The Development of a Delaware Estuary Regional Sediment Management Plan and Beneficial Use of Dredged Material Program:

A Strategic Plan

I. Problem Statement/Introduction

The Delaware Estuary extends from Trenton, NJ south to the Delaware Bay entrance, covers an area of approximately 800 square miles, and encompasses the States of New Jersey, Pennsylvania and Delaware (Figure 1). The estuary is heavily used for both commercial and recreational interests, and is an environmentally sensitive ecosystem in need of protection.

The existing dredging program for Estuary channels, berths and terminals amounts to approximately 5,000,000 cubic yards of sediment/year. This significant quantity of dredged material jeopardizes the limited current upland Confined Disposal Facility (CDF) capacity in some areas. The beneficial use of dredged material for the Delaware Estuary represents an opportunity to improve sediment management practices and reduce dredging impacts for which a regional system-wide solution has not been developed.

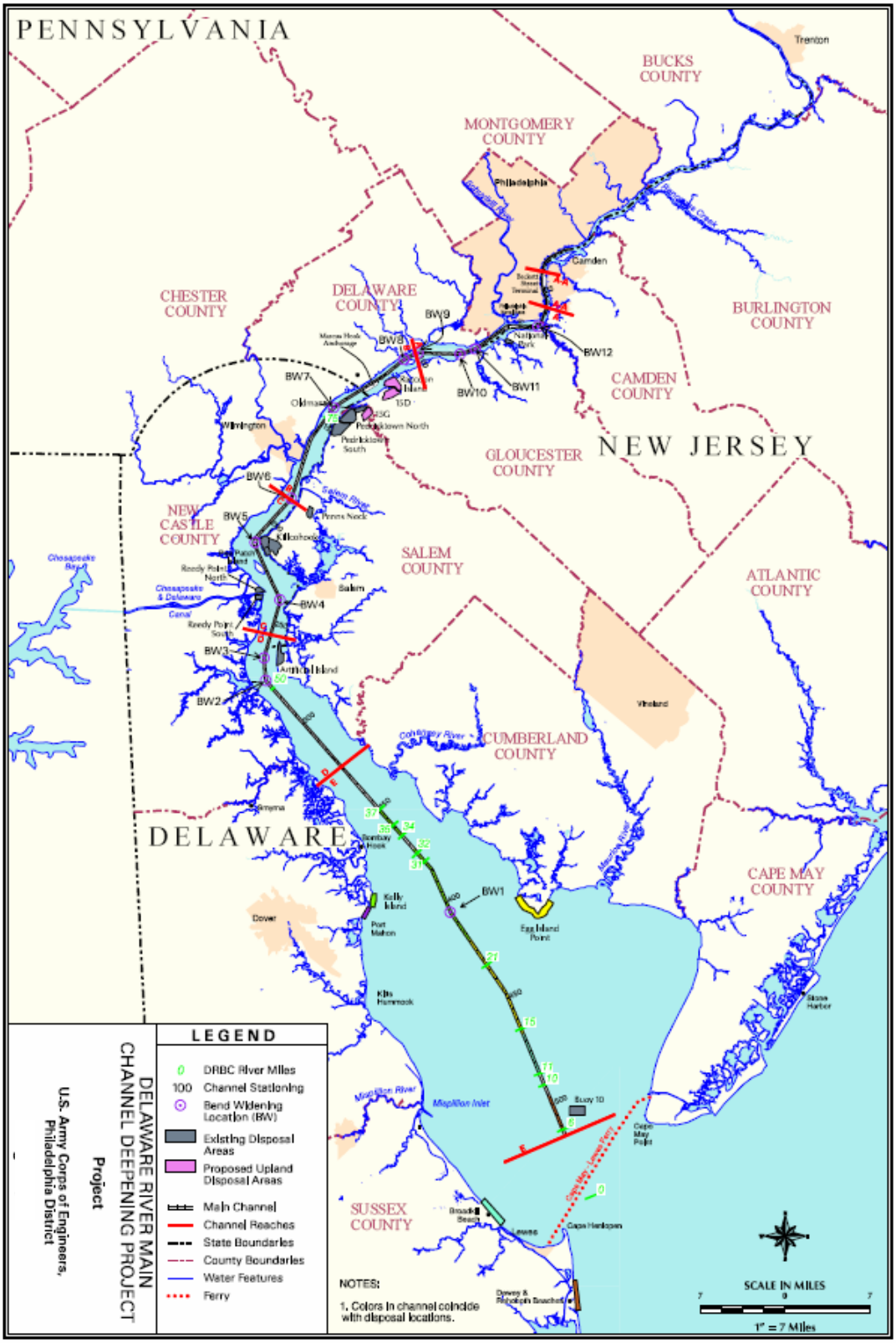
As a result, there is a need to develop a regional sediment management plan (RSMP) for the Delaware Estuary and associated tributaries such as the Schuylkill River, Salem River and Wilmington Harbor to include the development of a beneficial use of dredged material program. Such a program would entail assembling an integrated Regional Dredging Team to address the management of the Delaware Estuary sediment resources.

II. Purpose

The ultimate purpose and long term goal of this effort is for a Regional Dredging Team to implement and manage a RSMP to address all sediment resources in the Delaware Estuary, tributaries such as the Schuylkill River, Salem River and Wilmington Harbor, and private berths (herein referred to as 'the Estuary') for use by all interested parties. This effort will set a precedent for managing resources for the Estuary as a whole, thus facilitating management decisions regarding the beneficial use of dredged material. The beneficial use of dredged material for both the Delaware River navigation channel and CDFs will free up capacity thus allowing future Delaware Estuary dredging to continue in an economically sustainable manner.

The three major long-term goals of this effort include:

- Assemble a diversified Regional Dredging Team that will work together to formulate regionally acceptable solutions to the dredged material management challenges;
- Implement and manage a long-term sustainable RSMP;
- Develop the administrative, economic and logistical infrastructure needed to support the beneficial use of dredged material both from the Estruary, and from Confined Disposal Facilities (CDFs) to free up capacity for future dredging efforts. This effort includes compiling data into the Dredged Material Management System (DMMS) GIS database to assist in managing dredged material


PENNSYLVANIA
BUCKS COUNTY
MONTGOMERY COUNTY
CHESTER COUNTY
DELAWARE COUNTY
BURLINGTON COUNTY
CAMDEN COUNTY
NEW JERSEY
GLOUCESTER COUNTY
NEW CASTLE COUNTY
SALEM COUNTY
ATLANTIC COUNTY
CUMBERLAND COUNTY
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Camden
Trenton
Wilmington
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BW5
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BW7
BW8
BW9
BW10
BW11
BW12
LEGEND
DRBC River Miles
Channel Stationing
Bend Widening Location (BW)
Existing Disposal Areas
Proposed Upland Disposal Areas
Main Channel
Channel Reaches
State Boundaries
County Boundaries
Water Features
Ferry
NOTES:
1. Colors in channel coincide with disposal locations.
SCALE IN MILES
1" = 7 Miles
DELAWARE RIVER MAIN CHANNEL DEEPENING PROJECT
Project
U.S. Army Corps of Engineers, Philadelphia District

Figure 1

III. Short-Term Goals

The accomplishment of the long-term goals as stated above can best be facilitated by accomplishing five separate interim products, as discussed below.

A. Interagency Working Group Meeting and Collaboration

Interagency working group meetings will be held to discuss the following tasks:

- Define the RDT goals, participation, leadership, administrative support and meeting schedule;
- Build consensus within each of the agencies regarding appropriate representation, scope and responsibility;
- Discuss the long- and short-term goals of this effort;
- Identify potential pilot project;
- Establishing a timeline for accomplishing tasks and products;
- Establishing funding streams.

Initial products include:

- Develop a RSMP framework;
- Develop a Memorandum of Understanding between all agencies.

B. Regional Dredging Team (RDT) Development

An interagency diversified RDT will be developed to set a precedent for managing resources for the Estuary as a whole, thus facilitating management decisions regarding the use of dredged material for beneficial use purposes. The RDT will be complimented by a RDT Executive Committee for oversight to consider funding and policy decisions formulated and to be instituted by the RDT.

The concept of a RDT is supported by the National Dredging Team (NDT) chaired by the US Army Corps of Engineers. RDTs have the advantage of NDT expertise and experience, but can focus on those aspects of dredging and dredged material management that are unique to their region. RDTs in other regions, particularly New York Harbor have ensured ongoing support for dredging projects and dredged material management strategies, including beneficial use (even when beneficial use was not the least cost option). The RDT concept allows for open discussions between agency personnel and helps to reassure the public that dredged material policy is consistent and fair, especially in Ports that cross State boundaries. The RDT can also serve as a vehicle to bring together experts on innovative dredging and dredged material management technologies and to provide a consistent professional evaluation of program status for legislators and special interest groups.

The RDT will develop the RSMP and then continually monitor the implementation of the plan to ensure open dialog among stakeholders and provide a forum to discuss innovative solutions as they arise. The RDT will also be an excellent forum for dispute resolution and to provide public outreach on issues relating to dredging and dredged material management.

The RDT will include the following members:

•New Jersey
- NJ Department of Transportation Office of Maritime Resources (NJDOT/OMR)
- NJ Department of Environmental Protection (DEP) Land Use and Regulation Program
- NJ DEP Office of Dredging and Sediment Technology
- NJ DEP Office of Coastal Engineering
- South Jersey Port Corporation

•Pennsylvania
- Pennsylvania Department of Environmental Protection
- Pennsylvania Department of Transportation
- Philadelphia Regional Port Authority

•Delaware
- Delaware Department of Natural Resources and Environmental Control
- Delaware River Basin Commission
- Delaware Valley Regional Planning Commission
- Delaware River and Bay Authority
- Port of Wilmington

•Federal/Regional
- US Army Corps of Engineers: Philadelphia District
- US Environmental Protection Agency (Region II and III)
- US Fish and Wildlife Service
- National Marine Fisheries Service
- Pilots Association
- Maritime Exchange
- Delaware River Port Authority

C. Regional Sediment Management Plan Development

A regional RSMP will be prepared to summarize the need, alternatives and impacts associated with maintaining and improving the maritime infrastructure of the Delaware Estuary. The RSMP will illustrate the economic benefits and long-term needs for outyears and clearly show the consequences of failing to meet needs. The RSMP will include an implementation strategy using the RDT as a Steering Committee, and an outreach plan to ensure that private industry and NGOs have a forum to have their needs voiced and heard by the RDT.

D. Beneficial Use Opportunities Identification and Characterization

All Delaware River channels and upland CDFs will be characterized by compiling data into a GIS database to assist in managing dredged material. Data associated with New Jersey dredging and CDF efforts will be characterized in the NJDOT/OMR Dredged Material Management System (DMMS) GIS database. This effort would include combining existing databases at the federal, state and local government, academic and private institutions to rank/prioritize areas for beneficial use opportunities with pertinent information such as environmental (biological, chemical and water quality analyses), bulk analyses, geotechnical (quality and quantity), transportation/

accessibility, ownership, proximity to community, and available capacity. These data will assist in identifying the environmental properties of channel-dredged material to confirm that much of the dredged material meets acceptable use criteria for upland beneficial use in NJ and PA from a chemical and physical standpoint.

Individual beneficial use pilot demonstration projects will be identified based on management decisions from the compiled database, as well as from previous experiences of different agencies and associated R&D efforts. An emphasis will be placed on developing Project and Local Cooperation Agreements on an individual project basis.

Based on previous experiences at the USACE Fort Mifflin transfer facility, a potential beneficial use project could be the development of a transfer facility at the Pedricktown/Oldmans CDF located in southern New Jersey. This CDF has an existing rail facility and much data exists. Prioritized CDFs will be matched with specific potential use opportunities such as roadway, embankment, recreational, waste containment, and abandoned mine reclamation activities (i.e. Bark Camp restoration project). Other potential candidate sites could include Kilkohook and Artificial Island.

E. Estuary-Wide Sediment Budget Compilation

Existing sediment budgets will be compiled and reviewed towards developing an Estuary-wide sediment budget to facilitate more informed and practical long-term sediment management decisions and individual project impact analysis assessments. This budget would detail dredging quantities, cycles, and reaches for maintenance dredging events-to-date, ongoing, and future dredging events. This budget would facilitate beneficial use decisions and could be incorporated into a GIS database.

IV. Funding Stream

A proposal will be developed for the RSM National Demonstration Program or the USACE Planning Assistance to States program for FY06 (October 2005 through September 2006) Federal support. This funding will support the USACE's efforts to develop a RSMP framework, develop a Memorandum of Understanding between all agencies, and start compiling USACE CDF data for eventual import into the GIS database.

Several pieces of federal legislation have been identified, discussed in order of potential, which may serve as Federal support funding vehicles for FY 07.

- Beneficial Use of Dredged Material on the Delaware River, Delaware, New Jersey, and Pennsylvania, Senate Committee on Environment and Public Works Resolution;
- RSM National Demonstration Program;
- Planning Assistance to States;
- Section 1135 of WRDA '86 - Project Modifications for the Improvement of the Environment represents the best opportunity to transfer material out of a Confined Disposal Area for beneficial use, and;

- Section 204 of WRDA '92 - Beneficial Uses of Dredged Material for Ecosystem Restoration represents the best opportunity to ship material directly from channel to final location).

Federal appropriations from the Planning Assistance to States, Project Modifications for the Improvement of the Environment, and Beneficial Uses of Dredged Material for Ecosystem Restoration authorizations require a matching non-federal cost share of 50%, 25%, and 25%, respectively.

Potential sources of non-federal funds include the following entities involved in ecosystem restoration and beneficial use of dredged material projects (from 'Institutional Inventory for the Philadelphia District within the State of New Jersey', USACE: Philadelphia District):

- Regional Agencies and Organizations
  - Delaware Valley Regional Planning Commission
  - Delaware River Basin Commission
  - Delaware River and Bay Authority
  - Delaware River Port Authority
- State Agencies
  - NJ Department of Environmental Protection
  - NJ Department of Transportation
  - South Jersey Port Corporation
  - NJ Transportation Trust Fund
  - Pennsylvania Department of Environmental Protection
  - Pennsylvania Department of Transportation
  - Pennsylvania Regional Port Authority
  - Delaware Department of Natural Resources and Environmental Control

Once individual beneficial use projects have been initiated, the possibility exists for local partners to cost-share projects.