct employers and their employees.
- Provides more than 80,000 additional related jobs by shippers and consigners who use the port.

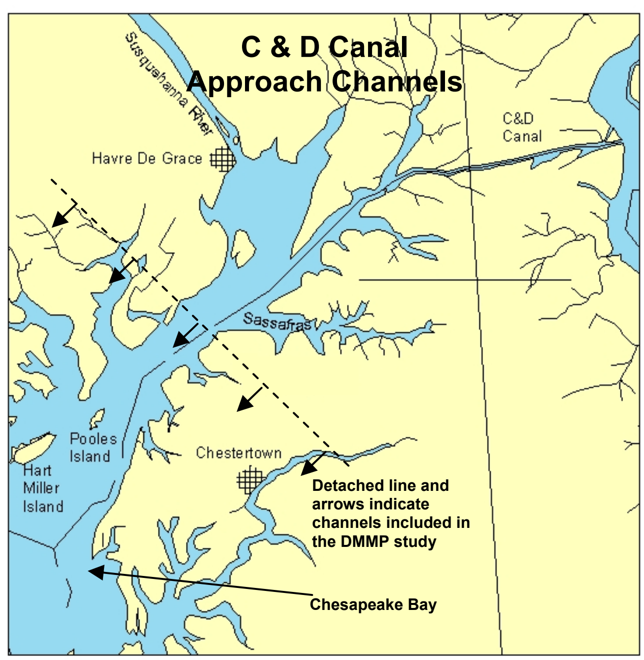
In July 2001, the Baltimore Harbor and Channels Dredged Material Management Plan Preliminary Assessment was prepared by the USACE, Baltimore District. The study concluded that within 8-10 years, there would be a shortfall of dredged material placement sites. Therefore, the Baltimore District is preparing a DMMP which will identify and evaluate various alternatives for the placement of dredged material to provide sufficient capacity for the next 20 years. There are three main goals of a DMMP:

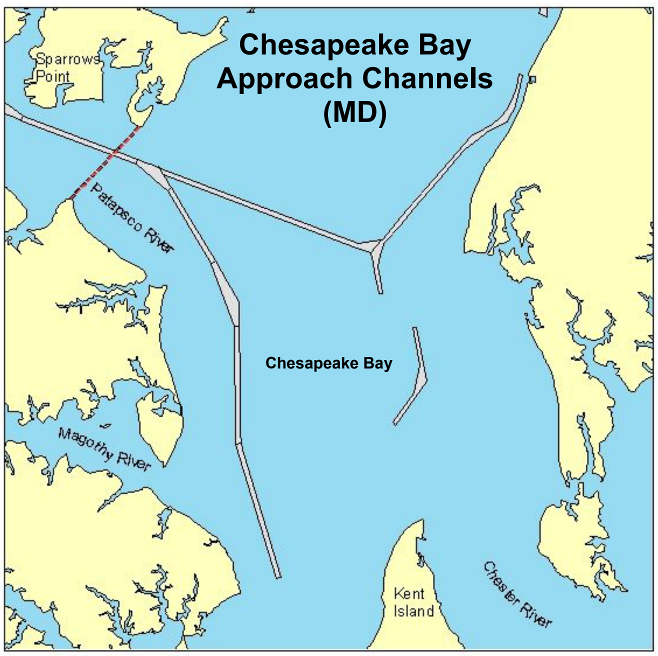
1. Maintain the federal channels in an economically and environmentally sound manner.
2. Place material in an environmentally sensitive manner.
3. Maximize the use of dredged material for beneficial use.

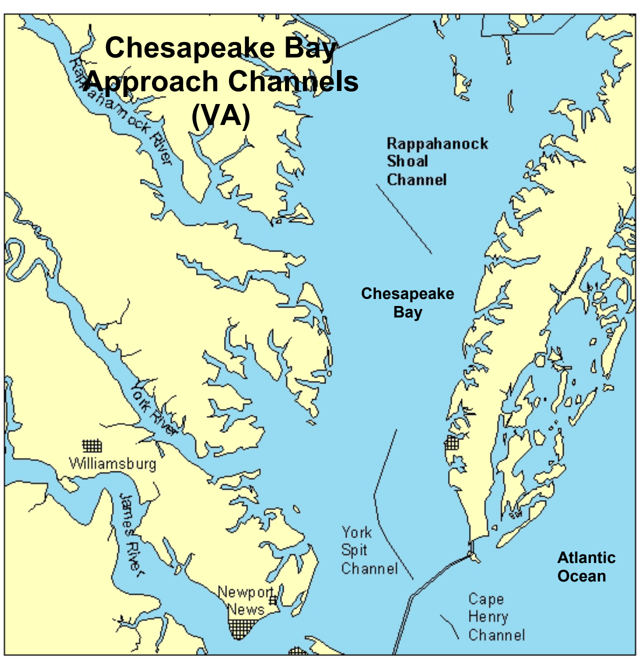
What areas are included in the Port of Baltimore DMMP?

The area encompassed in the Port of Baltimore DMMP spans from the Sassafras River in the northern part of the Chesapeake Bay, into the Harbor, and south through to the Cape Henry Channel at the mouth of the Chesapeake Bay.

Dredging activities and material placement for the network of channels is being addressed by dividing the approach channels into four geographic areas as shown in the following maps.







Dredged material placement needs and opportunities will be evaluated for each of the four geographic areas.

How will the Port of Baltimore Federal DMMP be prepared?

The State of Maryland Department of Transportation, as directed by the Maryland General Assembly, is currently preparing, from a local perspective, a DMMP to manage dredged material placement within Maryland. The federal DMMP process, which the Corps is pursuing, is fully integrated with the state DMMP. Both DMMPs consider long-term placement needs of federal, state, and local dredged material for the Port of Baltimore channels in a comprehensive manner. Both DMMPs make beneficial use of the material a top priority. And most importantly, both DMMPs include agency and public participation.

The federal DMMP process, like the State of Maryland DMMP, includes input from numerous stakeholders such as federal, state and local agencies; private and public special interest groups; and the general public.

Unlike the State of Maryland DMMP, the federal DMMP is required to follow the National Environmental Policy Act (NEPA) by preparing an Environmental Impact Statement (EIS)the federal DMMP is required to assess the economic benefits of maintaining the channels. The federal DMMP includes the Virginia Channels which serve the Port of Baltimore. Finally, the federal DMMP, unlike the State of Maryland DMMP evaluates dredged material placement actions from a national, rather than regional, perspective.

There are a number of well-defined steps which will be followed in the preparation of the federal DMMP. In May 2002, the Corps began the DMMP process by issuing a **NEPA Notice of Intent** and holding public meetings to seek input on the scope of the DMMP. Weston Solutions, Inc., was hired in July 2003 by the Baltimore District to prepare the DMMP Report and EIS.

Study Objectives are being developed by considering the amount of dredged material which will be generated in the next 20 years and existing placement sites throughout the area are being evaluated for capacity. At the same time, **Alternative Placement Plans** are being considered.

A **Federal Standard**, or base plan, will be developed for each channel reach. The federal standard is the least costly, environmentally sound, method to place dredged material and generally sets the limit of federal spending for dredging and placement.

Once alternative plans have been determined, **Screening Criteria** will be developed to evaluate the alternatives. The screening criteria developed by the Bay Enhancement Working Group (BEWG) during the State of Maryland DMMP process will be used as a starting point for the federal DMMP criteria. Following development of criteria, **Alternative Plan Evaluation** will be performed. This will allow the DMMP team to develop a suite of acceptable alternatives and an implementation plan for those alternatives.

The efforts and results of the DMMP process will be documented through a **DMMP Report and Tiered EIS**. Draft versions of the report will be provided for agency and public review and comment. Following public meetings, a **Final DMMP Report and Tiered EIS and a Record of Decision** will be published. After the DMMP is completed, site specific federal dredged material placement studies can begin, which will ultimately lead to implementation of various placement or management alternatives.

What alternatives will be considered within the DMMP?

The federal DMMP will consider three categories of dredged material placement alternative as well as the no action alternative:

1. **Maximize the Use of Existing Facilities** through Best Management Practices (BMPs) and/or expansion.
2. **New Placement Sites**.
3. **Beneficial and Innovative Uses** such as island restoration, shoreline restoration, mine/quarry reclamation, etc.

The federal DMMP will consider each of the alternatives and use the screening criteria to develop a recommended plan, which will likely be some combination of the alternative categories listed above.

What is the schedule?

A number of milestones have been accomplished in the DMMP process including publication of the NEPA Notice of Intent in May 2002 and the holding of public meetings in June 2002. The milestones which are ahead of us include:

- **January 2004** **Establish Screening Criteria**
- **March 2004** **Evaluate Alternatives**
- **October 2004** **Draft DMMP and EIS**
- **Oct.-Nov. 2004** **Public Comment Period**
- **April 2005** **Final DMMP and EIS**
- **May/June 2005** **Record of Decision**

How can I get involved?

There are several opportunities for public involvement with the federal DMMP process. By voicing your opinions and providing your support, you can help define the future of dredged material placement in the Chesapeake Bay region and secure the viability of the Port of Baltimore.

Get on the Mailing List — By being on the Federal DMMP mailing list you will receive future newsletters like this one. You will receive notifications of the Draft DMMP Report and Tiered EIS when it is published in October 2004 for public review and comments. You will receive notification when the Final DMMP report and Tiered EIS is published in April 2005. Finally, you will receive notification about public meetings. To get on the mailing list, send an email to dmmp.nab@usace.army.mil or call 1-800-295-1610.

Contact the Citizens' Advisory Committee (CAC) Liaison — The CAC, along with other state DMMP committees, will be involved in the establishment of federal screening criteria and the evaluation of dredged material placement alternatives. Mr. Greg Kappler is the CAC chair and can be contacted by phone at 410-291-4688 or by email at gregory.j.kappler@bge.com.

Where can I get more information?

Contact the following people:

At the Baltimore District:

Gwendolyn Meyer
Dredged Material Management Plan Study
U.S. Army Corps of Engineers
10 South Howard Street
P.O. Box 1715
Baltimore, Maryland 21203-1715

Toll free: 1-800-295-1610
Email: dmmp.nab@usace.army.mil

At the Maryland Port Administration:

Frank Hamons
Maryland Port Administration
2310 Broening Highway
Baltimore, MD 21224-6621

Phone: 410-631-1102
Email: fhamons@mdot.state.md.us

Visit the DMMP Website at

http://www.nab.usace.army.mil/projects/Maryland/DMMP/index.html

U.S. Army Corps of Engineers
ATTN: Gwendolyn Meyer
Dredged Material Management Plan Study
10 South Howard Street
P.O. Box 1715
Baltimore, Maryland 21203-1715

COMMENT LETTERS

FEDERAL AGENCIES AND OFFICIALS

COMMENTER F-1

DE [illegible] 24 Mar 05
PPMO (S. Johnson) ___

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401

March 17, 2005

Colonel Robert J. Davis, Jr., P.E.
District Engineer
U.S. Army Corps of Engineers
10 South Howard Street
P.O. Box 1715
Baltimore, Maryland 21203-1715

Dear Colonel Davis:

We look forward to working with your District and the Maryland Port Administration on a critical plan for ecosystem recovery through the beneficial use of clean dredged material. We have reviewed the "Draft Baltimore Harbor and Channels dredged Material Management Plan and Tiered Environmental Impact Statement." Our formal comments on the DEIS will be provided by the Department of the Interior. I am writing at this time in support of the wetland restoration DEIS alternative in Dorchester County, Maryland, that includes Blackwater National Wildlife Refuge. Blackwater NWR is part of the Chesapeake Marshlands NWR Complex. Glenn Carowan, the Refuge Manager, and I believe that such a project in and around the Refuge would be complimentary and crucial to supporting watershed restoration activities already in place. Further, this project reflects an ecosystem approach to management in the Chesapeake Bay when considered with other beneficial use of dredged material projects at Poplar Island, James Island, Barren Island, and other locations. 1

The Blackwater River watershed has undergone profound and ecologically degrading changes within the last 100 years. Beginning in the early 1800's, a canal was dug (Stewart's Canal), which connected the previously freshwater headwaters of the Blackwater to the salt waters of the Little Choptank River. Saltwater intrusion has eliminated migratory fish spawning habitat, and also has resulted in the conversion of hundreds of acres of marsh (predominately threesquare bulrush) into saline open water and mudflat. Thousands of additional acres of marsh have been lost to herbivory by an introduced exotic rodent species, the nutria. Marsh loss has been further exacerbated by sea level rise and land subsidence. The cumulative effect of these factors has been the loss of over 11,000 acres of emergent wetland vegetation within the boundaries of the refuge alone. Former marsh areas have been converted to turbid shallow waters, with an unconfined muck bottom which during wind and rain events contributes significant sediment loading to the Chesapeake Bay. Altered water depths, water quality, and bottom type prevents the recolonization of emergent wetlands or submerged aquatic vegetation.

The Chesapeake Marshlands NWR Complex, with a host of partners from the public and private sector, has embarked on an ambitious program to restore the Blackwater River watershed, both within and outside of the refuge boundary. In 2002, the Maryland Nutria Project established the goal of eliminating the nutria from the entire Chesapeake Bay and Delware Bay region. This project has resulted in the successful elimination of nutria on Blackwater NWR, and is expanding into nearby state and private lands that comprise a total initial Nutria Eradication Zone of over 75,000 acres. In order to address saltwater intrusion, a joint Maryland/Refuge project will construct a hydrologic barricade this Spring of 2005, which will once again separate the Little Choptank and Blackwater Rivers, allowing the headwaters of the Blackwater to return to a freshwater regime. Our Ecological Services and Fisheries Programs will be documenting wetland and anadromous fish response. In 1980, and again in 2003, wetlands were restored at Blackwater NWR by reestablishing requisite substrate elevations using clean fill material which was dredged on-site. Twelve acres were established in 1980 by the Refuge, and 15 acres were established in a joint project with your office, the Refuge, and the National Aquarium in Baltimore in 2003. The success and vegetative persistence of these projects lead us to be optimistic that this approach could, with modification, be done on a large scale. Lastly, ongoing studies are being conducted in and around the Refuge by USGS, to determine effects of, and additional management options dealing with, sea level rise and land subsidence. Initial work suggests the Blackwater River is a sediment starved system, exporting more soil than it receives, preventing existing marsh from keeping up with rising sea levels and land subsidence.

The U.S. Fish and Wildlife Service and our many partners have prioritized the restoration of the Blackwater River watershed in support of the Chesapeake Bay Program and its direction document "Chesapeake 2000". In addition, wetlands in and surrounding Blackwater NWR were designated at the Ramsar Convention as "Wetlands of International Importance". I believe it will take the expertise of your agency to make restoration of these resources a reality. We are aware of the economic commitment necessary to pursue such an endeavor. Our hope is that nationally significant environmental benefits coupled with economic, navigation, and predictability benefits to the Port of Baltimore, will make the Baltimore District the measure by which other Districts are compared as the Corps continues to be a lead Federal agency in environmental restoration.

Sincerely,

John

John P. Wolflin
Supervisor

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Custom House, Room 244
200 Chestnut Street
Philadelphia, Pennsylvania 19106-2904

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:

March 24, 2005

ER 05/0132

Colonel Robert J. Davis, Jr., P.E.
District Engineer
U.S. Army Corps of Engineers
P.O. Box 1715
Baltimore, MD 21203

Attn: Mark Mendelsohn

Dear Colonel Davis:

The Department of the Interior (Department) has reviewed the Draft Baltimore Harbor and Channels Dredged Material Management Plan and Tiered Environmental Impact Statement (Plan), Baltimore, Maryland. Please consider the following comments in completing the final version of the document.

GENERAL COMMENTS

The Department believes that a basic tenet of dredged material management should be the beneficial use of material for restoration of fish and wildlife habitat, and that any long-term plan be based on a broad geographic/ecosystem approach to management. The Plan's inclusion of the habitat restoration alternatives at Poplar Island, James/Barren Islands, and Dorchester County is reflective of such an ecosystem approach.

One of the Plan's recommendations is the construction of multiple confined disposal facilities (CDF's) in the Patapsco River. Basic details on the site locations and area of impact are not provided, although the Plan does note that the CDFs are not anticipated to have an environmental restoration component. Since the construction of CDF's in the Patapsco River will result in significant losses of estuarine habitat, this should be an option of last resort. If no feasible alternatives exist, a mitigation plan will need to be developed to compensate for the loss of estuarine habitat. This will be a difficult undertaking. One important action that should be taken is to design these sites so that they would have an environmental restoration component. 1

We believe that the south cell of the Hart-Miller Containment Facility should be considered as an option to reduce the need for CDF construction in the Patapsco River. Previous estimates by the Corps indicated that the south cell dikes could be raised to provide capacity for many millions of cubic yards of material. Despite the habitat restoration efforts that have been made at the site, it 2 remains dominated by phragmites. Thus, it appears the renovation of the site would be much less environmentally damaging than construction of new sites in the Patapsco River. Further, use of this site could result in an opportunity for improved vegetation management.

The Plan recommends optimized use of the Pooles Island open water site and notes that 6 million cubic yards (mcy) could be placed there prior to site closure. State law mandates that the use of this site be terminated no later than December 31, 2010. Our understanding is that Pooles Island was only intended to be used on an interim basis to help meet a near-term shortfall in available disposal capacity. Since the Popular Island placement site is operational with a capacity of 40 mcy, it appears that the near-term shortfall has been eliminated. Therefore, consideration should be given to discontinuing the use of the Pooles Island site. 3

The Plan recommends continued use of the Rappahannock Shoal Alternate and Wolf Trap Alternate open water sites in the lower Chesapeake Bay for disposal of material dredged from the Rappahannock and York Spit channels. We understand that these sites are only used infrequently, and that monitoring has not revealed substantial adverse impacts. Nevertheless, we recommend that the Plan include a statement that when future planning is conducted for the dredging of these channels, consideration would be given to options that would use the material for habitat improvement projects at islands or along bay shorelines. 4

The Plan recommends the continued use of the Dam Neck open water site in the Atlantic Ocean for disposal of material from the Cape Henry channel. The Cape Henry channel contains relatively coarse grain sediments that could possibly be used for beach replenishment. We recommend that the Plan include a note that when future dredging operations are planned, the grain size of the material would be examined to determine the potential for beach replenishment. 5

We are pleased that the recommended plan includes the Dorchester County wetland restoration alternative which would appear to have important environmental benefits. We fully endorse the further study of this alternative. We believe that such a project would be a key element of a watershed restoration program and reflect an ecosystem approach to management in the Chesapeake Bay. The alternative would include restoration of habitat values on Blackwater National Wildlife Refuge. A large scale wetland restoration in and around the Refuge would be complementary and crucial to supporting watershed restoration activities already in place. 6

SPECIFIC COMMENTS

Page 2-11, Lines 8-10, Section 2.2.1.1 Geomorphology:

The sentence, "Sea level is rising at a rate of 0.16 inches/year (1.3 ft/century) near the mouth of the Bay; this rate decreases northward, possibly due to lesser isostatic rebound" is incorrect in the use of the term "rebound". Rebound implies uplift, however the USGS reference cited actually used the term "isostatic adjustment" to represent sinking, or downwarping, of the Chesapeake Bay area. The apparent differential rate of sea level rise between the southern and northern parts of the bay may be a result of sediment compaction resulting from ground water extraction in the 7

Hampton Roads, Norfolk, Portsmouth area. It is suggested that the sentence be revised to read:

Sea level is rising at a rate of 0.16 inches/year (1.3 ft/century) near the mouth of the Bay; this rate decreases northward.

Page 4-14, Lines 15-18, section 4.3.2.4 Confined Disposal Facilities in Patapsco River:

The sentence states: "Although potential contamination of ground water is always a concern for dredged material placement, no negative impacts are expected because Baltimore utilizes a surface water system for its consumptive water needs." Potential effects on ground-water quality and the receiving ecosystem should also be examined and addressed in the design of the long-term monitoring plan. **8**

If you have any questions about these comments, please contact Mr. John Wolflin, Field Supervisor, U.S. Fish and Wildlife Service, 177 Admiral Cochrane Drive, Annapolis, Maryland, 21401 (Phone: 410-573-4573). Thank you for the opportunity to present these comments.

Sincerely,

Michael T. Chezik

Michael T. Chezik
Regional Environmental Officer

COMMENTER F-3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

March 28, 2005

Mark Mendelsohn
U. S. Army Corps of Engineers
Baltimore District, Planning Division
P.O. Box 1715
Baltimore, MD 21203

RE: Baltimore Harbor and Channels Dredged Material Management Plan (DMMP) and Draft Tiered Environmental Impact Statement (DTEIS); CEQ No. 050050.

Dear Mr. Mendelsohn:

In accordance with the National Environmental Policy Act of 1969 and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the above referenced project. The Dredged Material Management Plan (DMMP) and DTEIS were prepared to analyze broad dredged material management options for the Port of Baltimore for the next 20 years. Dredged material placement alternatives were compared for capacity, cost, environmental benefit and/or impact, and implementation risk, resulting in the recommended plan. The recommended plan presented in the DTEIS consists of six ongoing or new dredged material management elements that together will provide sufficient dredged material placement capacity for the Port of Baltimore through the next 20 years, including both maintenance and new work dredging needs.

EPA commends the Corps of Engineers and the State of Maryland, through the Maryland Port Authority (MPA), for their rigorous analysis and presentation of a wide variety of possible alternative solutions to the problem of managing material dredged from the Baltimore Harbor and approach channels. The resulting documents produced by both the Maryland DMMP process and through the Corps of Engineers Federal DMMP and EIS processes have been both technically thorough and publicly inclusive of the involved and interested stakeholders in the wide area potentially affected by this issue. EPA is pleased to have participated on several of the committees which have worked diligently to reach the point where conceptual recommendations can be presented for consideration by decision makers.

The six alternatives comprising the recommended plan in the DEIS are the result of a tiered DMMP process that evaluated 36 different types of placement sites over the four geographic subareas of the study area, for a total of 79 alternatives that were developed and compared for achieving sufficient dredged material placement capacity over the next 20 years, including a "no action" alternative. EPA concurs with the analysis of impacts and findings and the tiered process used to develop the DMMP and DTEIS. The DTEIS is a programmatic 1 document; thus, site specific NEPA documents will need to be prepared for any of the new alternatives recommended for implementation. We have the following specific comments concerning the six broad alternatives as presented in the DTEIS Recommended Plan.

EPA has rated the "no action" alternative, which consists of the continuation of current maintenance dredging and placing dredged material at existing placement sites without modification, and the new Alternative proposing wetlands restoration in Dorchester County, MD as "LO" (Lack of Objection). The "no action" alternative as described is comprised of two activities: the continued use of Open Water Placement in Virginia and the optimized use of existing dredged material management sites. We have assigned the rating of "EC" (Environmental Concerns) to the remaining three alternatives, which include the proposed multiple new Confined Disposal Facilities (CDF's) in the Patapsco River, the Poplar Island Environmental Restoration Project (PIERP) expansion and the Large Island Restoration (LIR) Middle Bay. EPA has also rated the overall adequacy of the DTEIS document as "1" (Adequate). A copy of the EPA EIS rating system is enclosed for your reference. 2

We suggest that the recommendation for continued use of Open Water Placement in Virginia include the Norfolk Ocean Placement Site. The Norfolk site has more than sufficient capacity for the projected quantity of dredged material projected to be removed from the Virginia (and even Maryland) approach channels during the 20 year planning period. Given this available capacity, and the approval of the site by EPA under the authority of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended, the DTEIS needs to further explore why this option should not be included as part of the recommended plan. EPA believes that the Norfolk Open Water Site should be pursued as part of a viable mix of options for Mid and Upper Bay disposal needs in the long term management process. 3

EPA strongly endorses the development of beneficial uses of dredged material. Further development of the Dorchester County Blackwater Wildlife Refuge wetlands alternative needs to address expansion of this site beyond that proposed in the DTEIS. The potential exists for the protection and enhancement of tidal wetland ecosystems being threatened by rising sea level and development. These and other Eastern Shore Chesapeake Bay wetlands have been identified as "wetlands of international importance" by the Ramsar Convention, an international treaty recognizing special wetland systems throughout the world. The Dorchester County wetlands have also been recognized as a "unique ecosystem" by the U.S. Fish and Wildlife Service (FWS) and as "priority wetlands" by EPA. Any future study of this alternative should expand the effort to identify funding opportunities to provide further significant environmental benefits by enhancing this valuable ecological asset. 4

We are concerned that the proposed multiple Confined Disposal Facilities (CDFs) have the potential to impact shallow water areas by placement of fill into the Patapsco River. Further development of this alternative needs to address habitat compensation and mitigation for unavoidable environmental impacts. It should also explore innovative technology to maximize continued use of these facilities beyond the projected 20 year time frame.

EPA is very concerned that the expansion of Poplar Island (PIERP) and the creation or restoration of a large island (LIR) in the Middle Bay have the potential to impact large areas of subaqueous habitat. We support the optimization of the vertical expansion of Poplar Island to the extent possible. Optimization of vertical expansion would help to avoid elimination of potential fisheries and vegetative habitat associated with lateral expansion. Detailed analysis of a Mid-Bay LIR needs to be performed to determine specific ecosystem impacts. Attention should be given to replacement of lost ecosystem functions and values through careful design and implementation, using the lessons learned to date from the Poplar Island experience. 5

We strongly concur with the recommendation for the continued technical development of innovative alternatives dropped from study at this time due to high cost, technical uncertainty, or high implementation risk. Continued development of alternatives is also important in providing capacity for the out years beyond the 20 year time frame of the recommended plan, or sooner if deemed feasible. This component may include, but not be limited to, placement of dewatered dredged materials on agricultural lands, in abandoned mines or for use in building materials. 6

EPA also recommends that the control of non-point source sediment loadings from the Upper Chesapeake Bay Watershed be pursued to reduce the need for future dredging and placement capacity by reducing sediment loadings to the Bay. Reduction of sediment loadings will also result in nutrient reduction. We encourage the Corps as a partner to the Chesapeake Bay Agreement to explore mutually beneficial options that will reduce the need for dredging in the out years while producing important water quality benefits for the Chesapeake Bay. 7

Thank you for the opportunity to review and provide comments on the DMMP and DTEIS. Should you have any questions regarding our comments, please contact Thomas Slenkamp, Deputy Branch Chief, at (215) 814-2750 or Marria O'Malley Walsh of my staff at (570) 628-9685.

Sincerely,

Thomas Slenkamp

for William J. Hoffman, Chief
Environmental Programs Branch

Environmental Impact Statement (EIS) Rating System Criteria

RATING THE ENVIRONMENTAL IMPACT OF THE ACTION

LO (Lack of Objections) - The review has not identified any potential environmental impacts requiring substantive changes to the preferredalternative. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposed action.

EC (Environmental Concerns) - The review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact.

EO (Environmental Objections) - The review has identified significant environmental impacts that should be avoided in order to adequately protect the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). The basis for environmental Objections can include situations:

1. Where an action might violate or be inconsistent with achievement or maintenance of a national environmental standard;

2. Where the Federal agency violates its own substantive environmental requirements that relate to EPA's areas of jurisdiction or expertise;

3. Where there is a violation of an EPA policy declaration;

4. Where there are no applicable standards or where applicable standards will not be violated but there is potential for significant environmental degradation that could be corrected by project modification or other feasible alternatives; or

5. Where proceeding with the proposed action would set a precedent for future actions that collectively could result in significant environmental impacts.

EU (Environmentally Unsatisfactory) - The review has identified adverse environmental impacts that are of sufficient magnitude that EPA believes the proposed action must not proceed as proposed. The basis for an environmentally unsatisfactory determination consists of identification of environmentally objectionable impacts as defined above and one or more of the following conditions:

1. The potential violation of or inconsistency with a national environmental standard is substantive and/or will occur on a long-term basis;

2. There are no applicable standards but the severity, duration, or geographical scope of the impacts associated with the proposed action warrant special attention; or

3. The potential environmental impacts resulting from the proposed action are of national importance because of the threat to national environmental resources or to environmental policies.

RATING THE ADEQUACY OF THE ENVIRONMENTAL IMPACT STATEMENT (EIS)

1 (Adequate) - The draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

2 (Insufficient Information) - The draft EIS does not contain sufficient information to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the proposal. The identified additional information, data, analyses, or discussion should be included in the final EIS.

3 (Inadequate) - The draft EIS does not adequately assess the potentially significant environmental impacts of the proposal, or the reviewer has identified new, reasonably available, alternatives, that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. The identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. This rating

-----Original Message-----
From: James Jett [mailto:JJETT@menv.com]
Sent: Tuesday, March 29, 2005 9:00 AM
To: Mendelsohn, Mark NAB02
Cc: Steve Storms (E-mail); Jane Boraczek (E-mail); Gwendolyn Gibson; Tammy Banta
Subject: EA/MES Comments to Draft Federal DMMP

Good Morning Mark,

On behalf of the MPA, please see the attached EA/MES comments to the draft federal DMMP.
Please note that the comments were divided into a
editorial/grammatical table and a content-based table.

-Jim Jett

<<content comment table.doc>> <<editorial comment table.doc>>

STATE AGENCIES AND OFFICIALS

COMMENTER S-1

EA/MES Editorial Comments to the February 2005 Draft DMMP

No.	Section	Page	Line	Comment
1.		x		There are two pages of acronym list numbered "x", please correct.
2.		xiii		Fix Table 3-3 title formatting.
3.		ES-14		Figure is difficult to read, please enlarge font on figure labels.
4.		ES-16		Please enlarge font so table is readable, page also needs a page number.
5.	1.7	1-19	19-20	This sentence conflicts with the statement on p. ES-6, line 15-16.
6.	2.2.1.4	2-17	7,18,24	Please fix heading titles.
7.	2.4	2-47	25	Rename this section to "Harbor/Upper Bay" or create separate section addressing the Harbor Channels.
8.	2.4	2-48	1	Fix section heading.
9.	2.6.5.4	2-74	21	Insert "can be" or "was" after "trawl collections".
10.	2.6.7.2	2-79	4	Please include an approximate depth to clarify for the reader.
11.	2.6.7.2	2-79	26	Change blue text reference and to black.
12.	2.6.8	2-84	18	Insert a parenthesis before CBP, 2004m.
13.	2.8.2.3	2-98	3	Correct "double-breasted" to double-crested".
14.	2.8.2.4	2-99	7	Pluralize "waterbird".
15.	2.8.3	2-99	23	Decapitalize "Area".

No.	Section	Page	Line	Comment
16.		Table 2-7, 2-8, 2-9		Fix cell formatting and margins in tables.
17.		Section 2 Figures		Fix text on cover page of section 2 figures.
18.		Figure 2-1		Fix text in Figure 2-1 title.
19.		Figure 2-6		Fix text in Figure 2-6 title.
20.	4.6.1.1	4-22	2	CENWW is not on the acronym list, please correct reference or add to the acronym list.
21.	4.6.1.4	4-23	26	Correct "founder" to "flounder".
22.	4.6.2. 1.5.1	4-27	12	Correct sentence to read "…located in an area…".
23.	4.7.2.3.2 to 4.7.2.3.6	4-40,41		Would sections 4.7.2.3.2 thru 4.7.2.3.6 be more appropriate under the wetlands restoration "aquatics" section 4.6.2.3?
24.	4.9.1.3	4-48	2	Should "black swimmer" be changed to "black skimmer"?
25.	4.17.1	4-70	12	Change "CQE" to "CEQ".
26.	4.17.2.2	4-73	21	Delete "to" after "…net impacts of this…".
27.	4.17.2.11	4-77	8	Reword to read, "…to create cumulative significant adverse impacts to water quality and water resources."
28.	5.0	Figure 5-1		Increase font size so figure is readable.

COMMENTER S-2

EA/MES Comments to the February 2005 Draft DMMP

Comments by:
MES: [redacted], Gwen Gibson
EA: Jane Boraczek

No.	Section	Page	Line	Comment
1.	General Comment			Generally like the new structure better. One caution: the existing or proposed sites are not introduced until after the existing conditions now, so there is no up front context for the studies that are referenced. Suggest inserting references to the pertinent sections or maps in Section 3 when talking about existing conditions studies.
2.	General Comment			*More recent information should be used in the existing conditions section. The citizens and the agencies are aware of the current information and may be expecting to see it in the text. This is especially important for the Harbor.
3.	General Comment			Have the references in sections 3 & 4 been confirmed? For example see p. 4-11, line 9. This references a Harbor report but the section is talking about WQ at PIERP. There seems to still be several places in Section 4 where multi-entity references attributed are not referencing the correct report.
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
5.	2.3.2	2-13	3-10	*It is not clear where the assumption of local borrow and clean material for external dikes is specified for AIC. This is spelled out for some diked alternatives, but not all and needs to be consistent.
6.	2.2.2	2-18 to 23		*Some information on erosion and loading was added, but information on contents of bottom sediment or reference to information in Section 1.
7.	2.2.2.1	2-23 to 33		*This section is better but still too focused on crabs. For example, flounder (an EFH species) could be mentioned. Chris Spaur should have lots of details on pycnocline depth in the context of DO??
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
9.	2.4	2-47 to 49		*Harbor fish consumption advisories should be addressed here.
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
11.	2.6.7.3	2-82	13-21	*A point should made somewhere in this section that SAV densities are highly variable. This is not included in the text anywhere. Acreages for any given year are somewhat meaningless because they could be ½ as much or twice as much the next year.
12.	2.7.3	2-88	16-17	*The riverine data is not really meaningful here. Please add Chesapeake Bay acreages.
13.	2.10.3 4.10.3	2-113 4-54	18 11-14	The text states that there are no Chesapeake Bay Area rivers in the Federal Wild and Scenic Rivers Act, however a citation in the upcoming MidBay EIS states that the Maryland General Assembly has designated at least nine rivers

No.	Section	Page	Line	Comment
				as "scenic or wild".
14.	2.12.1.1	2-114	17	It should be noted that most of Anne Arundel County is in the Middle-Bay study area.
15.	2.12.1.3	2-116	3-5	Anne Arundel County should be included in the list since it is in the Mid-Bay region from Annapolis south.
16.	4.0		General	*Information on child safety and OSHA should be mentioned in this section.
17.	4.2.1.2 to 4.2.1.4	4-6	6-14	*Please note in these sections that there would be disruption to sediments in the dredging process.
18.	4.3.1.1	4-9		*The white paper by Peddicord is still not referenced.
19.	4.3.1.2	4-11	General	*A discussion of nitrogen on channel and dredged releases to each of the dredging and placement options is not addressed in this section.
20.	4.4.2.2	4-12	19-22	*Table 3-1 indicates that harbor material will also be used. This needs to be reconciled with the statement that "dredged material for this project will originate form the outer channels."
21.	4.4.1.1 to 4.4.1.7	4-16	5-24	*Please include some discussion of UXO in these sections.
22.	4.7.2.2	4-38	6-22	*A discussion concerning how tidal flow may impact existing wetlands was not addressed. Text should state that further investigation may be required if the site has existing wetlands to ensure flushing of wetlands.
23.	4.17		General	*There remains little new regional context detail here. The point about potentially significant increases in wetlands in the mainstem is not really applicable, for example.
24.	4.17	4-71	7-20	*A point needs to be made that some of these projects may be implemented simultaneously. Also, should Blackwater restoration be included in the project list??
25.	6.0	6-1	13	*This sentence is questionable for use on multiple CDF's because by definition CDF's do not typically provide environmental benefits.

*-Indicates an outstanding comment and/or discussion from the 9/04 draft version EA/ MES comments

COMMENTER S-3

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Robert L. Ehrlich, Jr., Governor
Michael S. Steele, Lt. Governor
C. Ronald Franks, Secretary

March 25, 2005

U.S. Army Corps of Engineers
Attn: Mr. Mark Mendelsohn
Planning Division
P.O. Box 1715
Baltimore, MD 21203

Dear Mr. Mendelsohn:

Thank you for providing the Department of Natural Resources with the opportunity to provide comments on the *Draft Baltimore Harbor and Channels Dredged Material Management Plan and Tiered Environmental Impact Statement*. The Department has been an active member of the Bay Enhancement Work Group (BEWG) and as a member has provided numerous comments during the discussion phases in development of this document. The Environmental Review Unit has circulated the draft document and the following comments resulted from our intra-Department review:

As a general comment on the final results of the Corps' Dredged Material Management Plan (DMMP) process as presented in the draft document, the Department had hoped that the Tiered EIS (TEIS) format would allow placement options that had inherent difficulties because of cost and/or capacity limits to have more of an "even playing field" with higher capacity options such as large island restoration. Smaller scale projects such as small island restoration cannot compete directly with large island restoration in terms of cost, capacity or environmental benefits/acre of habitat restored. It was our hope at the start of the discussions for the Federal DMMP that the TEIS would allow for a "cafeteria" style array of placement options for future dredging projects. The smaller scale projects and innovative use projects being options under the final Federal DMMP that could be considered as placement options for some dredged material despite the cost and capacity limitations. Although all of the options received their due consideration under the BEWG process, cost, capacity and environmental benefits/acre restored are difficult selection criteria for the smaller placement options to overcome on a direct comparison with a 2,000 acre large island restoration or 575 acre expansion of the existing Poplar Island facility. **1**

Specific Comments on the draft document:

Chapter 1: Introduction

Page 1-2, Lines 14-15

The "need" should be more specific than just "insufficient dredged material placement capacity for the next 20 years." The reader should know at the beginning of the report how insufficient existing capacity is long before it is finally revealed at the end of <u>Section 2: Affected Environments</u> (note immediately after <u>Section 2-14 Noise</u>. This juxtaposing seems out of context). The reader should also be informed early on the breakdown of the dredging **2** volumes between maintenance and new work dredging that were used to determine that insufficient placement capacity existed for the next 20 years.

The 20-year period should be stated with a starting and ending point (2005-2024 (not 2025)). The discussion on the specific needs is finally presented in Section 2-15 and Table 2-35.

Page 1-8, Line 4

Sediments in C&D Lower Approach Channel are clayey silts (not silty clays) as correctly reported on Page 1-13, Line 15. 3

Page 1-17, Line 14

Is the Norfolk District part of BEWG? 4

Chapter 2: Affected Environments

General Chapter Comments

The alternatives sites account for consolidation when calculating site capacity (cut volume), as explained in Section 3.3.3 (a conversion factor of 0.7 or 0.9 was applied to site volume to account for the dewatering process…). It is not clear if the capacities listed in Table 2-36 are the "consolidated in-place volumes" or "site volumes". If capacities are site volumes, then site capacity (cut volume) is 70 mcy, and the shortfall over 20 years is 30.7 mcy [106.4 – 5.7 – (49/0.70], rather than 57 mcy [106-49]. This needs clarification in Section 2.15 Dredging Needs, Pages 2-127, and Line 23 through 2-128, Line 4. 5

Various sections refer to Site 104 as being the affected environment (for example, Pages 2-66, Line 25, and 2-73, Lines 20, 24 & 25). Is this recycled material from the Site 104 EIS or should it be Deep Trough, the stated Federal standard in Section 3.5.3 and several Tables in Section 3?

Page 2-16, Line 3

Section 2.2.1.4 Hydrostratigraphy describes the aquifers in the Lower Bay (Virginia). The information is based on the work of Meng and Harsh (1988), Hydrogeologic Framework of the Virginia Coastal Plain. Although some of the aquifers listed are relevant to the Maryland coastal plain, the important aquifers affecting the Middle and Upper Bay are not addressed, for example the Aquia, Magothy, Monmouth and Potomac aquifers. These aquifers are older than the Miocene but would be most affected by five of the six alternatives. 6

Page 2-102, Lines 24-25

The "Fish, Wildlife and Heritage Administration" has not existed within the Department of Natural Resources for some time. The coordination described in this section was with the Department's Wildlife and Heritage Service. 7

Page 2-107, Lines 19-22

The statement that the diamondback terrapin is currently under review by the Department for possible inclusion on the "RTE Animals of Maryland List" is incorrect and the portion of the sentence after the comma in Line 21 should be removed and the comma replaced with a period. 8

Page 2-127, Lines 23-24

Redo the math for the total shortfall based on a 20-year need, and specify remaining capacity at existing sites as either consolidated in-place volume or site volume. **9**

Chapter 3: Alternatives

General Chapter Comments

Understanding capacities in this section is confusing. It would be helpful to define the various capacity and volume terms (capacity, site capacity, net capacity, permitted capacity, cut volume, site volume, in-place volume, consolidated in-place volume). A glossary would be helpful. **10**

The sentence, "The site capacity (cut volume) is equal to the in-place volume divided by a consolidation factor of 0.7, or XX mcy" is stated numerous times. In this context the "or XX mcy" value can be confused for an alternative conversion factor. This sentence needs to be reworded to avoid confusion with the consolidation factor; or, the value can be given in a following sentence.

There should be an additional summary table showing how the volumes and conversion factors add up to the total site capacity referenced in each section (total capacity is given in Table 3-6 but does not alleviate the confusion of the total was calculated).

Page 3-2, Line 11

Table 1-6 referenced here and for the other alternatives is missing or should it be Table 2-35. As noted before, the projects are for 21 years, not 20 years. **11**

Page 3-5

Section 3.2 Dredged Material Placement Alternatives Considered references various State constraints on the placement of dredged material but fails to mention the need to comply with the State Critical Area law. **12**

Page 3-8, Line 29

Areas G-West and G-East along with Site 92 can accept more material. Senate Bill 830 allows for 7.4 mcy of "permitted" cut volume from 2001 to 2010. A total of 2.7 mcy was placed at Site 92 from 2001 to 2004. A "permitted" cut volume of 4.7 mcy remains for 2005 through 2010. At the projected rate of 1.45 mcy/yr, the site would close in 2007. **13**

Page 3-11, Line 26

In this line and other places, the phrase, "...does not exclude..." is the same as "...and includes..." which is used on Page 3-30, Line 10. Change to "includes" for consistency. **14**

Page 3-51, Line 21

Capacity Evaluations: Cite source(s) for consolidation factors used. **15**

Page 3-52, Line 7

Site capacity at open water placement sites does not equal site volume. Placed sediments are affected by consolidation and erosion; thus a consolidation/erosion factor should be applied to the Upper Bay capping (3.2.2.3) and Pooles Island open water site expansion alternatives (3.2.2.7) when calculating capacity. Through six years of placement at Site 92, this factor would be 0.67. **16**

Table 3-3 Maryland Geological Survey (not Geologic). **17**

Figure 3-5 Uppermost placement site is Area H (not Area D). **18**

Chapter 8: Distribution List

General Comment The distribution list should be updated to reflect current personnel and agency names. **19**

Thanks you again for the opportunity to provide comments on the subject document. If you have any questions regarding these comments or need further assistance, please contact Roland Limpert of my staff at 410-260-8333.

Sincerely,

Ray C. Dintaman, Jr.

Ray C. Dintaman, Jr., Director
Environmental Review Unit

cc: Ron Guns, Assistant Secretary
Mike Slattery, Assistant Secretary
David Goshorn, DNR-RAS
Jeff Halka, DNR-MGS

COMMENTER S-4

Robert L. Ehrlich, Jr.
Governor

Michael S. Steele
Lt. Governor

Martin G. Madden
Chairman

Ren Serey
Executive Director

STATE OF MARYLAND
CRITICAL AREA COMMISSION
CHESAPEAKE AND ATLANTIC COASTAL BAYS
1804 West Street, Suite 100, Annapolis, Maryland 21401
(410) 260-3460 Fax: (410) 974-5338
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March 17, 2005

Mr. Mark Mendelsohn
Planning Division
U.S. Army Corps of Engineers
P.O. Box 1715
Baltimore, Maryland 21203

RE: U.S. Army Corps of Engineers –
Draft Tiered Environmental Impact Statement (EIS)
Baltimore Harbor and Channels Dredged Material Management Plan and

Dear Mr. Mendelsohn:

Thank you for the opportunity to review the above project. This plan analyzes dredged material placement from channels necessary for navigation for the Port of Baltimore. The plan and EIS make no mention of Critical Area. As stated in COMAR 27.02.05.04B(3), **1**

> *Evidence that the factors listed in COMAR 27.02.05.04(B)(2), have been considered in planning for new or expanded water-dependent facilities shall be included in the agency's project description and statement of findings as provided in Regulation 27.02.05.02 of this chapter.*

The Maryland Port Administration (MPA) must provide this information to us for our review. We understand that three sites were selected by MPA Harbor Team that was formed several years ago. After attending the January 26, 2005 Joint Evaluation Meeting with your agency, it was brought to our attention that the MPA is proposing to construct a dredge material containment facility (DMCF) at Masonville in City of Baltimore and create a restoration\environmental enhancement of Masonville Cove which would impact the Critical Area. Such a proposal by MPA will need formal approval from the Critical Area Commission. **2**

Thank you for the opportunity to comment. If there are any questions, please feel free to call me at (410) 260-3483.

Sincerely,

Dawnn McCleary

Dawnn McCleary
Natural Resources Planner

cc: Roland Limpert
Chairman Martin Madden
Ren Serey
Regina Esslinger
LeeAnne Chandler
Meg Andrews
BA General Files - 05

COMMENTER S-5

COMMONWEALTH *of* VIRGINIA

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

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Director

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March 24, 2005

Mr. Wesley E. Coleman, Jr.
Chief, Civil Project Development Branch
Baltimore District, U.S. Army Corps of Engineers
P.O. Box 1715
Baltimore, Maryland 21203

RE: Draft Baltimore Harbor and Channels Dredged Material Management Plan and Tiered Environmental Impact Statement
DEQ-05-033F

Dear Mr. Coleman:

The Commonwealth of Virginia has completed its review of the above document (hereinafter "Draft Plan/EIS"). The Department of Environmental Quality ("DEQ") is responsible for coordinating Virginia's review of federal environmental documents prepared pursuant to the National Environmental Policy Act (NEPA) and responding to appropriate federal officials on behalf of the Commonwealth. The following state agencies, regional planning district commissions, and local government joined in this review:

Department of Environmental Quality
Department of Game and Inland Fisheries
Marine Resources Commission
Virginia Institute of Marine Science
Hampton Roads Planning District Commission
Accomack-Northampton Planning District Commission
Accomack County
City of Virginia Beach.

In addition, the following agency, regional planning district commissions and localities were invited to comment:

Department of Conservation and Recreation
Northern Neck Planning District Commission
Middle Peninsula Planning District Commission
Lancaster County
Mathews County
Northumberland County.

Project Description

According to the Draft Plan/EIS, the Corps is developing a long-term management plan for dredged material disposal from channels in the Chesapeake Bay serving Baltimore Harbor. The document addresses continuing open-water placement of dredged material in three Virginia sites (page ES-13):

- Dam Neck, offshore of Virginia Beach;
- Rappahannock Shoal, in the Chesapeake Bay near the mouth of the Rappahannock River; and
- Wolf Trap, in the Bay between Mathews and Accomack Counties.

Environmental Impacts and Mitigation

1. Solid and Hazardous Waste Management. The Draft Plan/EIS did not address either solid or hazardous waste issues or sites in Virginia. Nor did it include a search of Virginia's waste-related data bases, according to DEQ's Waste Division. The Waste Division staff conducted a cursory review of its data files and did not identify any waste sites that would affect, or be affected by, the proposed dredging plan. **1**

While sediment suspected of contamination must be handled in accordance with applicable rules (see "Regulatory and Coordination Needs," item 1, below), dredge spoil material is conditionally exempt from the solid waste regulations (9 VAC 20-80-60.E.) and excluded from the waste barging regulations (9 VAC 20-170-10) when it is managed in accordance with requirements of the State Water Law or similar authority. See next item and also "Regulatory and Coordination Needs," item 1, below.

2. Water Quality and Wetlands.

(a) Permit Requirements. Depending on the amount of material to be dredged and the type of disposal method contemplated for it, a Virginia Water Protection Permit may be required for dredged material disposal (see "Regulatory and Coordination Needs," item 2, below). The permit would address permissibility of, and restrictions upon, overboard disposal at the three previously authorized open-water sites: the Dam Neck **2**

Ocean Disposal Site, the Rappahannock Shoal Deep Alternate Site, and the Wolf Trap Alternate Site.

(b) Dredged Material Contamination. The majority of the areas to be dredged may contain contaminants including, but not limited to bulk organics, metals, PCBs (polychlorinated biphenyls), TBT (tributyltin), PAHs (polynuclear aromatic hydrocarbons), and other toxic chemicals (see Draft Plan/EIS, page 2-46, section 2.4). In addition, 90 percent of the Harbor Channels are presumed to be contaminated, according to the Draft Plan/EIS (page 3-56, section 3.4.1.1). The Chesapeake Bay and associated tributaries contain nutrient, dissolved oxygen, temperature, water clarity, and salinity problems, according to DEQ's Division of Water Quality. As the Draft Plan/EIS states:

> Increases in turbidity, water contamination, and nutrient release are potential impacts of sediment resuspension.... The dredging process is not expected to release concentrations of dissolved constituents that will impact water column organisms or affect human health.

(Draft Plan/EIS, page 4-9, section 4.3.1.1.)

There is little or no discussion of sediment testing. Increases in turbidity and total suspended solids (TSS) are generally discussed. However, the Draft Plan/EIS does not discuss possible pollutants, or their concentrations, found in the sediment and potential effects that the dredging operation would have on pollutant resuspension. There is mention of sediment information (Draft Plan/EIS, page 2-18, section 2.2.2), but no data provided to support the discussion.

(c) Avoidance and Minimization of Impacts. The Draft Plan/EIS does not discuss avoidance and minimization of impacts regarding the disposal areas, according to DEQ's Division of Water Quality. Neither is there mention of potential new upland disposal sites.

(d) Recommendation. DEQ recommends exhausting all Maryland alternatives for disposal of material from areas dredged in Maryland before considering disposal of that material in Virginia. In general, disposal areas for dredged material should be based on their proximity to the location of the area being dredged. See also item 6, below.

3. *Wildlife Resources.* The Department of Game and Inland Fisheries, as the Commonwealth's wildlife and freshwater fish management agency, exercises enforcement and regulatory jurisdiction over wildlife and freshwater fish, including state or federally listed endangered or threatened species, but excluding listed insects. The Department (hereinafter "DGIF") is a consulting agency under the U.S. Fish and Wildlife Coordination Act (16 U.S.C. sections 661 et seq.), and provides environmental analysis of projects or permit applications coordinated through the Department of Environmental 3

Quality and several other state and federal agencies. DGIF determines likely impacts upon fish and wildlife resources and habitat, and recommends appropriate measures to avoid, reduce, or compensate for those impacts.

DGIF supports the measures described in the EIS to minimize adverse impacts upon wildlife species of the dredging to be accomplished under the management plan. This includes following time-of-year restrictions for dredging activities to avoid sea turtle impacts (see Draft Plan/EIS, pages 4-74 and 4-75, section 4.17.2.5). If any dredging occurs during the time from April 11 to November 30, it must adhere to the requirements of the Biological Opinion cited in the Draft Plan/EIS. See "Regulatory and Coordination Needs," item 3, below.

4. Marine Resources. With regard to the placement of dredged material from the York River Entrance Channel at the Wolf Trap Alternate Placement Area, the Virginia Institute of Marine Science (hereinafter "the Institute") has studied the impact of such placement on the blue crab spawning stock in the vicinity of the Wolf Trap site and produced a report on the subject (Lipcius, with Seebo and Delano: *Final Report: Impact of York River Entrance Channel Dredged Material at the Wolf Trap Alternate Dredge Material Placement Area on the Blue Crab Spawning Stock*, dated January 4, 2005 (hereinafter "VIMS Report")). A copy of the Report is enclosed. The Institute's recommendations on this matter may be summarized as follows. **4**

(a) Material Placement Site. An alternative dredged material placement site should be identified in the future, because the Wolf Trap site is in the lower Bay spawning grounds of the blue crab, and there are periodically high abundances of mature blue crab females in the disposal area vicinity (VIMS Report, page 14).

(b) Time for Dredging and Placement. The Institute recommends dredging and dredged material placement in the Wolf Trap site during the five months from January 1 through May 31, and states that these activities are not advisable between June 1 and December 31. This recommendation constitutes a change to previous recommendations, because of the analysis reflected in the VIMS Report (VIMS Report, page 15).

With regard to the timing of dredging and dredged material placement, wintertime placement is not likely to affect blue crab spawning stock or population severely. While the *per capita* impact (i.e., upon each crab in the area) would be most severe in the winter when crabs could not evade sedimentation and burial accompanying the dredged material placement, the population impact would be relatively low because the estimated fraction of the potential spawning stock affected by the placement would be about 1% of the actual spawning stock. In the spring, both the population impact and the *per capita* impact would be less, because mature females would be better able to avoid burial by moving away in warmer water. The population impact would be low because of the low population of potential spawning stock (again, 1 to 2%) (VIMS Report, page 15).

Summertime dredging and placement of material, on the other hand, would not be advisable because while the *per capita* impact would be low, due to the ability of blue crabs to move and avoid burial, the population impact would be high because the abundance of mature females might represent 5% or more of the spawning stock, and they are also migrating to the lower Bay at the time, via the York River Entrance Channel and through the Wolf Trap vicinity. In addition, if left undisturbed, mature females would be able to reproduce in the summer (VIMS Report, page 15).

(c) Fisheries Protection. Both the Rappahannock Shoal Deep and the Wolf Trap disposal sites are important areas for commercially important fishery resources, according to the Marine Resources Commission and the Institute. Any planning efforts must consider these resources.

5. Prior Agreement on Disposal Sites. The Marine Resources Commission indicates that in a 1981 agreement between the Virginia Secretary of Commerce and Resources and the Maryland Secretary of Transportation (copy enclosed), the Commonwealth of Virginia conditionally designated the Rappahannock Shoal Deep and the Wolf Trap disposal sites for the placement of dredged material "for that part of Baltimore's 50-foot Channel Project located in Virginia waters." The conditions included a monitoring program to protect the fishery and preserve the ability of the Commonwealth to designate alternate disposal sites. These conditions specifically require that the material to be disposed of in these sites, or any subsequently designated alternate sites, originate from the portion of the Baltimore Channel in Virginia waters. **5**

6. Local and Regional Comments. The Hampton Roads Planning District Commission, representing jurisdictions east and south of James City County, Isle of Wight County, and Southampton County, indicate that the proposed dredging management plan is consistent with local and regional plans and policies. The Commission consulted with the City of Virginia Beach in making this determination. **6**

The Accomack-Northampton Planning District Commission, representing the two counties on Virginia's Eastern Shore, indicates that the proposed activities do not conflict with regional plans.

Accomack County has no comment.

Regulatory and Coordination Needs

1. Solid and Hazardous Waste Management. Any sediment that is suspected of contamination, or hazardous or solid wastes that are generated, transported, disposed, stored, or treated in Virginia, must be tested and handled in accordance with applicable federal, state, and local laws and regulations. These include, but are not limited to, the Virginia Waste Management Act (*Virginia Code* section 10.1-1400 et seq.), the Virginia Hazardous Waste Management Regulations (9 VAC 20-60), the Virginia Solid Waste Management Regulations (9 VAC 20-80), and the Virginia Regulations for Transportation of Hazardous Materials (9 VAC 20-110). As mentioned above, if dredge spoils are managed in accordance with state water law or similar authority, they are exempt from the Solid Waste Management Regulations. 7

2. Water Quality Regulation. The Corps should submit copies of a completed Joint Permit Application (JPA) for review by DEQ's Tidewater Regional Office (5636 Southern Boulevard, Virginia Beach, Virginia 23462) and the Marine Resources Commission (2600 Washington Avenue, Newport News, Virginia 23607). DEQ's Tidewater Regional Office (Harold Winer, telephone (757) 518-2153) is the permitting authority for the Virginia Water Protection Permit. The Commission serves as the clearinghouse for the Joint Permit Application process. DEQ and MRC will respond separately.

3. Wildlife Protection. Additional coordination regarding the protection of sea turtles, birds, or marine mammals may be necessary as the Corps complies with the Biological Opinion (see Draft Plan/EIS, page 4-74). In Virginia, the Corps should coordinate with the Department of Game and Inland Fisheries' Eastern Shore office (Ruth Boettger, telephone (757) 442-2429).

4. Fisheries Protection. Questions regarding fisheries protection pursuant to the 1981 agreement and/or in light of the VIMS Report may be directed to the Marine Resources Commission (Tony Watkinson, telephone (757) 247-2200) or the Virginia Institute of Marine Science (Tom Barnard, telephone (804) 684-7383 or e-mail barn@vims.edu, or Rom Lipcius, e-mail rom@vims.edu).

5. Federal Consistency Determination. Pursuant to the Coastal Zone Management Act of 1972, as amended, the Corps is required to determine the consistency of its activities affecting Virginia's coastal resources or coastal uses with the Virginia Coastal Resources Management Program (VCP) (see section 307(c)(1) of the Act and the Federal Consistency Regulations at 15 CFR Part 930, sub-part C, section 930.34). This involves an analysis of the activities in light of the Enforceable Programs of the VCP (first enclosure), and submission of a consistency determination reflecting that analysis and committing the Corps to comply with the Enforceable Programs. In addition, we invite your attention to the Advisory Policies of the VCP (second enclosure). The federal consistency determination may be provided as part of the documentation concluding the NEPA process, or independently, depending on your agency's preference. Section 930.39 gives content requirements for the consistency determination. If you need clarification of these comments, please contact DEQ's Office of Environmental Impact Review (Charles Ellis, telephone (804) 698-4488).

Thank you for the opportunity to review the Draft Plan/EIS. We look forward to reviewing the Final Plan/EIS.

Sincerely,

Ellie L. Irons

Ellie L. Irons
Program Manager
Office of Environmental Impact Review

Enclosures

cc: Andrew K. Zadnik, DGIF
Robert S. Munson, DCR
Allen R. Brockman, DEQ-Waste
Catherine M. Harold, DEQ-DWQ
Alan R. Pollock, DEQ-CBP
Tony Watkinson, MRC
Thomas A. Barnard, Jr., VIMS
Romualdo N. Lipcius, VIMS
Arthur L. Collins, Hampton Roads PDC
James M. McGowan, Accomack-Northampton PDC
Steven B. Miner, Accomack County
H. Clayton Bernick III, City of Virginia Beach
Dan Kavanaugh, Middle Peninsula PDC
Jerry W. Davis, Northern Neck PDC
Alan R. Pollock, DEQ-CBP
William H. Pennell, Jr., Lancaster County
Stephen K. Whiteway, Mathews County
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Attachment 1

Enforceable Regulatory Programs comprising Virginia's Coastal Resources Management Program (VCP)

a. Fisheries Management - The program stresses the conservation and enhancement of finfish and shellfish resources and the promotion of commercial and recreational fisheries to maximize food production and recreational opportunities. This program is administered by the Marine Resources Commission (VMRC); Virginia Code sections 28.2-200 to 28.2-713 and the Department of Game and Inland Fisheries (DGIF); Virginia Code sections 29.1-100 to 29.1-570.

The State Tributyltin (TBT) Regulatory Program has been added to the Fisheries Management program. The General Assembly amended the Virginia Pesticide Use and Application Act as it related to the possession, sale, or use of marine antifoulant paints containing TBT. The use of TBT in boat paint constitutes a serious threat to important marine animal species. The TBT program monitors boating activities and boat painting activities to ensure compliance with TBT regulations promulgated pursuant to the amendment. The VMRC, DGIF, and Virginia Department of Agriculture Consumer Services (VDACS) share enforcement responsibilities; Virginia Code sections 3.1-249.59 to 3.1-249.62.

b. Subaqueous Lands Management - The management program for subaqueous lands establishes conditions for granting or denying permits to use state-owned bottomlands based on considerations of potential effects on marine and fisheries resources, tidal wetlands, adjacent or nearby properties, anticipated public and private benefits, and water quality standards established by the Department of Environmental Quality (DEQ). The program is administered by the Marine Resources Commission; Virginia Code sections 28.2-1200 to 28.2-1213.

c. Wetlands Management - The purpose of the wetlands management program is to preserve wetlands, prevent their despoliation, and accommodate economic development in a manner consistent with wetlands preservation.

(1) The tidal wetlands program is administered by the Marine Resources Commission; Virginia Code sections 28.2-1301 through 28.2-1320.

(2) The Virginia Water Protection Permit program administered by DEQ includes protection of wetlands --both tidal and non-tidal; Virginia Code section 62.1-44.15:5 and Water Quality Certification pursuant to section 401 of the Clean Water Act.

d. Dunes Management - Dune protection is carried out pursuant to The Coastal Primary Sand Dune Protection Act and is intended to prevent destruction or alteration of primary dunes. This program is administered by the Marine Resources Commission; Virginia Code sections28.2-1400 through 28.2-1420.

e. Non-point Source Pollution Control – (1) Virginia's Erosion and Sediment Control Law requires soil-disturbing projects to be designed to reduce soil erosion and to decrease inputs of chemical nutrients and sediments to the Chesapeake Bay, its tributaries, and other rivers and waters of the Commonwealth. This program is administered by the Department of Conservation and Recreation; Virginia Code sections 10.1-560 et.seq.).

(2) Coastal Lands Management is a state-local cooperative program administered by the DCR's Division of Chesapeake Bay Local Assistance and 84 localities in Tidewater (see i) Virginia; Virginia Code sections 10.1-2100 through 10.1-2114 and 9 VAC10-20 et seq.

f. Point Source Pollution Control - The point source program is administered by the State Water Control Board (DEQ) pursuant to Virginia Code section 62.1-44.15. Point source pollution control is accomplished through the implementation of:

(1) the National Pollutant Discharge Elimination System (NPDES) permit program established pursuant to section 402 of the federal Clean Water Act and administered in Virginia as the Virginia Pollutant Discharge Elimination System (VPDES) permit program.

(2) The Virginia Water Protection Permit (VWPP) program administered by DEQ; Virginia Code section 62.1-44.15:5 and Water Quality Certification pursuant to section 401 of the Clean Water Act.

g. Shoreline Sanitation - The purpose of this program is to regulate the installation of septic tanks, set standards concerning soil types suitable for septic tanks, and specify minimum distances that tanks must be placed away from streams, rivers, and other waters of the Commonwealth. This program is administered by the Department of Health (Virginia Code sections 32.1-164 through 32.1-165).

h. Air Pollution Control - The program implements the federal Clean Air Act to provide a legally enforceable State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards. This program is administered by the State Air Pollution Control Board (Virginia Code sections 10-1.1300 through 10.1-1320).

(i) Coastal Lands Management is a state-local cooperative program administered by the DCR's Division of Chesapeake Bay Local Assistance and 84 localities in Tidewater, Virginia established pursuant to the Chesapeake Bay Preservation Act; Virginia Code sections 10.1-2100 through 10.1-2114 and Chesapeake Bay Preservation Area Designation and Management Regulations; Virginia Administrative Code 9 VAC 10-20-10 et seq.

Attachment 2

Advisory Policies for Geographic Areas of Particular Concern

a. Coastal Natural Resource Areas - These areas are vital to estuarine and marine ecosystems and/or are of great importance to areas immediately inland of the shoreline. Such areas receive special attention from the Commonwealth because of their conservation, recreational, ecological, and aesthetic values. These areas are worthy of special consideration in any planning or resources management process and include the following resources:

a) Wetlands
b) Aquatic Spawning, Nursery, and Feeding Grounds
c) Coastal Primary Sand Dunes
d) Barrier Islands
e) Significant Wildlife Habitat Areas
f) Public Recreation Areas
g) Sand and Gravel Resources
h) Underwater Historic Sites.

b. Coastal Natural Hazard Areas - This policy covers areas vulnerable to continuing and severe erosion and areas susceptible to potential damage from wind, tidal, and storm related events including flooding. New buildings and other structures should be designed and sited to minimize the potential for property damage due to storms or shoreline erosion. The areas of concern are as follows:

i) Highly Erodible Areas
ii) Coastal High Hazard Areas, including flood plains.

c. Waterfront Development Areas - These areas are vital to the Commonwealth because of the limited number of areas suitable for waterfront activities. The areas of concern are as follows:

i) Commercial Ports
ii) Commercial Fishing Piers
iii) Community Waterfronts

Although the management of such areas is the responsibility of local government and some regional authorities, designation of these areas as Waterfront Development Areas of Particular Concern (APC) under the VCRMP is encouraged. Designation will allow the use of federal CZMA funds to be used to assist planning for such areas and the implementation of such plans. The VCRMP recognizes two broad classes of priority uses for waterfront development APC:

i) water access-dependent activities;
ii) activities significantly enhanced by the waterfront location and complementary to other existing and/or planned activities in a given waterfront area.

Advisory Policies for Shorefront Access Planning and Protection

a. Virginia Public Beaches - Approximately 25 miles of public beaches are located in the cities, counties, and towns of Virginia exclusive of public beaches on state and federal land. These public shoreline areas will be maintained to allow public access to recreational resources.

b. Virginia Outdoors Plan - Planning for coastal access is provided by the Department of Conservation and Recreation in cooperation with other state and local government agencies. The Virginia Outdoors Plan (VOP), which is published by the Department, identifies recreational facilities in the Commonwealth that provide recreational access. The VOP also serves to identify future needs of the Commonwealth in relation to the provision of recreational opportunities and shoreline access. Prior to initiating any project, consideration should be given to the proximity of the project site to recreational resources identified in the VOP.

c. Parks, Natural Areas, and Wildlife Management Areas - Parks, Wildlife Management Areas, and Natural Areas are provided for the recreational pleasure of the citizens of the Commonwealth and the nation by local, state, and federal agencies. The recreational values of these areas should be protected and maintained.

d. Waterfront Recreational Land Acquisition - It is the policy of the Commonwealth to protect areas, properties, lands, or any estate or interest therein, of scenic beauty, recreational utility, historical interest, or unusual features which may be acquired, preserved, and maintained for the citizens of the Commonwealth.

e. Waterfront Recreational Facilities - This policy applies to the provision of boat ramps, public landings, and bridges which provide water access to the citizens of the Commonwealth. These facilities shall be designed, constructed, and maintained to provide points of water access when and where practicable.

f. Waterfront Historic Properties - The Commonwealth has a long history of settlement and development, and much of that history has involved both shorelines and near-shore areas. The protection and preservation of historic shorefront properties is primarily the responsibility of the Department of Historic Resources. Buildings, structures, and sites of historical, architectural, and/or archaeological interest are significant resources for the citizens of the Commonwealth. It is the policy of the Commonwealth and the VCRMP to enhance the protection of buildings, structures, and sites of historical, architectural, and archaeological significance from damage or destruction when practicable.

COMMENTER S-6

RECEIVED

MAR 01 2005

DEQ-Office of Environmental Impact Review

COMMONWEALTH *of* VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

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Fax (804) 698-4500 TDD (804) 698-4021
www.deq.state.va.us

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Robert G. Burnley
Director

(804) 698-4000
1-800-592-5482

MEMORANDUM

TO: Charles H. Ellis, III, Environmental Program Planner

FROM: ARB Allen Brockman, Waste Division Environmental Review Coordinator

DATE: March 1, 2005

COPIES: Sanjay Thirunagari, Waste Division Environmental Review Manager; file

SUBJECT: Environmental Impact Statement
ACOE—Baltimore Harbor and Channels Dredged Material Management Plan,
DEQ Project #05-033F

The Waste Division has completed its review of the Army Corps of Engineers's Dredged Material Management Plan for Baltimore Harbor and Channels in the Virginia waters of the Chesapeake Bay and Atlantic Ocean. We have the following comments concerning the waste issues associated with this project:

Neither solid waste nor hazardous waste issues and sites in Virginia were addressed in the report. Nor did the report include a search of Virginia's waste-related data bases. The Waste Division staff conducted a cursory review of its data files but did not identify any waste sites that would impact or be impacted by the proposed dredging plan. 1

Any sediment that is suspected of contamination or hazardous or solid wastes that are generated, transported, disposed, stored, or treated in Virginia, as defined in the Virginia Solid and Hazardous Waste Regulations must be tested and handled in accordance with applicable Federal, State, and local laws and regulations. (Dredge spoils, when managed in accordance with the Virginia State Water Control Board or other Virginia state agencies with similar authority, are conditionally exempt from the solid waste regulations (9VAC 20-80-60.E) and are excluded from the waste barging regulations (9VAC 20-170-10). Also, any treatment, storage, or disposal of hazardous wastes must be conducted in concert with applicable state laws and regulations. Some of the applicable state laws and regulations are: Virginia Waste Management Act, Code of Virginia Section 10.1-1400 *et seq.*; Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60); Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-80); Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal laws and regulations are: the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous materials, 49 CFR Part 107.

Please note that DEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. All generation of hazardous wastes should be minimized and handled appropriately. 2

If you have any questions or need further information, please contact Allen Brockman at (804) 698-4468.

COMMENTER S-7

MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER QUALITY
Ellen Gilinsky, Ph.D., Director

TO: Charlie H. Ellis, III
Office of Environmental Impact Review

FROM: Catherine Harold
Office of Wetlands and Water Protection

DATE: March 14, 2005

RECEIVED
MAR 1 2005
DEQ-Office of Environmental Impact Review

SUBJECT: Environmental Impact Statement
Baltimore Harbor and Channel Dredged Material Management Plan
05-033F

We have reviewed the information provided concerning the above-referenced project. The U.S. Army Corps of Engineers (USACE) Baltimore District (CENAB) is responsible for the maintenance of federal navigation channels leading to and from the Port of Baltimore. The project includes a uniform main channel 50 ft deep, and generally 800 feet (in Maryland) or 1,000 ft wide (in Virginia) through the Chesapeake Bay from the Virginia Capes to Fort McHenry in the Port of Baltimore. The purpose of the EIS is to develop a Dredged Material Management plan (DMMP) for all federally maintained navigation harbor projects where there is an indication of insufficient placement capacity to accommodate maintenance dredging for the next 20 years. A DMMP addresses a full range of placement alternatives, leading to the selection of a final plan that ensures that sufficient placement capacity is available for the next 20 years.

Given the content and the extent of the proposed plan, a Virginia Water Protection permit application may be required dependent upon which type of disposal method is determined and the amount of material to be dredged. The project proponent should coordinate with the Department of Environmental Quality (DEQ) Tidewater Regional Office for final permit determination by submitting a completed Joint Permit Application (JPA). **1**

According to the report(Section 2, page 46), the majority of the areas to be dredged, potentially contain contaminants that include, but are not limited to, bulk organics, metals, PCBs, TBT, PAHs, and other toxic chemicals. The report states (Section 3, page 56) that 90 percent of the Harbor Channels are presumed to be contaminated. In addition the Chesapeake Bay and associated tributaries contain nutrient, dissolved oxygen, temperature, water clarity, and salinity problems. According to the report (Section 4, page 9), "Increases in turbidity, water contamination, and nutrient release are potential impacts of sediment resuspension. The dredging process is not expected to release concentrations of dissolved constituents that will impact water column organisms or affect human health".

(over)→

There is little to no discussion of sediment testing. Increases in turbidity and Total Suspended Solids (TSS) are generally discussed. However, there is no discussion regarding possible pollutants, or their concentrations found in sediment and potential effects the dredging operation will have on pollutant resuspension. There is mention of a sediment information (Section 2, page 18), but no data is provided for document support. 2

Any soils suspected of contamination should be tested and disposed of in accordance with federal, state, and local laws and regulations. DEQ recommends sediment to be sampled and the results be compared to the 1995 NOAA Effects Range-Medium (ER-M) values. DEQ recommends submittal of sampling results with the submittal of the JPA.

The report does not discuss avoidance and minimization regarding the disposal areas. There is no mention of potentially new upland disposal sites. DEQ recommends exhausting all alternatives for areas dredged in Maryland to be located at Maryland disposal sites prior to disposal of the material in Virginia. Disposal areas should be derived based on location and proximity of material to be dredged. 3

Should the size or scope of the project change, additional review may be necessary. We recommend strict adherence to erosion and sediment control practices, and further encourage the project proponent to monitor construction activities to make certain that erosion and stormwater management practices are adequately preventing sediment and pollutant migration into surface waters, including wetlands. 4

Ellis,Charles

From: Winer,Harold
Sent: Thursday, March 10, 2005 3:08 PM
To: Ellis,Charles
Cc: Parolari,Bert
Subject: EIR #05-033F, Baltimore Harbor and Channels Dredging

As requested, TRO staff has reviewed the supplied information and has the following comments:

Regarding VWP issues, we note that the proposed disposal activities in Virginia portions of the Chesapeake Bay are limited to the continued use of three previously authorized open water disposal sites: the Dam Neck Ocean Disposal Site, the Rappahannock Shoal Deep Alternate Site, and the Wolf Trap Alternate site. The permissibility of and restrictions concerning overboard disposal of dredged material at these sites is addressed in Virginia Water Protection permits issues under Virginia Law and regulations. These regulatory requirements are addressed via the issuance of a VWP Permit for the dredging of Federal Navigation projects and associated disposal activities. Provided that the proposed disposal activities are conducted in compliance with all terms and conditions contained in a valid authorization from the Virginia Water Protection Permit program, we have no concerns over the proposed activity. 1

Thanks for the opportunity to comment.

Harold J. Winer
Deputy Regional Director
Virginia DEQ, Tidewater Regional Office
Phone: 757-518-2153/Fax: 757-518-2003
Email: hjwiner@deq.virginia.gov

COMMENTER S-9

Ellis,Charles

From: Andrew Zadnik [Andrew.Zadnik@dgif.virginia.gov]
Sent: Thursday, March 17, 2005 1:36 PM
To: Ellis,Charles
Cc: ProjectReview.Richmond_PO.DGIF@dgif.virginia.gov; Ruth Boettcher
Subject: Re: Baltimore Harbor and Channels, Dredged Material ManagementPlan_DEQ-05-033 _ESSLOG 20205

Sorry Charlie, we've been moving the last few days and are just now getting back to business.

This project involves the continued dredging of the Baltimore Harbor and Channels. The recommended dredged material placement plan consists of 6 alternatives. This includes the continued use of several open water placement sites in Virginia (Dam Neck - Virginia Beach, Rappahannock Shoal, and Wolf Trap - Matthews County), island restoration in the Middle Bay, and wetland restoration in Dorchester County, MD.

We support the measures described to minimize adverse impacts upon wildlife resources under our jurisdiction due to this project. This includes following a time-of-year restriction (TOYRs) for dredging activities to avoid sea turtle impacts. If any dredging occurs during the TOYR, it must adhere to the Biological Opinion requirements. If additional coordination is necessary regarding sea turtles, birds, or marine mammals, we recommend contacting VDGIF Eastern Shore Biologist Ruth Boettcher (757-442-2429; Ruth.Boettcher@dgif.virginia.gov). 1

We recommend that the design of any restored/created islands or wetlands take into consideration the needs of wildlife. This should include designing the dykes to facilitate movement by semi-aquatic species, such as turtles.

Thank you,

Andrew K. Zadnik
Environmental Services Section Biologist
Department of Game and Inland Fisheries
4010 West Broad Street
Richmond, VA 23230

(804) 367-2733
(804) 367-2427 (fax)

>>> "Ellis,Charles" <chellis@deq.virginia.gov> 03/17/05 09:51AM >>>
Everybody - I need your comments on this Draft EIS when you get a chance. I think that the document was on CDs for most of us.

Thanks very much.

Charlie Ellis

DEQ, Office of Environmental Impact Review

March 17, 2005

COMMENTER S-10

COMMONWEALTH of VIRGINIA

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Marine Resources Commission
2600 Washington Avenue
Third Floor
Newport News, Virginia 23607

William A. Pruitt
Commissioner

March 24, 2005

Post-it® Fax Note 7671	Date 3-24-05 # of pages ▶ 4
To Charles Ellis	From Tony Watkinson
Co./Dept. DEQ	Co. VMRC
Phone #	Phone # 757-247-2255
Fax # 804-698-4319	Fax #

Mr. Charles H. Ellis, III
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219

RE: Baltimore Harbor and Channels, Dredged Material Management Plan Draft Tiered EIS (Army Corps of Engineers, Baltimore District) DEQ-05-033F

Dear Mr. Ellis:

In response to your request for our review of the above-referenced document, we offer the following comments.

By virtue of a 1981 agreement between the Virginia Secretary of Commerce & Resources and the Maryland Secretary of Transportation (copy enclosed), the Commonwealth of Virginia conditionally designated the Rappahannock Shoal Deep (RSD) and the Wolf Trap (WT) disposal sites for the placement of dredged material "for that part of Baltimore's 50' Channel Project located in Virginia waters." The conditions included a monitoring program that would serve to protect and preserve the interests of the Commonwealth of Virginia and the ability of the Commonwealth to designate alternate disposal sites. These conditions specifically require that the material to be disposed in these, or any subsequently designated alternate sites, originate from within that portion of the Baltimore Channel in Virginia waters. 1

In addition to the foregoing, please be advised that both the RSD and WT sites have been shown to be important areas for commercially important fishery resources. We refer you to our March 30, 2001, letter to Mr. Robert Blama, Baltimore District COE, and to the January 4, 2005 Final Report entitled "Impact of York River Entrance Channel Dredge Material at the Wolf Trap Material Placement Area on the Blue Crab Spawning Stock" by the Virginia Institute of Marine Science, which addresses potential impacts from dredge material placement on hard clams in the RSD area and on blue crabs in the WT area. These resources must be considered in any planning efforts. 2

We hope these comments meet your needs. Thank you for the opportunity to provide comments on this project. Should you have any questions, please don't hesitate to call me at (757) 247-2255.

Sincerely,

fr Tony Watkinson
Deputy Chief, Habitat Management

TW/JMW/bac
HM
Enclosures
cc: Commissioner William A. Pruitt
Mr. Robert W. Grabb, Chief, Habitat Management

April 24, 1981

The Honorable James J. O'Donnell
Secretary, Maryland Department of
Transportation
Post Office Box 8755
Baltimore Washington International Airport
Maryland 21240

Dear Secretary O'Donnell:

The Commonwealth of Virginia is pleased to submit this letter providing for the designation of disposal sites for that part of Baltimore's 50' Channel project located in Virginia waters.

Section 101 of the River and Harbor Act, December 31, 1970, PL91-611, authorizes construction of the Baltimore 50' Channel project, and requires local assurances from nonfederal interests. Item "a" of those requirements calls for the affected nonfederal interests, in this case the Commonwealth of Virginia, to provide the federal government with suitable sites for placement of dredged material resulting from the initial dredging and subsequent maintenance of the project.

In response to that requirement, the Commonwealth of Virginia agrees to the following:

1. Ocean disposal of dredged material from the initial dredging and subsequent maintenance of the Cape Henry Channel section and stockpiling of acceptable material at the Ft. Story or an acceptable alternate site for future use by the Commonwealth.

2. In the Chesapeake Bay, the use of the Rappahannock Shoal Deep and the Wolf Trap disposal sites for the placement of dredged material from the initial dredging and subsequent maintenance will be permitted only if all conditions in paragraph 1 below are met.

It is understood that the use of the disposal sites in the Chesapeake Bay, as described above, is contingent upon satisfaction of the following conditions:

1. That the Corps of Engineers, in concert with the Commonwealth, will continue to work to develop a satisfactory monitoring program which includes the spoil disposal sites for the Baltimore 50' Channel project that will serve to protect and preserve the interests of the Commonwealth of Virginia and its citizens. This monitoring program will be developed and initiated prior to any actual placement of dredged material, in order to establish an existing baseline condition in the disposal areas. A portion of the monitoring may be application of sediment dispersion modeling developed by Waterways Experiment Station (WES) as appropriate.

2. That the Commonwealth prior to or during the course of construction of the project may designate alternative disposal sites in the Bay of similar costs, capacities and convenience as the agreed sites. The Commonwealth will designate these alternate sites in sufficient time to allow for baseline monitoring and evaluation and not delay the dredging of the project.

The Commonwealth of Virginia agrees to these actions which will be accomplished without cost to the Commonwealth. Any claims resulting from this construction will not be borne by the Commonwealth of Virginia.

It is also requested that once the project is under construction any contestable issue would result in immediate contact with the Commonwealth.

Sincerely,

Maurice B. Rowe
Secretary of Commerce & Resources

George M. Walters
Secretary of Transportation

cc: The Honorable John N. Dalton
Colonel Douglas Haller
Mr. James Moore

Ellis,Charles

From: Tom Barnard [barn@sweethall.wetlan.vims.edu]
Sent: Thursday, March 24, 2005 11:54 AM
To: Ellis,Charles
Cc: dobrien@vims.edu; rom@vims.edu
Subject: Draft EIS for Baltimore Harbor and Channels Dredged Materials Management Plan

Charlie,

Given the results of recent blue crab research efforts in the Bay and the resultant changes in the blue crab management policy which have occurred over the recent past, as well as the
information provided in the Rom Lipcius report on the use of the Wolf Trap Alternate site, we have two recommendations. Both of these appear in Rom's report with the first being to identify a new alternative to the Wolf Trap overboard site for future dredging and if the Wolf Trap site must be used, the recommended placement window be limited to the five months of January 1 through May 31.

I understand that you and the VMRC have Rom's report. Please let us kow if there are any questions.

Tom

Thomas A. Barnard, Jr. *
College of William and Mary * phone (804)684-7383
Virginia Institute of Marine Science * fax (804)684-7179
Center for Coastal Resources Management * email <barn@vims.edu>
P.O. Box 1346 *
1208 Greate Road *
Gloucester Point, VA 23062-1346 *

HAMPTON ROADS
PLANNING DISTRICT COMMISSION

JEANNE ZEIDLER, CHAIR • PAUL D. FRAIM, VICE CHAIRMAN • JAMES O. MCREYNOLDS, TREASURER
ARTHUR L. COLLINS, EXECUTIVE DIRECTOR/SECRETARY

March 15, 2005

Mr. Charles H. Ellis, III
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, Virginia 23219

Re: Baltimore Harbor and Channels,
Dredged Material Management
Plan DEQ #05-033F (ENV:GEN)

Dear Mr. Ellis:

Pursuant to your request of February 11, 2005, the staff of the Hampton Roads Planning District Commission has reviewed the Draft Tiered Environmental Impact Statement for placement of dredged materials generated by the continued dredging of the Baltimore Harbor channels. We have contacted the City of Virginia Beach concerning the project.

Based on this review, it appears that the proposal is consistent with local and regional plans and policies.

We appreciate the opportunity to review this project. If you have any questions, please do not hesitate to call.

Sincerely,

Arthur L. Collins

Arthur L. Collins
Executive Director/Secretary

MLJ/fh

Copy: Mr. H. Clayton Bernick III, VB

A-NPDC

Virginia's Eastern Shore

ACCOMACK-NORTHAMPTON PLANNING DISTRICT COMMISSION
P.O. BOX 417 • 23372 FRONT STREET • ACCOMAC, VIRGINIA 23301
(757) 787-2936 • TOLL FREE (866) 787-3001 • FAX: (757) 787-4221
EMAIL: anpdc@a-npdc.org • WEBSITE: www.a-npdc.org

RECEIVED

FEB 18 2005

DEQ-Office of Environmental Impact Review

February 17, 2005

Ms. Charles H. Ellis, III
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219

Re: 05-033F Baltimore Harbor and Channel Dredged Material Management Plan

Dear Mr. Ellis:

The A-NPDC has reviewed the Army Corps of Engineer's Baltimore Harbor and Channel Dredged Material Management Plan, 05-033F. The activities outlined in this analysis do not conflict with regional plans.

On behalf of the A-NPDC, I would like to thank you for providing the opportunity to comment on this project.

Yours truly,

James M. McGowan, AICP
Director of Planning

cc: Paul F. Berge, AICP
Executive Director

If you cannot meet the deadline, please notify CHARLIE ELLIS at 804/698-4488 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.

B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.

C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MR.CHARLES H. ELLIS III
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319

Charles H. Ellis III

CHARLES H. ELLIS III
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

No Response.

(signed) ____________________ (date) 2-25-05

(title) County Admin.

(agency) Accomack Co. Government

PROJECT # 05-033F **8/98**

Ellis,Charles

From: Clay Bernick [emc@vbgov.com]
Sent: Friday, March 18, 2005 1:04 PM
To: Ellis,Charles
Subject: Re: Comments on Draft EIS on Baltimore Harbor and Channels,Dredged Material Management Plan (DEQ-05-033

Charlie-

We reviewed the draft and have no substantive comments to offer. We also advised HRPDC of this and it is reflected in their written comments, I believe. Thanks for providing the document for our review.

Clay

Clay Bernick
Environmental Management Administrator
City of Virginia Beach
Department of Planning
Environmental Management Center
2405 Courthouse Drive
Building 2, Room 115
Municipal Center
Virginia Beach, VA 23456-9040
(757) 427-4621 Reception
(757) 426-5667 Fax
(757) 427-4899 Voice Mail
cbernick@vbgov.com Email

>>> "Ellis,Charles" <chellis@deq.virginia.gov> 03/17/05 09:51AM >>>
Everybody - I need your comments on this Draft EIS when you get a chance. I think that the document was on CDs for most of us.

Thanks very much.

Charlie Ellis

DEQ, Office of Environmental Impact Review

March 17, 2005

The College of
William & Mary

Chartered 1693

VIRGINIA INSTITUTE of MARINE SCIENCE
VIMS

FINAL REPORT

Impact of York River Entrance Channel Dredge Material at the Wolf Trap Alternate Dredge Material Placement Area on the Blue Crab Spawning Stock

Romuald N. Lipcius

(Principal Investigator)

Michael S. Seebo and Kristen A. Delano

(Technical Staff)

Department of Fisheries Science

Virginia Institute of Marine Science

The College of William and Mary

Gloucester Point, Virginia 23062

4 January 2005

Situation and Problem Statement

In Chesapeake Bay, the blue crab (*Callinectes sapidus*) has sustained a concurrent, persistent and substantial reduction in the spawning stock, recruitment, larval abundance, and female size (Lipcius and Stockhausen 2002). Spawning stock abundance has declined by 81 %, female size by 8 %, spawning stock biomass by 84 %, and abundance of larvae and postlarvae by approximately an order of magnitude (Lipcius and Stockhausen 2002). In addition, the relationship between spawning stock abundance and postlarval recruitment is positive and significant, indicating that an enhanced spawning stock should produce higher recruitment (Lipcius and Van Engel 1990, Lipcius and Stockhausen 2002) and hence allow for long-term, sustainable exploitation in the fishery and population persistence.

A spawning sanctuary and protected corridor for the blue crab spawning stock was implemented in 2000 to provide the foundation for its enhancement (Lipcius et al. 2001, 2003). Whereas the smaller historical spawning sanctuary did not protect a sufficient fraction of the spawning stock (Seitz et al. 2001), the expanded spawning sanctuary and migratory corridor protects a considerable fraction (~75 %) of the spawning stock (Lipcius et al. 2001, 2003), once those females composing the spawning stock survive to the sanctuary. It is therefore important to identify impacts upon the spawning stock.

This project sought to quantify the distribution and abundance of the blue crab spawning stock in the vicinity of the Wolf Trap Alternate Dredge Material Placement Area (WT, Appendix Figure 1), and to determine the impact of this activity on the local spawning stock using WT. The information derived from this project complemented that gathered by VIMS Trawl Surveys (VTS/ChesMMAP) and the VIMS Winter Dredge Survey (WDS), which were funded by alternative sources (Commonwealth of Virginia and NOAA). The VTS and WDS generated data for assessment of the blue crab spawning stock in Chesapeake Bay. A geographical stratification was employed to obtain complete spatial coverage and to provide indices of abundance. This project used information gathered by the VTS and WDS, and was thus a cost-effective means of conducting the study.

Objectives

The aim was to assess the extent to which material placement in WT from dredging in the York River Entrance Channel might reduce the Chesapeake Bay blue crab spawning stock using WT. We determined whether or not a significant loss might occur by comparing blue crab abundance in the WT site with that in the surrounding region. Specifically, we completed the following objectives:

1. We quantified blue crab abundance through trawling or dredge surveys at the WT site in August prior to dredging and material placement, at the end

of September during dredging and material placement, and in November/December after dredging and material placement. We also utilized additional information gathered by the VTS and WDS for the remainder of the Bay at no additional cost. Dredge tows were 127.0 m l x 1.86 m w (236.22 m^2). Trawl tows were 385.0 m l x 5.18 m w (1995 m^2).

2. We performed a spatial statistical analysis of the lower Bay spawning stock data from this project and from the VTS to assess impact of WT material placement activities on the Bay spawning stock using WT.

Results

Mature female abundance inside and outside WT

Mature females were significantly more abundant inside WT than outside in one

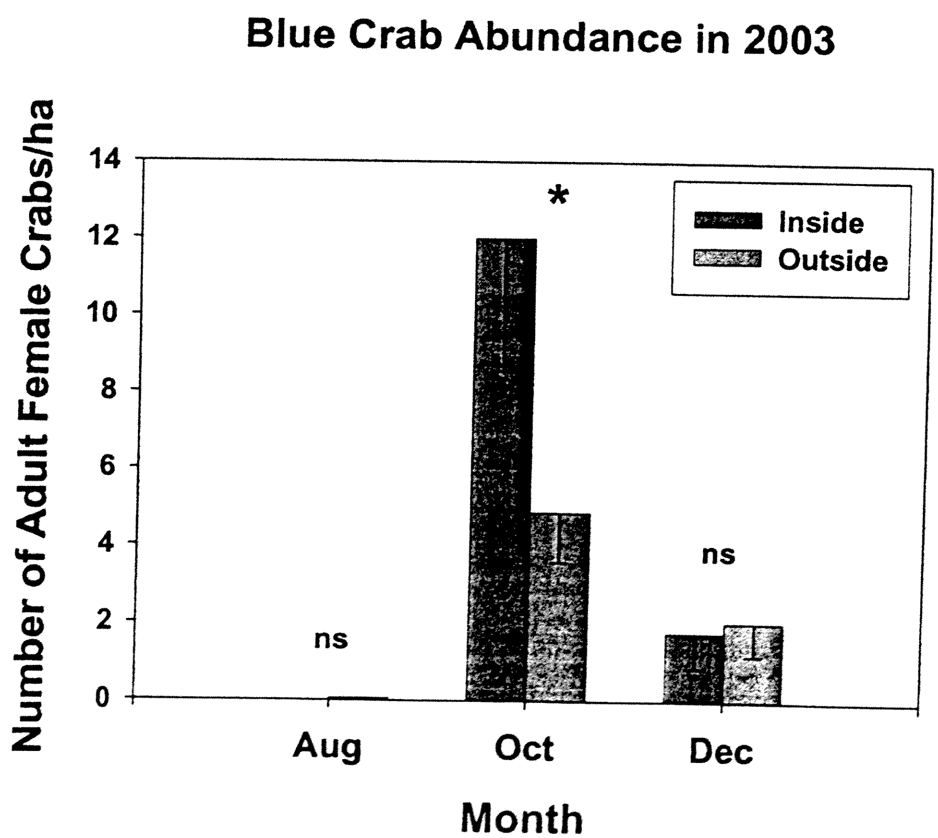


Figure 1. Density of mature females inside and outside the Wolf Trap placement area. Each value represents the mean density of approximately 20 trawl or dredge samples. The vertical lines inside of each bar represent one standard error. The * denotes a statistically significant difference between inside and outside areas, whereas the ns denotes non-significance (Analysis of Variance, $\alpha = 0.05$).

(October) of the three months (Figure 1). In the other two months (August and November/December) there was no difference in abundance of mature females inside and outside WT (Figure 1).

Seasonal abundance of mature females inside WT

Mature females were moderately and seasonally abundant inside WT (Figure 2). Females were significantly more abundant inside WT during October than during December (Figure 2). Abundances in both of these months were significantly higher than that in August, when no females were captured in WT (Figure 2). The passage of Hurricane Isabel in September may have temporarily increased abundance in WT when sampling occurred in October.

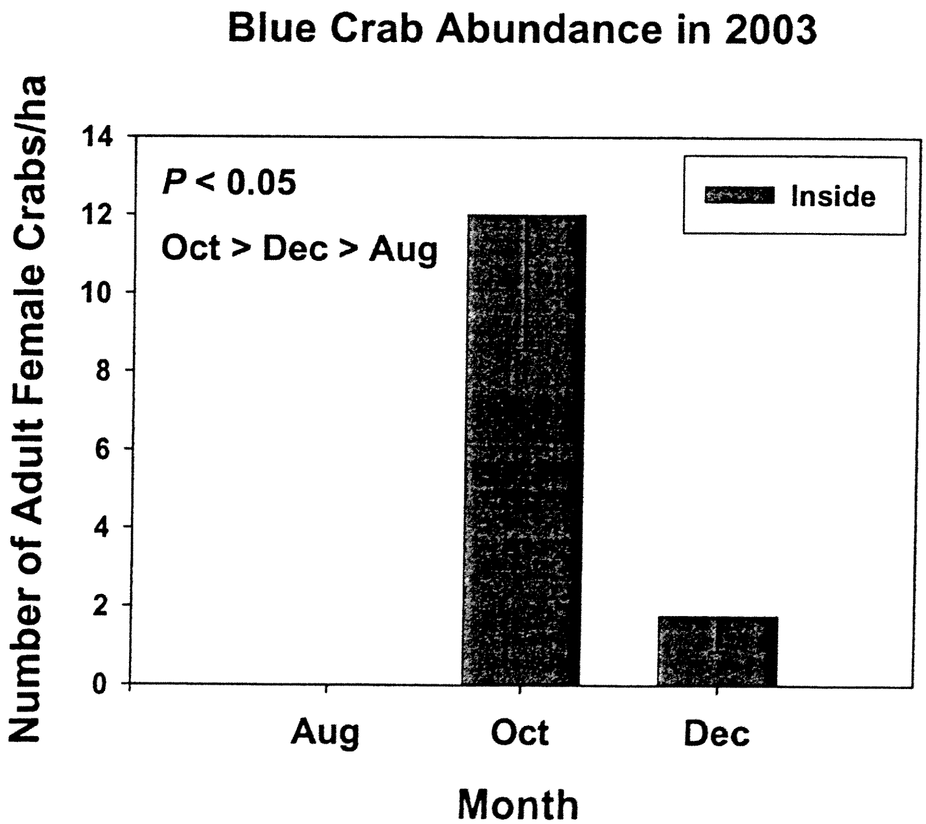


Figure 2. Density of mature females inside the Wolf Trap placement area. Each value represents the mean density of approximately 20 trawl samples. The values for each month differed significantly from each other, with abundance of mature females significantly higher in October and significantly lower in August (Analysis of Variance, Tukey's multiple comparison test, $\alpha = 0.05$); i.e., October was higher than December, and both were higher than August). Vertical lines inside of each bar represent one standard error.

Seasonal abundance of mature females outside WT

Mature females were not abundant outside of WT (Figure 3). Although the seasonal pattern in abundance outside WT (Figure 3) was similar to that inside WT (Figure 2), the low monthly abundances precluded detection of significant differences between months.

Incidence of dead females in WT

We used the WDS to conduct approximately 20 dredge survey tows within WT in early December after dredge placement had occurred, and found no evidence of dead or injured blue crabs, whether mature or immature, male or female.

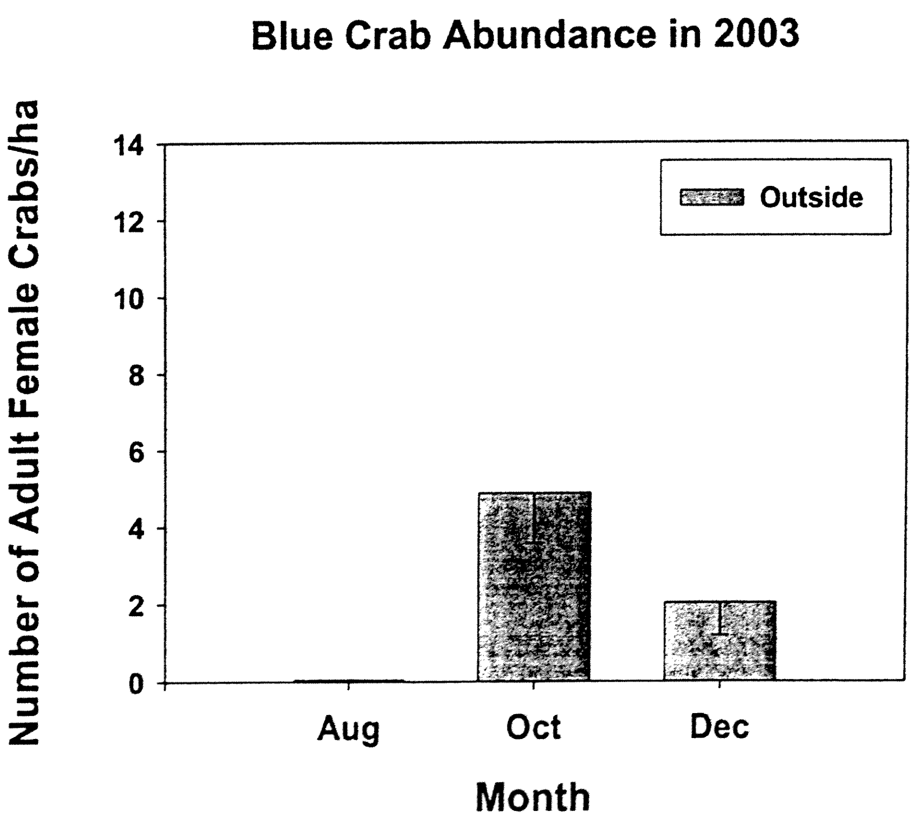


Figure 3. Density of mature females outside the Wolf Trap placement area. Each value represents the mean density of approximately 20 trawl samples. None of the monthly values differed significantly from each other (Analysis of Variance, Tukey's multiple comparison test, $\alpha = 0.05$). Vertical lines inside of each bar represent one standard error

Spatial analysis of spawning stock abundance in 2002 relative to WT

In March 2002, mature female abundance was high in the WT area (Figure 4).

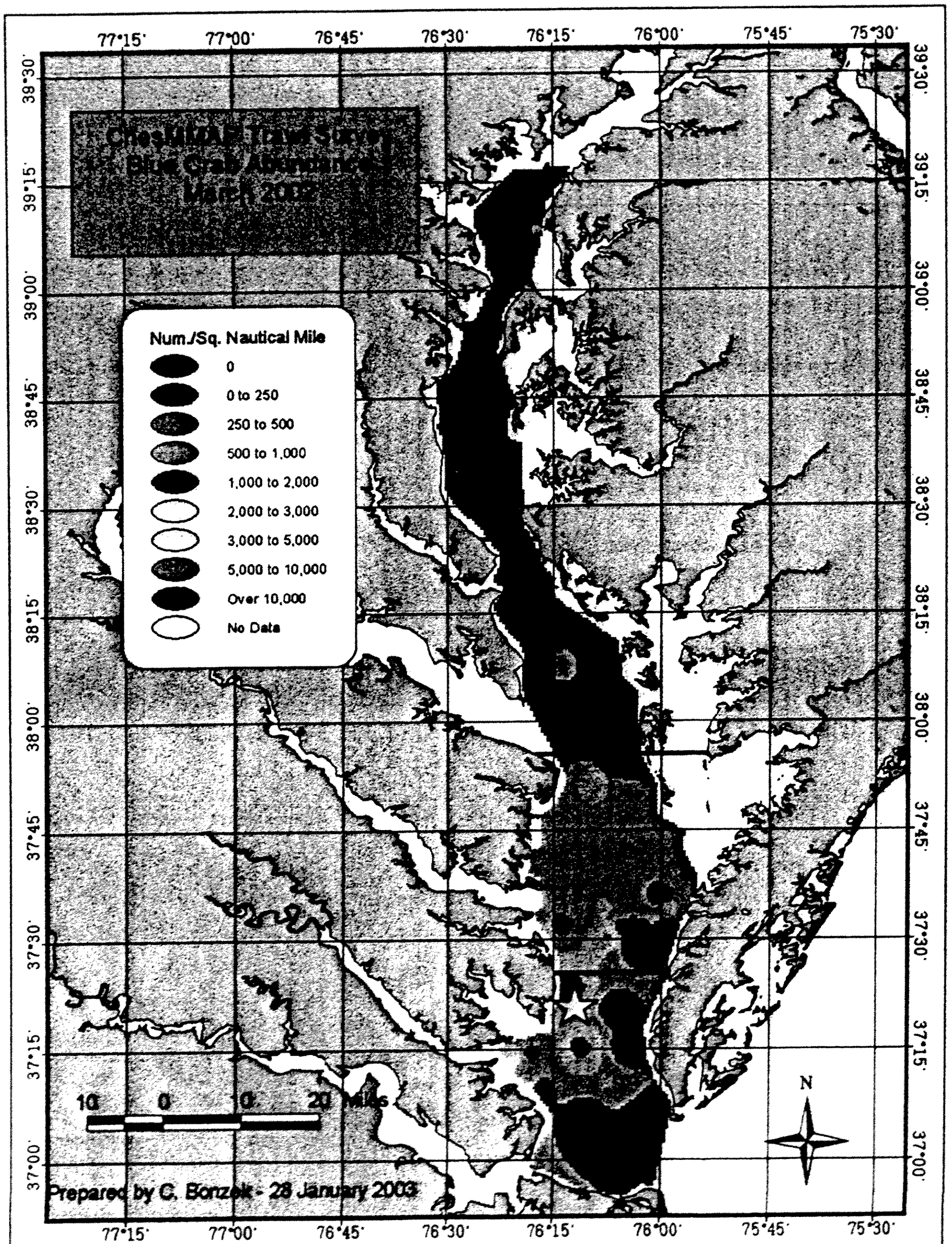


Figure 4. Density contours of mature females in March 2002, based on 20-minute trawl samples of the VIMS Chesapeake Bay Multispecies Monitoring and Assessment Program. Yellow star =

In May 2002, females were abundant north and east of WT, but not in WT (Figure 5).

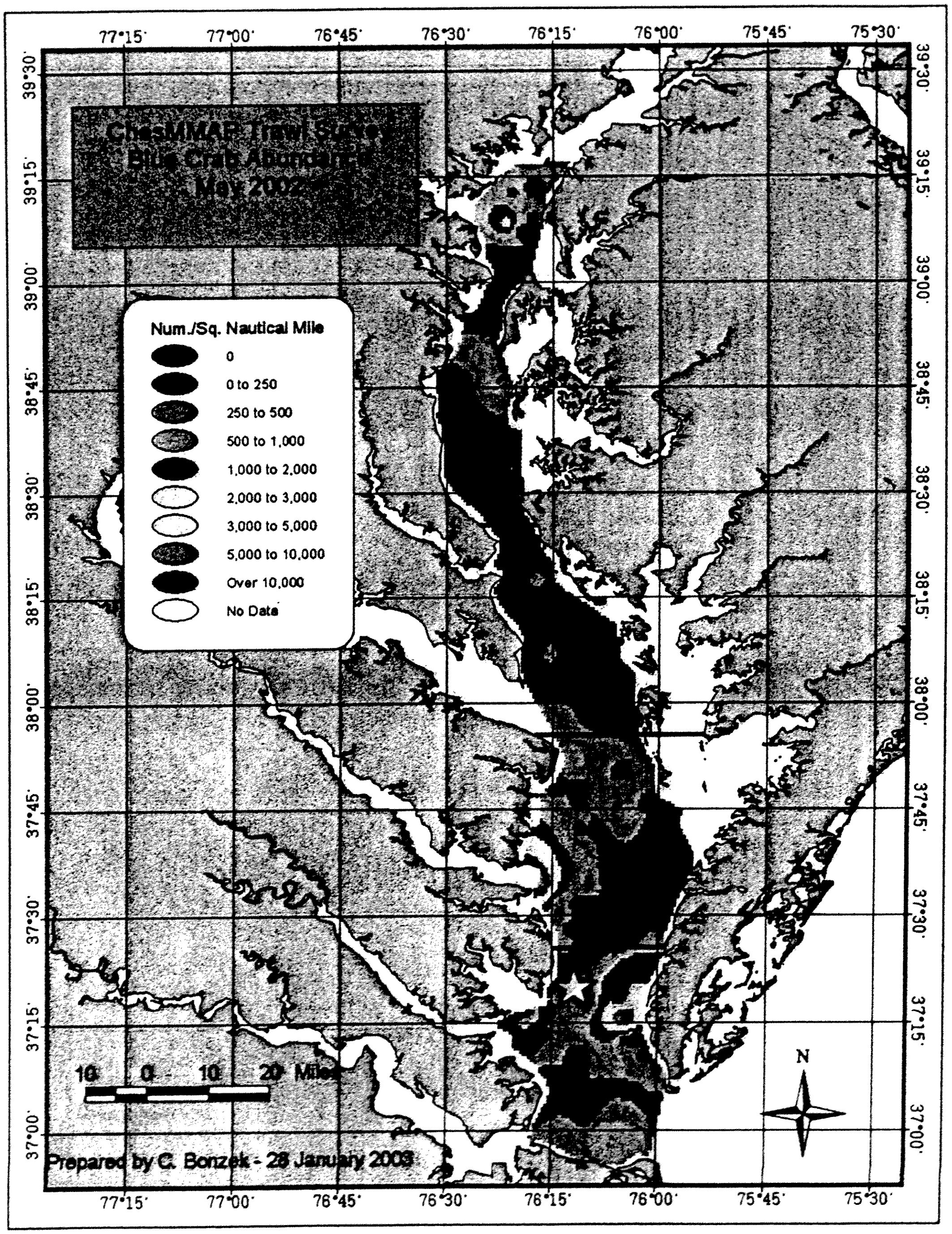


Figure 5. Density contours of mature females in May 2002, based on 20-minute trawl samples of the VIMS ChesMMAP. Yellow star = WT.

In July 2002, female abundance remained high north and east of WT, and increased to moderately high abundance in WT (Figure 6).

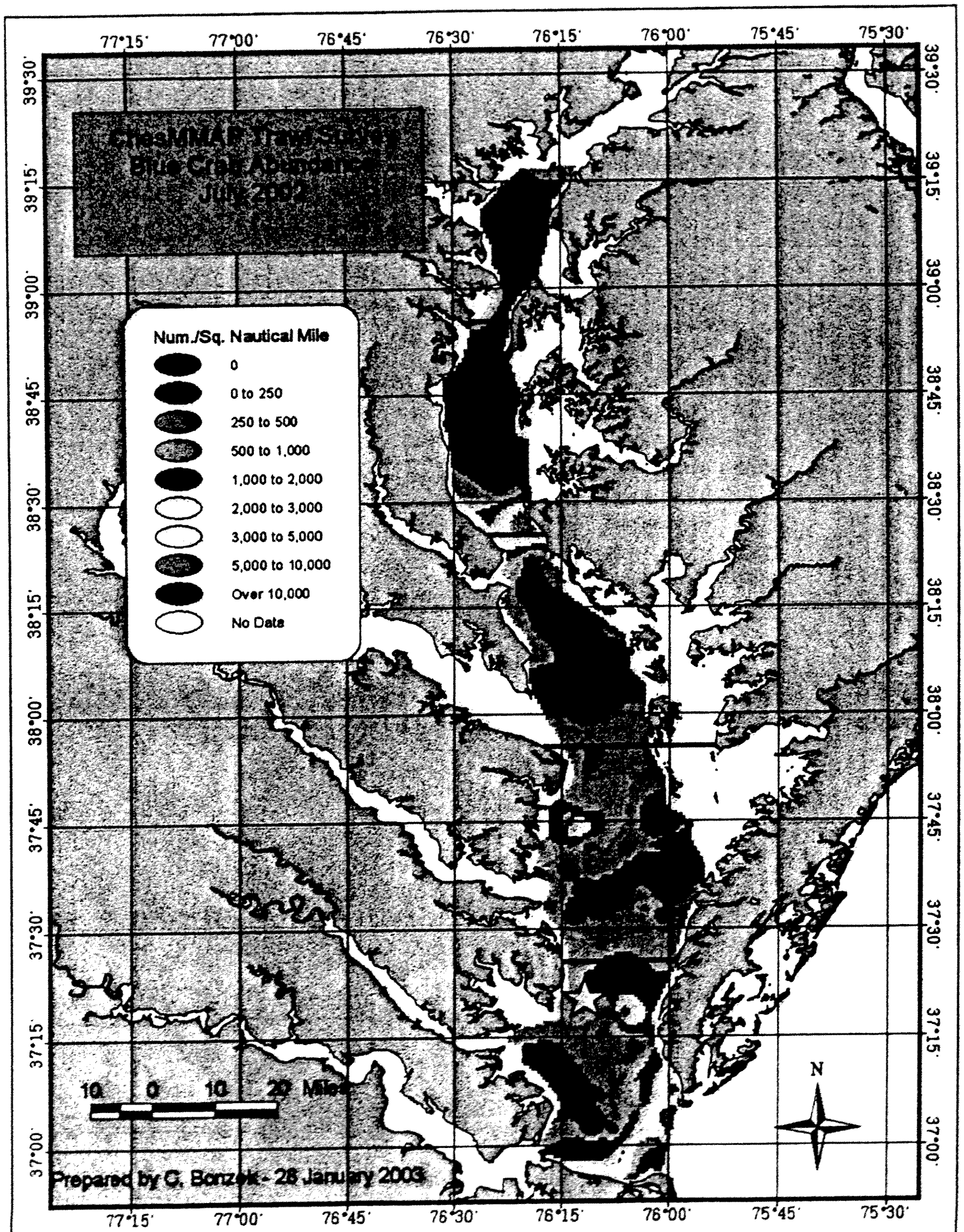


Figure 6. Density contours of mature females in July 2002, based on 20-minute trawl samples of the VIMS ChesMMAP. Yellow star = WT.

In September 2002, as in July, female abundance remained high north and east of WT, and was at low abundance in WT (Figure 7).

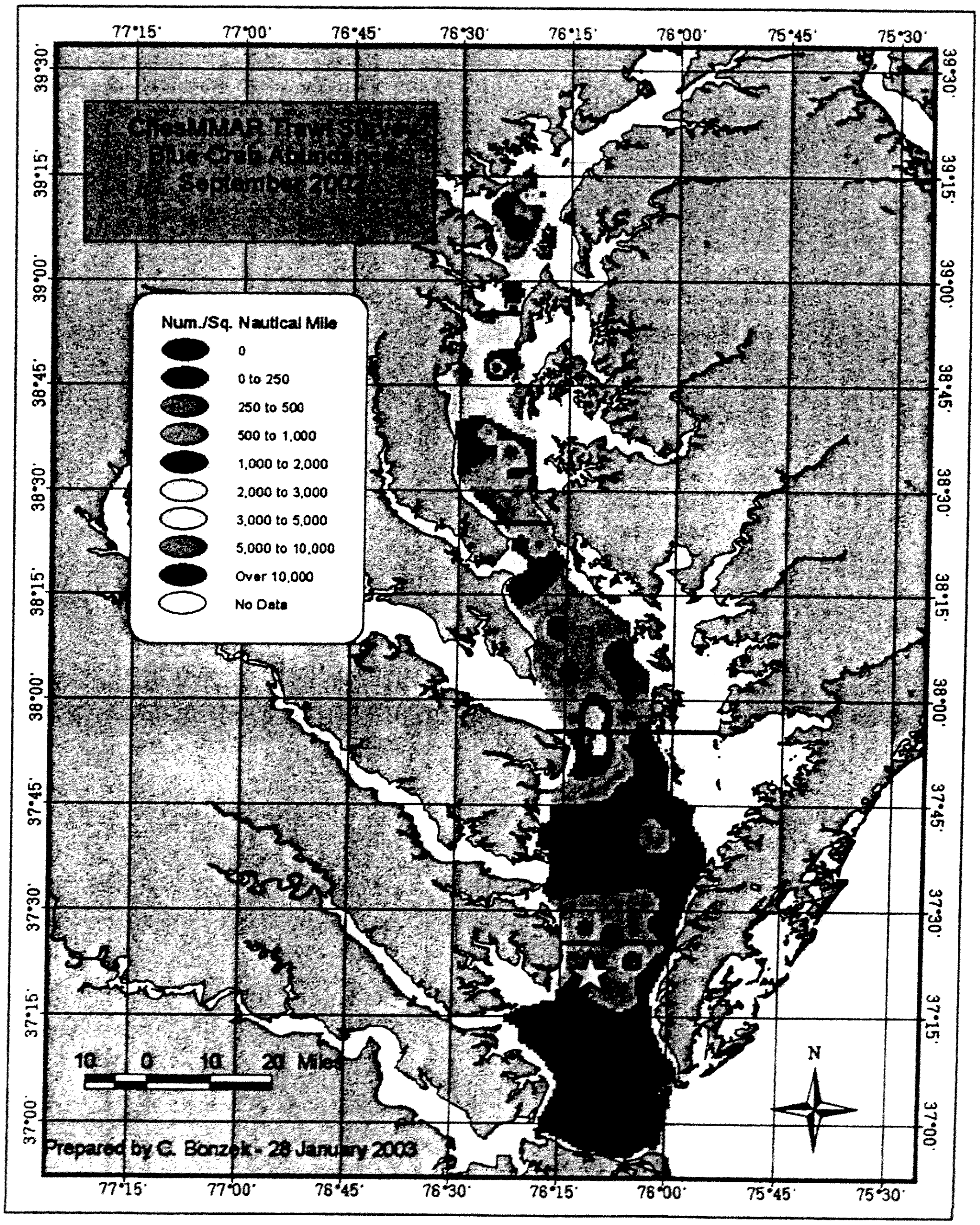


Figure 7. Density contours of mature females in September 2002, based on 20-minute trawl samples of the VIMS ChesMMAP. Yellow star = WT.

During the final trawl survey of 2002, in November, mature female abundance was high throughout the lower Bay, including the WT area (Figure 8).

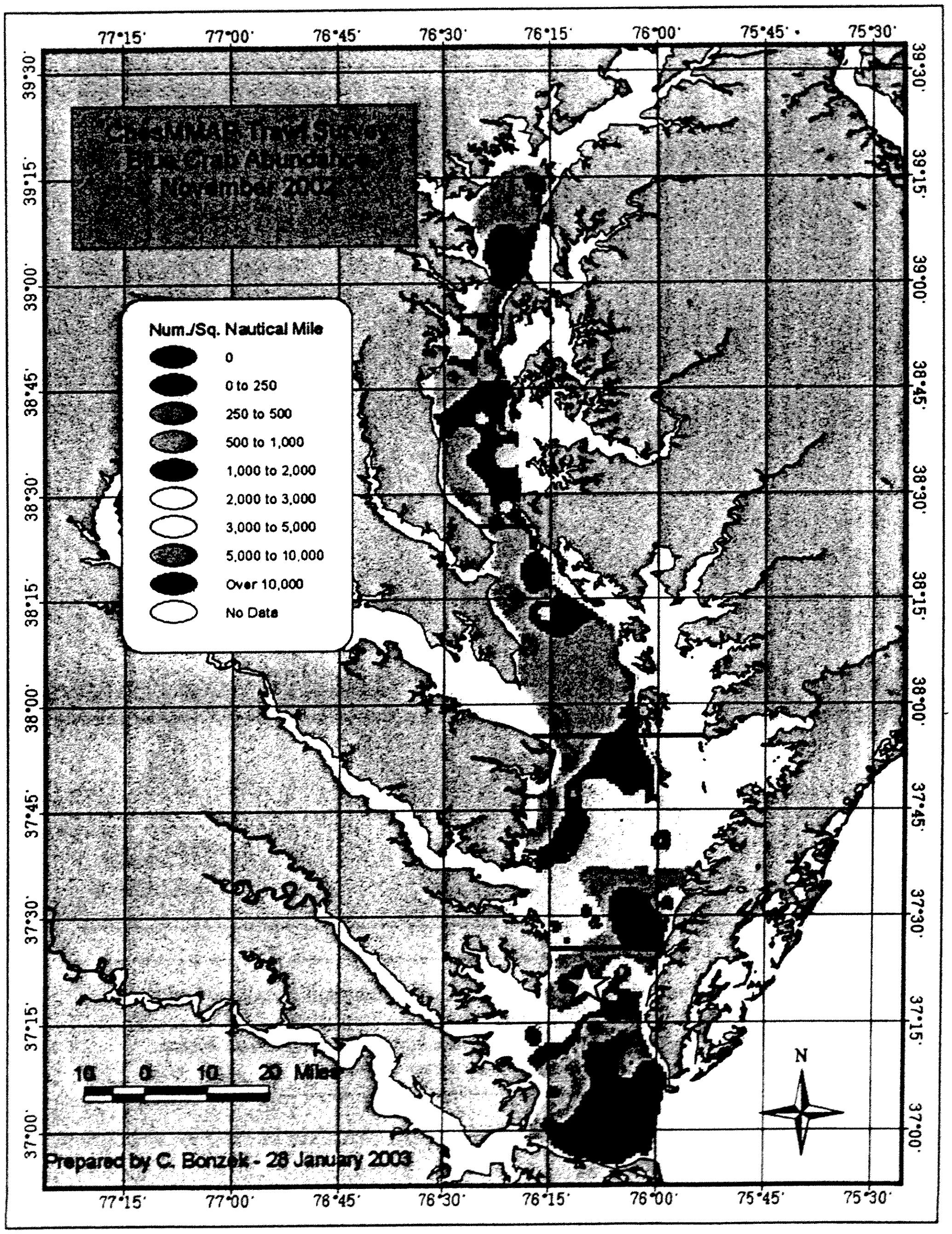


Figure 8. Density contours of mature females in November 2002, based on 20-minute trawl samples of the VTS/ChesMMAP. Yellow star = WT.

Adult Females

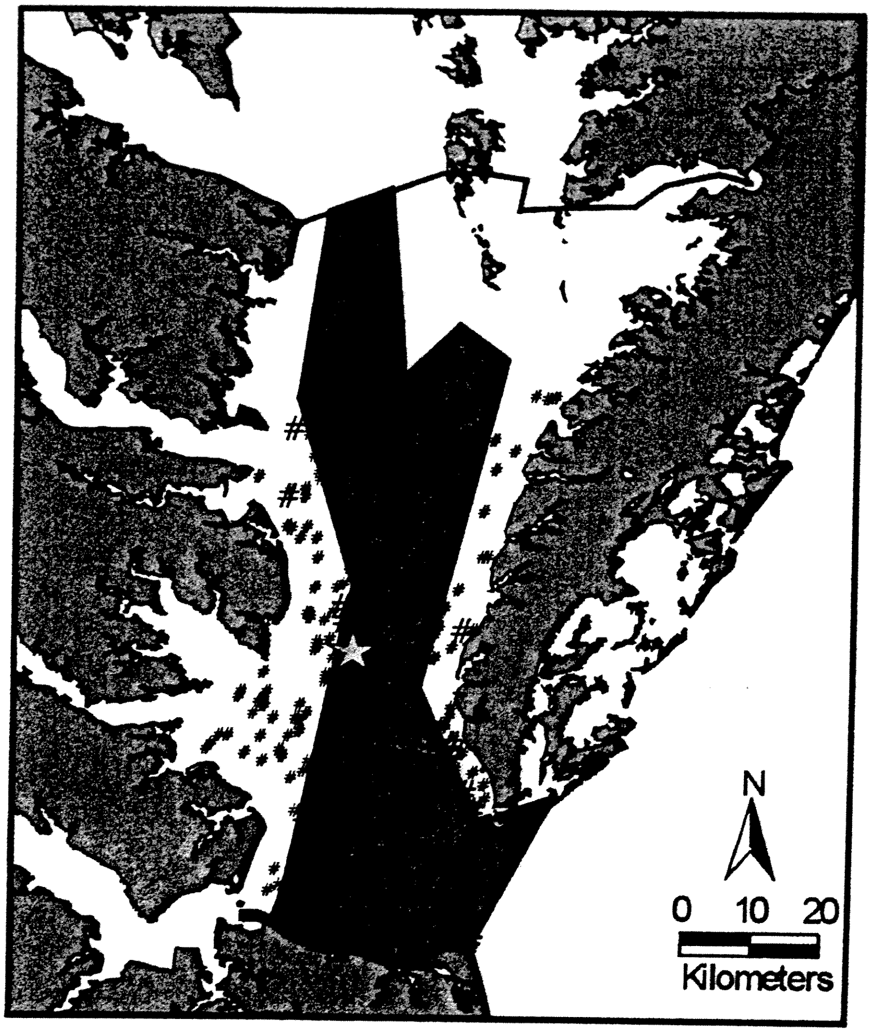


Figure 9. Average densities of mature females in the lower Chesapeake Bay over three years, during June-September. Each symbol represents a site where female abundance was high; larger symbols denote higher concentrations. Figure adapted from Lipcius et al. (2003). Yellow star = WT.

Spawning stock abundance during the reproductive period in the spawning grounds

Abundance of mature females is usually moderate in the WT area during the reproductive period (June-September), as evidenced by the VTS (Figure 9).

Heavier concentrations of mature females occur in the region surrounding WT to the south, east and north (Figure 9).

Mature female abundance during wintertime

Abundance of mature females in the winter (late November through March) is moderate to high in WT and the surrounding region (Figure 10), reflecting the accumulation of females after their migration from other parts of the Bay towards the spawning grounds.

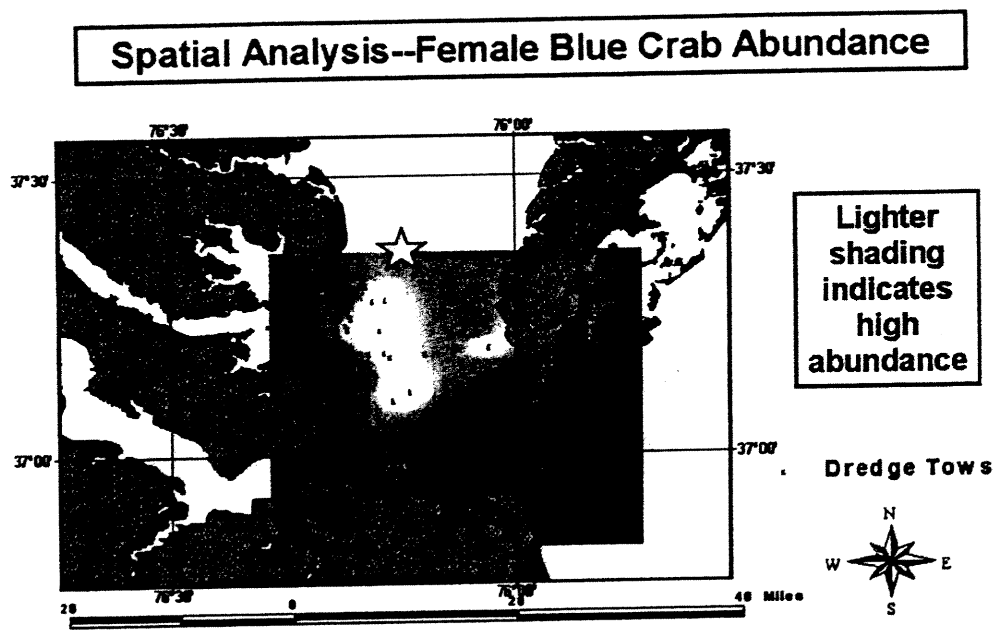


Figure 10. Geostatistical (spatial) analysis of the overwintering blue crab potential spawning stock. Points indicate sampling locations of the WDS from November, 2002 through March, 2003. Figure adapted from Lipcius, Hoenig and Walter (unpublished report, 2003). Yellow star = WT.

Conclusions

Wintertime—December through March

From late November through March, mature females are abundant in the WT area, though abundance declines through February and March as the winter dredge fishery exploits these females. From the measured density of mature females in December (1.77 per ha) and the approximate area of WT and its buffer (Appendix Figure 1, 1812 ha), we estimate that there were about 3,207 mature females in WT and its buffer zone in winter. This is a small fraction of the spawning stock, even when the spawning stock is in low abundance at about 2,000,000 females (Seitz et al. 2001). However, in winter females are inactive due to cold temperatures (i.e., below 50°F), and could not avoid being buried by sediment deposited during dredge placement activities, such that all females in WT would likely perish were they to be covered by sufficient dredge material.

Spring and Summer—April through September

In spring and early summer, mature females can be at low or high abundance in WT, ranging from fewer than 100 to about 10,000 in WT and its buffer zone. Since water temperatures are usually higher than 50°F, females resident in WT should be able to avoid burial by sediment from dredge placement activities. In addition, even 10,000 mature females is a relatively small fraction of the lowest annual spawning stock of approximately 2,000,000 females (Seitz et al. 2001), although most females at this time are actively reproducing in the lower Bay, including the WT area.

Fall—late September through November

In late summer and fall, females are generally at high abundance in the WT area and surrounding region, ranging from 20,000 to more than 50,000 females in WT and its buffer zone. At this time, females are feeding and migrating to the spawning grounds in the lower Bay to overwinter and spawn the following year. The density and abundance of mature females in WT are sizable during this period, and could represent 5 % or more of the spawning stock when the spawning stock is low. Mature females would likely be covered by sediment from dredge placement activities at this time, though they should be able to avoid burial due to their high activity and ability to migrate. Moreover, there may be some physiological stress and reduced feeding efficiency associated with sedimentation. However, we found no dead females in WT after dredge placement activities in 2003, indicating that despite the high abundance of females in the WT area, they were able to avoid burial and lethal stress. The sub-lethal effects remain unknown.

Composition of blue crabs in WT

Most of the blue crabs captured in WT were mature females (53.4 %; Appendix figure 2). Of the remaining blue crabs, 29.5 % were juvenile females, and 17 %

were males. Consequently, the abundance of all crabs in WT would be roughly double that noted previously for mature females (i.e., approximately 6,000 total crabs in winter; up to 20,000 crabs in spring and summer; and 40,000-100,000 crabs in the fall). These estimates may have been inflated in the fall, however, due to the influence of Hurricane Isabel in September, which caused major distribution changes in the blue crab throughout Chesapeake Bay (personal observation).

Recommendations

1. ***Optimal location for dredge material placement in Chesapeake Bay***

Given that WT is in the lower Bay spawning grounds of the blue crab, and that there are periodically high abundances of mature blue crab females in WT, it is recommended that an alternative dredge material placement site be identified in the future.

2. ***Optimal time for dredge material placement in WT and alternative sites***

The *per capita* impact (i.e., upon each crab in WT) of dredge material placement in WT upon the blue crab spawning stock and population would be most severe in winter when crabs could not evade sedimentation and burial accompanying dredge material placement. Moreover, the impact of wintertime dredging in the York River Entrance Channel, which is within the migration corridor for females traveling to the lower Bay over-wintering and spawning grounds, is unknown due to the paucity of data during dredging activities. However, many of the crabs potentially impacted by dredging and dredge material placement would be exploited by the winter dredge and spring deep-water-pot fisheries. Furthermore, the estimated fraction of the potential spawning stock impacted by dredge material placement would be at most about 1 % of the actual spawning stock, though this estimate does not include the effect of dredging in the York River Entrance Channel. Given the relatively low impact of dredge material placement upon the spawning stock, dredge material placement in wintertime is not likely to affect the blue crab spawning stock or population severely, and is thus not ill advised.

In spring, both the *per capita* and the population impact of dredge material placement activity upon the spawning stock would probably be minimal. The *per capita* impact is assumed low because mature females in WT should be able to avoid burial by sediment from dredge placement activities when water temperatures are higher than 50°F, as occurs in the spring. The population impact is assumed to be relatively low during spring because mature females are not consistently at high abundance in WT and because the fraction of the potential spawning stock in WT is no more than approximately 1-2 % of the lowest annual spawning stock. As in winter, dredge material placement in spring is not likely to degrade the blue crab spawning stock or population appreciably, and is therefore also not imprudent.

In summer and fall, the *per capita* impact of dredge material placement in WT upon the blue crab spawning stock and population would probably be low because, as in spring, mature females in WT should be able to avoid burial by sediment from dredge placement activities when water temperatures are high. However, the population impact may be considerable because abundance of mature females in WT is sizable during this period, and could represent 5 % or more of the spawning stock when the spawning stock is low. Moreover, females are migrating to the lower Bay via the York River Entrance Channel and through the WT area, and may suffer stress or mortality from dredging and dredge material placement activities. Furthermore, females in WT within the spawning sanctuary would not be exploited and thus able to reproduce if left undisturbed. Hence, dredging and dredge material placement during summer and fall (June 1 – December 31) are not advisable. The June 1 initiation is consistent with the philosophical foundation of the Virginia Spawning Sanctuary, which is effective from June 1 – September 15. The December 31 end date allows exploitation by watermen in the winter dredge fishery from December 1-31, and thereby minimizes conflicts between dredging activities and the winter dredge fishery.

Consequently, pending the acquisition of further data, the recommended period for future dredging and dredge material placement activities in WT is the five months from January 1 to May 31. This is a modification of the previous recommendation to focus dredge material placement activities during the fall and winter, and is due to the new analysis of potential fall and wintertime impacts.

3. *Critical data, monitoring and research needs*

There is a critical need for further data acquisition regarding the impact of dredging and dredge material placement activities (1) with respect to pre-dredging and post-dredging monitoring within and near the impacted areas, (2) with respect to the benthic communities (i.e., food for blue crabs) in the impacted areas, (3) with respect to the effects of dredging in the York River Entrance Channel, and (4) with respect to alternative dredge material placement sites.

Acknowledgements

We thank P. Gerdes for assistance with trawl sampling; C. Bonzek for the ChesMMAP spatial statistical analyses; J. Walter for the WDS spatial analysis; C. Machen, captain of the Langley (VIMS research vessel), and a crew member who assisted with the crab sampling.

References

Lipcius, R. N. and W. T. Stockhausen. 2002. Concurrent decline of the spawning stock, recruitment, larval abundance, and size of the blue crab *Callinectes sapidus* in Chesapeake Bay. Mar. Ecol. Prog. Ser. 226: 45-61.

Lipcius, R. N. and W. A. Van Engel. 1990. Blue crab population dynamics in Chesapeake Bay: variation in abundance (York River, 1972-1988) and stock-recruit functions. Bull. Mar. Sci. 46: 180-194.

Lipcius, R. N., M. M. Montane and B. J. Rothschild (*in press*). Interannual decline, compensatory mortality, and conservation of the Chesapeake Bay blue crab population in winter. Fish. Bull.

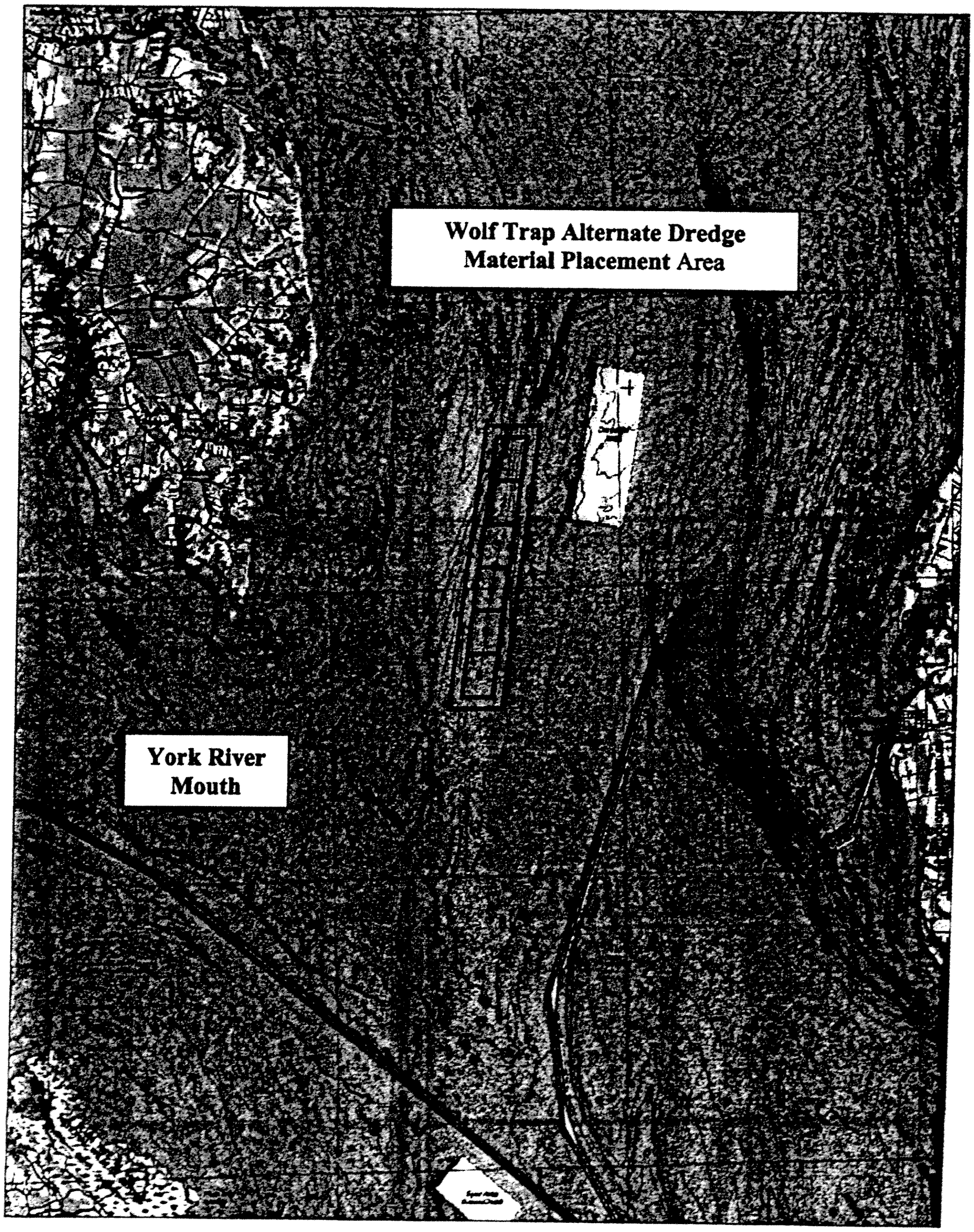
Lipcius, R. N., R. D. Seitz, W. J. Goldsborough, M. M. Montane and W. T. Stockhausen. 2001. A deep-water marine dispersal corridor for adult female blue crabs in Chesapeake Bay. Spatial Processes and Management of Marine Populations. (Eds. G. H. Kruse, N. Bez, A. Booth, M. W. Dorn, S. Hills, R. N. Lipcius, D. Pelletier, C. Roy, S. J. Smith, and D. Witherell). University of Alaska Sea Grant, AK-SG-01-02, Fairbanks.

Lipcius, R.N., W.T. Stockhausen, R.D. Seitz and P.J. Geer. 2003. Spatial dynamics and value of a marine protected area and corridor for the blue crab spawning stock in Chesapeake Bay. Bull. Mar. Sci. 72: 453-469.

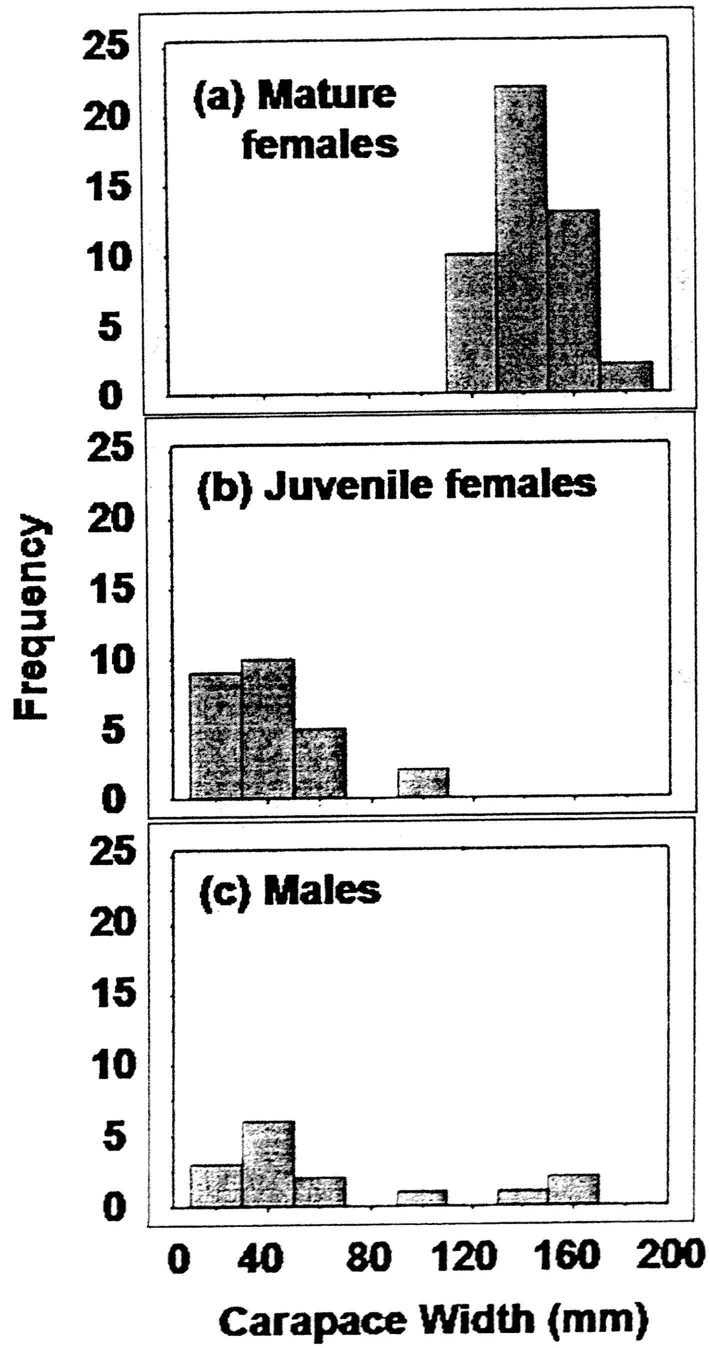
Schaffner, L. C. and R. J. Diaz. 1988. Distribution and abundance of overwintering blue crabs, *Callinectes sapidus* in the lower Chesapeake Bay. Estuaries 11(1): 68-72.

Seitz, R. D., R. N. Lipcius, W. T. Stockhausen and M. M. Montane. 2001. Efficacy of blue crab spawning sanctuaries in Chesapeake Bay. Spatial Processes and Management of Marine Populations (Eds. G. H. Kruse, N. Bez, A. Booth, M. W. Dorn, S. Hills, R. N. Lipcius, D. Pelletier, C. Roy, S. J. Smith, and D. Witherell). University of Alaska Sea Grant, AK-SG-01-02, Fairbanks.

Appendix Figure 1. The six cells of the Wolf Trap Alternate Dredge Material Placement Area and a fringing buffer zone. The area is northeast of the York River mouth.



Appendix Figure 2. Size frequency histograms of mature female (a), juvenile female (b), and male (c) blue crabs captured by trawl and dredge surveys August-December 2003 in the Wolf Trap Alternate Dredge Material Placement Area. N = 47 for mature females; 26 for juvenile females; and 15 for males.



COMMENTER S-11

STATE of MARYLAND
DREDGE MATERIAL MANAGEMENT PROGRAM
CITIZENS' ADVISORY COMMITTEE

03/23/2005

Mr. Mark Mendelsohn
US Army Corps of Engineers, Baltimore District
P.O. Box 1715
Baltimore, MD 21203-1715

Dear Mr. Mendelsohn:

I am writing on behalf of the Citizens' Advisory Committee to Maryland's Dredged Material Management Program. We wish to comment on the draft Baltimore Harbor and Channels Dredged Material Management Plan and Tiered Environmental Impact Statement produced by the Baltimore District.

Over the past 18 months the Citizens' Advisory Committee has worked closely with the Corps on the development of this DMMP. We have served as a sounding board for the Corps and its consultant, Weston Solutions, and have provided ongoing comment and critique as the draft has been developed. Based on our understanding of the Federal perspective of the Corps' DMMP, we offer the following comments:

1. The Corps has worked diligently with CAC on this DMMP. We believe that by also working in partnership with the Maryland Port Administration, various public interest groups, the scientific community, and private citizens, the Corps has developed a long term, cost effective dredging plan for the Port of Baltimore. We encourage the Corps to work closely with MPA and to continue to integrate the State DMMP, which is currently being developed, with their own in order to prevent duplication of effort. It appears that this proposal meets the need for placement capacity well beyond the required 20 years. **1**

2. We believe that the Corps' draft addresses the multitude of environmental concerns inherent in dredging within the Chesapeake Bay. The Corps used a modified environmental screening tool developed by the Bay Enhancement Work Group that included several parameters required for the EIS. The result we believe is a thorough analysis of a large number of options and a set of recommendations that maximize both capacity and environmental benefits. **2**

3. We are pleased that the "tiered" approach of the Corps plan meshes well with the more specific recommendations of the Harbor Team. We hope to see those recommendations implemented in a timely manner as the process moves forward. **3**

4. We urge the Corps to strengthen the emphasis on innovative reuse of dredged material in this DMMP. The document acknowledges that innovative reuse ought to be part of a long term strategy, but implementation would be delayed because cost effective strategies are not immediately apparent. As a result of specific goals set by the Harbor Team in their 2003 report to the Management Committee, the CAC believes that greater emphasis must be placed on innovative reuse. It must be one of the recommended strategies in the final plan. Measured resources must be devoted to following up on the recommendations that emerged from the Innovative Reuse Forum sponsored by the MPA in December 2004. We believe that lack of a specific strategy for innovative reuse in the current draft is a need that should be addressed before the plan is finalized. **4**

CAC members represent local governments, community groups, business and environmental organizations. Several members, representing their organizations, attended and spoke at the two public meetings held by the Corps in March, 2005. All members were encouraged to publicly comment if their groups had specific concerns. Some will assuredly provide additional comments in writing. At the CAC meeting held on March 9, 2005, members present voted to <u>support</u> the Corps' Draft Baltimore Harbor and Channels Dredged Material Management Plan and Tiered Environmental Impact Statement. In our opinion, the Corps has met the objectives as stated.

We look forward to working with you in the future.

Sincerely,

Francis Taylor
Chair, Citizens Advisory Committee

COMMENTER S-12

MDP

Maryland Department of Planning

Robert L. Ehrlich, Jr.
Governor
Michael S. Steele
Lt. Governor

Audrey E. Scott
Secretary
Florence E. Burian
Deputy Secretary

April 1, 2005

Mr. Mark Mendelsohn
Project Manager, Planning Division
U.S. Army Corps of Engineers
P.O. Box 1715
Baltimore, MD 21203-1715

STATE CLEARINGHOUSE RECOMMENDATION

State Application Identifier: MD20050211-0072
Applicant: U.S. Army Corps of Engineers
Project Description: Draft Baltimore Harbor and Channels Dredged Material Management Plan and Tiered EIS
Project Location: in portions of the Chesapeake Bay
Approving Authority: U.S. Department of Defense
Recommendation: **Consistent with Qualifying Comments and Contingent Upon Certain Actions**

Dear Mr. Mendelsohn:

In accordance with Presidential Executive Order 12372 and Code of Maryland Regulation 14.24.04, the State Clearinghouse has coordinated the intergovernmental review of the referenced project. This letter, with attachments, constitutes the State process review and recommendation based upon comments received to date. This recommendation is valid for a period of three years from the date of this letter.

Review comments were requested from the Maryland Department(s) of Transportation, Natural Resources, the Environment, General Services, Business and Economic Development, Housing and Community Development including the Maryland Historical Trust, Agriculture, the University System of Maryland, the Maryland Emergency Management Agency, the Maryland Environmental Service, the Maryland Military Department, the Counties of Worcester, Wicomico, Talbot, Somerset, Caroline, Carroll, Charles, Dorchester, Harford, Kent, Queen Anne's, Montgomery, St. Mary's, Anne Arundel, Baltimore, Howard, Cecil, and Calvert; the Interstate Commission on the Potomac River Basin, the Baltimore Metropolitan Council, the Towns of Queenstown, Hurlock, Rock Hall, and Chestertown; the Cities of Baltimore, Laurel, and Cambridge; and the Maryland Department of Planning. As of this date, the Maryland Environmental Service, the University System of Maryland, the Counties of Baltimore, Caroline, Dorchester, Harford, St. Mary's, Talbot, Wicomico, Somerset, Montgomery and, Kent; the Towns of Rock Hall, Chestertown, Hurlock, and Queenstown; and the Cities of Cambridge, and Laurel have not submitted comments. **This recommendation is contingent upon the applicant considering and addressing any problems or conditions that may be identified by their review. Any comments received will be forwarded.** Howard County had no comments.

The Maryland Department of Housing and Community Development, including the Maryland Historical Trust (the Trust), and the Interstate Commission on the Potomac River Basin stated that their findings of consistency are contingent upon the Applicant taking the actions summarized below.

The Trust stated that their findings of consistency are contingent upon the Applicant completing the Section 106 consultation with the Trust.

The Interstate Commission on the Potomac River Basin indicated that their findings of consistency are contingent upon the approval of the review document by the reviewing agencies in Maryland, and Virginia.

The Maryland Department of Natural Resources found this project to be generally consistent with their plans, programs, and objectives, but included certain qualifying comments summarized below. The Maryland Department of Natural Resources (DNR) stated that the Tiered EIS should more specifically express the need for additional dredged material placement capacity in Chapter 1. DNR affirmed that important aquifers (i.e. the Aquia, Magothy, Monmouth, and the Potomac) that affect the Middle and Upper Chesapeake Bay are not addressed in Chapter 2. DNR mentioned that an additional summary table, in Chapter 3, would clarify how the volumes, and conversion factors add up to the total site capacity. See the attached letter. 1

The Maryland Department(s) of Agriculture, Business and Economic Development, General Services, Transportation, Environment, the Maryland Emergency Management Agency; the Maryland Military Department; the Counties of Anne Arundel, Carroll, Cecil, Charles, Queen Anne's, and Worcester County; the Baltimore Metropolitan Council; and the Maryland Department of Planning found this project to be consistent with their plans, programs, and objectives. Calvert County stated that the project is not inconsistent with their plans.

The City of Baltimore sought to convene a meeting with the Applicant to discuss the timeline for the Plan, the siting of proposed new containment facilities on the Patapsco River, and possible alternatives to the latter method of relocating dredged material. 2

Any statement of consideration given to the comments should be submitted to the approving authority, with a copy to the State Clearinghouse. The State Application Identifier Number must be placed on any correspondence pertaining to this project. The State Clearinghouse must be kept informed if the approving authority cannot accommodate the recommendation. Please remember, you must comply with all applicable state and local laws and regulations. If you need assistance or have questions, contact the State Clearinghouse staff person noted above at 410-767-4490 or through e-mail at brosenbush@mdp.state.md.us.

Mr. Mark Mendelsohn
April 1, 2005
Page 3

Also please complete the attached form and return it to the State Clearinghouse as soon as the status of the project is known. ***Any substitutions of this form must include the State Application Identifier Number.*** **This will ensure that our files are complete.** Thank you for your cooperation with the MIRC process.

Sincerely,

Linda C. Janey, J.D., Director
Maryland State Clearinghouse
for Intergovernmental Assistance

LCJ:BR
Enclosure(s)
cc: Winfield Miller-Town of Queenstown
Jim Salt – USM
Ruth Mascari - MEMA
Ronald Spalding - MDOT
Ray Dintaman - DNR
John Sparkman - MES
Joane Mueller - MDE
Nelson Reichart - DGS
James Gring - DBED
Beth Cole - DHCD/MHT
Sandy Redmer - MDA
Bill Riley - MILT
Edward Tudor – WRCS
Robert Caffrey – ANAR
George Kinney - TLBT
Martha Baker – BCIT
Gary Pusey – WCMC
Mina Hilsenrath - HOWD
Charles Massey - SMST
Elizabeth Krempasky - CRLN
Steven Horn - CRRL
David Umling – CHAS
Steven Dodd – DRCH
Theresa Raymond - HRFD
Gail Owings - KENT
Faith Rossing - QANN
Lisa Rother – MTGM
George Forrest – STMA
Margo Bailey - Town of Chestertown
Jay Jacobs - Town of Rock Hall
Craig Moe – City of Laurel
Mary Logan - BMC
Bo Park - ICPRB
Lynn Lanham – BLCO
Eric Sennstrom - CECL
Gregory Bowen - CLVT
Don Bradley–Town of Hurlock
Cleveland Rippons- Cambridge City

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COMMENTER S-13

MDP

Maryland Department of Planning

Robert L. Ehrlich, Jr.
Governor
Michael S. Steele
Lt. Governor

Audrey E. Scott
Secretary
Florence E. Burian
Deputy Secretary

April 12, 2005

Mr. Mark Mendelsohn
Project Manager, Planning Division
U.S. Army Corps of Engineers
P.O. Box 1715
Baltimore, MD 21203-1715

STATE CLEARINGHOUSE REVIEW – ADDITIONAL REVIEWER COMMENTS RECEIVED
State Application Identifier: MD20050211-0072
Project Description: Draft Baltimore Harbor and Channels Dredged Material Management Plan and Tiered EIS
Project Location: in portions of the Chesapeake Bay
Clearinghouse Contact: Bob Rosenbush

Dear Mr. Mendelsohn:

We are forwarding the enclosed comment(s) made by the Maryland Department of Housing and Community Development, including the Maryland Historical Trust, the Maryland Environmental Service, and the County of Wicomico regarding the referenced project for your information. The County of Caroline had no comments. See the attached letters, and response form. If you need assistance or have questions concerning this review, please contact the staff person noted above.

Should you have any questions, contact the State Clearinghouse staff person noted above at 410-767-4490 or through e-mail at brosenbush@mdp.state.md.us. Your cooperation and attention to the review process is appreciated

Sincerely,

Linda C. Janey

Linda C. Janey, J.D., Director
Maryland State Clearinghouse for Intergovernmental Assistance

LCJ:BR
Enclosure (Comments Received)
cc: Gary Pusey - WCMC
John Stockman - MES
Beth Cole - DHCD/MHT
Elizabeth Krempasky-CRLN

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COMMENTER S-14

MARYLAND
ENVIRONMENTAL
SERVICE

Robert L. Ehrlich, Jr.
Governor

John S. Sparkman
Director

April 4, 2005

Mr. Bob Rosenbush
Maryland Department of Planning
Room 1104
301 West Preston Street
Baltimore, MD 21201-2305

SUBJ: Maryland Environmental Service (MES) comments to the Draft Baltimore Harbor and Channels Dredged Material Management Plan (DMMP) and Tiered Environmental Impact Statement, State Application Number: MD20050211-0072

Dear Mr. Rosenbush:

Per your request, please find enclosed one hard copy of the Maryland Environmental Service (MES) comments to the Draft Baltimore Harbor and Channels Dredged Material Management Plan (DMMP) and Tiered Environmental Impact Statement. These comments were submitted to the USACE-Baltimore District on March 29, 2005.

The enclosed table includes comments from our subcontractor, EA Engineering, Science and Technology, Inc. as well as MES personnel. Please contact me at 410-729-8333 should you have any questions regarding the submitted documentation.

Sincerely,

Cecelia L. Donovan

Cecelia Donovan
Division Chief
Environmental Dredging and Restoration

Enclosure

cc: John Sparkman, MES

COMMENTER S-15

DHCD
Maryland Department of Housing and Community Development

Robert L. Ehrlich, Jr.
GOVERNOR

Michael S. Steele
LT. GOVERNOR

Victor L. Hoskins
SECRETARY

Shawn S. Karimian
DEPUTY SECRETARY

April 4, 2005

Ms. Linda C. Janey, J.D.
Director
Maryland State Clearinghouse for Intergovernmental Assistance
Maryland Department of Planning
301 West Preston Street
Room 1104
Baltimore, Maryland 21201-2305

Dear Ms. Janey;

This office has received the report prepared to address the Baltimore Harbor and Channels Dredged Material Management Plan (DMMP):

> Draft Baltimore Harbor and Channels Dredged Material Management Plan and Tiered EIS
> State Application Identifier: MD20050211-0072

The extent of effects on historic properties by the outlined projects cannot be determined due to insufficient information. Federal and/or State historic preservation requirements have not been met by this draft document.

Our initial review of Volume II – Appendices; Appendix E - Cultural Resources Study indicates a need for additional archeological research and underwater survey, after the U.S. Army Corps of Engineers selects a finalized DMMP plan. Survey scopes can be developed when DMMP determines more precisely where dredged material will be placed; where new spoils placement will occur or the extent of expansion of existing facilities. 1

Our review identified the need for archeological surveys if existing facilities are expanded (i.e. Hart-Miller Island and Pooles Island open water site), creation of new islands (West of Tolchester Channel), restoration (Parson's Island and Mid –Bay Shoreline), use of open water dumping of spoils (the Deep Trough), or upland deposal sites (Cecil County). Our experience has shown that the potential for cultural resources in any of these options range from the region's earliest, Paleo-Indian sites, to historically significant shipwrecks.

DIVISION OF HISTORICAL AND CULTURAL PROGRAMS

100 Community Place
Crownsville, MD 21032

PHONE 410-514-7600
TOLL FREE 1-800-756-0119
FAX 410-987-4071
TTY/RELAY 711 or 1-800-735-2258
WEB www.mdhousing.org

We request that the Corps maintain consultation with Maryland Historical Trust (MHT) staff, including myself. Please forward all detailed plans as they become available to me as well as MHT's Office of Preservation Services staff.

Further consultation with our office, by the Corps and consultants, will be necessary to fulfill compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. All surveys needs to be performed in accordance with the "Standards and Guidelines for Archeological Investigations in Maryland" (Shaffer and Cole 1994), Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (1983) and direct consultation with Maryland Historical Trust underwater archeologists. 2

Thank you for your early consultation and cooperation. If you have any questions or require further information, please contact me at (410-514-7662) or Mr. Stephen Bilicki (410) 514-7668.

Sincerely,

Susan B.M. Langley, Ph.D.
State of Maryland Underwater Archeologist
200500348
cc: Mr. Bob Rosenbush
Ms. Elizabeth J. Cole
Mr. Stephen R. Bilicki

MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard o Baltimore Maryland 21230-1718
(410) 537-4120

April 29, 2005

Mr. Mark Mendelsohn
Planning Division
U.S. Army Corps of Engineers
P.O. Box 1715
Baltimore MD 21203

RE: MDE Identification Number: ES20050210-0006
Project: Draft Baltimore Harbor and Channels Dredged Material Management Plan

Dear Mr. Mendelsohn:

Thank you for the opportunity to review the above referenced project. The document was circulated throughout the Maryland Department of the Environment (MDE) for review, and the attached comments are for your consideration.

Again, thank you for giving MDE the opportunity to review this project. If you have any questions, please feel free to call me at (410) 537-4120.

Sincerely,

Joane D. Mueller
Clearinghouse Coordinator

Enclosure

Maryland Department of the Environment Comments on the *"Draft Baltimore Harbor and Channels Dredged Material Management Plan and Tiered Environmental Impact Statement"*

Page, Section and Line #	MDE Comment	USACE Response
General Comment	MDE suggests consideration and exploration of innovative and alternative use technologies as a formal DMMP recommendation. In order to have alternative/innovative use as a viable dredged material management option, Maryland must continue to support and encourage its technological development.	
General Comment	MDE encourages the Corps of Engineers to consider the idea of a dredged material re-handling/pre-processing facility that will further support alternative/innovative use concepts. Current dredged material containment facility design and operating procedures do not allow for effective segregation of dredged material. A facility designed with multiple cells to encourage dewatering, separation, and stockpiling of dredged material could supply a steady source of sediment for innovative use projects (i.e., brick or building products manufacturing, mine reclamation, wetland creation, shoreline stabilization, etc.). Such a facility would also promote overland transport of dewatered dredged materials to suitable sites. This facility would also function as a throughput, never filling up, creating unlimited capacity and minimizing the need for future containment facilities throughout Chesapeake Bay.	
General Comment	MDE recommends that the design of each dredged material containment facility, particularly those receiving contaminated material (i.e., the Patapsco River CDFs), include a contingency plan to effectively manage or treat effluent discharge. Special treatment cells or a cascading design whereby effluent is moved from one cell to the next as different phases of treatment proceed prior is one such design. Due to the extremely large volumes of water associated with these facilities, it is very difficult to manage the discharge after a water quality concern has been identified. MDE feels each facility should have the infrastructure in place to treat effluent in stages as it moves towards final discharge.	

Maryland Department of the Environment Comments on the *"Draft Baltimore Harbor and Channels Dredged Material Management Plan and Tiered Environmental Impact Statement"*

General Comment	Any solid waste including construction, demolition and land clearing debris, generated from the subject project, must be properly disposed of at a permitted solid waste acceptance facility, or recycled if possible. Contact the Solid Waste Program at (410) 537-3318 for additional information.	
Page ES-12, Table ES-2.	The PIERP alternative should consider lateral and vertical expansion as independent projects and analyze costs, capacities, habitat benefits, technical/logistical risk, and acceptability risks independently.	
Page ES-15, line 23.	Recommend rewording sentence. Rather than "outweigh", MDE suggests you use the term "mitigate".	
Page ES-22, lines 7-9.	This sentence is incorrect. The GRR does not analyze dike raising independently, only in conjunction with a lateral expansion.	
1. Tables	Tables 1-2 through 1-4 should have a totals column tallying the total cubic yardage of all channels.	
Page 2-4, section 2.1.1.5	The presence of the turbidity maximum zone should in the Upper Bay should be mentioned in this discussion of tides and currents.	
Page 2-23 through 2-27	This discussion of the percent contributions of sediment among the various states and regions of the Bay is extremely confusing. It's difficult to make the percentages add up. Perhaps a table summarizing the percent contribution information would be helpful.	
Page 2-55, section 2.6.1.1	May want to mention in this section that the index period for the Chesapeake Bay IBI is July 15th through September 30th.	
Page 2-58	May want to specifically mention the influence on relatively pristine ocean water in the lower bay which helps mitigate water quality impacts to the lower Bay region.	

Maryland Department of the Environment Comments on the *"Draft Baltimore Harbor and Channels Dredged Material Management Plan and Tiered Environmental Impact Statement"*

Pages 2-59 through 2 – 61, section 2.6.1.3	For this section on benthic assessments, it would be helpful to mention the months in which the sampling was conducted.	
Page 2-60, section 2.6.1.3.3	MDE conducted the baseline benthic monitoring for Site 92. No mention of the results of these baseline studies are made in this section.	
Page 3-19, line 26.	There is a typo here. Says an 8-foot dike raising of a 30 acre facility will result in 190.4 mcy of capacity. This cannot be correct.	
Page 3-20, section 3.2.2.5.3	The Pearce Creek upland disposal facility has been associated with groundwater contamination. MDE would not allow any use of the site, unless perhaps if treated with lime or calcite simultaneous with dredged material inflow. This concept is currently being pilot tested at the Courthouse Point upland facility and results/analysis are pending.	

LOCAL AGENCIES AND OFFICIALS

COMMENTER L-1

Apr-08-05 09:35A P.03

Please Complete Your Review & Recommendation Before March 24, 2005

Return Completed Form To: Linda C. Janey, J.D., Director, Maryland State Clearinghouse for Intergovernmental Assistance, Maryland Department of Planning, 301 West Preston Street, Room1104, Baltimore, MD 21201-2305
Phone: 410-767-4490 Fax: 410-767-4480

State Application Identifier: MD20050211-0072	Clearinghouse Contact: Bob Rosenbush, 410-767-4490 brosenbush@mdp.state.md.us

Location: in portions of the Chesapeake Bay

Applicant: U.S. Army Corps of Engineers

Description: Draft Baltimore Harbor and Channels Dredged Material Management Plan and Tiered EIS

Based on a Review of the Information Provided, We Have Checked (●) the Appropriate Determination Below

		CONSISTENT RESPONSES - (For Use By STATE AGENCIES Only)
	C1	It is **Consistent** with our plans, programs, and objectives
	C2	It is **Consistent** with the policies contained in **Executive Order 01.01.1992.27** (Maryland Economic Growth, Resource Protection, and Planning Act of 1992), **Executive Order 01.01.1998.04** (Smart Growth and Neighborhood Conservation Policy), and our plans, programs, and objectives.
	C3	**(MHT ONLY)** It has been determined that the project will have "no effect" on historic properties and that the federal and/or State historic preservation requirements have been met.
	C4	**(DNR ONLY)** It has been determined that this project is in the Coastal Zone and is not inconsistent with the Maryland Coastal Zone Management Program.
	C7	**(MDP ONLY)** It is consistent with the requirements of State Finance and Procurement Article 5-7B-02; 03; 04 and 05 Smart Growth and Neighborhood Conservation (Priority Funding Areas).
		CONSISTENT RESPONSES - (For Use By COUNTY & LOCAL AGENCIES Only)
✓	**C5**	It is **Consistent** with our plans, programs, and objectives.
	C6	It is **Consistent** with the Economic Growth, Resource Protection, and Planning Visions (Planning Act of 1992), State Finance and Procurement Article 5-7B – Smart Growth and Neighborhood Conservation (Priority Funding Areas), and our plans, programs, and objectives.
		OTHER RESPONSES - (For Use By ALL)
	R1	**GENERALLY CONSISTENT WITH QUALIFYING COMMENTS:** It is generally **Consistent** with our plans, programs and objectives, but the attached qualifying comment is submitted for consideration.
	R2	**CONTINGENT UPON CERTAIN ACTIONS:** It is generally **Consistent** with our plans, programs and objectives contingent upon certain actions being taken as noted in the attached comment(s).
	R3	**NOT CONSISTENT:** It raises problems concerning compatibility with our plans, programs, objectives, or Planning Act visions/policies; or it may duplicate existing program activities, as indicated in the attached comment(s). If a meeting with the applicant is requested, please check here: ☐
	R4	**ADDITIONAL INFORMATION REQUESTED:** Additional information is required to complete the review. The information needed is identified below. If an extension of the review period is requested, please check here: ☐
	R5	**FURTHER INTEREST:** Due to further interest/questions concerning this project, we request that the Clearinghouse set up a conference with the applicant.
	R6	**SUPPORTS:** Supports "Smart Growth" and Federal Executive Order 12072 (Federal Space Management), which directs federal agencies to locate facilities in urban areas.

Attach additional comments if necessary OR use theses spaces: ______________________________

Name: GARY PUSEY
Organization: WICOMICO CO. PLANNING DEPT
Address: P.O. BOX 870
SALISBURY, MD 21803

Signature: Gary Pusey
Phone: (410) 548-4860
Date Completed: 4-8-05

_ Check here if comments are attached.

RECEIVED
APR 0 8 2005

MDPCH-1A

Maryland Department of Planning

Robert L. Ehrlich, Jr.
Governor
Michael S. Steele
Lt. Governor

Audrey E. Scott
Secretary
Florence E. Burian
Deputy Secretary

May 4, 2005

Mr. Mark Mendelsohn
Project Manager, Planning Division
U.S. Army Corps of Engineers
P.O. Box 1715
Baltimore, MD 21203-1715

STATE CLEARINGHOUSE REVIEW – ADDITIONAL REVIEWER COMMENTS RECEIVED
State Application Identifier: MD20050211-0072
Project Description: Draft Baltimore Harbor and Channels Dredged Material Management Plan and Tiered EIS
Project Location: in portions of the Chesapeake Bay
Clearinghouse Contact: Bob Rosenbush

Dear Mr. Mendelsohn:

We are forwarding the enclosed comments made by Harford County regarding the referenced project for your information. If you need assistance or have questions concerning this review, please contact the staff person noted above.

Should you have any questions, contact the State Clearinghouse staff person noted above at 410-767-4490 or through e-mail at brosenbush@mdp.state.md.us. Your cooperation and attention to the review process is appreciated

Sincerely,

Linda C. Janey

Linda C. Janey, J.D., Director
Maryland State Clearinghouse for Intergovernmental Assistance

LCJ:BR
Enclosure (Comments Received)
cc:
Ray Dintaman – DNR*
Joane Mueller – MDE*
Sandy Redmer – MDA*
Nat Brown – MPA*

MDP

Maryland Department of Planning

RECEIVED
17 P 1:37

Robert L. Ehrlich, Jr.
Governor
Michael S. Steele
Lt. Governor

Audrey E. Scott
Secretary
Florence E. Burian
Deputy Secretary

MARYLAND STATE CLEARINGHOUSE - AGENCY REVIEW REQUEST

RESPONSE TO THE CLEARINGHOUSE
YOUR RESPONSE IS REQUIRED BEFORE March 24, 2005

TO: REVIEW COORDINATORS

DATE 02/11/2005

FROM: Linda C. Janey, J.D., Director
Maryland State Clearinghouse for
Intergovernmental Assistance

A COMPLETED RESPONSE FORM IS REQUIRED FOR CLEARINGHOUSE RECORDS

State Application Identifier:	**MD20050211-0072**				
Description:	Draft Baltimore Harbor and Channels Dredged Material Management Plan and Tiered EIS				
Applicant:	U.S. Army Corps of Engineers				
Location:	in portions of the Chesapeake Bay				
Contact Person:	Bob Rosenbush				
Approving Authority:	U.S. Department of Defense				
CFDA Number:	None				
Funds Requested:	**Federal:**	$ 0.00	**State:**	$ 0.00	
	Local:	$ 0.00	**Other:**	$ 0.00	

Please complete and return the enclosed review response form to the State Clearinghouse before the response due date listed above. Always place the referenced **State Application Identifier** on all documents and correspondence regarding the project.

NOTE to the Review Coordinators: The Applicant sent a copy of the review document directly to your agency.

As you review the attached project, please formulate comments and recommendations that reflect the views of elected officials and the adopted plans and policies of your agency or local jurisdiction. ***Please provide an early alert to the Clearinghouse staff contact (410-767-4490) if there is disagreement with or concern regarding the project, if you need additional information, and/or if you cannot complete the review by March 24, 2005***. Otherwise we may assume that you choose not to comment. Thank you for your cooperation with the intergovernmental review process.

LCJ:BR

Review Coordinators:

Margo Bailey - Town of Chestertown
Jim Salt - USM
Ruth Mascari - MEMA
Ronald Spalding - MDOT
Ray Dintaman - DNR
John Sparkman - MES
Joane Mueller - MDE
Nelson Reichart - DGS
James Gring - DBED
Beth Cole - DHCD/MHT
Sandy Redmer - MDA
Bill Riley - MILT
Edward Tudor - WRCS
Mary Ellen Gray - WCMC
George Kinney - TLBT
Charles Massey - SMST
Elizabeth Krempasky - CRLN
Steven Horn - CRRL
David Umling - CHAS
Steven Dodd - DRCH
Theresa Raymond - HRFD
Winfield Miller - Town of Queenstown
Cleveland Rippons - City of Cambridge
Gail Owings - KENT
Faith Rossing - QANN
Lisa Rother - MTGM
George Forrest - STMA
Robert Caffrey - ANAR
Martha Baker - BCIT
Lynn Lanham - BLCO
Mina Hilsenrath - HOWD
Eric Sennstrom - CECL
Frank Jaklitsch - CLVT
Bo Park - ICPRB
Mary Logan - BMC
Joe Tassone - MDPE
Pat Goucher - MDPL
Jay Jacobs - Town of Rock Hall
Don Bradley – Town of Hurlock
Craig Moe – City of Laurel

301 West Preston Street • Suite 1101 • Baltimore, Maryland 21201-2305
Telephone: 410.767.4500 • Fax: 410.767.4480 • Toll Free: 1.877.767.6272 • TTY Users: Maryland Relay
Internet: www.MDP.state.md.us

Please Complete Your Review & Recommendation Before March 24, 2005

Return Completed Form To: Linda C. Janey, J.D., Director, Maryland State Clearinghouse for Intergovernmental Assistance, Maryland Department of Planning, 301 West Preston Street, Room1104, Baltimore, MD 21201-2305
Phone: 410-767-4490 Fax: 410-767-4480

State Application Identifier: MD20050211-0072		**Clearinghouse Contact:** Bob Rosenbush, 410-767-4490 brosenbush@mdp.state.md.us
Location: in portions of the Chesapeake Bay		
Applicant: U.S. Army Corps of Engineers		
Description: Draft Baltimore Harbor and Channels Dredged Material Management Plan and Tiered EIS		
Based on a Review of the Information Provided, We Have Checked (●) the Appropriate Determination Below		
CONSISTENT RESPONSES - (For Use By STATE AGENCIES Only)		
	C1	It is **Consistent** with our plans, programs, and objectives
	C2	It is **Consistent** with the policies contained in **Executive Order 01.01.1992.27** (Maryland Economic Growth, Resource Protection, and Planning Act of 1992), **Executive Order 01.01.1998.04** (Smart Growth and Neighborhood Conservation Policy), <u>and</u> our plans, programs, and objectives.
	C3	**(MHT ONLY)** It has been determined that the project will have "no effect" on historic properties and that the federal and/or State historic preservation requirements have been met.
	C4	**(DNR ONLY)** It has been determined that this project is in the Coastal Zone and is not inconsistent with the Maryland Coastal Zone Management Program.
	C7	**(MDP ONLY)** It is consistent with the requirements of State Finance and Procurement Article 5-7B-02; 03; 04 and 05 Smart Growth and Neighborhood Conservation (Priority Funding Areas).
CONSISTENT RESPONSES - (For Use By *COUNTY & LOCAL AGENCIES* Only)		
	C5	It is **Consistent** with our plans, programs, and objectives.
	C6	It is **Consistent** with the Economic Growth, Resource Protection, and Planning Visions (Planning Act of 1992), State Finance and Procurement Article 5-7B – Smart Growth and Neighborhood Conservation (Priority Funding Areas), <u>and</u> our plans, programs, and objectives.
OTHER RESPONSES - (For Use By ALL)		
X	**R1**	**GENERALLY CONSISTENT WITH QUALIFYING COMMENTS:** It is generally **Consistent** with our plans, programs and objectives, but the attached qualifying comment is submitted for consideration.
	R2	**CONTINGENT UPON CERTAIN ACTIONS:** It is generally **Consistent** with our plans, programs and objectives contingent upon certain actions being taken as noted in the attached comment(s).
	R3	**NOT CONSISTENT:** It raises problems concerning compatibility with our plans, programs, objectives, or Planning Act visions/policies; or it may duplicate existing program activities, as indicated in the attached comment(s). If a meeting with the applicant is requested, please check here: ☐
	R4	**ADDITIONAL INFORMATION REQUESTED:** Additional information is required to complete the review. The information needed is identified below. If an extension of the review period is requested, please check here: ☐
	R5	**FURTHER INTEREST:** Due to further interest/questions concerning this project, we request that the Clearinghouse set up a conference with the applicant.
	R6	**SUPPORTS:** Supports "Smart Growth" and Federal Executive Order 12072 (Federal Space Management), which directs federal agencies to locate facilities in urban areas.

Attach additional comments if necessary OR use theses spaces: ____________________

Name: ____________________

Organization: J. Steven Kaii-Ziegler, Director

Address: Harford County Planning & Zoning
220 South Main St.
Bel Air, MD 21014

Signature: S t [illegible]

Phone: (410) 638-3103

Date Completed: 4/13/05

_ **Check here if comments are attached.**

1

ENTERED

APR 18 REC'D

MDPCH-1A

HARFORD COUNTY HEALTH DEPARTMENT

ENVIRONMENTAL HEALTH

120 South Hays Street, Suite 200 P.O. Box 797 Bel Air, Maryland 21014-0797

Andrew Bernstein, MD, MPH
Health Officer

MEMORANDUM

To : **Theresa Raymond**
Planning and Zoning

From : **Susan Kelly, Director**
Bureau of Environmental Health

Date : **April 7, 2005**

Re : **MD STATE CLEARINGHOUSE REVIEW – ID # MD20050211-0072**
Draft Baltimore Harbor and Channels Dredged Material Management Plan and Tiered EIS

COMMENTS:

Disposal/Placement Options

Most of the options do not appear to have a direct impact on Harford County. The exceptions are the following:

- Agricultural Placement – MD
  Is Harford County agricultural land under consideration? 2
- Mine Placement – Cecil County, MD
  Depending on the location in Cecil County could impact Susquehanna and threaten drinking water intakes. 3
- Shoreline Restoration – MD
  Is Harford County shoreline under consideration? 4

With the exceptions of the concerns stated above, there do not appear to be any direct impacts on Harford County from the proposed placement options.

GROUPS AND ASSOCIATIONS

COMMENTER G-1

CCA MD

Coastal Conservation Association Maryland

MID-SHORE•NORTH ANNE ARUNDEL•ANNAPOLIS•GREATER WASHINGTON
BALTIMORE•KENT NARROWS•SOUTHERN MARYLAND•LOWER SHORE

March 29, 2005

Mr. Mark Mendelsohn
USCACE – PL
P.O. Box 1715
Baltimore, MD 21203-1715

Dear Mr. Mendelsohn,

Coastal Conservation Association (CCA) is a non-profit organization dedicated to the conservation, restoration, and protection of our marine resources. CCA has 15 state chapters from Maine to Texas with over 90,000 members. CCA Maryland (CCA MD) has eight local chapters with approximately 2,000 members. We are an advocate first for Maryland's marine resources and their habitats, and secondly for recreational anglers.

It has come to CCA MD's attention that the National Marine Fisheries Service (NMFS) has proposed the inclusion of an embayment in the Poplar Island Expansion Project. CCA MD supports the concept of such embayments and other innovative ideas to mitigate lost essential fish habitat from the implementation Maryland's Dredge Material Management Plan (DMMP). 1

CCA MD understands the main consideration in the development of the Poplar Island Restoration Project was to provide an environmentally acceptable method to place dredge material. It appears little consideration has been given to the direct and indirect impacts these projects have on essential fish habitat. Also, by drastically altering almost 1000 acres of exceptional shallow water fishing habitat government has created a much less satisfying and less productive perimeter based mid-water fishing experience for shallow-water anglers, while permanently denying access to our once productive historic fishing grounds.

The new concepts being proposed by NMFS could partially mitigate the loss of natural occurring and varying essential fish habitat that has been encased and lost to the Bay. In addition an embayment would lessen the detrimental impacts of the DMMP projects on Maryland's recreational anglers. The original Poplar Island project was difficult to envision. Now having had the opportunity to interact with the finished project CCA MD has grave concerns about any portrayed benefits from future dredge impoundments to our recreationally important finfish and the anglers that pursue them.

Dedicated to the Conservation and Protection of Marine Life
101 Ridgely Avenue, Suite 12A • Annapolis, MD 21401
(410) 280-8770 • (888) 758-6580 • (410) 280-1432
info@ccamd.org

CCA MD requests that the representatives of the various agencies and partners that have influence on the content of the draft Environmental Impact Statement provide alternative options that include the NMFS proposed embayment. By expanding the objectives of the Poplar Island Expansion Project, and future DMMP projects, to include beneficial components for shallow water marine environments and recreational angling, recreational anglers can be encouraged to be supportive. 2

Thank you for the opportunity to provide CCA's marine conservation and recreational angling perspective for including the NMFS proposed embayment in the Poplar Island Expansion project's EIS.

Respectfully,

D. W. Silliman

Donald W. Silliman
CCA MD State Chairman

Cc: USF&WS, Jason Miller
NMFS, John Nichols
MDNR, Dave Goshorn

COMMENTER G-2

CHESAPEAKE BAY FOUNDATION

Environmental Protection and Restoration
Environmental Education

July 2, 2002

Ms. Michele A. Bistany
U.S. Army Corps of Engineers – Baltimore District
P.O. Box 1715
Baltimore, MD 21203-1715

Re: General Comments on Corps Dredged Material Management Plan (DMMP)

Dear Ms. Bistany:

The Chesapeake Bay Foundation appreciates the opportunity to comment on the process currently being undertaken by the Baltimore District to develop a federal DMMP for Port of Baltimore dredged material. Having attended the first public scoping meeting on June 12 on Kent Island, I offer this letter as formal comments on behalf of CBF's membership in Maryland. While it is certainly laudable that, as the Federal agency most directly involved with dredged material management for the Port of Baltimore, the Baltimore District of the Corps of Engineers undertake a comprehensive approach to forecasting dredging yields and disposal needs into the future, the Chesapeake Bay Foundation has several concerns about the outlined process.

1) CBF has worked with many State and Federal agencies, including the Corps, in good faith to help the Maryland Port Administration improve their process for evaluating and selecting dredged material disposal capacity. After years of mistrust and poor communication, that process is slowly evolving and gaining support. After more than a year and half of State-led effort, the Corps begins a separate, though similar, process confusing the general public and leaving many participants in the State's process to wonder how much of their work will have been in vain. While CBF recognizes the Corps' responsibilities under Federal guidelines, we request the Baltimore District utilize to the fullest extent possible, the work that has gone into the ongoing State efforts. Also recognizing that time represents one of the greatest obstacles to meeting future disposal capacity, capitalizing on sound information developed and discussed among a myriad of State, Federal and private sources would save valuable time and resources and continue forward progress. 1

2) CBF also understands the subtleties associated with the Corps' ability to evaluate open water disposal and other State-barred disposal options as part of the federal DMMP process. However, publicly perpetuating the idea that open water disposal could be used in Maryland for Port dredged material undermines extensive work on the part of many of your Federal, State and local partners. Unfortunately, discussing open water disposal, even in terms for developing a federal base plan and determining cost-share ratio,s gets lost in translation for many citizens and leads to confusion, or worse, mistrust. 2

3) CBF firmly believes that the Corps of Engineers should capitalize on the current opportunity to more closely evaluate the actual dredging need rather than relying solely on thé Maryland Port Administration's assessment of dredging demand. Dredged material disposal capacity should be recognized as a finite resource and allocated accordingly. Dredging projects with questionable merit or economic justification should be, at the very least, postponed until reasonable dredged material capacity can be developed and brought online to accommodate maintenance dredging. 3

Though dredged material management for the Port of Baltimore poses an increasingly complex challenge, the Chesapeake Bay Foundation firmly believes it can be accomplished without compromising the health of the Chesapeake Bay. Thanks you again for the opportunity to offer these comments.

Sincerely,

Jennifer Aiosa
Senior Scientist

PUBLIC (INDIVIDUALS)

COMMENTER P-1

-----Original Message-----
From: Rebecca Kolberg
Sent: Thursday, March 24, 2005 3:42 PM
To: Mendelsohn, Mark NAB02
Subject: Comments-Draft Baltimore Harbor and Channels DMMP & Tiered EIS

To: Mark Mendelsohn, Planning Division, U.S. Army Corps of Engineers, Baltimore District

From: Rebecca Kolberg, Greater Pasadena Council representative, Maryland Port Administration's DMMP Citizens Advisory Committee

Re: Cox Creek Confined Disposal Facility

The recommended plan in the Draft Baltimore Harbor and Channels Dredge Material Management Plan and Tiered Environmental Impact Statement includes as one placement alternative the "optimized use" of the Cox Creek Confined Disposal Facility (CDF). In the executive summary on page 20, it also states "other past, present and reasonably foreseeable projects or actions that could, when added to the recommended plan alternatives, result in cumulative impacts include: ... Vertical expansion of the Cox Creek CDF." **1**

It is unclear to me after repeated readings of the DMMP document whether these statements refer to the current plans supported by the community to re-open the dredge site and raise the dikes to the maximum permitted height of 36 feet OR if they refer to the "Cox Creek Expansion" alternative outlined in section 3, pgs 21-22, which proposes an additional vertical expansion that "would further increase the crest elevation by 10 ft to 46 ft."

As a citizen and as the Greater Pasadena Council's representative on dredge mangement issues, I would like to go on record as saying that the USACE and the MPA should not assume the local community will support a vertical expansion of the Cox Creek CDF above the currently authorized 36 feet. **2**

Any proposal to raise the dikes above the currently authorized 36 feet needs to be presented to local citizens in public forums held in the affected community. Like other communities being considered for Baltimore Harbor dredge disposal sites, the community should also be offered the opportunity to suggest additional local beneficial use/environmental restoration projects to accompany any vertical expansion. In addition, any proposal for vertical expansion should be presented to the MPA's Cox Creek Citizens Advisory Committee for its review and comments.

Communities near Cox Creek generally have been supportive of the 36-foot project because 1) from the outset, the MPA agreed to preserve the Swan Creek wetlands in exchange for raising the dikes to 36 feet 2) they have received considerable information about the dredging project through a variety of meetings/news articles over the past 10 years. However, similar support may not exist for a vertical expansion that changes the expected contour of the land and prolongs the length of time that the community will be exposed to any potential noise/light/water quality/recreational issues associated with dredge material disposal. The community also would likely have questions and concerns about how a vertical expansion may change or limit the options for use of the Cox Creek site upon closure.

Thank you for your attention! Feel free to call me if you have any questions.

Rebecca Kolberg
Pasadena, MD 2112

COMMENTER P-2

From: EARL J THOMAS
Sent: Tuesday, March 15, 2005 8:44 PM
To: Mendelsohn, Mark NAB02
Subject: TEIS

Mr. Mendelsohn

My name is Jeff Thomas I am the President of a local chapter of a conservation organization which you may or may not have herd of the National Wild Turkey Federation. I am wrighting to you in regards to the Draft Tiered Enviormrntal Impact Statement. In these day's of shrinking wildlands I hope those involved in this dredging project will consider the importance of using the dredge material to create new wetlands as the Friends of Blackwater have proposed. We cannot afford to lose the chance to create new wetlands at the rate their being lost. Thank You and GOD bless 1

Jeff Thomas

3/31/2005

COMMENTER P-3

From: George W. Adams
Sent: Friday, March 25, 2005 4:22 PM
To: Mendelsohn, Mark NAB02
Cc: Roger Stone
Subject: TEIS, Baltimore Harbor and Channels Dredged Material

Dear Mr. Mendelsohn:

I have purused your TEIS on the Baltimore Harbor and Channels Dredged Material use.

I strongly support Option 29, Wetlands Restoration in the Blackwater National Wildlife Refuge. I think it is a valuable use of the material and funds, and, based on your careful analysis, I think it is the best potential use of this valuable material. 1

Within the structure of your analysis in Appendix B, I suggest that the BNWR wetlands restoration should be scored a +1 instead of zero in the category "Community Socioeconomics". BNWR and the surrounding marshes are vitally and increasingly important to the economics of Dorchester County. They are an increasing draw for tourism and for vacation homes, on which Dorchester County is dependent. In a simple way this is evident in BNWR's rising visitor rate; it is more broadly, but subjectively, evident to those of us who live here. Failure to prevent further loss of these wetlands--and this project not only would restore wetlands but also would help reduce further loss--will be costly to the entire community. 2

Outside the admirably crisp structure of your analysis, the unusual geometry at BNWR makes this use an especially valuable investment compared to the alternatives. The Blackwater project involves recovering an interior void in an existing marsh; the other significant projects involve adding to the exterior periphery of marshes. This difference means that the Blackwater project not only would restore deteriorated wetlands, but would also reduce the rate of *future* wetlands loss, for reasons I describe below. None of these benefits apply to restoration on the exterior periphery of a wetland.

1.) Some contributions to wetlands loss are edge effects--for examples, exposure to wave energy and erosion by water flow. The BNWR project would reduce or largely eliminate the edge, and therefore would reduce the rate of loss from these effects. Restoring marshes on the exterior periphery increases the amount of edge, and therefore increases the rate of loss from these effects.

2.) The Army Corps tidal data in BNWR from the fall of 2003 shows that there is essentially no semidiurnal component of the hydroperiod above the Shorter's Wharf Bridge, and the upper area of the marsh is dominated by the very long period effects of the tidal residual in the Bay (roughly related to the passage of weather fronts, on the order of five days.) This absence of a semidiurnal component results primarily from frequency filtering caused by an interaction of the great amount of open water above the bridge, and the restriction at the bridge. The increasing amount of open water above the bridge has no doubt caused loss of that semidiurnal component; and reducing the amount of open water above the bridge will restore the semidiurnal component in that area, without reducing the longer period components. (I can show this rigorously, and would be happy to expand on the point, but you can probably do it as well or better than I.) It is well established that the characteristic hydroperiod is an important environmental factor in determining the nature of a wetland. I cannot offer direct evidence, but it seems likely that this change in characteristic hydroperiod is contributing to adverse change in the marsh; and that restoration of the hydroperiod will enhance health of the existing marsh and of the restored marsh. Restoration at a marsh exterior periphery cannot produce this benefit.

3.) Despite the restriction at the Shorter's Wharf bridge, increased open water in the interior of the marsh increases the volumetric flow in the river. To accommodate this increased flow, the river widens by eroding marsh downstream. Reducing the open water in the interior of the marsh will reduce the volumetric flow, and will therefore reduce this rate of loss, and may well allow the marsh to grow into the existing riverbed, as it is always ready to do. Again, restoration at a marsh exterior periphery cannot produce this benefit.

Thank you for your attention.

Sincerely,
George W. Adams

COMMENTER P-4

From: Charles Carter
Sent: Monday, March 07, 2005 5:51 PM
To: Mendelsohn, Mark NAB02
Subject: Re: Baltimore District DMMP/TEIS

Dear Sir,

By the way, the costs I associate with such an operation are about half of the ones used for the DMMP/TEIS Ag. Alt.s. I would break down the costs per cubic yard as follows:

Task	Low	High	
Clamshell	4.00	5.00	(assumes sufficient volume to include mob/demob)
Barge & Tow	6.00	7.00	(assumes stable fuel prices)
Offload	2.50	3.00	(assumes stable fuel prices & pumping distance of less than 1 mile)
Placem't, etc*	6.00	7.00	
Total**	18.50	22.00	

* Placement, land acquistion, dike construction, Virginia permitting & 5-year post placement monitoring, agricultural restoration (does not assume liming or other amendments to control sulfides or mobilization of metals)

** Assumes sufficient volume, private contract basis, stable input prices, long term placement contract. These numbers do not consider dredge planning (engineering, permitting, public participation and compliance) in Maryland.

3/31/2005

I am somewhat at a loss to understand the $43/cy (Virginia) and $50-51/cy (Maryland) alternatives for Agricultural Placement. I do not understand how my numbers are half of the Va and Md alternatives unless the lower volume, small placement increments and dredge planning have a doubling effect upon the costs? 3

Sincerely

Charles Carter

----- Original Message -----
From: Charles Carter
To: Mark Mendelsohn
Cc: Mike Baker ; Kevin Wikar
Sent: Monday, March 07, 2005 5:04 PM
Subject: Baltimore District DMMP/TEIS

Monday. March 07, 2005.

Mr. Mark Mendlesohn
USACE Planning Division
Baltimore District, Corps of Engineers
P.O. Box 1715
Baltimore, MD 21203-1715

Re: Baltimore DMMP/TEIS

Dear Sir,

I see that the Agricultural placement / beneficial use in the Baltimore DMMP/TEIS was rejected as an alternative for disposal for Technical/Logistical Risk. I see that the logistics for agricultural placement are for 6" lifts over small areas one at a time. I am surprised anyone would consider such small increments. 1

My company, Port Tobacco at Weanack, uses dredge material to restore land along the James River that was mined for sand and gravel. We are taking 550,000 - 625,000 cubic yards from the Woodrow Wilson Bridge project to restore 40 acres to agricultural productivity and to pre-mining elevations. Currently, we have received 501,000 cy and anticipate another 50,000 - 100,000cy this year. Mike Baker BakerM@wwbgec.com 301-567-0094 x 242 or Kevin Wikar WikarK@wwbgec.com 301-567-0094 x 372 are the contacts for the WWB dredge project. 2

Also, this year we will take 340,000 cy from the Earl NWS in Colt's Neck N.J. for a "thin lift" of 5-feet over another 48 acres of low productivity farm land. Neither of the projects disharges to waters from the unloading process as the free water in the dike is recycled back to recharge the barge offloading hydraulic pumps.

There is an estimated 10,000 acres of mined land along the James River. I know of over 2,000 acres suitable to accept relatively "clean" dredge material to an average depth of 5 - 10 feet and I have discussed this the property owners of the mined land. Additionally, I have the only permit issued by the state of Virginia for such dredge placement.

Who could I discuss the DMMP/TEIS Agricultural Alternative with as regards the Technical/Logistical Risk factors?

Sincerely,

Charles H Carter

Charles H. Carter, III

COMMENTER P-5

March 23, 2005

Mr. Mark Mendelsohn
Planning Division
P.O. Box 1715
Baltimore, Maryland 21203

Dear Mr. ~~Mendelsohn~~, Mark,

I am writing to comment on the DRAFT Tiered Environmental Impact Statement for Baltimore Harbor and Channels Dredged Material Management Plan Project (DTEIS-DMMP.) I wish to speak specifically to the possibility of disposing of spoil material from within Baltimore Harbor as a restoration technique for wetlands within Blackwater National Wildlife Refuge.

Although thorough in many respects, the DTEIS-DMMP appears to have overlooked the possibility of introducing sediment contaminants into the materials cycling pathways of Blackwater Refuge. To the extent that this is true, the document is not adequate as a decision-making tool. 1

Several sections of the document refer to the alternative of utilizing harbor-derived spoils for restoration at Blackwater, as follows:

A) Section 3.2.3., p. 3-43, refers to "suitable" material from the Harbor Channels; some 3.2 million cubic yards (mcy) is proposed to be placed about two feet thick on approximately 1000 acres.

B) Section 4.2.2.3, p. 4-8, refers to " potentially material from the Harbor Channels that is deemed acceptable under Section 404 of the Clean Water Act.... The dredged material from this portion of the Bay is best suited for this application because of the iron-rich nature of the material, whichj will buffer sulfide production."

C) Section 4.4.1.2, p. 4-16, notes that whereas State law requires that contaminated material be limited as to placement, the Federal government is not bound by State law, "...however, there is evidence that some material dredged within the Harbor area would be considered contaminated by Federal standards."

D) Section 4.4.2.3, p. 4-18, notes that "Because...only Harbor material deemed acceptable under Section 404 of the Clean Water Act would be used, the presence of HTRW [hazardous, toxic and radioactive waste] materials is not a concern.

E) Section 4.4.2.4, p. 4-18, although referring to confined disposal within the Patapsco River, notes that "dredged material from the Harbor has the potential to contain HTRW materials, but through containment and regular leachate monitoring, the presence of any HTRW should not impact the surrounding environment." I mention this section because should Harbor spoils be utilized at Blackwater, there they would not be contained behind dikes, but only held temporarily by geotextile tubes (cf. p. 4-8.). Hence, there would be no attenuation of leachate by sand dikes, and very little opportunity for monitoring leachate chemistry.

Only two sections, 4.8.1.2 (p.4-42) and 4.9.1.2 (p. 4-47) mention the possibility of contamination of wildlife through cycling via food webs. Using only a few sentences, both deal only with results of releases to the water column during dredging operations; neither refers to long term cycling in the context of contaminant uptake by marsh vegetation.

Although Sections 4.2.2.3 and 4.4.2.3 state that only spoils found acceptable under Section 404 of the CWA would be used at Blackwater, such a finding would require that reviewers rigorously examine the potential for the cycling of contaminants. Because of the paucity or absence of treatment of this issue in the DTEIS-DMMP, one cannot be assured that such rigor will occur, despite the efforts of an extensive list of technical preparers of this document and those of the Bay Enhancement Working Group. **2**

No data on contaminant loads in harbor sediments are provided in the DTEIS-DMMP. However, data on these are available in the Chesapeake Bay Program toxics characterization data files (see http://www.chesapeakebay.net/data/toxics/pr1wt-5.pdf , accessed 3/23/2005) These files give sediment chemical contamination data over a period of years (1989-1997) for stations within the Patapsco River estuary (Chesapeake Bay segment WT-5). Data are given for both exotic organic compounds and heavy metals, and are given for both sediment and some biological tissue concentrations. Buchman (1999) produced a series of "Screening Quick Reference Tables" to aid in evaluating the severity of contamination in various environmental media

To verify that these sediments are heavily contaminated, I here reproduce some heavy metals portions of those documents, in juxtaposition. Those samples exceeding the freshwater PEL levels are boldfaced. Tissue sample levels are included for stations where available and indicate in some cases that bio accumulation or biomagnification may have occurred.

Date	Latitude/ Longitude	Parameter	Sediment ppb	Tissue ppb	Freshwater Sediment PEL	Marine Sediment PEL
6/30/89	39.20833N /76.52333 W	Arsenic	**30233.**	4448.	17,000.	41,600
		Cadmium	676.	808.	3530.	4210.
		Chromium	**196781**.	23.	90,000.	160,400.
		Copper	74923.	1,557,047.	197,000.	108,200.
		Lead	123.	0.04	91,300.	112,180.
		Mercury	329.	92.	486.	696.
		Selenium	1014.	48360.	N/a	N/a

(PEL= probable effects level; the level above which adverse effects are frequently expected, based on benthic community metrics and toxicity test results.)

Date	Latitude/ Longitude	Parameter	Sediment ppb	Tissue ppb	Freshwater Sediment PEL	Marine Sediment PEL
8/27/90	39.24333N /76.49150 W	Arsenic	**25099.**		17,000.	41,600
		Cadmium	**10899.**		3530.	4210.
		Chromium	**1,220,000.**		90,000.	160,400.
		Copper	**207000.**		197,000.	108,200.
		Lead			91,300.	112,180.
		Mercury	263.		486.	696.
		Selenium	3639.		N/a	N/a

Date	Latitude/ Longitude	Parameter	Sediment ppb	Tissue ppb	Freshwater Sediment PEL	Marine Sediment PEL
8/27/90	39.25333N /76.55167 W	Arsenic	**30299.**		17,000.	41,600
		Cadmium	927.		3530.	4210.
		Chromium	**382,000.**		90,000.	160,400.
		Copper	**218000.**		197,000.	108,200.
		Lead	**154000.**		91,300.	112,180.
		Mercury	186.		486.	696.
		Selenium	5639.		N/a	N/a

Date	Latitude/ Longitude	Parameter	Sediment ppb	Tissue ppb	Freshwater Sediment PEL	Marine Sediment PEL
8/15/90	39.24633N /76.55700 W	Arsenic	**36199.**		17,000.	41,600
		Cadmium	2409.		3530.	4210.
		Chromium	**341000.**		90,000.	160,400.
		Copper	**215000.**		197,000.	108,200.
		Lead	**114000.**		91,300.	112,180.
		Mercury	179.		486.	696.
		Selenium	6869.		N/a	N/a

Date	Latitude/ Longitude	Parameter	Sediment ppb	Tissue ppb	Freshwater Sediment PEL	Marine Sediment PEL
10/8/94	39.23580N /76.49610 W	Arsenic	**52600.**		17,000.	41,600
		Cadmium	**12300.**		3530.	4210.
		Chromium	**1,340,000.**		90,000.	160,400.
		Copper	**207000.**		197,000.	108,200.
		Lead	**267000.**		91,300.	112,180.
		Mercury	380.		486.	696.
		Selenium	5190.		N/a	N/a

Date	Latitude/ Longitude	Parameter	Sediment ppb	Tissue ppb	Freshwater Sediment PEL	Marine Sediment PEL
10/8/94	39.20640N /76.58030 W	Arsenic	**127000.**		17,000.	41,600
		Cadmium	2440.		3530.	4210.
		Chromium	**181000.**		90,000.	160,400.
		Copper	**264000.**		197,000.	108,200.
		Lead	**243000.**		91,300.	112,180.
		Mercury	**603.**		486.	696.
		Selenium	9100.		N/a	N/a

Date	Latitude/ Longitude	Parameter	Sediment ppb	Tissue ppb	Freshwater Sediment PEL	Marine Sediment PEL
10/8/94	39.27670N /76.57420 W	Arsenic	**68200.**		17,000.	41,600
		Cadmium	2760.		3530.	4210.
		Chromium	**296000.**		90,000.	160,400.
		Copper	**599000.**		197,000.	108,200.
		Lead	**710000.**		91,300.	112,180.
		Mercury	482.		486.	696.
		Selenium	24600.		N/a	N/a

Date	Latitude/ Longitude	Parameter	Sediment ppb	Tissue ppb	Freshwater Sediment PEL	Marine Sediment PEL
10/8/94	39.20810N /76.50750 W	Arsenic	**64000.**		17,000.	41,600
		Cadmium	2190.		3530.	4210.
		Chromium	**396000.**		90,000.	160,400.
		Copper	154000.		197,000.	108,200.
		Lead	**178000.**		91,300.	112,180.
		Mercury	441.		486.	696.
		Selenium	3980.		N/a	N/a

Date	Latitude/ Longitude	Parameter	Sediment ppb	Tissue ppb	Freshwater Sediment PEL	Marine Sediment PEL
8/26/97	39.24800N /76.55300 W	Arsenic	**25600.**		17,000.	41,600
		Cadmium	1350.		3530.	4210.
		Chromium	**244000.**		90,000.	160,400.
		Copper	131000.		197,000.	108,200.
		Lead	**108000.**		91,300.	112,180.
		Mercury	321.		486.	696.
		Selenium	2710.		N/a	N/a

The significance of these data lies in a potential parallel between what occurred at Kesterson Wildlife Refuge in California between 1972 and 1985. Kesterson Refuge received drainage of irrigation water containing high (unspecified concentration) levels of selenium salts from 1972 onward. The water was allowed to evaporate in some 1280 acres of ponds. The availability of the water, per se, created wetlands which were attractants to migratory and resident waterfowl and wading birds. By 1981, high levels of selenium were present in the area and lowered population abundances of wetland wildlife were observed. By 1983, many deformities and deaths among waterfowl were evident. In 1985, the drain was closed and in 1986, water delivery ceased, as it was deemed a possible violation of the migratory bird treaty act. In 1988, the ponds were buried and the irrigation water was diverted to the San Joaquin River.

Further relevance is obtained by reference to the history of Belews Lake selenium contamination. Waterborne concentrations of approximately 10 ppb were delivered to this Piedmont North Carolina cooling reservoir from about 1975 to 1985. Residues in benthos were consistently high; at times, accumulations in plankton were equally high; dietary bioaccumulation occurred and massive reproductive failure occurred in warmwater centrarchids. In portions of the lake, water **concentrations of 0.2 - 4. parts per billion** bioaccumulated to **greater than 25 parts per million** (i.e., more than 1000 times.) Teratogenic effects were evident 10 years after selenium inputs stopped (Peer Consultation Workgroup, 1998.) Analysis of fish only data indicated that toxic effects may occur when total sedimentary selenium concentrations exceed 4 parts per million (= 4000 ppb.)

In the DTEIS-DMMP there is a notable absence of treatment of, and lack of acknowledgement that cycling of sediment contaminants occurs. Similarly, the document fails to discuss bioaccumulation in marsh vegetation, benthos, and vertebrate wildlife and that adverse effects on wildlife therefrom can occur. These shortcomings should be corrected in the final EIS. These points should be emphasized and specifically made a part of the decision-making with particular reference to potential use of harbor-derived spoils in wetland restoration at Blackwater Refuge. US Fish and Wildlife Service officers and others responsible for wetland restoration using dredged spoils should assure themselves that the components of the spoils to be used pose no hazard to the resources they manage.

Thank you for the opportunity to comment on this document. I hope that these points will help make the DTEIS-DMMP and the FEIS more useful as decision-making tools.

Sincerely,

Nick Carter

W. R. Carter, III

cc: John Wolflin, USFWS
Glen Carowan, USFWS
Marvin Moriarty, USFWS
Roland Limpert, Md DNR

Literature Cited

Buchman, M.F. 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle Wash. Coastal Protection and Restoration Division, NOAA. 12 pp.

Peer Consultation Workgroup. September, 1998. Report on the Peer Consultation Workgroup on selenium Aquaqtic Toxicity and Bioaccumulation. U.S. Environmental Protection Agency, Office of Water 4304. EPA-822-R-98-007.

COMMENTER P-6

-----Original Message-----
From: Marcia Drenzyk
Sent: Thursday, March 24, 2005 4:23 PM
To: Mendelsohn, Mark NAB02
Cc: Frank Hamons; Bill Lear
Subject: Comments to DMMP Report

As the former chairperson of the Cox Creek Advisory Committee from the committee's inception (when the committee was created by state legislation in order to force the Port to enter into discussions with local citizens and provide us with some say and oversight into the reopening of the old Cox Creek Dredge site) until February of this year, I read with interest In the DMMP recommendations where the Army Corp of Engineers refers to a Cox Creek Expansion alternative outlined in section 3, pgs 21-22, proposing an additional vertical expansion that "would further increase the crest elevation by 10 ft to 46 ft." 1

In the four years that I served as head of the Cox Creek committee there was NO MENTION of increasing the height of the site beyond 36 feet that would make the final dredge site the same height of the adjacent parking lot. I am very offended that the Army Corp of Engineers seems to think that they can simply start placing additional options for consideration on the table WHEN THERE HAS BEEN NO PRESENTATION TO THE LOCAL COMMUNITIES NOR ANY PERMITS TO ALLOW THAT HEIGHT. It is offensive that local citizens have been spending YEARS in discussion with the Port negotiating what can and cannot happen at that site and finding out that the Army Corp of Engineers thinks it can suggest whatever they want, whenever they want irrespective of our wishes.

To say I am angry would be an understatement. I recommend you delete that reference to adding another 10 feet in height to the DMMP recommendations until you hold public hearings and meetings with the local communities and the Port obtains permits for such a large change to the plan for that site. 2

Frank and Bill -- I would suggest that the Port insist that the Army Corp of Engineers send a representative to each and every Cox Creek Advisory Committee meeting in the future to report on what they are proposing for the site since it seems they have their own agenda and have no accountability. Very bluntly, this makes all the meeting with the Port seem like they were done in bad faith and were a fraud and a complete waste of everyone's time if the Army Corp of Engineers can come in at this late date with their recommendations that were not discussed with the nearby communities.

Marcia Drenzyk
Former Chairman and member of the Cox Creek Advisory Committee
Baltimore, MD 21226

COMMENTER P-7

From: Lisa Mayo
Sent: Sunday, March 13, 2005 6:53 PM
To: Mendelsohn, Mark NAB02
Subject: dredged material TEIS

Dear Mr. Mendelsohn:

I would like to comment on the Draft Tiered Environmental Impact Statement (TEIS) issued by the US Army Corps of Engineers. I am a volunteer at Blackwater National Wildlife Refuge, and I strongly support the use of clean dredged materials to restore wetlands in Dorchester County, specifically at Blackwater National Wildlife Refuge and Fishing Bay Wildlife Management Area.

As you know, these wetlands represent vital habitat for waterfowl, wildlife, and fish in the Chesapeake Bay watershed. Blackwater Refuge has lost over 8,000 acres of marsh and no other options are available to restore wetlands on such a large scale.

Funding is needed to implement the Dorchester County option of this environmental impact statement. I ask that you and your staff pursue the Dorchester County option and give Blackwater Refuge the assistance it needs.

Sincerely,
Lisa Mayo

COMMENTER P-8

From: J Schlachter
Sent: Monday, March 14, 2005 10:20 PM
To: Mendelsohn, Mark NAB02
Subject: TEIS - Dorchester County proposed option

U.S. Army Corps of Engineers
Attn: Mark Mendelsohn
Planning Division
P.O.Box 1715
Baltimore, MD 21203
Dear Mr. Mendelsohn:

We wish to add our comments on the Draft Tiered Environmental Impact Statement (TEIS) issued by the US Army Corps of Engineers.

We heartily support the use of clean dredged materials to restore wetlands in Dorchester County. As you're likely aware, Blackwater National Wildlife Refuge and Fishing Bay Wildlife Management Area have lost thousands of acres of wetlands over the last 70 years. We regularly visit the Refuge and see how these diminished wetlands provide such a critical habitat for waterfowl, wildlife, and fish in the Chesapeake Bay watershed. There has been terrific work done to address the loss of acreage but it has only been on a very small scale. Other than to use clean dredged material from the Port of Baltimore, there are no other options available to restore the wetlands on such a needed large scale.

We request that you and your staff look favorably upon the Dorchester County option as the best way of putting the dredged material to such a worthwhile use.

Sincerely yours,

James & JoAnn Schlachter

3/31/2005

COMMENTER P-9

From: Trish
Sent: Wednesday, March 16, 2005 11:07 AM
To: Mendelsohn, Mark NAB02
Subject: Blackwater National Wildlife Refuge

Dear Mr. Mendelsohn,

I have heard that over 8,000 acres of marsh have been lost and no other options are available to restore wetlands other than to use clean dredged material from the Port of Baltimore. I am very concerned about this.

Funding is needed to implement the Dorchester County option of the environmental impact statement. Please encourage your staff to move forward on this important restoration program.

Sincerely,

Trish Witkowski

COMMENTER P-10

Mr. Mark Mendelsohn
Planning Division
U.S. Army Corps of Engineers – Baltimore
P.O. Box 1715
Baltimore, MD 21203-1715

CRITIQUE OF DRAFT DMMP REPORT

Dear Mr. Mendelsohn:

I have reviewed the *Baltimore Harbor and Channels Dredged Material Management Plan and Tiered Environmental Impact Statement*. My comments, questions and suggestions are appended.

On the whole, while there was a commendable quantity and quality of work performed in identifying and assessing placement options for dredged material from the navigation channels serving the port of Baltimore, several basic, undergirding premises for the entire DMMP study effort are seriously flawed. Specifically I find that: 1

A. the placement 'Demand–Capacity Shortfall' is erroneously overestimated (by more than 100%), and
B. the economic analyses performed to justify continued, full-depth maintenance dredging are defective and inadequately documented – some are inaccurate, some are questionable – to such an extent that the wrong conclusions appear to have been deduced.

Details supporting these findings are incorporated in the appended comments.

Correcting the DMMP study's arithmetic for these flawed premises has a most significant and profound implication –

The "Recommended Plan" of the DMMP Report cannot be rationalized! 2

For Bay-origin material, rather than a suite of three placement options, it would be possible to maintain the entire existing navigation channel system for the next 20+ years (assuming it is all warranted) via only the expansion of Poplar Island. Further, if revised economic assessments conclude that full-depth maintenance dredging of both access channel systems is no longer warranted – the revised placement needs for 20 years can be satisfied via the remaining capacity at the Poplar Island disposal site (without any expansion).

Finally, based upon my review of Corps' guidance documents, I dispute the basic assumption used by CENAB in the DMMP Report's economic assessments that "Associated Costs" are not includable in the determination of the benefit-to-cost ratio (BCR) for maintenance dredging of navigation channels. However, because this is a general policy issue … and not a specific DMMP-related arithmetic error … it will be addressed in a separate communication to the District.

It appears that a substantial revision of the Draft DMMP Report will be required: the faulty economic assessments used to justify maintenance dredging need to be modified, the placement capacity 'shortfall' needs to be corrected, and consequently the "Trade-off Analysis" of placement options needs to be reworked. Because this substantial revision of the study effort and Draft Report would be expected to yield a significantly revised "Recommended Plan", I request that the DMMP process and schedule be modified to include a re-release of a revised Draft DMMP Report followed by an appropriate period for public review and comment before progressing to the preparation of the Final DMMP and Tiered EIS. **3**

In closure, I appreciate the opportunity to review and comment on the current Draft DMMP Report. I especially appreciate being provided with a paper copy of the document to facilitate my review. I look forward to the District's responses to the issues and concerns raised herein and to a possible opportunity for a 'mini IRC' in mid-April 2005.

Sincerely,

John M. Williams

Copy: Congressman Wayne T. Gilchrest
Col. Robert J. Davis, Jr., CENAB-DE (cover letter only)

CRITIQUE OF DRAFT DMMP REPORT

***Baltimore Harbor and Channels Dredged Material Management Plan and Tiered Environmental Impact Statement*; February 2005**

COMMENTS:

General: The Draft DMMP Report is an impressive document, is generally well-organized with much supporting information, and does a competent job of reviewing the process used for identifying, assessing and selecting options for disposal of material dredged from the navigation channels serving the port of Baltimore.

General: The Draft DMMP Report and the incorporated analyses are insufficient and inadequate (seriously wanting) with respect to a careful, thorough quantification of two key undergirding aspects:

- The placement needs for dredged material; and
- The economic justification for maintenance dredging of all major channel segments to their full authorized depths and constructed widths.

Although the Project Management Plan (PMP) gave a high priority to the criticality of performing a detailed economic assessment to ascertain exactly how much maintenance dredging was truly warranted so that the placement needs could be carefully quantified – and initially scheduled this task to commence in the 2nd week of the DMMP study effort and to be completed before October 2003 – it appears that CENAB did not devote serious effort to the task until late in the study period – and the economic analysis was not completed until January 2005! Unfortunately the quality of the assessment reflects this 'last minute' effort.

Further, the modicum of effort apparently devoted to these two critical facets is reflected in the limited description and discussion documented in the Report. For example, in the body of the report … which is a full 1½ inches of double-sided text … only a scant 33 lines of text and 2 tables focus on "Dredging Needs" and the "Economic Justification of Continued Maintenance" is presented and discussed with just 39 lines of text. Admittedly, the subject of "Economic Justification …" is formally summarized in Appendix F of Volume II of the Report. However, in those 2½ inches of additional Report material, only 7 pages of text and 5 pages of tables are presented that utilize any Corps' DMMP-generated economic analyses to rationalize the (presumed) full-depth maintenance dredging of all channel segments.

For matters as critically important to a 20-year, dredged material management plan as the magnitude of the dredging needs (cubic yards) and the economic justification of continued maintenance dredging of each separable channel segment (BCR>1), **the proffered discussion is grossly deficient.** **4**

Federal Standard - Base Plan: The "federal standard" or 'base plan' for placement of dredged material calls for a.) open water placement near Pooles Island of material from the Lower Approach Channel (C&D Canal), b.) open water placement in the Deep Trough of material from the Approach Channels in the Bay, c.) open water **5**

(rnl)

placement at Virginia sites of material dredged from Virginia waters, and d.) placement on Hart-Miller Island of material from Harbor channels. (Page ES-8) Even if there were no State of Maryland legal restrictions on the three Maryland options, there is not sufficient capacity in two of the Maryland-based options for a 20-year DMMP. Consequently, this quartet of disposal options as stipulated in the Draft DMMP Report is an **INADEQUATE, INAPPROPRIATE Base Plan!**

If the Maryland-legislated constraints were non-existent, the base plan ('federal standard) would be

a.) open water placement near Pooles Island for material from the Lower Approach Channel until that site is full (about 6 mcy of capacity remains for future placement) and then open water placement in the Deep Trough for subsequent dredgings from the Lower Approach Channel, **6**

b.) open water placement in the Deep Trough of material from the other Approach Channels in the Bay,

c.) open water placement at Virginia sites of material dredged from Virginia waters, and

d.) placement on Hart-Miller Island of material from Harbor channels with expansion of that site when capacity becomes limited.

This is the base plan that should be used for the DMMP!

[Note: The Report text in Section 3.5.1 should be revised. Based on prior studies, and communication with J. Halka, Maryland Geological Survey, there is NOT sufficient residual placement capacity at the Pooles Island location for 20 years of maintenance dredging of the Lower approach Channel (about 19 mcy).] **7**

Over the 20-year planning horizon the changes in placement (items a. and d.) would have concomitant increased costs. These increased costs should be appropriately factored into the economic analyses of continued maintenance dredging.

Placement Needs: The Report indicates that the projected cumulative need (capacity) for placement of material dredged from the Maryland portion of Bay channels is 73.4 mcy (Table 2-35). Several corrections appear warranted. **8**

1. Since this is to be a 20-year DMMP, use only data for 20 years … not 21. The duration of the period 2005 –2025 (inclusive) is 21 years. The column for the year 2025 should be deleted from Table 2-35 and from Figure 5-1; all cumulative values in the Report should be revised accordingly. This correction reduces the apparent cumulative placement need from 73.4 mcy to a total of 69.0 mcy.

2. Use actual historical data on maintenance dredging requirements for the Lower Approach Channel (C&D Canal channels system) rather than the unsubstantiated estimate of 1.2 mcy/yr (Table 1-1). [See related item in 'Suggestions' section of this letter.] Using the data of Attachment 4, Appendix F, the annual average dredging required to maintain that segment of the channel system is 0.885 mcy/yr ("pay"). Including an extra "non-pay overdepth" quantity for the 20-year period would generate a total of $20 \times 0.885 \times 1.10 = 19.5$ mcy as the correct cumulative placement need for the "C&D Approach Channels" … versus the value of 27.7 mcy cited in Table 2-35 for a 21-year period.

3. In estimating 'projected dredging quantities' (or placement needs) the Report appropriately starts with averages of the historical annual dredged quantities from more than the prior decade ... but then ADDS an EXTRA 10 percent to account for "Storm Events" in each and every year into the future (Table 2-35). This erroneously overestimates projected dredging quantities because it implicitly assumes that there were NO storm events in the prior decade ... and starting in 2005 there will be significant storm events every year! This is not a realistic assumption nor is any logic presented in the Report to support such a significant factor. In reality, the historical record of annual dredging quantities already implicitly INCLUDES "storm events". The extra 10% for "storm events" should be deleted from Table 2-35 and all Report considerations!

Consequently, because of these three factors, the projected dredging quantity ... or need for placement ... of material from Bay channels in Maryland should be revised from 73.4 mcy to 55.8 mcy. This is a 24% decrease!

Existing Placement Capacity: The Report indicates that the cumulative existing capacity for placement of material dredged from Bay and Harbor channels is 49.0 mcy (Table 2-36). Two corrections appear to be warranted. 9

1. The discussion of the Report and Figure 5-1 both note the use of 5.0 mcy of 'clean' material in 2009 and 2010 to "cap" the placement at Hart-Miller Island of material dredged from Harbor channels. Bay-origin, maintenance dredging material is deemed to be 'clean' and would also contain low-levels of organic material (water-holding) and available nutrients ... apparently making it satisfactory for establishment of vegetation with little or no additional incorporations and hence useful as a capping material. Since no reasons are provided in the Report for NOT using Bay-origin dredged material for capping, it would be very efficacious to do so. Table 2-36 ... and the associated Report text ... do not take this quantity into consideration – and hence underestimate existing placement capacity for Bay-origin dredged material by 5.0 mcy.

2. The Report assumes that the residual placement capacity at Poplar Island is 27 mcy (Table 2-36). Recent communications with CENAB indicates, however, that as of the end of 2004 the residual capacity was at least 30 mcy (maybe even 31 mcy) because of improved consolidation of placed sediments. (1)

Consequently, uniting these two factors, the existing capacity for placement of material from Bay channels in Maryland improves from 33 to 41 mcy ... a 25% increase!

Estimated Placement Capacity Deficit ... or 'Demand-Capacity Shortfall':
Combining the corrections of the foregoing items reduces the "Demand-Capacity Shortfall" for placement of material dredged from the Maryland portion of the Bay channels from 40.4 mcy (21 years) to 14.8 mcy (20 years) ... **a decrease of 63%!**

The implications of this correction are significant. The Report's Recommended Plan for handling Bay-channel dredged material calls for simultaneously pursuing

- expansion of the Poplar Island disposal facility,
- construction of a large mid-Bay placement site near James Island, and
- pumping dredged material into Blackwater National Wildlife Refuge (a very expensive placement 'add-on' devised solely to generate politically-attractive environmental points).

The ultimate capacities of these three facets of the Plan are 24.0, 34.6 and 3.2 mcy, respectively. If, as the Report claims, the Demand-Capacity Shortfall is 40.4 mcy then there is an obvious need to implement at least the two largest of the three recommended disposal alternatives. However, if the correct Demand-Capacity Shortfall is just 14.8 mcy, then only one major placement alternative is needed. Review of the Implementation Schedule (Figure 5-1) confirms that the proposed Poplar Island Expansion alone would suffice to sustain the maintenance dredging of the Bay channels. [Note that this correction and simplification would save over $450 million in the 20-year time horizon! (and more thereafter)]

Justification of Continued Maintenance – 50-Foot Project: The economic assessment performed to justify continued maintenance dredging of the main access channel to Baltimore is so badly flawed that it needs to be completely reanalyzed. **10**

Rather than perform a thorough analysis of current commodity movements and vessel operating practices the Report adapted an assessment performed in 1981 to rationalize the deepening of the main channel from 42 to 50 ft. (2) In so doing the current Draft DMMP Report erroneously assumed that

A. All foreign trade in the economically critical commodities of export coal and import iron ore would move in vessels requiring a very deep waterway (>42 ft); and
B. The minimum underkeel clearance is 5 feet for vessels using the main (50-ft) channel.

Further, the Draft DMMP Report economic analysis did not utilize current statistics on commodity movements.

1. Review of Baltimore Maritime Exchange (BME) data for vessel movements at the Port of Baltimore in the year 2002 finds that approximately 20% of the vessels (bulkers) transporting either iron ore or coal to/from Baltimore had a loaded sailing draft of ≤ 40 feet. To include these as "benefiting" vessels for maintaining a 50-ft deep channel system overestimates anticipated benefits by approximately 10% (assuming the shallower draft bulkers have about half the capacity of the deeper draft bulkers).

2. The minimum underkeel clearance routinely utilized by deep-draft vessels transiting the main southern (50-ft) channels is 2.5 feet. This value is substantiated by pilots (3) and by review of BME data showing numerous transits with drafts at 47.5 ft – and none with drafts any greater. Using a minimum underkeel clearance of 2.5 feet instead of 5 feet as employed in the adapted computations (2) reduces the light-loading unit savings ($/ton) to just 55% of the erroneous '5-foot' values. (Key factor = (30+6) inches / (60+6) inches = 0.545)

3. Additionally, benefits computed in the DMMP Report are based on the average quantity of pertinent commodities moved in the 5-year time span from 1997-2001. Using Waterborne Commerce Statistics Center data (4) to update the 5-year average to the period from 1999-2003 finds little change in import iron ore movements – but a continuing decline of export coal tonnage.

Restating Table 4 (Draft DMMP Report; Appendix F)

Baltimore Harbor and Channels
Computation of Benefits by Commodity

Commodity	Avg. Tonnage; 1000T		Savings/ton; $/T		Benefits; $1000	
	1997-2001	1999-2003	DMMP	Revised	DMMP	Revised
Iron Ore, Canada	2164	2108	0.58	0.32	1255	675
Iron Ore, Foreign	2308	2331	2.15	1.17	4962	2727
Coal	5352	3853	1.70	0.93	9098	3583
Total					**15,315**	**6,985**

Finally, these recalculated benefits are about 10% too high considering that about 20% of the loaded bulkers are not sailing with drafts > 40 ft. (Item 1 above) ... hence the revised estimated benefits to coal and ore carriers are about $6,300,000 versus dredging costs cited in the Draft DMMP of $10,812,057
... producing an apparent **BCR of only 0.58!**

Based on these simple corrections and revisions to the economic analysis provided in the Draft DMMP Report, **continued full-depth maintenance of the main channel (50 ft) to Baltimore does NOT appear to be economically warranted!**

Economic Analysis – 35-Foot C&D Canal Approach Channels; Benefits: The affirming conclusion of warranted continued maintenance of the 35-ft channel system is questionable based on the economic analysis incorporated in the Draft DMMP Report. There are problems arising from the assumption of certain values for pivotal economic parameters and for not using the latest waterway traffic information. 11

1. The economic analysis for the 35-ft channel system is predicated on very <u>specific</u> assertions about tug/barge operating costs ($750/hr) and operating speeds in coastal service (8 kts). (5) This is important because 2/3 of the estimated benefits accrue from barge traffic. The value for tug/barge hourly operating costs seems very high by comparison with those for deep-draft vessels using the waterway or the Port of Baltimore (see Table 2, Appendix F). As a further comparison, the operating costs of a 4500 HP tug with a 4500 cy dump scow have recently been estimated to total $590/hr. (6) Following from these considerations, a 20% reduction in the average tug/barge operating costs to $600/hr would reduce the computed benefits by 13%.

2. Computed benefits attributable to barge traffic are inversely proportional to the operating speed that is assumed for impacted tug/barges in open-water. The DMMP analysis <u>assumed</u> that value to be 8 kts. The only support provided for that

speed value was that it had also been assumed in the Martin analysis (5). However, Tug/barges operating in coastal service are reported to have speeds of 8-10 kts when towing and 10-14 kts when pushing. (7) Consequently, a recalculation of benefits (travel cost savings) using an 'assumed' speed of 10 kts for tug/barges yields a value of $10,484,000 ... a reduction of 14% from the DMMP value.

3. Benefits computed in the DMMP Report are based on the average number of vessels and barges transiting the 35-ft waterway in the 5-year time span from 1998-2002. The number of deep draft vessels using the route has been in a long-term, continual decline (10% per year) and the number of transiting barges has also declined in recent years. Consequently, a more realistic estimate of current benefits can be deduced from using current traffic levels. Employing Waterborne Commerce Statistics Center data (4) to update the 5-year averages to 2003 traffic values results in the computed benefits of $12,152,500 to $9,754,000 ... a 20% reduction!

4. Combining several of the foregoing considerations ... namely using 2003 traffic levels and simply revising the open-water speed of tug/barges to 9 kts ... reduces the apparent Travel Cost Savings to about $8,992,500 ... or a BCR of 1.06, unless one properly includes the costs of the Swan Point channel maintenance dredging. With this inclusion ... the BCR is essentially 1.00.

Given the uncertainty in the assumptions of key unit costs, vessel speeds, etc, it is certainly **NOT obvious that full-depth maintenance of the 35-ft channel system providing secondary access to Baltimore is economically warranted.**

Economic Analysis – 35-Foot C&D Canal Approach Channels; Sailing Drafts: The values utilized in Table 9, Appendix F, for sailing drafts of vessels and barges transiting the C&D Canal and Channels are problematic and appear to be misreadings of the WCSC data (4). This problem leads to additional logic errors in subsequent considerations.

To illustrate this matter: In Table 9 the 'Draft' category listed as "20-18" corresponds to the three rows in the WCSC 'Trips and Drafts' tabulations for vessels moving with sailing drafts in a three-foot draft range of 17 ft to 20 ft. [In the WSCS tabulation the rows are simply listed as 18, 19 and 20. The reader is obliged to understand the missing mathematical "basket". (8)] To be more mathematically precise, the sailing draft range for the "20-18" category is 17 ft < Draft ≤20 ft. A waterway 22.0 ft deep would be necessary to handle all of these vessels. [This is a critical item to clearly understand!]

As a consequence of the foregoing, the tabulated values of "Required Channel Depth" in Table 10 are misstated; each should be 1 ft smaller ... e.g., 31, 28, 25, 22, and 19. Note that this is consistent with the accepted understanding that 19 ft would be the "natural depth" of the waterway if no maintenance dredging were performed. With a water depth of 19.0 ft, all vessels (or barges) with sailing drafts >17 ft would be excluded from using the waterway.

This problem with carefully defining "Channel Depths" is extended into Table 11 ... and then confounded. Once Table 10 is corrected per the above ... and the first two columns of Table 11 revised accordingly ... the values for the third column, which are extracted from Table 8, will no longer correlate to the same numerical values of channel depth (there is the 1-ft "shift"). The entire table needs to be reworked! [Note that at the 'natural depth' of 19 ft ... the DMMP-computed maximum values for costs saved ($8,479,577) and benefits foregone ($12,152,511) should correlate. In Table 11 of the Draft Report, they do not. As presented, the Table is clearly in error.]

Finally, this problem propagates into Figure 3. When "Cumulative Benefits" are replotted taking into account the 1-ft shift in channel depths, DMMP-computed benefits and costs become much closer at all channel depths (i.e., there is not as much difference between costs and benefits).

If one goes a step further, and combines this **correction** to the DMMP economic analysis for the 35-foot Channel System with the switch to the year 2003 for the vessel/barge traffic data base, it **produces a complete REVERSAL of the Benefits vs. Costs hierarchy** for channel depths >27 feet! For the deeper depths, the *computed annual maintenance costs EXCEED the computed annual benefits*!

In summary, the economic assessment for the 35-ft Channel System is flawed and imprecise; the correct conclusion is not apparent from the analysis presented in the Draft DMMP Report! **The Analysis should be redone with updated inputs and improved logic.**

Economic Analysis – 35-Foot C&D Canal Approach Channels; Key Parameters: The economic analysis for the 35-ft channel system is predicated on an assertion about tug/barge operating costs ($/hr) and an assumption about tug/barge operating speeds in coastal service (kts). No confirming, supporting or validating information for these pivotal economic parameters was presented. No Corps' approved tug/barge operating parameters or costs were cited. **12**

The values utilized in the Draft DMMP Report were extracted from a recent MPA consultant's report (5). That report developed "an average hourly operating cost of $750" from telephone interviews with some of the waterway's tug and barge operators. Per Corps' regulations and guidance, this is an inappropriate methodology for Corps' studies and reports. Engineering Regulation ER 1105-2-100 states:

"(6) Data Sources.

(a) Interviews. Collect data not available from secondary sources by personal interviews. (Use only interview forms approved by the Office of Management and Budget.) Display the questionnaire used and summary of responses in the project report in such a way that individual sources are not disclosed."

[Section E-10, NED Benefit Evaluation Procedures: Transportation, Deep Draft Navigation; page E-52.]

Unfortunately no interview forms or questionnaires were utilized in the DMMP study effort to develop the economically critical values of tug/barge hourly operating costs (or operating speeds). The values utilized in the economic assessment have not been ... and cannot be ... validated. Consequently, since the computed benefits cannot be validated ... logically, **the DMMP-computed benefits are invalid!**

The economic analysis of continued maintenance dredging of the 35-Foot C&D Canal Approach Channels clearly needs to be completely redone utilizing a Corps' approved, validatable set of operating parameters for the fleet of tug/barges utilizing the waterway!

Port-related jobs: The Report cites 115,400 as the number of "direct and Port-related jobs in Maryland". (Page 1-17) This value and statement are not correct. 13

There are 15,740 direct jobs associated with activities at the Port of Baltimore. The total number of direct, induced, indirect and related jobs totals 112,400 in the states of Maryland, West Virginia, Ohio and Pennsylvania. (9)

Branch Channels and Anchorages: Although the "justification" of continued full-depth maintenance dredging of the Branch Channels and Anchorages is included as a separate category in Appendix F, "Economic Justification", there was no economic analysis in the Report ... only a citation of the number of vessels using the channels with sailing drafts >30 feet. (page 17) It is NOT sufficient to cite a prior economic analysis performed for a different purpose ... and that may or may not be correct ... as justification.

To be an actual economic justification, the BCR for maintaining the full depths of each of these "separable elements" of the channel system should be computed. The economic benefits ($/yr) accruing from dredging each channel should be compared with the economic costs ($/yr).

The text and analysis should be upgraded to incorporate the existing channel depths for each branch channel and a tabulation should be prepared showing the number of annual user vessels having sailing drafts within 8 ft of the channel depth for each branch channel ... at one-foot sailing draft intervals. From such information, it can be discerned if all channel segments should be routinely maintained at full depths or at some lesser values. 14

CRITIQUE OF DRAFT DMMP REPORT

Baltimore Harbor and Channels Dredged Material Management Plan and Tiered Environmental Impact Statement; February 2005

QUESTIONS:

1. ***"Baseline costs."*** The Report states "The federal standard limits federal investment to a justified level of costs, serves as a basis for cost-sharing, and establishes baseline costs for economic analyses." (Page ES-8) Where in ER 1105-2-100, or other Corps' guidance, does it specify that the 'federal standard' (base plan) is the baseline for costs in economic analyses, i.e. that the BCR is to be based on the base plan? Please provide the text of the pertinent guidance. **15**

2. ***Projected Dredging Quantities:*** Table 2-35 indicates that "Non-Federal Maintenance" dredging in the Harbor will be 300,000 cy/year ('pay' basis). No historical data or discussion is provided to substantiate the value.
What is the basis for this assumption? Please interpret the 300,000 cy/year value in comparison with the annual average value of 150,000 cy/year (pay) for "private sector" dredged material placed at Hart-Miller Island for the period from 1983-2002. (10) [The 150,000 cy (pay) was deduced from a value of 161,650 cy (scow).] **16**

3. ***New Work Dredging - Harbor:*** In the overview tabulation of *Projected Dredging Quantities*, Table 2-35, the Draft Report includes partially identified Harbor dredging projects totaling 7.8 mcy (+ non-pay overdepth') for the years 2005-2008. **17**
   A. Precisely what are these projects and what will they provide for the Port?
   B. Why are they not mentioned and discussed in the Report in *Section 2.15 Dredging Needs*?

4. ***New Work Dredging - Harbor:*** In the overview tabulation of *Projected Dredging Quantities*, Table 2-35, the Draft Report includes a line item for "Unidentified New Work" in the Harbor Channels section. This line item has a 'zero' value for the first 6 years ... and is thereafter set at 10% of the total Harbor dredging (federal maintenance + non-federal maintenance + new work). **18**
   A. What is the rationale and justification (historical record or ??) for this category?
   B. Why is the projected value 'zero' until 2010 ... and then an apparently arbitrary value of 10% thereafter?
   C. Since this line item amounts to 1/10 of the Harbor placement 'shortfall', why is it not discussed in the Report text?

5. ***'New Work' – Harbor:*** The Report indicates the existence of an "Other State New Work" project slated for 2014-2015 that generates 4.45 mcy (pay) of dredging (Table 2-35). Accounting for the associated "unidentified new work" and "non-pay overdepth" raises the total projected placement need for this unidentified project to 5.4 mcy. This quantity is 1/3 of the projected 'shortfall' in placement capacity over the next 20 years for Harbor-origin dredgings. **19**
A. What is this unspecified project? Why is a 'new work' dredging project of this magnitude not described and discussed in the Report?

6. ***Economic Analyses – Time Horizon:*** In outlining the plans for performing the economic analysis, the *Project Management Plan* explicitly stated, "The analysis will factor in estimated usage of the channels through 2025." (11)

A. In view of this stipulation, why was estimated vessel and barge usage of the channels accessing the Port of Baltimore in years beyond 2002 or 2003 not included in the economic analyses? **20**

B. Since vessel and barge usage is generally declining, and maintenance costs are gradually increasing, please explain why these factors were not considered in the economic analyses.

7. ***Economic Analysis – 50-ft Project:*** The Report states "The total cost to maintain the channels associated with the 50-foot project is $10,812,000." (Appendix F, page 9) **21**

A. Does this cost value include maintenance dredging of the Virginia channels?

B. Does this cost value include maintenance dredging of the non-Federal channels in the Harbor?

C. Does this cost value include the non-Federal "cost-share" for maintenance of channels with depths >45 feet? What are the actual values for the non-Federal costs?

D. What are the bases and origins of the "Nominal Cost" values presented in Table 5 (Appendix F)? (I can't reconstruct the values from USACE dredging contracts data.)

E. Why use 2002 as the base year for the costs and benefits considerations when more recent data is available and the year 2003 was used for the assessment of maintaining the 35-foot project?

8. ***Economic Analysis – 50-ft Project:*** The Draft Report assumed a depth of 50 feet was needed to handle all of the export coal and import iron ore traffic. However, in 2003 only 51 vessels with sailing draft >44 ft used the waterway and only 77 vessels transited with sailing drafts >41 ft. (4) **22**

A. How can a Federal expenditure of $10.8 million be justified for only 50-75 vessel transits ($140,000 to $200,000 per transit)?

B. Why did the analysis not assess the efficacy of maintaining the waterway to lesser depths?

9. ***Economic Analysis – 35-Foot C&D Canal Approach Channels:*** Assuming the calculations supporting Tables 6-8 are correct, the DMMP economic analysis concludes that … using the "Federal standard" for placement … the annual maintenance dredging costs total $8,479,000. A recent MPA-sponsored analysis of the dredging costs for the 35-ft channel system concluded the equivalent costs were $9,500,000. (6) **23**

A. Please explain the difference.

10. ***Economic Analysis – 35-Foot C&D Canal Approach Channels:*** From the information provided in the Draft Report it is not possible to develop or confirm any of the cost numbers in Tables 6, 7 and 8 of Appendix F.

A. How were these values computed? Please provide the bases and specifics for the calculations utilized. [e.g., explain how the various unit costs for dredging ($/cy) were deduced; explain why there are no apparent 'economies of scale' such that unit costs ($/cy) are lower when larger quantities are dredged – with **24** particular attention to the costs and quantities cited in Tables 6 and 7; explain with appropriate detail how the dredging quantities and associated costs for depths less than 35 ft were ascertained (not clear from existing discussion in text); explain how these USACE-deduced values of the quantities to be dredged compare with those previously estimated (6).]

B. At a channel depth of 35 ft, the average annual dredging quantity of CENAP's channels totals 1,057,295 cy in Attachment 4 versus 1,123,382 cy in Table 7. Please explain this apparent inconsistency.

11. ***Economic Analysis – 35-Foot C&D Canal Approach Channels:*** The analysis was based on computed 'transportation cost savings' of vessels and barges that used the 35-ft deep C&D Canal access route to/from Baltimore and more northern ports instead of the longer route via the main channel and Cape Henry. The analysis valued the differential in sailing times as if the vessels and barges would be immediately unloaded upon berthing at their destination (i.e., used only "at sea" hourly costs). **25**

A. Why did the analysis not take into consideration the recognized factor that most vessels (and barges) sit idle at berth for many hours after arriving before unloading? Arriving vessels wait at berth prior to unloading because land-side labor has fixed shift start-times ... and charges a significant overtime premium for any labor shift with a start-time other than 8:00 am. Frequently this means that some, or all, of the transit time ostensibly "saved" via use of a speedier route is actually not productively utilized (and hence has an associated diminished economic savings). Close study of the time spent in port by vessels reveals that, most of the time, vessels commence unloading operations at 8:00 am ... regardless of the time of day or night that they berthed or the access route utilized. The economic significance of this matter can be discerned when one compares the "at sea" and "in port" hourly operating costs for vessel or barges.

12. ***Innovative Use Options***. The Report recommendations vaguely include the pursuit of innovative use alternatives for disposition of dredged material. (Pages ES-24 and 6-1) How does the Corps plan to pursue the "innovative use options" in partnership with the State of Maryland? The Report text needs to explain in detail providing specifics and addressing funding and management issues. If the Corps has no specific plan and 'path forward', the recommendation should be deleted.

CRITIQUE OF DRAFT DMMP REPORT

***Baltimore Harbor and Channels Dredged Material Management Plan and Tiered Environmental Impact Statement*; February 2005**

SUGGESTIONS:

Table 1-1: For the Table providing information on the Maintenance Dredging Average Annual Quantity (cy) for the C&D Approach Channels suggest using historical data rather than the unsubstantiated estimate of 1,200,000 cy provided by CENAP. Specifically, suggest using either the detailed data provided by CENAP (April 2004) to Gahagan & Bryant Associates for the period 1992-2003 that finds an average annual maintenance quantity of 0.85 mcy for the Lower Approach Channel (and 0.15 mcy for the Upper Approach Channel). **26**

OR ... suggest using the data provided in the DMMP Report, Appendix F, Attachment 4 for the period of 1993-2003 that finds an average annual maintenance quantity of 0.88 mcy for the Lower Approach Channel (and 0.16 mcy for the Upper Approach Channel).

Table 1-6: No Table 1-6 exists in the Report, yet it is cited on pages 3-2, 3-3, 3-4, 3-5 and 3-7. Either the material for Table 1-6 should be incorporated in the Report or the text needs to be changed. **27**

Sediment Issues: Several portions of the discussion in *Section* 2 that discuss sediment quantities need clarification.

Page 2-11: The Draft Report states "The Susquehanna discharges an annual average of 2.5 megatons of sediment." (line 22) However, Table 2-33 clearly reports the annual sediment load to be 1.04 - 1.06 million tons per year. (years 2000 and 2002) This is a big discrepancy and warrants clarification. [Which values should be relied upon?] **28**

Page 2-19: The Draft Report states "The Conowingo Reservoir ... is currently trapping about 50% to 70% of suspended sediment that would otherwise be discharged to the Bay. Approximately 42 million tons of sediment storage capacity remains (2003)." (line 28) Some interesting considerations follow from this information.

If 50% of the suspended sediment in the Susquehanna is discharged into the Bay downstream of Conowingo, and the annual discharge totals 2.5 megatons (page 2-11), then the total annual suspended sediment load above the Conowingo Reservoir is 5.0 megatons.

If the other 50% of this load is trapped ... 2.5 megatons ... the remaining storage life of the Reservoir is 17 years post 2003.

If 30% of the suspended sediment in the Susquehanna is discharged into the Bay downstream of Conowingo then the total annual suspended sediment load above the Conowingo Reservoir is 8.3 megatons.

If 70% of this load is trapped ... 5.8 megatons ... the remaining storage life of the Reservoir is 7 years post 2003.

No matter what value is selected for the 'sediment trapping' efficiency in the range of 50-70%, it appears that sediment accumulation in the Conowingo Reservoir will reach 'steady-state' before 2024 … and thus be in the 20-year DMMP planning horizon.

However, if the annual sediment discharge from the Susquehanna is as low as 1.0 megatons (Table 2-33), then it would take about 2 ½ times as long for the Conowingo Reservoir to reach steady-state.

Reality is probably somewhere between these extremes, hence it would seem to be imperative to quantitatively address these considerations … and their implications for dredging quantities and costs … in the DMMP Report.

Page 2-20: Relative to the filling of the pool behind the Conowingo Dam, the text states "there is not an estimated time period in which the reservoirs will fill …" (line 3). I believe that there are several USGS estimates which indicate that the sediment accumulation will reach a steady-state sometime in the 2018 - 2023 period. Since this is within the 20-year time horizon of the DMMP, these projections should be included in the Report and their implications for dredging discussed. (see foregoing item)

Page 2-21: The Draft Report states "Currently, more than 5 million tons of sediment enter the Bay from land-based sources … ." (line 7) Is this quantity just from rivers and streams as indicated by Tables 2-33 and 2-34 … or is it the total sediment load? The value is inconsistent with the statement of Page 2-25 "erosion processes carry approximately 11 million cubic yards of sediment into the Bay." (line 13) The text seems to need some clarification at these points.

[It is interesting to compare the magnitude of these sediment sources with the quantity of material dredged annually from the Maryland channels … recognizing that the material dredged from the Virginia channels probably had a predominant ocean-origin.]

Port of Baltimore Commerce: In section 2.13.1 the Draft Report cites Baltimore as "handling more than 30 million tons annually of all types of cargo from around the world." Suggest correcting that value since … for the year 2003 … Foreign commerce via Baltimore totaled 24,096,000 tons and Total commerce (Foreign + Domestic) totaled 40,183,000 tons. (4) 29

Dredging Quantity – Virginia Channels: The Draft Report text is inconsistent and erroneous in several locations relative to the requisite quantity of material to be dredged from the Virginia portion of the main channel system. The correct values (to be consistent with Table 2-35 and Figure 5-1) are 16.05 mcy for a 21-year period (2005-2025) and 13.36 mcy for a 20-year period (2005-2024). The text at pages ES-3, ES-4 and 3-61 (and probably elsewhere) needs to be revised accordingly. 30

Economic Analysis – 35-Foot C&D Canal Approach Channels: The discussion on page 12 (Appendix F) indicates that some procedure was devised for ascertaining the requisite dredging quantities to maintain the channels at depths less than the full authorized depth (35 ft). However the procedure is not clear from the text and there is no way to assess its appropriateness or accuracy. 31

Suggest revision of the text and incorporation into the Final Report the necessary figures (graphics) and example calculations to clarify this matter.

Swan Point Channel: As part of the DMMP suggest considering allowing the Swan Point Channel to silt in to its natural depth of about 27 feet as there is insufficient deep draft vessel and barge traffic through the channel to justify the maintenance expense. The economically significant commerce movements via barge from Norfolk/Hampton Roads to the Delaware River ports would still be able to transit the route if the depth were 27 feet. 32

This variant would reduce annual dredging needs by about 100,000 cy … extending the life of the Poplar Island disposal site and save well over $500,000 annually.

Acceptability Risk Evaluation: Strongly suggest that the "Acceptability Rating" for the 'C&D Canal Upland Sites Expansion' be revised from a '2' to a '3' because there is significant (not 'moderate') public opposition to any further use of the Pearce Creek disposal site AND because the Maryland Department of the Environment is on record as refusing to grant a Water Quality Certification for placement of dredged materials at the site. [Table 3-9] 33

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REFERENCES:

(1) Johnson, S., (CENAB); *RE: POPLAR ISLAND COSTS AND CAPACITIES,* EMAIL to J.M. Williams, February 11, 2005.

(2) USACE; *Baltimore Harbor and Channels, Maryland and Virginia, Combined Phase I and II General Design Memorandum*, August 1981.

(3) Band, W.F.X., (untitled) EMAIL to J.M. Williams, March 9, 2005.

(4) USACE; *Waterborne Commerce of the United States (WCUS), Waterways and Harbors*, 2002 and 2003; Navigation Data Center, Waterborne Commerce Statistics Center.

(5) Martin Associates, *Economic Benefits of the Maintenance Dredging Program for the C&D Canal*, prepared for Maryland Port Administration, October 14, 2004.

(6) Gahagan & Bryant Associates, *Northern Passage Channel System - Dredging Program Incremental Cost Analysis, 18 – 35 ft*, Final Draft Report, October 2004.

(7) Williams, J.M., Personal Communication from major maritime carrier in coastal service.

(8) Hassett, S.K., (USACE), *Re: Trips and Drafts Methodology*, EMAIL to J.M. Williams, August 20, 2004.

(9) Martin Associates, *The Economic Impacts of the Port of Baltimore*, Nov. 10, 2003.

(10) Young, Wayne, (MES), *RE: Public Information Act Request*, Letter to J.M. Williams, March 4, 2003 transmitting a multi-year data table of material placed at Hart-Miller Island.

(11) USACE; *Project Management Plan, Baltimore Harbor and Channels Dredged Material Management Plan*, October 2002.

COMMENTER P-11

-----Original Message-----
From: Barbara Medina
Sent: Tuesday, March 15, 2005 10:29 AM
To: Mendelsohn, Mark NAB02
Subject: Dredge from the Port of Baltimore

Dear Mr, Mendelsohn:

I would like to support the recommendations in the draft TEIS for disposition of the dredge material from the Port of Baltimore, assuming of course that the material has been tested and is found to be free of toxins that would do harm to wetlands plants and animals. The National refuge and the wildlife management area in Dorchester County have been losing wetlands for a long time. A replacement of clean material would let both areas function better and give a better return to taxpayers for their investment in these needed facilities.

Thank you for permitting testimony on the study.

Sincerely,

Barbara Medina
Silver Spring, MD 20904

COMMENTER P-12

From: William & Elizabeth Giese

Sent: Thursday, March 24, 2005 8:00 PM
To: Mendelsohn, Mark NAB02
Subject: Draft DMMP Baltimore

March 24,2005

Mark Mendelsohn
U.S. Corps of Engineers
Planning Division

Mr. Mendelsohn:

I would like to express my support of the Draft Tiered Environment Statement for the Baltimore Harbor and Channels Dredged Material Management Plan. The Corp has done an excellent job of reviewing the alternatives for the wise use of dredge spoil from the Baltimore Channels and projecting that use over the next 20 years. Finalizing the Hart-Miller Island site over the next few years will produce a unique area for the public and wildlife to be enjoyed for the future. The expansion of Popular Island will take care of the immediate needs of the material in the near future and the creation of the James and Barren restoration areas will not only create unique areas but will also protect the sections of the Bay shore in Dorchester County from the ravages of the Bay and prevent continued erosion of shoreline and a reduction of sediments resulting from that erosion. I am particularly supportive in exploring the opportunity of using dredge material for the restoration of the Blackwater NWR marshlands. The continued loss of the these invaluable wetlands not only threatens the resources using the refuge but also reduces the natural resources of the entire Bay watershed. The possible use of these materials is currently the only potential restoration opportunity available. I encourage the Corps of Engineers to do every thing possible to further that opportunity.

Thank you

William M. Giese Jr
Elizabeth M. Giese
Cambridge MD 21613

COMMENTER P-13

From: Debbie Dilley
Sent: Tuesday, April 26, 2005 9:19 AM
To: Mendelsohn, Mark NAB02
Subject: One man's trash is another's treasure!

Dear Mr. Mendelsohn,

I am hoping you would be willing to send CLEAN dredge material from Baltimore to Blackwater Wildlife Refuge for wetland restoration. Years ago, we saw so many birds there compared to now. So if there is <u>any</u> way for you to help restore this wetland, I feel obligated to ask. Songbirds, etc, have declined so greatly over the last 20 years due to the loss of habitat and change in land on migration routes. We appreciate ALL YOUR HELP. Thank you.

Debbie Dilley
Frederick, MD 21701

COMMENTER P-14

-----Original Message-----
From: Peggy Tillier
To: Mendelsohn, Mark NAB02
Subject: TEIS

Dear Mr. Mendlesohn:

I would like to add my name and voice to those urging you to move forward on the Draft Tiered Environmental Impact Statement Dorchester County Option.

As a member of the Friends of Blackwater, I know first hand how our small efforts at using clean dredged material over the past several years has made an impact and been enormously successful. However, our efforts are but a teaspoon dipped in the ocean. It will take much larger forces and far greater resources than we have at our disposal. This is something that must be accomplished if we are to protect the Chesapeake Bay watershed and the various wildlife that depend upon it for survival. The deposit of dredged material has been a problem in the past....we are asking that it be placed where enormous good can come from it. 1

Thank you for reading this and for anything you can do to urge adoption of this option.

Peggy Tillier
Woolford, MD 21677

COMMENTER P-15

Elkton, MD 21921
March 23, 2005

Col. Robert J. Davis
District Engineer
USACE- Baltimore
P.O. Box 1715
Baltimore, MD 21203-1715

ASSESSING BCRs IN DMMP STUDY – ASSOCIATED COSTS

Dear Colonel Davis:

The District recently released the report *Draft Baltimore Harbors and Channels Dredged Material Management Plan and Tiered Environmental Impact Statement*. (1) The public comment period is from February 11 to March 28, 2005.

This letter addresses additional factors to be used in calculating the Benefit-to-Cost Ratios (BCRs) intended to ascertain the economic justification of continued maintenance dredging of the navigation channels serving the Port of Baltimore. These comments augment my prior communications on the DMMP study, including my letter of March 22 to the District. **1**

As this particular consideration is a policy issue, and not simply a technical comment on the calculations or text of the Draft Report, it is being submitted separately for your review and consideration.

SITUATION:

In establishing the context for considerations of placement alternatives and justifying economic evaluations, the cited DMMP Report stated:

> "The federal standard is the least costly dredged material placement alternative consistent with sound engineering practices and compliant with federal environmental laws. The federal standard limits federal investment to a justified level of costs, serves as a basis for cost-sharing, and establishes baseline costs for economic analyses." (1; page ES-8)

The DMMP study subsequently constructed several economic assessments of continued maintenance dredging of the major channel systems serving the Port of Baltimore using the above "federal standard" as the basis for the NED costs in the BCR determinations.

In so doing, CENAB <u>assumed</u> that

1. The 'federal standard' establishes baseline costs for economic analyses, and
2. BCRs for economic justification of continued maintenance dredging can be calculated using <u>only</u> the Federal costs for implementing the 'federal standard'.

I believe that the foregoing propositions are not valid and are inconsistent with Corps' guidance and Corps' practice.

COMMENTS on SITUATION:

The quoted statement, while clear and concise, has some troubling elements. The term “federal standard” does not appear in standard Corps’ guidance. However, based on the remainder of the first sentence, “federal standard” appears to be synonymous with the more generally used term “base plan”.

The assertion that the “federal standard” (‘base plan’) establishes baseline costs for economic analyses seems to be unique. I was unfamiliar with that interpretation and have been unable to locate such a statement in any Corps’ guidance for planning or economic aspects of navigation projects. (2,3,4,5,6) Consequently I question the veracity of this key assumption.

ADDITIONAL FACTORS:

With regards to the economic justification of navigation projects, Corps’ guidance is specific:

> “Economic justification is determined by comparison of NED benefits and costs.”
>
> [*Digest of Water Resources Policies and Authorities*, EP 1165-2-1, Chapter 12, Navigation, 15 Feb 1996.]

In computing numerical values of the NED costs to be utilized in an economic assessment (and BCR determination), Corps’ analysis frequently focuses on the specific *implementation* expenses or outlays (e.g., post-authorization PED costs, construction costs and contingencies, administrative services costs, habitat mitigation costs, utility relocation costs, etc.). However, Corps’ guidance also makes clear that other costs should be incorporated into the analysis. [See appended Excerpts from Corps’ Guidance] These other categories are termed “Associated Costs” and “Other Direct Costs”. They are not defined on the basis of who incurs the costs but rather in terms of the types of resources used or costs incurred. (3,4,5) More simply stated:

NED Costs = Implementation Outlays + Associated Costs+ Other Direct Costs.

It would not be correct, therefore, to base the NED costs in BCR determinations solely on ‘Implementation Outlays’… as appears to have been done in the economic assessments performed as part of the current DMMP study. For example, in the case of maintenance dredging of the Tolchester or Brewerton Extension Channels, the “Implementation Outlays” (as charged to the O&M budget) are the costs to dredge and then place the material overboard into the Deep Trough (‘base plan’). Since placement is actually at Poplar Island, those additional incremental costs of material transfer, unloading and placement are being charged to another project (PIERP). Nevertheless … per the ‘guidance’… they are “Associated Costs” since they are expenditures (consumption of resources) necessary to accomplish and realize the objectives of the maintenance dredging project. Hence those additional costs should have been included in the NED costs compiled in the DMMP economic analyses.

As a further comment … Corps’ practice in other economic assessments for navigation projects has been to identify and include in the analyses some of the additional, non-Federal resource consumptions and costs that are required to realize project benefits. [See appended examples.]

“ASSOCIATED COSTS” NOT INCLUDED IN DMMP ECONOMIC ANALYSES:

“Associated Costs are the costs of measures needed over and above project measures to achieve the benefits claimed during the period of analysis” (3,6)

While there may be other ‘associated costs’ for the subject project to maintain the depths of the navigation channels to the Port of Baltimore, these are obvious:

1. Maintenance dredging of the non-Federal channels and berthing areas. This activity has been estimated to generate about 300,000 cubic yards annually (1) but the accompanying costs of approximately $1.5 million were not included. Such activities and their associated costs have been routinely incorporated in Corps’ economic assessments of dredging projects. (7,8)

2. Allocation of dredged material placement costs to other (non-O&M) projects. These costs … the difference between the actual dredging and placement costs and those estimated under the ‘federal standard’ or base plan … need to be appropriately accounted for and incorporated in the economic assessments as “Associated Costs”. The actual dredging costs are a cost-shared outlay, part of which is charged to an “environmental restoration project” (like Poplar Island) and the balance to the Federal O&M for channel maintenance dredging; the latter is simply the Federal outlay excluding any cost-share. These additional costs … to be charged to the non-O&M project … were recently estimated at $4.42/cubic yard (9). For the relevant Tolchester and Brewerton Extension channels, with an average annual dredging demand of about 650,000 cy, the associated costs not accounted for thus total approximately $2.9 million annually. This estimated value is remarkably consistent with the total of $5.8 million of “Incremental Dredging Costs” which were charged to the Poplar Island Environmental Restoration Project for the FY03-FY04 period. (10)

“OTHER DIRECT COSTS” NOT INCLUDED IN DMMP ECONOMIC ANALYSES:

"These are the costs of resources directly required for a project or plan, but for which no implementation outlays are made." (3,6)

There may be additional ‘other direct costs’ for the dredging project to maintain the navigation channels to the Port of Baltimore, but these are obvious:

1. O&M costs for maintaining the Hart-Miller Island dredged material disposal facility. These costs are borne exclusively by the State of Maryland (MPA) and are “resources donated for the project “ to maintain the Harbor channels. There are no Federal outlays. Hence these annual costs are clearly categorizable as ‘other direct costs’. (6) They total about $4 million annually. (11)

2. Loss of fishing opportunities near Pooles Island. This matter was compellingly described at the DMMP public meeting on March 10. It appears to be an “uncompensated NED loss” as described in the appended citations. (6)

In addition to the foregoing items, in FY05 the Maryland Port Administration currently projects expenditures on dredging programs of $14 million for “Planning and Engineering” for future dredged material disposal and $21 million for “Dredged Material Placement and Monitoring”. These are in addition to the above costs.

Question: Should these MPA outlays be included as 'Associated Costs' or 'Other Direct Costs' in the NED costs portion of the economic assessments of channel maintenance dredging? Please explain.

Question: In preparation of a Final version of the DMMP Report, how will CENAB be including the foregoing "Associated Costs" and "Other Direct Costs" in reassessing the economic justification of maintenance dredging? Please explain.

SUMMARY:

The foregoing considerations (bolstered by the appended Corps' guidance and practices) indicate clearly that the economic analyses used in the Draft DMMP Report should have included both 'Associated Costs' and 'Other Direct Costs' in their assessments of NED Costs … and the subsequent BCRs.

Consequently … based on this review of Corps' guidance and practices … **the BCR computations used in the DMMP study and Report are incorrect.** All appropriate costs were not included. Further, because the magnitudes of the neglected cost terms are significant … the reported BCRs are markedly impacted so that even *without* the technical corrections discussed in my March 22 letter … the conclusion may be confidently drawn that **full depth maintenance dredging of all channels serving the Port of Baltimore is NOT warranted.**   Perhaps some channels should be maintained as some lesser depths; however, the precise answer is not clear at this juncture.

Obviously such a conclusion substantially reduces the placement needs for dredged material and necessitates an extensive reworking of the other portions of the DMMP study and Report. Clearly this is a crucial issue for CENAB to resolve.

I request that this substantive policy issue be promptly reviewed with CENAB's 'higher authorities' for resolution and that the Draft DMMP Report be modified accordingly.

In closing, I appreciate the opportunity to comment on the Draft DMMP Report and the methodologies employed in its preparation. I look forward to the District's review of these considerations and its response to my questions and concerns. If warranted, I would be available to discuss these issues in depth with Corps' personnel after April 7.

Sincerely,

John M. Williams

Copy: Congressman Wayne T. Gilchrest
Mr. Mark Mendelsohn (CENAB)

PERTINENT CITATIONS EXCERPTED FROM CORPS' GUIDANCE:

GUIDANCE ON NED COSTS:

"k. NED costs.

(1) Project measures, whether structural or nonstructural, require the use of various resources. NED costs are used for the economic analysis of alternative projects and reflect the opportunity costs of direct or indirect resources consumed by project implementation. From an economic perspective, the real measure of cost is opportunity cost, i.e., the value of that which is foregone when a choice of a particular plan or measure is made. In order to capture the opportunity costs of proposed plans, NED costs include three types of costs: implementation costs, other direct costs and associated costs.

(2) Implementation costs are explicit costs of implementing a project. They include the post authorization planning and design costs, construction costs, construction contingency costs, and operations, maintenance, repair, rehabilitation and replacement costs (OMRR&R). These also include costs for all fish and wildlife habitat mitigation, historic and archaeological mitigation and data recovery, lands, easements, relocations, rights-of-way, disposal/borrow areas and water and mineral rights, which are necessary to implement the project.

(3) Other direct costs are the costs of resources directly required for a project or a plan but for which no implementation outlays are made. Examples of these costs are interest during construction, value of donated land, uncompensated NED losses and other negative externalities.

(4) Associated costs are those costs necessary for production of project outputs for which no project expenditure is made. An example would be the cost of transmission lines provided by the private sector necessary for using energy provided by a hydropower improvement."

Ref.: ER 1105-2-100, 22 Apr 2000; pages 2-11 to 2-12.

"NED COSTS

The relevant costs for project evaluation have been determined by policy to be NED costs. NED costs are defined as follows:

> "Resources required or displaced to achieve project purposes by project installation and/or operation, maintenance, and replacement activities represent a NED cost and should be evaluated as such. Resources required or displaced to minimize adverse impacts and/or mitigate fish and wildlife habitat losses are also NED costs. (P&G)"

"NED costs are not defined on the basis of who incurs the cost. For example, NED costs may be incurred by the Federal government, any non-Federal level of government, by individuals, or society in general. The primary contribution made by the P&G definition of NED costs is to identify and define specific examples of fixed and variable opportunity costs associated with Corps projects."

"The NED costs are divided into **implementation outlays**, **associated costs**, and **other direct costs**. Examples of these costs are provided in terms of the resources used and costs incurred to produce a typical Corps project."

“**Associated costs** are a subset of costs over and above the "project costs" necessary to realize the benefits; they are usually, but not necessarily, non-Federal costs. The distinction between implementation outlays and associated costs is rather artificial from an economic theory standpoint. From a purely economic sense, project implementation costs would include the costs of all inputs necessary to produce the project outputs or benefits, regardless of by whom they are paid.

The NED distinction between implementation outlays and associated costs appears to be based on the identity of the party that incurs the cost. Implementation outlays appear to be the responsibility of the Federal government and the non-Federal partner, while associated costs frequently, but not always, are the responsibility of the non-Federal partner or a third party.”

Ref: IWR Report 91-R-11; pages 42-43.

GUIDANCE ON ASSOCIATED COSTS and OTHER DIRECT COSTS:

“f. Evaluation Procedure: Associated Costs. Associated costs are the costs of measures needed over and above project measures to achieve the benefits claimed during the period of analysis. For example, associated costs include the cost of irrigation water supply laterals, if they are not accounted for in the benefit estimate. Base associated costs on the current market prices of goods and services required for the installation of measures needed over and above project measures.

(1) Associated costs have often been handled through the self-liquidating cost concept. A self-liquidating cost is the cost of a particular type of asset that can be operated in such a way that it repays the money spent to acquire it (e.g. mooring or dock space). The use of self-liquidating costs is limited to those cases in which appropriate associated costs are netted out of benefit measures.

(2) It is preferred that associated costs be explicitly treated as NED project related costs, and appear as costs in benefit-cost ratios.”

“g. Evaluation Procedure: Other Direct Costs.

(1) These are the costs of resources directly required for a project or plan, but for which no implementation outlays are made. Consequently, they are included in the economic costs of a plan but not in the financial costs. These costs may be important for both structural and nonstructural plans. For example, a zoning plan to preserve floodplain values by restricting development would have as a cost the value of with project development opportunities foregone. A plan that responds to demand growth by reallocating existing outputs from low value uses to high value uses through pricing mechanisms (i.e., raising the price of existing outputs) would have as its major cost the value of the outputs to the users who forego its use as a result of its higher price. On the other hand, a structural project may displace recreation use at the project site and the value of foregone recreational opportunities is a direct cost. Whenever possible,

compute these costs using the procedures set forth for computing benefits (in Appendix E). If these costs are not quantified, they should be otherwise identified.

(2) Other direct costs also include uncompensated NED losses caused by the installation, operation, maintenance, repair, rehabilitation, or replacement of project or plan measures. All uncompensated net losses in economic outputs (not transfers) that can be quantified shall be considered project NED costs. The evaluation of such costs requires an analysis of project effects both within and outside the project area."

Ref.: ER 1105-2-100; 22 Apr 2000; Appendix D, D-9 to D-10.

ASSOCIATED COSTS (2.12.6)

"Associated costs are the costs of measures needed over and above project measures to achieve the benefits claimed during the period of analysis." P&G p.99.

"Associated costs may be borne directly by the non-Federal partner or they may be borne by the private sector."

"Associated costs are frequently overlooked when they do not have to be paid by either the Federal government or the non-Federal partner. When private industry and individuals must incur some cost to be able to consume or make use of project outputs, these are NED costs.

The costs of a hydropower project to the Federal government and its non-Federal partner include the costs of the dam and generating equipment. The energy produced cannot be used until transmission lines and individual connections are also provided. These latter costs, born by the private sector, are associated costs that should be included in the economic analysis of the project.

Navigation projects provide many examples of associated costs. A deep draft channel is cost shared by the Corps and its partner. The output of this project is not realized until access channels connecting private users with the main channel are dredged; berths are constructed or deepened; rail spurs built, etc. The costs associated with using project outputs can be substantial."

OTHER DIRECT COSTS (2.12.7)

"These are the costs of resources directly required for a project or plan, but for which no implementation outlays are made." (P&G p. 99).

"Other direct costs as defined in the P&G are synonymous with what have been called implicit or non-monetary costs in this manual. These costs are direct in that they are incurred as a direct result of project implementation. There are no expenditures associated with these costs, only resource use. Three types of other direct costs are part of NED project costs.

The first type of other direct cost identified in the P&G is the use of resources for project implementation for which money is not expended. Land or other resources donated for the project are examples. Resources are used, implying an opportunity cost, but there is no explicit money cost associated with the resource use. These are still NED project cost."

“Uncompensated NED losses are a second category of other direct costs. NED losses result when economic output is diminished by the installation, operation, maintenance, or replacement of a project. These costs are also implicit costs. They differ from the first category in that they need not be associated with project construction only. Lost output that can be attributed to project operation at any point in time or space are also NED project costs.

An example of an uncompensated project loss would be the loss of fishing and canoeing opportunities downstream of a reservoir as a result of releases of water. When water is released from a dam, fishermen and boaters may lose access to the river downstream of the dam. This represents an NED loss of recreation user days. No one is compensated for these lost opportunities, yet they are real economic costs of the project.

The third category of other direct costs identified in the P&G are what we called negative externalities in the last chapter. Many of these externalities will be implicit costs. Some of them, however, become explicit costs for the affected third parties. For example, induced flood damages are an NED project cost. From the perspective of the Federal government and its partner, these are implicit costs of the project that neither of them will have to pay. Ultimately, however, when the damage occurs and recovery from the damages is necessary, someone is going to have to make an explicit payment for the relief. In this sense, some of the other direct costs may become explicit costs at some point in time.”

Ref: IWR Report 93-R-12; pages 59-61.

GUIDANCE ON ‘BENEFICIAL USES:

“(2) Beneficial Uses. Costs for beneficial uses consistent with, and part of, the Base Plan are O&M costs and shall be shared in the same manner as other navigation O&M costs. Where beneficial uses involve an incremental cost over the Base Plan, these incremental costs are either a non-Federal responsibility or are a shared Federal and non-Federal responsibility depending on the type of beneficial use, as follows: …”

Ref.: ER 1105-2-100, pg E-76.
such costs are ‘associated costs’ and includable in NED costs.

“F-20. **Beneficial Uses of Dredged Materials, Section 204, Water Resources Development Act of 1992, as amended.**
a. Purpose. Section 204 (a) authorizes the Secretary to “carry out projects for the protection, restoration, and creation of aquatic and ecologically related habitats, including wetlands, in connection with dredging for construction, operation, or maintenance by the Secretary of an authorized navigation project.”

b. Base Plan. Disposal of dredged material associated with the construction or maintenance dredging of navigation projects should be accomplished in the least costly manner consistent with sound engineering practice and meeting all Federal environmental requirements.
This constitutes the base plan for the navigation purpose. If the ecosystem restoration project is part of the base plan, it is a navigation (harbor or inland system) construction or maintenance

cost and funded accordingly. Where the ecosystem restoration project is not part of the base plan for the navigation purpose, the base plan serves as a reference point for measuring the incremental costs of the ecosystem restoration project that are attributable to the environmental purpose.

c. Cost-Sharing. Ecosystem restoration projects under Section 204 are funded as navigation construction or operation and maintenance costs up to the level of the base plan. For costs above this baseline, the non-Federal share of the project shall be 25 percent of the incremental costs associated with construction of the ecosystem restoration project, including provision of all LERRD. The non-Federal sponsor shall also be responsible for 100 percent of OMRRR associated with the ecosystem restoration.

d. Work-in-Kind. No credit will be allowed for work-in-kind."

Ref.: ER 1105-2-100, 22 April 2000; Appendix F.

EXAMPLES OF CORPS' PRACTICE re "ASSOCIATED COSTS" INCLUDED IN NED COSTS AND BCR DETERMINATIONS:

CENAB; GDM-1981: The "Non-Federal dredging costs" estimated in the study for deepening the main Chesapeake Bay channel from 42 to 50 ft were treated as *Associated Costs* in the economic analysis and amounted to 22.8% of the Total Project Costs (First Costs). (7) These non-federal costs included private channel dredging in berthing areas and access channels, provision and maintenance of suitable disposal area with retaining dikes, and relocation of affected utilities. The private channels included waterways to Bethlehem Steel Ore Pier, Consolidation Coal, C&O and B&O Coal and Ore Piers, Exxon Company, Locust Point Pier 7, etc. The 'suitable disposal ' area' was Hart-Miller Island … constructed and operated at MPA/State of Maryland expense (non-Federal).

CENAP; LRR-1997: The proposed navigation dredging project to deepen the Delaware River channel from 40 to 45 ft would benefit primarily tankers importing crude oil. Project documents identified non-Federal berth dredging and bulkhead modifications as *Associated Costs* totaling about 9% of Total Project Costs. (8)

REFERENCES:

(1) USACE, *Draft Baltimore Harbors and Channels Dredged Material Management Plan and Tiered Environmental Impact Statement*, CENAB, February 2005.

(2) USACE, *Selected Corps of Engineers Project Planning Presentations and Guidance; Information CD on Corps of Engineers Guidance, Water Resources Development Acts and the Corps Planning Process*, Division of Federal Program Activities, October 25, 2001.

(3) USACE, *Guidance for Conducting Civil Works Planning Studies (Planning Guidance Notebook)*, ER 1105-2-100, 22 April 2000.

(4) USACE, *Digest of Water Resources Policies and Authorities*, EP 1165-2-1, 15 February 1996.

(5) USACE-IWR, *National Economic Development Procedures Manual – Overview Manual for Conducting National Economic Development Analysis*, IWR Report 91-R-11, October 1991.

(6) USACE-IWR, *National Economic Development Procedures Manual, National Economic Development Costs*, IWR Report 93-R-12, June 1993.

(7) USACE, *Baltimore Harbor and Channels, Maryland and Virginia, Combined Phase I and II General Design Memorandum*, CENAB, August 1981.

(8) USACE, *Delaware River Main Channel Deepening Project (Pennsylvania, New Jersey and Delaware), Limited Reevaluation Report*, CENAP, May 1997.

(9) Gahagan & Bryant Associates, *Northern Passage Channel System - Dredging Program Incremental Cost Analysis, 18 – 35 ft*, Final Draft Report, October 2004.

(10) Johnson, S., *Re: Poplar Island Costs and Capacities*, EMAIL to J.M. Williams, February 11, 2004.

(11) Maryland Department of Transportation, *FY 2005-2010 Maryland Consolidated Transportation Program, DRAFT*, 2004.

ORAL (COMMENTS DELIVERED AT PUBLIC MEETINGS)

BALTIMORE HARBOR AND CHANNELS
DREDGED MATERIAL MANAGEMENT PLAN
(DMMP) & TIERED ENVIRONMENTAL
IMPACT STATEMENT (EIS)

PUBLIC COMMENT MEETING
MARCH 7, 2005
7:00 P.M.
QUEEN ANNE'S COUNTY PUBLIC LIBRARY,
STEVENSVILLE BRANCH
STEVENSVILLE, MARYLAND

PRESENTATION AND COMMENTS

Reported By: Michele D. Lambie, CSR-RPR

MEETING MODERATORS
Scott Johnson
Bob Nelson

PANEL MEMBERS
Jeff McKee
Corinne Murphy
Kurt Frederick

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P R O C E E D I N G S

MR. JOHNSON: Good evening and welcome to the public meeting for the Baltimore Harbor & Channels Dredged Material Management Plan and Tiered Environmental Impact Statement. My name is Scott Johnson and I'm the Project Manager for the US Army Corps of Engineers, Baltimore District. The Corps is the federal agency responsible for the preparation of this DMMP and EIS.

We will begin this meeting with a formal presentation of the DMMP and EIS lasting about 20 minutes, followed by an opportunity for you, the public, to comment on the record about the project. Your comments will be recorded by our court reporter and entered into the formal record. The Corps will respond to these comments as part of the final EIS. In the interest of time and allowing everyone who wishes to speak an opportunity, I would ask that you limit your formal comments to five minutes. My colleague, Bob Nelson, will indicate when your time is up. You may also enter

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a written statement for the record if you choose. Once we have heard from all those who wish to speak, the formal portion of our meeting will be concluded. I will then open the floor for questions of myself and our panel, who I will introduce later in the presentation. We will answer as many of your questions as we can and will remain after the conclusion of the formal meeting to talk to you individually. The important thing is for us to document all your questions for the record.

First, let me explain the National Environmental Policy Act, or NEPA. NEPA went into effect as a federal law in January 1970, with the goal of protecting the environment by promoting better planning and decision making, and coordination with the public. NEPA reviews are required for any proposed project which includes federal money, lands or permits.

Within NEPA, there is a process called an environmental impact assessment. This is

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documented in an Environmental Impact Statement, or EIS. An EIS documents the purpose and need of a proposed action, evaluates reasonable alternatives to the action, and analyzes the significant environmental and other consequences of that action. In doing so, an EIS assists officials in making better decisions and planning actions. Some of the environmental factors which are considered through an EIS include water and air quality, endangered species, human health and safety, to name a few.

This chart illustrates the EIS process. The process begins with a Notice of Intent which is published in the Federal Register. It notifies the public that a federal agency will be preparing a NEPA document to evaluate the impacts associated with a proposed action. The second step is public scoping meetings where the public is invited to comment on the purpose and extent of the study and to identify significant issues. The third step is the preparation of a Draft EIS which evaluates a

proposed project in light of the project need, reasonable alternatives, and environmental and other consequences of the proposed action. The Draft EIS is then submitted for public review and comment, for a minimum of 45 days. A second round of meetings is generally held during which public comments on the draft EIS are solicited. That is the intent of tonight's meeting. Based on comments received from the public, the Draft EIS is revised into a Final EIS. The final step is the preparation of a Record of Decision, or ROD. The ROD formally summarizes the EIS analysis and is signed by participating federal agencies.

What is a DMMP? A DMMP addresses dredging needs and the economic justification for such dredging; dredged material placement alternative sand the capacities of placement sites; environmental compliance requirements; and the opportunities to use dredged material as a beneficial resource. A DMMP is generally 100% federally funded and in this case, funded entirely

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by the US Army Corps of Engineers, Baltimore District. As I noted before, it incorporates an integrated EIS evaluation and will also justify follow-on site specific studies.

The process for preparing a DMMP and Tiered EIS is shown on this flow chart. The entire process encompasses 5 major phases. Phase 1, preparation of a Preliminary assessment, is shown on this chart in light blue. A preliminary assessment is a review of dredging needs within a site or region and identifies if there is a shortage of dredged material placement capacity and a need to proceed with a more in-depth review called the DMMP. Phase 2, preparation of a DMMP study, is shown here in dark blue. I'll explain this phase in more depth later in the presentation. Phase 3, shown here in orange, is the preparation of project-specific Feasibility Studies. Each of these studies would be considered a separate Federal action, building on the work done in the DMMP process, but requiring all the steps of a NEPA

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process to evaluate a specific project. Phase 4, shown in green, is Implementation. During this phase, a specific action identified and justified through a Feasibility Study, is designed, constructed or implemented, and operated or maintained. The action may require Congressional authorization. The final phase, Phase 5 is periodic review and update and is shown on this chart in purple. In Phase 5, completed actions are reviewed on some specific project frequency to assure the intended goals of the project are being met and to allow for optimization of the action at some time in the future as circumstances warrant.

So why are we preparing DMMP? First of all, it's a federal requirement that a plan be prepared whenever insufficient dredged material capacity exists. The Preliminary Assessment, or PA, prepared by the Corps in 2001 for the Baltimore Harbor & Channels concluded that no only was there insufficient capacity for placement of dredged material over the next 20-years, but by 2009, just

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4 years from now, we will begin overloading the remaining placement sites. So how did the Corps prepare a DMMP? It integrated its DMMP process with that of the Maryland Port Administration, or MPA, which was also preparing a state DMMP. The Corps invited input from all stakeholders groups including both federal and state regulators, and from public interest groups and the general public.

You might wonder what differences there

are between the state and federal DMMP's that justify the preparation of both. First, the state and federal DMMPs are similar in that they both consider a long-term, or 20-year, planning horizon and both emphasize the opportunity for beneficial use of dredged material. They both use the same Federal and state regulatory agencies and public interest groups, such as the Bay Enhancement Working Group, or BEWG, and the Citizens Advisory Committee, or CAC, to solicit input. This coordination assures that both DMMPs reflect similar opinions and priorities of the Chesapeake

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Bay community. The major difference between the state and Corps DMMPs is that the Corps DMMP has to evaluate the benefits and impacts of various actions from a federal, rather than a local perspective. The Corps' DMMP also includes both Virginia and Maryland, whereas MPA's DMMP only includes dredging needs and placement opportunities in Maryland. A third difference is that the Corps' DMMP follows the NEPA process and includes an EIS. The final difference between the two DMMPs is that the Corps' DMMP must include something called a federal standard, or base plan, which is the least costly, environmentally acceptable means for dredged material placement. The Corps' DMMP must consider all practicable alternatives, regardless of State or local laws and regulations. This means that the Corps' DMMP considers alternatives that the Maryland DMMP cannot because the alternatives are illegal in Maryland. For example, the Corps' DMMP evaluated open water placement in the Maryland portion of the Chesapeake Bay, because even though

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it is prohibited by state law, it is allowable under federal law.

As I mentioned previously, the CORPS' DMMP encompasses almost the entire Chesapeake Bay, from the Sassafras River south to the mouth of the Bay. For evaluation purposes, we divided the Bay into four areas including the Chesapeake and Delaware Canal, or C&D, Approach Channels which extend south from the Sassafras River to Pooles Island; the Harbor Channels which extend Sassafras River to Pooles Island; the Harbor Channels which extend northward into the Inner Harbor from the North Point Rock Point Line; the Chesapeake Bay Approach Channels (Maryland) which extend from the mouth of the Baltimore Harbor south to the Maryland-Virginia State line, and the Chesapeake Bay Approach Channels (Virginia) which extend south from the Maryland-Virginia State line to the mouth of the Bay. These geographic areas, as well as the navigation channels, are illustrated on the boards in the back side of the room.

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Once the geographic areas were identified for the DMMP, we evaluated the costs and benefits associated with continued maintenance dredging of the federal navigation channels to determine if such costs were justified. Through this evaluation we determined that the benefits associated with the maintenance of the channels greatly outweighed the costs associated with dredging. For example, in the C&D Canal Approach Channels, the annual benefits of maintaining a navigation depth of 35 feet equaled 12.1 million dollars while the associated annual dredging costs were 8.5 million dollars. In the Baltimore Harbor & Channels, annual benefits of maintenance dredging are 15.3 million dollars versus annual maintenance costs of 10.8 million dollars.

Our next step was to identify the net dredged material capacity need that is required for each area over the 20-year planning window. By net need I mean the amount of dredged material capacity above that which can be satisfied by

placement in existing dredged material placement sites such as Poplar Island Environmental Restoration Project or Cox Creek Confined Disposal Facility. For Harbor material, material dredged from channels north of the North Point-Rock Point Line, the net need through 2025 is approximately 17 million cubic yards. For maintenance of the C&D Canal Approach and the Chesapeake Bay Approach Channels in Maryland, the combined net need is approximately 40 million cubic yards. For the Chesapeake Bay Approach Channels in Virginia, the net need is zero, since the existing sites in Virginia have sufficient capacity to handle dredged material placement well past 2025.

Once maintenance dredging was determined to be economically justified and the capacity requirements defined for each geographic area, we developed a list of alternatives to be considered. Those alternatives fall into four categories. Existing placement sites include the Pooles Island Open Water Placement Site, Poplar Island

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Environmental Restoration Project, Cox Creed CDF, Hart-Miller Island Containment Facility, and the Open Water Placement Sites in Virginia and in the Atlantic Ocean. The existing sites were evaluated for their current available capacity as well as for the possible expansion. New placement sites include alternative such as Confined Aquatic Disposal Sites, or CADs; Confined Upland Disposal Facilities, or CDFs, and Artificial Islands. Beneficial Use Sites are those placement sites which will render some sort of benefit, either economic or environmental, by their construction and use. Examples of beneficial use sites include Island Restoration, Wetland Restoration and Shoreline restoration. And finally, Innovative Use sites are those where dredged material is used in a novel way to produce some sort of economic benefit. Examples of Innovative use include using dredged material to make building products, like bricks, reclaim abandoned mines, or to enhance degraded agricultural lands. In all, we looked at 26 unique

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alternatives for handling our dredged material needs.

With the help of the BEWG, the Corps DMMP developed five quantitative and qualitative criteria to evaluate the dredged material placement alternatives. Quantitative criterias include cost, capacity and environmental impacts. Costs for each alternative were determined by preparing a concept level design for each alternative and then preparing budget level cost estimate for each. The estimates were full life-cycle costs and included costs for planning, design, construction, and operations and maintenance. The available dredged material capacity for each alternative was calculated by using the concept level designs. Environmental Impacts resulting from each alternative were determined with specific help from the BEWG. The Corps' DMMP used the BEWG's detailed environmental scoring process to evaluate each alternative. The BEWG system evaluates 52 different environmental criteria in categories such as water

quality, endangered species, shallow-water habitat, air quality, public health, etc. The full BEWG analysis is available in the handout package.

In addition to the three quantitative criteria, we considered two qualitative criteria. The technical/logistical criteria evaluated the likelihood that an alternative would succeed based on engineering considerations. For example, beach nourishment is a well-proven, often-used technique.

On the other hand, agricultural placement o dredged material has been done on a small scale but never on a large scale and would face numerous technical and logistical challenges.

The second qualitative criterion was implementation probability. What is the likelihood that an alternative would succeed given potential legal obstacles or public and regulatory opposition: For example, open water placement in Maryland waters is prohibited by state law. Therefore, this alternative was dropped.

After identifying the criteria and scoring

each alternative, we combined the alternatives into groups, or what we call suites of alternatives. Each suite is come combination of alternatives that meet the dredged placement capacity need for an area. For example, one suit was Large Island Restoration in the Mid-Bay along with Wetland Restoration. Another suit was Poplar Island expansion along with shoreline restoration. By combining the alternatives into suites meeting the capacity need, we could concentrate on comparing the cost and environmental impacts of the suits relative to one another.

For the C&D Canal Approach and the Chesapeake Bay Approach Channels in Maryland we assembled over 14,000 suites which met the capacity needs for those areas. Those 14,000 suites are shown on this chart along with the cost, as measured in millions of dollars and environmental benefit, as measured with the habitat index score, for each suite.

Once all the possible suites were

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assembled, we were able to compare the suites and select the most cost efficient means to achieve environmental benefit. After that point we took into account the technical, logistical and implementation probabilities of each suite and eliminated those with little likelihood of success. Those suites which remained were evaluated to form the recommended plan.

Remember the chart from 2 slides ago with over 14,000 suites of alternatives? This chart represents the suites that remained after the comparative analysis. By combining the suite on the far left (Poplar Island Expansion & Large Island Restoration), with the suite on the far right (Large Island Restoration and Wetlands Restoration), we can achieve a recommended plan for the Maryland and C&D Canal Approach Channels which balances cost and environmental benefit.

So, after considering all feasible alternatives and evaluating them against each other, using both quantitative and qualitative

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criteria, we developed a recommended plan which includes first, optimized use of existing sites in both Maryland and Virginia such as Hart-Miller Island, Pooles Island Open Water Site, Cox Creek CDF, Poplar Island, and open water placement sites in Virginia; second, construction of multiple Confined Disposal Facilities along the Patapsco River; third, expansion of the current footprint at Poplar Island; fourth, restoration of an existing, degraded large island in the mid-bay; and fifth, wetland restoration in Dorchester County, Maryland.

To summarize, the recommended plan developed through this DMMP and EIS process meets the goals of a DMMP by first providing sufficient placement capacity for the next 20 years; second, doing so in an economical manner by optimizing existing sites such as Cox Creek CDF and expanding an existing site in Poplar Island; third, placing the material in a manner that minimizes negative impacts to the environment; and fourth, by maximizing the beneficial use of dredged material

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to enhance the environment through projects such as island restoration and wetland restoration.

The schedule for the DMMP is shown here. The Notice of Intent was published in May 2002 followed by the Public Scoping Meetings in June 2002. The Draft DMMP and Tiered EIS was completed in February of this year and made available for public comment beginning on February 11, 2005. We are holding two public comment meetings, the first is this meeting at Queen Anne's Public Library and the second will be held this Thursday, March 10th at Essex Community College. The public comment period will extend until March 28th. The final DMMP is scheduled to be issued in July 2005 with a

Record of Decision to follow in September 2005.

If you wish to review the Baltimore Harbor & Channels DMMP and Tiered EIS, you can do so by visiting this library, Baltimore County Public Library, Anne Arundel County Public Library, St. Mary's County Public Library, Somerset County Public Library, Dorchester County Public Library,

obtaining a CD from our Welcome Table, or visiting the website listed here. All comments on the DMMP and EIS should be submitted in writing by March 28th to Mr. Mark Mendelsohn at the address listed here.

Thank you for your attention and I will now open the floor to those of you in attendance wishing to offer formal comments for the record, and I'm now going to open the floor up for those of you in attendance wishing to offer form comments for the record.

MR. JOHNSON: I believe we had a list coming up. We're going to start off with our sponsor, our partner from the Maryland Port Administration, Dr. Steve Storms. Steve.

MR. STORMS: Shall I -- hi. I am Steve Storms with the Maryland Port Administration.

COMMENTER O-1

The MPA is a part of the Maryland Department of Transportation. The Maryland Port Administration supports fully the Corps' activities in developing their Dredge Material Management

Plan, and we're very pleased with the progress that has been made, and especially pleased that our two respective DMMPs have, have been so well integrated through the, the use of shared resources. Thank you.

MR. JOHNSON: Thank you, Steve. I would ask that when you come up, if you would, please, give your name, any affiliation that you have, and please spell your name for the record, please.

Bruce Coulson.

COMMENTER E-2

MR. COULSON: Yes, my name is Bruce Coulson. I'm from Taylors Island, Maryland, Dorchester County, representing a member of the CAC and representing the Dorchester County Shore Erosion Group.

We've been following this Corps' DMMP Plan for, since it started I have been on the CAC. We support it. People in Dorchester County support this plan, restoring mid-bay islands and wetland restoration. Thank you.

MR. JOHNSON: Thank you. And Joe Coyne.

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COMMENTER E-3

MR. COYNE: Thank you. My name is Joseph Coyne, C-O-Y-N-E. I'm wearing two hats here tonight. One is representing the Dorchester County Council, and the second, the same group that Bruce is with, my colleague on the Dorchester County Shoreline Erosion Group, a nonprofit organization that was formed after Hurricane Fran in 19, I believe that was 1996.

You may realize that Dorchester County is in a unique position in the Chesapeake Bay. It kind of sticks out like a sore thumb in a way. It makes it very vulnerable to the actions of wind and wave and pounds the shorelines almost all the time from any direction, so there's a lot of things happening there, and we were trying to figure out, through this Shoreline Erosion Group, what could be done to slow down damage and the problems caused by shoreline erosion.

We worked on that issue for a couple of years when we discovered the probability of tying in with the DMMP in some way. It started in 1998

when we first met with the Secretary of Transportation, a legislator from Dorchester County and Frank Hammons to make known the possible interest of Dorchester County. We were quite aware of the problems with Site 104 and thought we might offer a solution that would be acceptable to all concerned.

We made that presentation to the group that I just mentioned, and through our own group in Dorchester County we started holding public hearings on the issue.

Would the citizens of Dorchester County and the land owners be okay with the idea of the Beneficial Use Project in Dorchester County. We scheduled well over 60 public meetings with the public invited. We have a regular newsletter that's issued on a monthly basis. We have published many newspaper articles making citizens and land owners aware of what we were trying to do in cooperation with the State of Maryland and the Port Authority.

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Through those years, from 1998 to the present, we've had almost no opposition. One individual is all that we're aware of that has been in opposition to the use of dredge materials as a beneficial use in Dorchester County, and we have always been supportive of three major focuses, our particular group, and that is the restoration of James Island, help for Barren Island and the need for environmental solutions at the Delmarva, at the Black Water Reserve, Wildlife Reserve, and so those have always been made clear to the people attending our meetings.

We have constantly, consistently made presentations to the Dorchester County Council about the possibility of this occurring. They have always been extremely supportive of this project coming to Dorchester County.

So I want to say, in closing, we certainly support the notion of the DMMP in Dorchester County. We certainly support it as soon as possible. We have the support of the citizens,

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we have the support of the elected officials; state, local and federal.

We think we have kept everybody as informed as we can. We've never had any one of those groups come back to us and say, We don't like

what you're doing. They always say, Can you move
it up? Can you do it faster?

So in closing then, I just want to say we have received sound support from the citizens of Dorchester and we strongly urge the adoption of this plan for use in Dorchester County. Thank you very much.

MR. JOHNSON: Thank you, Joe. Unless everybody signed up to speak, is there anybody else that would like to make a statement for the record?

(No response.)

MR. JOHNSON: If not, then this concludes the formal portion of this meeting.

BALTIMORE HARBOR AND CHANNELS
DREDGED MATERIAL MANAGEMENT PLAN AND
TIERED ENVIRONMENTAL IMPACT STATEMENT
PUBLIC COMMENT MEETING
(Presentation and Comments)

Meeting in the above-captioned matter was taken on Thursday, March 10, 2005, at Essex Community College, 7201 Rossville Boulevard, Baltimore, Maryland, commencing at 7:05 p.m. before Carol T. Lucic, Notary Public.

Reported by: Carol T. Lucic, RMR

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MR. JOHNSON: Good evening and welcome to the public meeting for the Port of Baltimore dredged material management plan and tiered environmental impact statement. My name is Scott Johnson. I'm the project manager for US Army Corps of Engineers, Baltimore District. The Corps is the federal agency responsible for the preparation of the DMMP and the EIS.

We'll begin this meeting with a formal presentation of the DMMP and EIS lasting about 20 minutes followed by an opportunity for you, the public, to comment on the record about the project. Your comments will be recorded by our court reporter to my right and entered into the formal record for the project.

In the interest of time and allowing everyone who wishes to speak an opportunity, I would ask that you limit your formal comments to five minutes. My colleague, Joyce Conant, will indicate when your time is up. You may also enter a written statement for the record if you choose. Once we've heard from all of

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those who wish to speak the formal portion of this meeting will be concluded, and I'll then open up the floor for questions of myself and our panel, who I'll introduce later on.

We will answer as many questions as we can and will remain after the conclusion of the formal part of the meeting to talk to you individually if you wish. The important thing is for us to document all of your questions for the record.

First let me explain the National Environmental Policy Act or NEPA. NEPA went into effect as a federal law in January of 1970 with the goal of protecting the environment by promoting better planning and decision making and coordination with the public. NEPA reviews are required for any proposed project which includes federal money, lands, or permits.

Within NEPA there is a process called an environmental impact assessment. This is documented in an environmental impact statement or EIS. An EIS documents the purpose and need of a proposed action,

evaluates reasonable alternatives to the action, and analyzes the significant environmental and other consequences of that action. In doing so an EIS assists officials in making better decisions and planning actions. Some of the environmental factors which are considered through an EIS include water and air quality, endangered species, and human health and safety, to name a few.

This chart illustrates the EIS process. The process begins with a notice of intent which is published in the Federal Register. It notifies the public that a federal agency will be preparing a NEPA document to evaluate the impacts associated with an action. The second step is public scoping meetings where the public is invited to comment on the purpose and the extent of the study and to identify significant issues. The third step is the preparation of a draft EIS which evaluates a proposed project in light of the project need, reasonable alternatives, and environmental and other consequences of a proposed action.

The draft EIS is then submitted for public review and comment for a minimum of 45 days. A second round of meetings is generally held during which public comments and the draft EIS are solicited, and that is the intent of tonight's meeting. Based on comments received from the public the draft EIS is revised into a final EIS. The final step is the preparation of a record of decision or ROD. The ROD formally summarizes the EIS analysis and is signed by the participating federal agencies.

Now let me give you some information on this particular federal action, the Baltimore Harbor and Channels Dredged Material Management Plan and Tiered Environmental Impact Statement. The goals of a federal or Corps DMMP are threefold. The first is to develop a thoughtful and comprehensive plan to manage navigation channels for the economic benefit of the nation and the region and to do so in an economically and environmentally sound manner. Second is to place dredged material which results from the maintenance of navigation channels in an environmentally sound

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manner. Finally the third goal of a DMMP is to use dredged material to the maximum extent possible as a beneficial resource.

What is a DMMP? A DMMP addresses dredging needs and the economic justification for such dredging, dredged material placement alternatives and the capacities of placement sites, environmental compliance requirements, and the opportunities to use dredged material as a beneficial resource. A DMMP is 100% federally funded and in this case funded entirely by the U.S. Army Corps of Engineers, Baltimore District. As I noted before, it incorporates an integrated environmental impact statement evaluation and will also justify follow-on site specific studies.

The process for preparing a DMMP and tiered EIS is shown on this flow chart. The entire process encompasses five major phases. Phase 1, preparation of a preliminary assessment, is shown on this chart in light blue. A preliminary assessment is a review of dredging needs within a site or region and identifies if there is a shortage of dredged material placement

capacity and a need to proceed with a more in-depth review called a DMMP.

Phase 2, preparation of a DMMP study, is shown here in dark blue, and I'll explain this phase in more detail later in the presentation. Where we are at right now in the process is shown in yellow, the draft DMMP and public input phase.

Phase 3 shown here in orange is the preparation of a project specific feasibility study. Each of these studies would be considered a separate federal action building on the work done in the DMMP process, the first tier, but requiring all of the steps of a NEPA process to evaluate a specific project.

Phase 4 shown in green is implementation. During this phase a specific action identified and justified through a feasibility study is designed, constructed, or implemented and operated or maintained. The action may require Congressional authorization at this point.

The final phase, Phase 5, is periodic review and update and is shown in the chart in purple. In

Phase 5 completed actions are reviewed on some specific project frequency to assure the intended goals of the project are being met and to allow for adjustment of the action as circumstances warrant.

So why are we preparing a DMMP? First of all, it's a federal requirement that a plan be prepared whenever insufficient dredged material capacity exists. The preliminary assessment, that first phase that we talked about, was prepared by the Corps in 2001 for the Baltimore Harbor and Channels and concluded that not only was there insufficient capacity for placement of dredged material over the next 20 years, but by 2009, just four years from now, we will begin overloading the remaining sites.

So to start the process the Corps invited input from all stakeholders groups including both federal and state regulators and from the public interest groups and the general public. We also integrated our DMMP with that of the Maryland Port Administration, which was also preparing a DMMP for the State of Maryland.

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So you might wonder why do we have two separate DMMPs, one for the State and one for the Federal Government? What are the differences? What are the similarities? First, the state and federal DMMPs are similar in that they both consider a long-term, at least 20-year planning horizon, and both emphasize the opportunity for beneficial use of dredged material. They both use the same federal and state regulatory agencies and public interest groups such as the Bay Enhancement Working Group and the Citizens Advisory Committee to solicit input. This coordination assures that both DMMPs reflect similar opinions and priorities of the Chesapeake Bay community.

The major differences between the State and the Corps' DMMP is that the Corps' DMMP has to evaluate benefits and impacts of various actions from a federal rather than a local perspective. The Corps' DMMP also includes both Virginia and Maryland, whereas the Maryland Port Administration's DMMP only includes dredging needs and placement opportunities in Maryland.

A third difference is that the Corps' DMMP follows the NEPA process which I described earlier and includes an environmental impact statement. The final difference between the two is that the Corps' DMMP must include something called a federal standard or base plan, which is the least costly, environmentally acceptable means for dredged material placement.

The Corps' DMMP must consider all alternatives which are federally acceptable; that is, not contrary to federal laws and regulations. This means that the Corps' DMMP considers alternatives that's Maryland's DMMP cannot because the alternatives are illegal in Maryland. For example, the Corps' DMMP evaluated open water placement in the Maryland portion of the Chesapeake Bay because even though it's prohibited by state law, it's allowable under federal law.

As I mentioned previously, the Corps' DMMP encompasses the entire Chesapeake Bay from the Sassafras River south to the mouth of the bay. For evaluation purposes we divided the bay into four areas

including the Chesapeake and Delaware Canal or C & D approach channels which extend south from the Sassafras River to Pooles Island, the Harbor channels which extend northward into the Inner Harbor from the North Point-Rock Point Line, the Chesapeake Bay approach channels in Maryland which extend from the mouth of the Baltimore Harbor south to the Maryland-Virginia state line, and the Chesapeake Bay approach channels in Virginia which extend south from the Maryland-Virginia line to the mouth of the bay. These geographic areas as well as the navigation channels are also illustrated on boards in the front of the room that you can take a look at later.

Once the geographic areas were identified for the DMMP we evaluated the cost and benefits associated with continued maintenance dredging of the federal channels to determine if such costs were justified. Through this evaluation we determined that the benefits associated with maintenance of the channels outweighed the costs associated with dredging. For example, in the C & D Canal approach channels the annual benefits

of maintaining a navigation depth of 35 feet equals $12.1 million while the associated annual dredging costs were 8-1/2 million. In the Baltimore Harbor and channels annual benefits of maintenance dredging are

$15.3 million versus annual maintenance costs of $10.8 million.

Our next step was to identify the net dredged material capacity need that is required for each area over the 20-year planning window. By "net need" I mean the amount of dredged material capacity above that which can be satisfied by placement in existing dredged material placement sites such as Poplar Island environmental restoration project or the Cox Creek confined disposal facility. For Harbor material, material dredged from channels north of the North Point-Rock Point line, the net need for 2025 is approximately 17 million cubic yards. For maintenance of the C & D Canal approach and the Chesapeake Bay approach channels the combined net need is approximately 40 million cubic yards. For the Chesapeake Bay approach channels in Virginia the net

need is zero since the existing sites in Virginia have sufficient capacity to handle dredged material placement well past 2025.

Once maintenance dredging was determined to be economically justified and the capacity requirements defined for each geographic area we developed a list of alternatives to be considered. Those alternatives fall into four categories. Existing placement sites include the Pooles Island open water placement, Poplar Island environmental restoration, Cox Creek confined disposal facility, Hart-Miller Island containment facility, and the open water placement sites in Virginia and in the Atlantic Ocean.

The existing sites were evaluated for their current available capacity as well as for possible expansion. New placement sites include alternatives such as confined aquatic disposal sites or CADs, confined upland disposal facilities or CDFs, and artificial islands.

Beneficial use sites are those placement sites which render some sort of benefit, either

economic or environmental, by their construction and use. Examples of beneficial use sites include island restoration, wetland restoration, and shoreline restoration.

Finally, innovative use sites are those where dredged material is used in a novel way to produce some sort of economic benefit. Examples of innovative use include using dredged material to make building products like bricks, reclaim abandoned mines, or to enhance degraded agricultural lands. In all we looked at 26 unique alternatives for handling our dredged material needs.

With the help of the Bay Enhancement Working Group, part of the State's DMMP process, the Corps DMMP developed five quantitative and qualitative criteria to evaluate the dredged material placement alternatives. Quantitative criteria include cost, capacity, and environmental impacts. The costs for each alternative were determined by preparing a concept level design for each alternative and then preparing budget level cost estimates for each. The estimates were full life cycle costs including costs for planning, design, construction, and operation and maintenance. The available dredged material capacity for each alternative was also calculated by using the concept level designs.

Environmental impacts resulting from each alternative were determined with the specific help from the Bay Enhancement Working Group. The Corps' DMMP used the work group's detailed environmental scoring process to evaluate each alternative. The Bay Enhancement Working Group evaluated 52 different environmental criteria in categories such as water quality, endangered species, shallow water habitat, air quality, and public health. The full BEWG analysis should be available in your folder at the welcome table and on the board in the front of the room.

In addition to the three quantitative criteria we considered two qualitative criteria. The technical/logistical criteria evaluated the likelihood that an alternative would succeed based on engineering considerations. For example, beach nourishment is a

well-proven, often used technique. On the other hand, agricultural placement of dredged material has been done on small scales, but never on a large scale and would face numerous technical and logistical challenges to be successful.

The second qualitative criterion was implementation probability. What is the likelihood that an alternative would succeed given the potential legal obstacles or public or regulatory opposition? For example, open water placement in Maryland waters is prohibited by state law; therefore, this alternative was dropped.

After identifying the criteria and scoring each alternative we combined the alternatives into groups or what we call suites of alternatives. Each suite is some combination of alternatives that meet the dredged material placement capacity need for an area. For example, one suite was large island restoration in the mid-bay along with wetland restoration. Another suite was the Poplar Island expansion along with shoreline restoration. By combining the alternatives

into suites meeting the capacity need, we could concentrate on comparing the costs and environmental impacts of suites relative to each other.

For the C & D canal approach and the Chesapeake Bay approach channel region in Maryland we assembled over 14,000 suites, and they're represented on this chart by 14,000 individual little dots. You can see how difficult this was at first to deal with. These 14,000 suites are shown here with costs as measured in millions of dollars and environmental benefit as measured with the habitat index score for each suite.

Once all the possible suites were assembled we were able to compare the suites and select the most cost effective means to achieve the environmental benefits. After that we took into account the technical and logistical and implementation probabilities of each suite and eliminated those with little likelihood of success. Those suites which remained were evaluated to form the recommended plan.

If you remember the charts two back with the

14,000 little dots on it, the 14,000 suites of alternatives, this chart represents what was left, the suites that remained after the comparative analysis. Again, the cost is on the left and the habitat benefits are across the bottom.

By combining the suite on the far left, Poplar Island expansion and large island restoration, with the suite on the far right, large island restoration and wetland restoration, we can achieve a recommended plan for the Maryland and C & D canal approach channels which balances cost and environmental benefit.

So after considering all feasible alternatives and evaluating them against each other using both qualitative and quantitative criteria we developed a recommended plan which includes first optimizing the use of existing sites in Maryland such as Hart-Miller Island, Pooles Island, Cox Creek, and Poplar Island; second, use of open water placement sites in Virginia; third, construction of multiple confined disposal facilities along the Patapsco River;

fourth, expansion of the current footprint at Poplar Island; fifth, restoration of an existing degraded large island in the mid-Chesapeake Bay; and, sixth, wetland restoration in Dorchester County, Maryland.

Along with these six the DMMP also recommends continued technical development of innovative use in partnership with the State of Maryland.

So to summarize, the recommended plan developed through this DMMP and environmental impact statement process meets the goals of the DMMP by first providing sufficient placement capacity for at least the next 20 years, doing so in an economical manner by optimizing existing sites such as Cox Creek and expanding an existing site in Poplar Island; third, placing the material in a manner that minimizes negative impacts to the environment; and, fourth, by maximizing the beneficial use of dredged material to enhance the environment through projects such as island restoration and wetland restoration.

Finally to our schedule. The notice of intent was published in May of 2002 followed by the

public scoping meetings in June. The draft DMMP and tiered environmental impact statement was prepared in January of this year, completed in February, and made available for public comment beginning on February 11, 2005. We're holding two public comment meetings. The first was at Queen Anne's County Public Library on March 7 and the second is tonight's meeting here at the Essex Community College. The public comment period will extend until March 28. The final DMMP is scheduled to be issued in July of 2005 with a record of decision to follow in September of 2005.

If you wish to review the Port of Baltimore or the Baltimore Harbor and Channels DMMP and Tiered

EIS, you can do so by visiting the Essex County Public Library, the Anne Arundel County Public Library, St. Mary's, Somerset, and Dorchester County Public Libraries, or by obtaining a CD from our welcome table outside or visiting the website listed here. All comments on the DMMP and EIS should be submitted in writing by March 28 to Mr. Mark Mendelsohn at the address listed here. You should have a copy of this

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presentation in the handout folder that you can take home with you.

Finally, thank you for your attention, and I will now open the floor up to those in attendance wishing to offer formal comments for the record. I would ask that when you approach the microphone, please provide your name and how to spell it for the court reporter as well as any affiliation that you may have.

First we are going to start off with our partner, the Maryland Port Administration, Mr. Nat Brown.

COMMENTER O-4

MR. BROWN: Thank you. My name is Nathaniel Brown, N A T H A N I E L. I represent the Harbor Development Office of the Maryland Port Administration. We work with the Army Corps of Engineers on a number of our dredging projects. I simply want to state for the record the Maryland Port Administration supports the federal DMMP. Thank you.

MR. JOHNSON: Thank you. Next -- I apologize if I butcher anybody's names -- is Mr. Robert Fantom. If you don't want to come up, we can bring the

COMMENTER O-5

microphone to you as well.

MR. FANTOM: My name is Robert Fantom, F A N T O M. I operate a small greenhouse farm. We have 25 greenhouses on seven acres right off Rossville Boulevard right near Belair Road. I have been farming my whole life, and I'm tired of being blamed for everything that is wrong with the bay when everywhere I look in Maryland I see digging and dumping in the water. I apologize. I'm not very well prepared. I just heard about this meeting yesterday morning and I have been very busy.

I want to say that since we came here in 300 plus years of farming the reef structure in the Upper Bay, which basically in my experience -- my experience in the bay is from the Bay Bridge north to the Susquehanna River -- the structure there is all -- it's an endless maze of caverns and reefs. It has been stable for 300 years of farming. It has never silted in.

In the last 15 or 20 years the open bay dumping and the dredging, the oyster shell fossil reef

dredging in the upper bay has made the area around Pooles Island, the water stays muddy all the time. I believe if it didn't rain for 10,000 years, the water would still be muddy there. Particularly Area D, which is halfway between Pooles Island and Fairley Creek, which is Area H, there was a natural cavern there. It was a half, three-quarters of a mile long of natural channel almost 60 feet deep. It was a good place to fish. There was always fish there.

Now they have dug it all up and they filled in the holes, and every time the tide runs in or every time the tide runs out the water gets stirred up there and it makes mud. If you come out of Middle River or Gunpowder River or any of the rivers, the water is crystal clear until you get out to Pooles Island, and then it turns into a mud slide.

You can make a good case that during the declining years of striped bass on the whole East Coast when the population collapsed and the Federal Government got involved and they finally did something about it and closed fishing, we were catching plenty of

fish from the Chesapeake Bay Bridge to the Susquehanna Flats and people fished even up to the dam there. There was plenty of hard bottom. The water was deep. The water was clear. There were plenty of places for the fish to hide. The structure there provided habitat for striped bass. It's a very difficult place to go and gill net because your gill nets don't work around oyster reefs. This stuff gets all hung up and they lose their gear and they don't catch fish.

That's one of the reasons there was still fish there. That's one of the reasons there was still fish left for you guys to repopulate. If you turn it all into a mud flat with the open bay dumping, which I'm here because I'm particularly upset about the open bay dumping in the Pooles Island area -- it sounds like maybe you're not going to do it anymore. That would be a good thing.

The other thing I wanted to say was the reservoir effect. You take a reservoir like Loch Raven Reservoir where they have a lot of deep water, and when you get a lot of rain, the reaches of the reservoir get

muddy, and over a long period of time it slowly silts in and the mud comes further down faster.

Well, in the Susquehanna River the dams above Conowingo are completely silted in, so the volume of water is greatly reduced. With the reduced volume of water every time it rains it's that much faster that the water comes down into the bay. If you keep making the water in the upper bay shallower, the mud is going to keep on traveling down the bay and we're never going to have quality habitat again. You're probably never going to have it anyway.

I want to say one more thing. I apologize for not being well prepared. I wanted to ask why the Federal Government protects the fossil reefs in Florida. When you go there, you can't even chip a piece of coral. There are sites down there where you're not even allowed to throw your anchor in the water because it's going to damage the fossil reefs, and in this area we seem to have sold our fossil reefs into slavery.

I wanted to close with a quote from a man

named John Anderson, who wrote a song called Seminol Wind, which was about the Army Corps of Engineers draining the Everglades. He said: "Ever since the days of old men would search for wealth untold. They dig for silver and for gold and leave the empty holes." Well, in Maryland we have found a way to save money by using our empty holes to dump our trash, and I hope that you guys never do that again. Thank you.

MR. JOHNSON: Thank you. I believe it's Albert Marani.

COMMENTER O-6

MR. MARANI: He pretty much said everything I wanted to say. Are you not going to dump in the open water around Pooles Island anymore?

MR. JOHNSON: Pooles Island is going to close by state law in 2010. As I said, we dropped that as an alternative because of the political risk and the public outcry against that. So we don't believe that it's an alternative that will succeed.

MR. MARANI: Are you going to continue to dump until 2010?

MR. JOHNSON: Yes.

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MR. MARANI: They've pretty much ruined the upper bay.

MR. JOHNSON: This phase that we're in right now -- I apologize, but what we're doing is the floor is open for public statements. If you will stick around after we close the formal portion of this meeting, we'll enter into a question and answer period.

Mr. Williams, John Williams.

COMMENTER O-7

MR. WILLIAMS: My name is John Williams. That's W I L L I A M S. I'm a member of the Citizens Advisory Committee for the dredged material management program, but I am not speaking on their behalf, but as an individual.

I find that the work you have done here is quite commendable in the effort of identifying and assessing placement options, but in reviewing the document and trying to establish numeric precision, I find some of the basic undergirding premises for the entire DMMP study are flawed, and I would have to raise those up to you for their correction.

Specifically, the placement demand capacity shortfall is erroneously overestimated. B, the economic justification of continued maintenance is defective. Portions of that analysis are inaccurate. Portions of it are questionable to such an extent that the whole conclusions may be wrong.

Looking at some of the details of that, back to the demand capacity shortfall, I would urge first with a projection of placement needs that you use actual historical data rather than estimates from the Philadelphia District for the 35 foot channel. Second, that you recognize historical data of a decade-plus duration which also already includes storm events, and you don't need an extra 10% for that. I also suggest you use 21 years in your analysis. The net result of that on the demand side for the Maryland channels would reduce the projected demand by 20% from 69 million cubic yards to 56.

In terms of your available capacity, I think you need to include the 5 million cubic yards of capping capacity at Hart-Miller Island and take into consideration the remaining capacity of Poplar Island to reflect more current information. The net result of those two factors would increase capacity for the Maryland channels by 25% from 33 to 41 million cubic yards. The net effect of both of these factors reduces the shortfall that you have by 50% from 36 to 15 million cubic yards.

The implications of that are that your recommended plan would not need three alternatives, expansion of Poplar, the construction of a large island, and some pumping in the black water refuge. In fact, you could accommodate the existing shortfall with only a single alternative and save a great deal. I think the calculations need to be reviewed.

When it comes to the economic justification for the maintenance, I find that the cost values used do not represent reality, but are based on the hypothetical case of dumping into the bay because it is less expensive. I take issue with that, specifically with the analyses for the two major parts, the 50 foot channel system and the 35 foot channel system.

Relative to the 50 foot channel system, the analysis adapted the 1981 economic justification. Unfortunately, there is a significant math error in the current analysis relative to the under keel clearance. It also does not use current commodity movements. When you combine those two factors, it reduces the apparent PCR from 1.41 to 0.65, and it does appear that continued maintenance of the main channel is not economically warranted. Surely there must be a better analysis to support that.

With regards to the 35 foot channel system, the analysis is predicated on historical data, 1998 to 2002, and some assertions from Mr. Marder concerning the operating characteristics; however, if you use more current traffic for the canal for the year 2003, it reduces the apparent benefits by 22%, and if you use a more realistic nine knots instead of eight knots, it reduces the apparent benefits another 7-1/2 percent. The net effect of both of those would reduce the apparent PCR to essentially 1.0. The analysis needs closer attention.

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So what I would recommend is that we're all interested in having this analysis be as accurate as possible using the best set of numbers so that proper decisions can be made. I would urge that the Corps go back and look closely at all of those factors. I will be filing detailed comments on them for your consideration. Thank you.

MR. JOHNSON: Thank you, John, and I will reiterate our offer to meet with you when you're ready to review any detail.

Finally William Huppert. Did I get that right?

COMMENTER O-8

MR. HUPPERT: You're very close. My name is William Huppert, H U P P E R T. I'm a resident of Baltimore County for most of my life and have spent approximately 70 years on Middle River. There are several things I want to comment.

The first is that I got a phone call last night about 7:30, 8 o'clock telling me about this meeting. It was the first I had heard of it. My brother-in-law Albert said the same thing. He heard it

from me via phone this morning. So I'm concerned about communications.

There are other things. I'm with the Maryland Saltwater Sport Fishermen's Association. I'm active in building artificial reefs in the bay and many other projects involving the environment. I don't understand why you should be doing this open dumping until 2011. I think it's time to stop that completely. We all know what the damaging effects of that have been over the years.

The first thing I want to say is what toxins -- when you do all of this dredging, what is spread out there off Pooles Island? I have seen nothing in the literature so far that tells me what kind of poisons, toxins, other substances that are harmful to me, my family, my grandchildren, and everyone else. So I've seen nothing stated here about the effect of those things, and there have got to be some serious consequences there.

Secondly, over the years I have been reading. Again, I, like the gentleman previous, didn't

have enough time to really research all of the things that I could have possibly researched, but my recollection is over the past several years the shipping on the C & D Canal has been decreasing quite rapidly. Then I looked at the amount of the spoils that are going to be dredged from there, and it's a tremendous 40 billion yards. When I saw that, and then we're talking about the economic benefits, and if the shipping is constantly decreasing on the C & D Canal, why aren't we factoring that in there? That concerns me very much. It doesn't seem an economically sound policy to me.

Again, I'm very concerned about the environmental impact from what is being pulled up off the bottom and circulated back out there again because we have in effect made a -- it looks like coffee with a little bit of cream in it almost the entire year. If you run across the bay to Tolchester and down to Swan Point and places like that, the whole area is terrible. In fact, two years ago we had virtually no crabs come into Middle River, and I can't find out the

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answer to that. I don't know if somebody else knows it. I think we had crabs for about three weeks this year is all it lasted. That's another concern of mine.

Anyhow, my big concern again is what are these chemicals that are being pulled up and spread out, and the second is is the work on the C & D Canal worth the effort plus all the material that you're going to have to dispose of. Thank you.

MR. JOHNSON: Thank you. Would anybody else like to make a statement for the record? That concludes the formal portion of this meeting.