



**US Army Corps
of Engineers
New York District**

**FINDING OF NO SIGNIFICANT IMPACT/
DRAFT ENVIRONMENTAL ASSESSMENT FOR THE
SELECTION OF POTENTIAL DREDGED MATERIAL
PLACEMENT SITES FOR THE KILL VAN KULL-
NEWARK BAY CHANNELS PHASE II DEEPENING
PROJECT (AREA 4A)**



**Kill Van Kull Federal Navigation Channel
New York/New Jersey**

OCTOBER 1999

**FINDING OF NO SIGNIFICANT IMPACT
SELECTION OF POTENTIAL DREDGED MATERIAL PLACEMENT SITES
FOR THE KILL VAN KULL-NEWARK BAY CHANNELS
PHASE II DEEPENING PROJECT (AREA 4A)**

I have reviewed and evaluated the Environmental Assessment (EA) for this project in terms of overall public interest. The proposed action is an administrative decision on the selection of potential sites for placement of dredged material that is unsuitable for use as remediation material at the Historic Area Remediation Site. This material will be removed during channel deepening in the Kill Van Kull and Newark Bay Channels, New York and New Jersey. The authorized channel deepening would increase depth from -40 feet below mean low water (MLW) to -45 feet below MLW, plus an additional 2-foot allowance for dredging tolerance. The environmental conditions in the project area are analyzed in previous documents, including the Final Environmental Impact Statement (USACE 1980 a,b) and the Final EA (USACE 1997) for the Kill Van Kull/Newark Bay Channels Phase II Deepening Project. The purpose of this EA is to select placement sites, evaluate the manner in which the proposed action would change conditions in the project area, and to determine whether the impacts associated with placement site selection warrant the preparation of a supplement to the FEIS.

The USACE, in coordination with non-Federal partner(s), has identified and integrated a number of placement strategies into an overall management plan. Three potential upland sites and one potential sub-aqueous site have been identified by the non-Federal sponsor. In addition, the New York Harbor Dredged Material Management Plan (DMMP) (USACE, Implementation Report, September 1999) has identified other placement or beneficial use opportunities which may become available during the life of the Kill Van Kull/Newark Bay deepening project.

Placement sites selected as part of the Kill Van Kull/Newark Bay Channels Phase II Deepening Project must show costs commensurate with suitable benefits and full compliance with environmental requirements. In the Final EA for the Kill Van Kull/Newark Bay project (USACE, N.Y. District, Final Environmental Assessment/Finding of No Significant Impact for the Kill Van Kull/Newark Bay Channels Phase II Deepening Project, December 1997), a tiering strategy was developed in accordance with the Counsel on Environmental Quality (CEQ), NEPA regulations 40 CFR 1502.20 and 1508.28, in which the final selection of dredged material placement sites was deferred until such time as the issue was ready to be decided upon. All potential sites have been, or will be, permitted and in compliance with all appropriate Federal, state, and local regulatory and permitting requirements and analyses. Placement site utilization will not occur until all Federal, state, and local regulatory agencies have issued the required permits. Permit approval for the placement of dredged material at individual sites would be obtained by the owner/lessee of each of the potential placement sites.

As a result of my review, I find at this time that there are no substantial changes in the proposed action or significant new circumstances or information relevant to environmental concerns or bearing on the proposed action or its impacts that would warrant the preparation of a supplement to the FEIS.

October 1999

William H. Pearce
Colonel, Corps of Engineers
Commanding



**FINDING OF NO SIGNIFICANT IMPACT
SELECTION OF POTENTIAL DREDGED MATERIAL PLACEMENT SITES
FOR THE KILL VAN KULL-NEWARK BAY CHANNELS
PHASE II DEEPENING PROJECT (AREA 4A)**

I have reviewed and evaluated the Environmental Assessment (EA) for this project in terms of overall public interest. The proposed action is an administrative decision on the selection of potential sites for placement of dredged material that is unsuitable for use as remediation material at the Historic Area Remediation Site. This material will be removed during channel deepening in the Kill Van Kull and Newark Bay Channels, New York and New Jersey. The authorized channel deepening would increase depth from -40 feet below mean low water (MLW) to -45 feet below MLW, plus an additional 2-foot allowance for dredging tolerance. The environmental conditions in the project area are analyzed in previous documents, including the Final Environmental Impact Statement (USACE 1980 a,b) and the Final EA (USACE 1997) for the Kill Van Kull/Newark Bay Channels Phase II Deepening Project. The purpose of this EA is to select placement sites, evaluate the manner in which the proposed action would change conditions in the project area, and to determine whether the impacts associated with placement site selection warrant the preparation of a supplement to the FEIS.

The USACE, in coordination with non-Federal partner(s), has identified and integrated a number of placement strategies into an overall management plan. Three potential upland sites and one potential sub-aqueous site have been identified by the non-Federal sponsor. In addition, the New York Harbor Dredged Material Management Plan (DMMP) (USACE, Implementation Report, September 1999) has identified other placement or beneficial use opportunities which may become available during the life of the Kill Van Kull/Newark Bay deepening project.

Placement sites selected as part of the Kill Van Kull/Newark Bay Channels Phase II Deepening Project must show costs commensurate with suitable benefits and full compliance with environmental requirements. In the Final EA for the Kill Van Kull/Newark Bay project (USACE, N.Y. District, Final Environmental Assessment/Finding of No Significant Impact for the Kill Van Kull/Newark Bay Channels Phase II Deepening Project, December 1997), a tiering strategy was developed in accordance with the Counsel on Environmental Quality (CEQ), NEPA regulations 40 CFR 1502.20 and 1508.28, in which the final selection of dredged material placement sites was deferred until such time as the issue was ready to be decided upon. All potential sites have been, or will be, permitted and in compliance with all appropriate Federal, state, and local regulatory and permitting requirements and analyses. Placement site utilization will not occur until all Federal, state, and local regulatory agencies have issued the required permits. Permit approval for the placement of dredged material at individual sites would be obtained by the owner/lessee of each of the potential placement sites.

As a result of my review, I find at this time that there are no substantial changes in the proposed action or significant new circumstances or information relevant to environmental concerns or bearing on the proposed action or its impacts that would warrant the preparation of a supplement to the FEIS.

October 1999

William H. Pearce
Colonel, Corps of Engineers
Commanding

**DRAFT ENVIRONMENTAL ASSESSMENT/
FINDING OF NO SIGNIFICANT IMPACT
THE SELECTION OF POTENTIAL DREDGED MATERIAL PLACEMENT
SITES FOR THE KILL VAN KULL-NEWARK BAY CHANNELS
PHASE II DEEPENING PROJECT (AREA 4A)**

EXECUTIVE SUMMARY: The proposed action is an administrative decision on the selection of potential sites for placement of dredged material. This material would be removed during channel deepening in the Kill Van Kull and Newark Bay Channels, New York and New Jersey. The authorized channel deepening would increase depth from -40 feet below MLW to -45 feet MLW, plus an additional 2-foot allowance for dredging tolerance. The environmental conditions in the project area are analyzed in previous documents, including the Final EIS (USACE 1980 a,b) and the Final EA (USACE 1997) for the Kill Van Kull/Newark Bay Channels Phase II Deepening Project. The purpose of this EA is to select placement sites, evaluate the manner in which the proposed action would change conditions in the project area, and to determine whether the impacts associated with placement site selection warrant the preparation of a supplement to the FEIS.

The former Mud Dump Site, located approximately 6 miles east of Sandy Hook, New Jersey, has recently been de-designated as a dredged material placement site by the Environmental Protection Agency. New unconfined ocean placement sites are unlikely to be designated in the near future. Suitable material may be placed at the Historic Area Remediation Site (HARS).

Currently, the volumes of material to be removed during the deepening of Area 4A of the KVK/Newark Bay Channel are estimated to be 25,000 CY of dredged material suitable for placement at the Historic Area Remediation Site (HARS), 228,000 CY of rock material suitable for use at designated reef sites and 96,000 CY of dredged material unsuitable for placement at HARS. With respect to sediments that may not be suitable for use as remediation material at the Historic Area Remediation Site (HARS), initial selection of potential placement sites has been finalized.

The non-Federal sponsor has identified three upland beneficial use sites (Kearny Koppers Coke, NJ; Bayonne Landfill, NJ; and Bark Camp Mine site, PA) and one sub-aqueous disposal site (Newark Bay Confined Disposal Facility, NJ). The Kearny Koppers Coke site is currently operating and is permitted to accept up to 1 MCY of treated dredged material. A second project phase at the Kearny site, which is currently under permit review, could accommodate an additional estimated 2.4 MCY of dredged material. Closure of the Bayonne Landfill and remediation of the adjoining PSE&G Company property will require approximately 4.5 MCY of fill. Processed dredged material is suitable for these purposes, and all necessary permits have been obtained by the site owner. The Bark Camp Mine site in Penfield, Pennsylvania, is operating with a permit and should allow for placement of up to 480,000 CY of treated dredged material. An existing permitted contained aquatic disposal (CAD) cell at the Newark Bay Confined Disposal Facility has a remaining capacity of 830,000 CY. All potential sites must be permitted and in compliance with all appropriate regulatory and permitting requirements and analyses prior to placement of dredged material. Approval for the placement of dredged material at individual sites would be obtained by the owner/lessee of the each of the potential placement sites.

The USACE, in coordination with non-Federal partner(s), has identified and integrated a number of placement strategies into an overall management plan. In addition, the New York Harbor Dredged Material Management Plan (DMMP) (USACE, Implementation Report, September 1999) has identified other placement and beneficial re-use opportunities which may become available during the entire Kill Van Kull/Newark Bay Channels Phase II Deepening Project, including non-local alternatives and long-term strategies.

The District has concluded that the changes in the conditions of environmental resources are not significant, and the proposed impacts on these resources as a result of the authorized project are not significantly different than those described in the FEIS.

If you would like further information on this assessment, contact:

Ms. Megan Grubb
Project Biologist
U.S. Army Corps of Engineers
New York District, CENAN-PL-EA
26 Federal Plaza
New York, New York 10278-0900
(212) 264-5759

TABLE OF CONTENTS

<u>ITEM</u>	<u>PAGE</u>
EXECUTIVE SUMMARY	
1.0 INTRODUCTION	1
2.0 PURPOSE AND NEED FOR ACTION	3
2.1 MARINE TRAFFIC AND SAFETY CONCERNS.....	3
2.2 ECONOMIC CONCERNS.....	3
2.3 COMMITMENT OF RESOURCES.....	4
3.0 ALTERNATIVES TO THE PROPOSED ACTION	4
3.1 NO ACTION ALTERNATIVE.....	5
3.2 SITE SELECTION CRITERIA.....	5
3.3 BENEFICIAL USE ALTERNATIVES.....	6
3.3.1 Kearny Koppers Coke, NJ.....	8
3.3.2 Bayonne Landfill, NJ.....	8
3.3.3 Bark Camp Mine Facility, PA.....	8
3.4 CONTAINED AQUATIC DISPOSAL FACILITIES ALTERNATIVES.....	12
3.5 LONG-TERM PLACEMENT STRATEGIES.....	12
3.6 RECOMMENDED PLAN.....	14
4.0 AFFECTED ENVIRONMENT	14
5.0 ENVIRONMENTAL IMPACTS	15
6.0 CONCLUSIONS	15
7.0 COORDINATION	16
8.0 REFERENCES	17

LIST OF FIGURES

Figure 1 Project Location: Kill Van Kull and Newark Bay 2

Figure 2 Kearny Koppers Coke Site, NJ Location 9

Figure 3 Bayonne Landfill Site, NJ Location 10

Figure 4 Bark Camp Mine Site, PA Map 11

Figure 5 Newark Bay Confined Disposal Facility Site, NJ Location 13

APPENDICES

- Appendix A - Mailing List for Draft Environmental Assessment
- Appendix B - Administration's Closure of Mud Dump Site (July 24, 1996 Letter)
- Appendix C - U.S. Fish & Wildlife Coordination Act Section 2(B) Report (April 1997)
- Appendix D - Correspondence
- Appendix E - New Jersey Coastal Zone Management Evaluation
- Appendix F - New York Coastal Zone Management Evaluation
- Appendix G - Clean Water Act Section 404 (B)(1) Guidelines Evaluation
- Appendix H - Project Comments
- Appendix I - USFWS Biological Opinion on the Effects of Channel Deepening Activities
Within the Arthur Kill, Kill Van Kull, and Newark Bay Channels, New
York and New Jersey, on the Peregrine Falcon
- Appendix J - Clean Air Statement of Conformity

LIST OF ACRONYMS

BERH - Board of Engineers for Rivers and Harbors
CEQ - Council on Environmental Quality
CY - Cubic Yard
CZM - Coastal Zone Management
DMMP - Dredged Material Management Plan for the Port of New York and New Jersey
EA - Environmental Assessment
ER - Engineer Regulation
FEA - Final Environmental Assessment
FEIS - Final Environmental Impact Statement
FONSI - Finding of No Significant Impact
FSFEIS - Final Supplement to the Final Environmental Impact Statement
HARS - Historic Area Remediation Site
MLW - Mean Low Water
MCY - Million Cubic Yards
NBCDF - Newark Bay Confined Disposal Facility
NEPA - National Environmental Policy Act
NJDEP - New Jersey Department of Environmental Conservation
NJDIG - New Jersey Dredging Inter-Agency Group
NMFS - National Marine Fisheries Service
NRHP - National Register of Historic Places
NYD - New York District
NYSDEC - New York State Department of Environmental Conservation
NY/NJ - New York and New Jersey
O&M - Operations and Maintenance
SHPO - State Historic Preservation Office
SEIS - Supplemental Environmental Impact Statement
USACE - U.S. Army Corps of Engineers
USEPA - U.S. Environmental Protection Agency
USFWS - U.S. Fish and Wildlife Service
WRP - Waterfront Revitalization Program

1.0 INTRODUCTION

This Environmental Assessment (EA) was prepared in accordance with the National Environmental Policy Act (NEPA) to address the selection of potential placement alternatives for dredged material unsuitable for open ocean placement. The dredged material will be removed during the proposed Federal Navigation Project located at the Kill Van Kull and Newark Bay waterways, Port of New York and New Jersey (Figure 1). The authorized project plan provides for the deepening of existing navigational channels, from the confluence of the Kill Van Kull and Anchorage channels to the northern edge of the Port Newark Reach in Newark Bay. The project would increase channel depth from -40 ft below mean low water (MLW) to -45 ft below MLW, plus an additional 2 ft over depth allowance for dredging tolerance. The proposed navigation improvements to the Port were analyzed in the Navigation Study on Improvements to Existing Federal Navigation Channels Report (USACE 1980 a,b), the Supplemental Environmental Impact Statement (SEIS)(USACE 1986), and the Final Supplement to the Final Environmental Impact Statement (FSFEIS) (USACE 1987).

The U.S. Army Corps of Engineers, New York District is developing a comprehensive dredged material management plan for the New York/New Jersey (NY/NJ) Harbor area. Part of this plan is concerned with the placement of dredged material that is found to be unsuitable for use as remediation material at the Historic Area Remediation Site (HARS). Material unsuited for placement at the HARS would be placed in permitted upland or sub-aqueous disposal sites (USACE, December, 1998). The non-Federal sponsor is responsible for providing potential placement sites, as well as other management options, for the material removed during Kill Van Kull/Newark Bay project construction.

A tiering strategy for dredged material placement was developed in accordance with the Council on Environmental Quality (CEQ), NEPA regulations 40 CFR§1502.20 and §1508.28. The final selection of potential dredged material placement sites was deferred until the issue could be decided upon (United States Army Corps of Engineers, N.Y District, Final Environmental Assessment/Finding of No Significant Impact for the Kill Van Kull/Newark Bay Channels Phase II Deepening Project, December 1997; hereafter cited as: USACE, FEA/FONSI 1997). This EA documents the selection of potential placement sites. Candidate sites are subject to, and must comply with, all appropriate regulatory and permitting requirements and analyses. Placement site utilization will not occur until all Federal, state, and local regulatory agencies have issued the required permits. Obtaining permit approval for placement of dredged material at each of the proposed sites is the responsibility of the owner/lessee of each respective site.

This EA is required for NEPA compliance and identifies potential sites for placement of Kill Van Kull/Newark Bay dredged material. The location and selection of appropriate sites for beneficial use or disposal of dredged material unsuitable for use as remediation material at the HARS, that may be collected during deepening of Area 4A (Figure 1) is necessary for further deepening of the Kill Van Kull/Newark Bay channels to proceed. This EA has been prepared by the U.S. Army Corps of Engineers, New York District (NYD) to address the status of the alternative dredged material placement sites described herein. This assessment was prepared in accordance with NEPA, the implementing

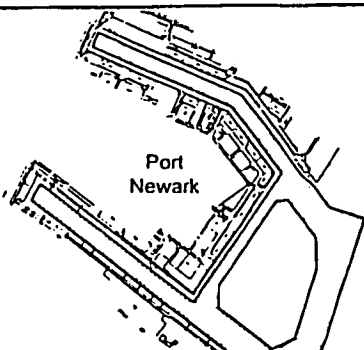


NEW JERSEY

KEY



Area 4A



Port Newark

Elizabeth Port Authority Marine Terminal

Elizabeth

Newark Bay

BAYONNE, NJ

Constable Hook

Bergen Point

Elizabeth Port

STATEN ISLAND, NY

Howland Hook Marine Terminal

ANCHORAGE CHANNEL

DEPARTMENT OF THE ARMY
NEW YORK DISTRICTS CORPS OF ENGINEERS
NEW YORK, N.Y. 10215-0090
Baker

Figure 1. Project Location: Kill Van Kull and Newark Bay (Adapted From: USACE Final I.L.R., December 1997)



regulations of the CEQ, and guidance contained in Engineer Regulation (ER) 200-2-2, *Environmental Quality Procedures for Implementing NEPA* (3-4-88).

2.0 PURPOSE AND NEED FOR ACTION

This EA is required for NEPA compliance regarding the selection of potential upland and sub-aqueous dredged material disposal sites. These proposed sites would be utilized for placement of unsuitable dredged material removed during the authorized deepening of the Kill Van Kull and Newark Bay Channels. The selection of disposal sites was deferred in the Final EA for the Kill Van Kull/Newark Bay Channels Phase II Deepening Project until specific areas were ready for contract solicitation and subsequent contract award and execution (USACE, FEA/FONSI 1997). Since then, no new concerns affecting the administrative selection of disposal sites have been identified.

The distinction between material that is potentially suitable and unsuitable for placement at the Historic Area Remediation Site (HARS) has been based on geologic boring data, but will be tested and confirmed prior to actual placement. Based on preliminary evaluation, the NYD currently estimates that dredging for the entire Kill Van Kull/Newark Bay project will require management of approximately 1.1 million cubic yards (MCY) of rock, 6.3 MCY of HARS suitable sediments and 3.3 MCY of sediments which are unsuitable for placement at the HARS. For Area 4A of the multi-year and multi-contract project, preliminary evaluation estimates the required management of approximately 228,000 CY of rock, approximately 25,000 CY of dredged material meeting the criteria for use as remediation material at the HARS, and approximately 96,000 CY of dredged material unsuitable for placement at HARS. Material unsuitable for use as remediation material at HARS requires alternative placement methods (USACE, FEA/FONSI 1997). Testing to confirm the estimated sediment volumes and sediment suitability characteristics for Area 4A is underway and will be completed prior to actual placement. A summary of the purpose and need presented in the Final EA for the Kill Van Kull/Newark Bay Channels Phase II Deepening Project (USACE, FEA/FONSI 1997) is provided below.

2.1 Marine Traffic and Safety Concerns

Water depths in the existing Federal Navigation Channels in the Kill Van Kull and Newark Bay at present do not provide for economically efficient and safe utilization by deep draft (> 40 feet) vessels. Container ships and oil tankers either transit these channels in a lightered or underloaded condition, or anchor in NY/NJ Harbor to await a favorable tide. As a result, tanker vessel congestion within the Harbor markedly increases, thereby increasing the potential for accidents. The additional shipping/transfer operations needed for lightering also elevates the probability of water pollution from spillage.

2.2 Economic Concerns

The Port of New York and New Jersey is vitally important to the economy of the Northeast, handling more tonnage than any other port on the U.S. East Coast. According

to American Association of Port Authorities (AAPA) figures, container traffic through the Port in 1997 totaled 12.6 million metric tons of cargo in 1.3 million containers, equaling 2.4 million twenty-foot equivalent units (TEUs). The Port provides more than 166,000 jobs and \$20 billion in economic activity. (USACE, Draft Feasibility Report, September 1999) Despite this level of commercial activity, the Port's volume of cargo has an average annual growth rate of only 3%, substantially lagging behind its major U.S. and international competitors. The future shipping trend is toward increased containerization in larger vessels requiring deeper drafting channels and Port facilities. It is possible to alleviate this problem by making the Kill Van Kull Channel deeper. The deepening project can be justified only if, over the assumed 50-year life of the project, its annualized total costs are less than its annualized total benefits. Reanalysis of deepening costs and project benefits for the Kill Van Kull and Newark Bay Channels Phase II Deepening Project (USACE, FEA/FONSI 1997) estimated that the annualized cost of deepening the Kill Van Kull to -45 feet MLW is approximately \$148 million. The annualized benefits resulting from incurring this cost are estimated to be \$615 million, thus indicating highly favorable economic viability.

2.3 Commitment of Resources

The Kill Van Kull and Newark Bay Channel project was authorized for construction in the Supplemental Appropriations Act for fiscal year 1985, Conference Report stating:

“...That the Secretary of the Army acting through the Chief of Engineers is authorized and directed to proceed with planning, design, engineering, and construction of the following projects substantially in accordance with the individual report describing such projects as reflected in the Joint Explanatory Statement of the Committee of Conference accompanying the Conference Report for H.R. 2577...; Kill Van Kull Channel, Newark Bay Channel, New York and New Jersey...”

The report referenced in the Joint Explanatory Statement was the December 1981 report of the Chief of Engineers, who concurred with the views of the Board of Engineers for Rivers and Harbors (BERH). The BERH report generally agreed with the NYD's and Division Commander's Reports except that it recommended deepening to -45 feet MLW. Therefore, the depth to -45 feet MLW was authorized by the Supplemental Appropriations Act, 1985; Public Law 99 - 88. The completion of the authorized Kill Van Kull/Newark Bay Channels Phase II Deepening Project is contingent upon the selection and approval of suitable sites for the management of dredged material unsuitable for use as remediation material at the HARS. This EA documents the selection of potential placement sites.

3.0 ALTERNATIVES TO THE PROPOSED ACTION

This section includes a discussion of the alternatives analyses for dredged material management contained in the 1987 Feasibility Study and FEIS and the December 1997 Final EA for the Kill Van Kull and Newark Bay Channels Phase II Deepening Project (USACE, FEA/FONSI 1997). The alternative dredged material placement sites

considered in this EA include only those sites selected from the options identified in that EA (USACE, FEA/FONSI 1997). Dredged material management alternatives will follow the standards presented by the New Jersey Department of Environmental Protection (NJDEP) in "The Management and Regulation of Dredging Activities and Dredged Material in New Jersey's Tidal Waters" (NJDEP, 1997) and the dredged material management standards of the other applicable states, including New York and Pennsylvania. All potentially utilized placement sites have been, or will be, permitted and in compliance with all applicable regulatory requirements.

3.1 No Action Alternative

Without the selection of disposal sites for dredged material unsuitable for use as remediation material at the HARS, necessary channel maintenance, and/or channel deepening, cannot occur. As a result, economic benefits in the form of economically efficient trade and commerce would not be realized, most likely resulting in the loss of jobs and tax revenue in the region. Furthermore, sediments that are contaminated from past and present human activities within the NY/NJ Harbor area, including the Kill Van Kull and Newark Bay waterways, will remain as a potential threat to the health of aquatic ecosystems.

3.2 Site Selection Criteria

The screening process employed for the consideration of potential placement sites for dredged material unsuitable for ocean placement included objectives outlined in the Newark Bay Confined Disposal Facility FSEIS (USACE, FEIS 1997). These criteria included:

- Must be suitable for receipt of unsuitable dredged material within a short-term timeframe
- Must be permissible, defined as:
 - The action requires no changes to existing regulations or laws necessary for permitting.
 - The current permit process for local, state, Federal, and international laws and regulations can be accomplished within the required timeframe for the project.
- Must be constructable, defined as:
 - The action will use existing technology, with no untested construction methods involved.
 - There is no encumbrance on existing or proposed land uses.
 - There are no access or utility restrictions (*e.g.*, underground electric cables).

- Must be environmentally acceptable, defined as:
 - There are no substantial adverse impacts.
 - Any impacts are to be at balance or have a net beneficial effect.
 - The action does not put additional stress on endangered or threatened species.

In addition to these criteria, the non-Federal sponsor has requested in a letter to the Corps dated March 31, 1998, that capacity of a potential placement site be between 0.50 MCY and 14 MCY, thereby allowing smaller permitted facilities to compete for smaller volume placement contracts.

The non-Federal sponsor has proposed four potential placement sites for unsuitable dredged material removed from Area 4A of the Kill Van Kull/Newark Bay project. Three upland beneficial use alternative sites are proposed: (1) Kearny Koppers Coke, New Jersey; (2) Bayonne Landfill, New Jersey; and (3) Bark Camp Mine Facility, Pennsylvania. One local sub-aqueous disposal option is proposed by the non-Federal sponsor: (1) Newark Bay Confined Disposal Facility and (2) Sub-Channel Cells in Newark Bay.

NOT PERMITTED!

Beneficial use alternatives are the preferred group of options for Area 4A and subsequent contracts. However, these alternatives may not be capable of handling all of the dredged material and may not eliminate the need for containment facilities, disposal facilities and other long-term disposal strategies. The following sections describe the three groups of dredged material management strategies selected for Area 4A: beneficial use, contained aquatic disposal facilities and long-term disposal strategies. A complete discussion of dredged material management options is presented in the District's Dredged Material Management Plan for the Port of New York and New Jersey (DMMP) Draft Implementation Report (USACE, September 1999) and the DMMP Progress Report (USACE, December 1997). There has been considerable work undertaken to identify placement site alternatives for dredged materials found to be unsuitable for use as remediation material at the HARS. Several possible alternatives have been eliminated due to a number of factors, including timeframe and capacity requirements, high monetary costs, Federal regulations, and permitting issues.

3.3 Beneficial Use Alternatives

Beneficial use of dredged material for habitat restoration, creation, and enhancement is an integral part of the NYD's Dredged Material Management Plan (DMMP) for the Port of NY/NJ (USACE 1999; USACE, December 1998). Beneficial use applications are intended to maximize the potential economic and environmental outputs of dredged material as a resource.

Beneficial use applications currently being considered for NY/NJ Harbor include: construction of artificial reefs (using rock), creation of oyster reef habitat, restoration of

non-oyster shellfish beds, creation of intertidal wetlands for habitat development and water quality treatment, restoration of intertidal mudflats and shallow subtidal habitat, restoration of the habitat of existing degraded subaqueous borrow pits, upland habitat development/remediation, and creation of bird/wildlife islands. Remediation of uplands (brownfields, landfill cover) and habitat restoration of existing degraded borrow pits provide the greatest potential placement capacity (USACE, December 1998). Depending on the specific beneficial use application, either HARS suitable or HARS unsuitable dredged material may be used. If sediments unsuitable for use as remediation material at HARS are used, capping with clean sediment or sediment decontamination/stabilization would be required. Beneficial use applications, especially upland remediation projects, provide incentive for the continued development of cost-effective sediment decontamination and stabilization technologies.

Several of the proposed beneficial uses (e.g. shellfish bed restoration, wetland restoration/creation) will require considerable research and development before planning, site selection, and implementation. For other beneficial uses (e.g., habitat restoration of existing degraded borrow pits, oyster reef creation), pilot projects will be needed in the Harbor prior to full-scale implementation. All proposed beneficial use applications would be USACE funded, if part of a USACE navigation or habitat restoration project, or funded by an applicant as part of a Section 404 permit application.

The U.S. Environmental Protection Agency (USEPA) designated the Historic Area Remediation Site (HARS) in September 1997 for remediation of that site via capping with suitable dredged material. All dredged material proposed for placement at the HARS must pass USEPA testing criteria for open water disposal prior to placement (USACE, December 1998).

Dredged material deemed unsuitable for use as remediation material at the HARS may have beneficial use applications. The three candidate upland placement sites proposed below (Kearny Koppers Coke, Bayonne Landfill, and Bark Camp Mine Site) are considered, in part, because placement of treated, unsuitable dredged material at these sites would constitute a beneficial use alternative. Dredged material placed at the Kearny (Seaboard) and Bayonne sites would provide for site remediation at both locations and landfill capping at the latter site. Placement of material at the Bark Camp site would be used for site remediation and reclamation of an abandoned strip mine.

For the upland placement sites, all necessary state permits would be required for placement of dredged material as fill. If the sites involve impacts to wetlands or waters within the jurisdiction of the USACE, then Federal permitting and NEPA requirements would need to be met under the USACE regulatory program. Potential issues under these circumstances may include, but are not limited to impacts to aquatic and terrestrial resources, threatened and endangered species, wetlands, cultural resources and both surface and ground water quality.

3.3.1 Kearny Koppers Coke, NJ

Kearny Koppers Coke is a brownfield project under the jurisdiction of NJDEP Site Remediation Program (Figure 2). Utilization of dredged material at the site would have a dual purpose: 1) remediation of a former industrial property that has been the site of unregulated dumping; and, 2) providing a viable, beneficial use for dredged material. The site has already accepted 1.1 MCY of dredged material and is currently permitted to accept an additional 1 MCY of dredged material. The permit application for the full use of the site is currently under review by the USACE. The proposed site remediation plan involves the removal of coal tar deposits from intertidal areas, installation of a cutoff wall, and capping of the entire site with cement-stabilized dredged material. The full use of the site would accommodate an estimated total of 4.5 MCY of dredged material (USACE, September 1999). The Kearny Koppers Coke site encompasses an area of approximately 167.3 acres. No unique plant communities exist on the Kearny site and approximately 19.4 acres of the site support wetlands. The faunal community is typical of the nearby urban area.

3.3.2 Bayonne Landfill, NJ

The Bayonne Landfill is located at the City of Bayonne, Hudson County, New Jersey (Figure 3). The site has been permitted by the Federal, state, and local agencies. The site has capacity for approximately 4.5 MCY of dredged material. Utilization of the site would provide multiple benefits: 1) proper closure of a former sanitary landfill; 2) remediation of an industrial brownfield that has been the site of uncontrolled dumping; and, 3) creation of a viable, beneficial use alternative for the placement of dredged material.

The Bayonne site encompasses an area of approximately 135 acres. The former landfill encompasses the western 38 acres of the site, while the other 97 acres are a former industrial property, which is to be remediated. Approximately 18 acres of the site contain jurisdictional wetlands, although only 8 acres of wetland area would be impacted during site remediation activities. The site has been moderately disturbed and the faunal community that does exist is typical of the area, as is described in the Final EA for the Kill Van Kull/Newark Bay Channels Phase II Deepening Project (USACE, FEA/FONSI 1997).

3.3.3 Bark Camp Mine Facility, PA

The Bark Camp Mine Facility is located in Huston Township, Clearfield County, Penfield, Pennsylvania (Figure 4). The site has been permitted by state and local agencies as a strip mine reclamation facility. The site has accepted 20,000 CY of dredged material from Perth Amboy dredging projects and could accept up to 480,00 CY of treated dredged material (PADEP 1998). Utilization of the site would provide multiple benefits including remediation of an abandoned strip mine that is currently contaminating water resources and wetlands downstream from the facility as well as reclamation of state forest and terrestrial habitat.

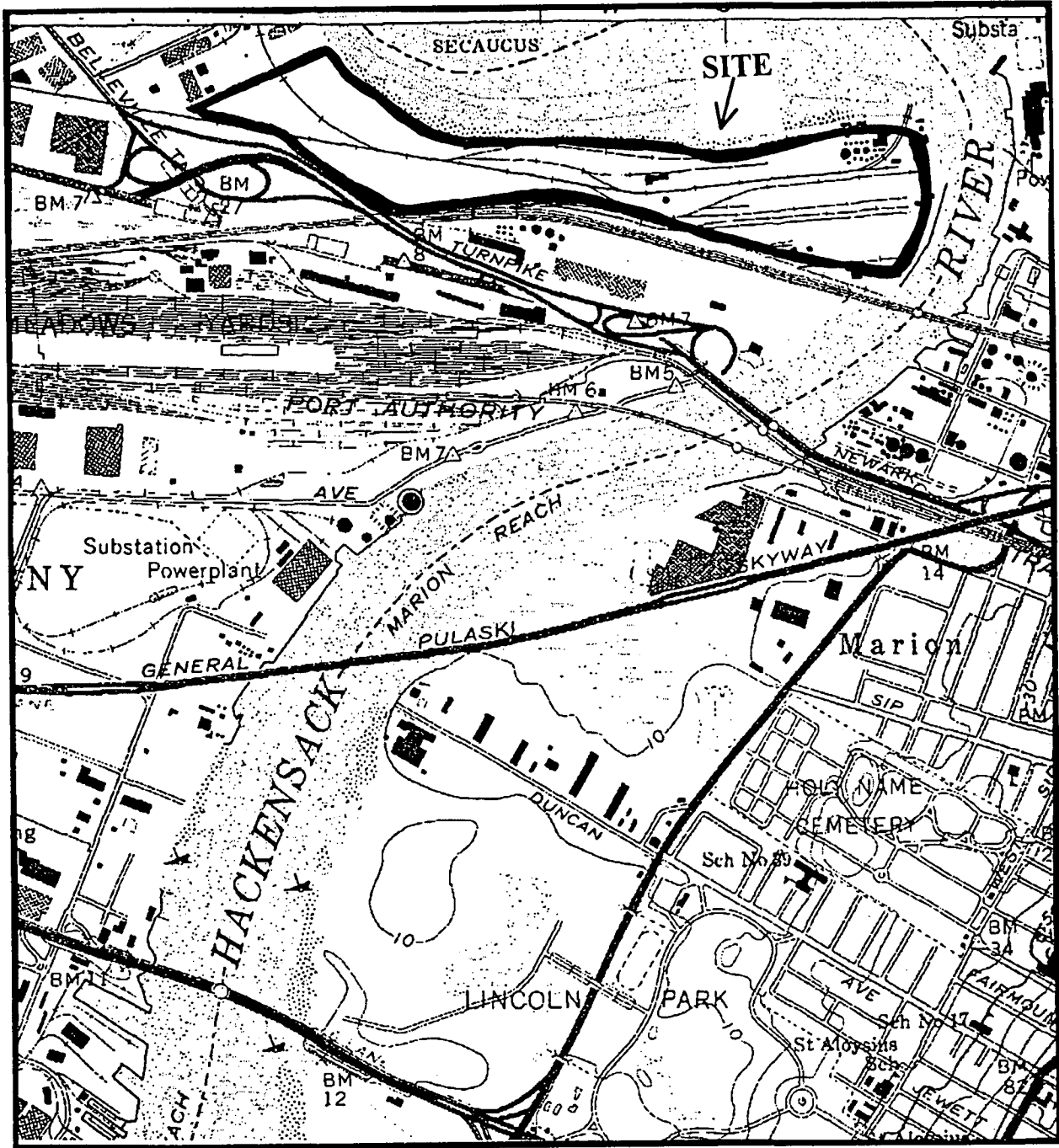
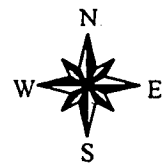


Figure 2 Kearny Koppers Coke Site Location

USGS 7.5" Topographic Map
 Jersey City, 1967, Photorevised 1981
 1:24000





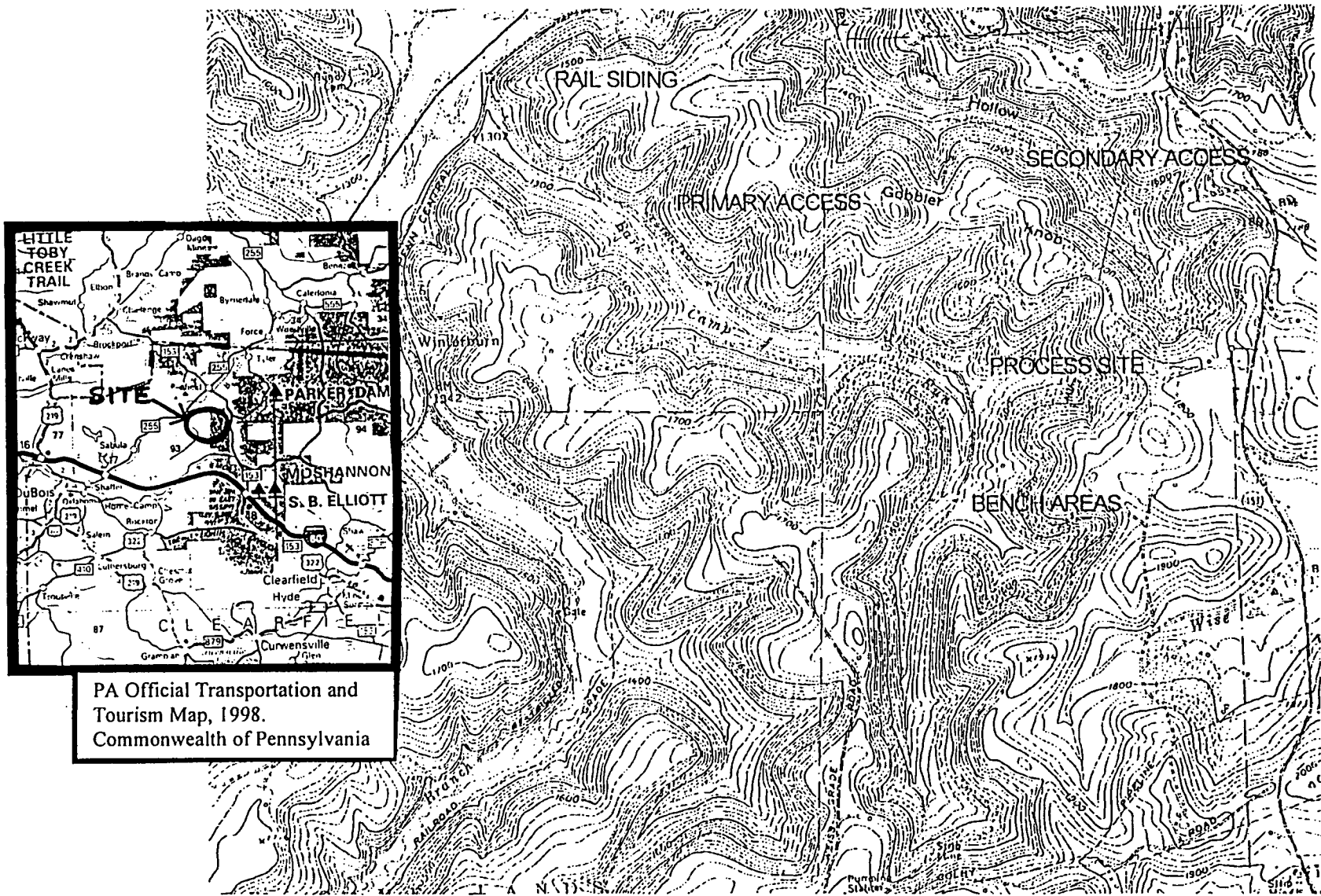
Map Scale: 1" = 2000'



QUADRANGLE LOCATION

Source: USGS 7.5" Topographic Map
 Jersey City, N.J. - N.Y.
 1967, Photorevised 1981

Figure 3. Bayonne Landfill
 Site Location



PA Official Transportation and
Tourism Map, 1998.
Commonwealth of Pennsylvania

FIGURE 4: BARK CAMP MINE SITE MAP
USGS QUADRANGLE MAP
CLEARFIELD COUNTY
PENFIELD, PA

The Bark Camp site encompasses approximately 1200 acres and is being reclaimed by the Pennsylvania Department of Environmental Protection and Consolidated Technologies, Inc. (PADEP 1998). Two deep mine shafts and an open strip mine have been acidifying a stream that runs through the facility since abandonment of the mine in 1988. Efforts are being made to restore the impacted wetlands and stream in the facility as well as reclaim the strip mine. Dredged material from the KVK would have to be dewatered and mixed with coal fly ash (10%-20% of total volume). It would then have to be transported by rail to Driftwood, PA and, subsequently, by local railway to Bark Camp.

3.4 Contained Aquatic Disposal Facility

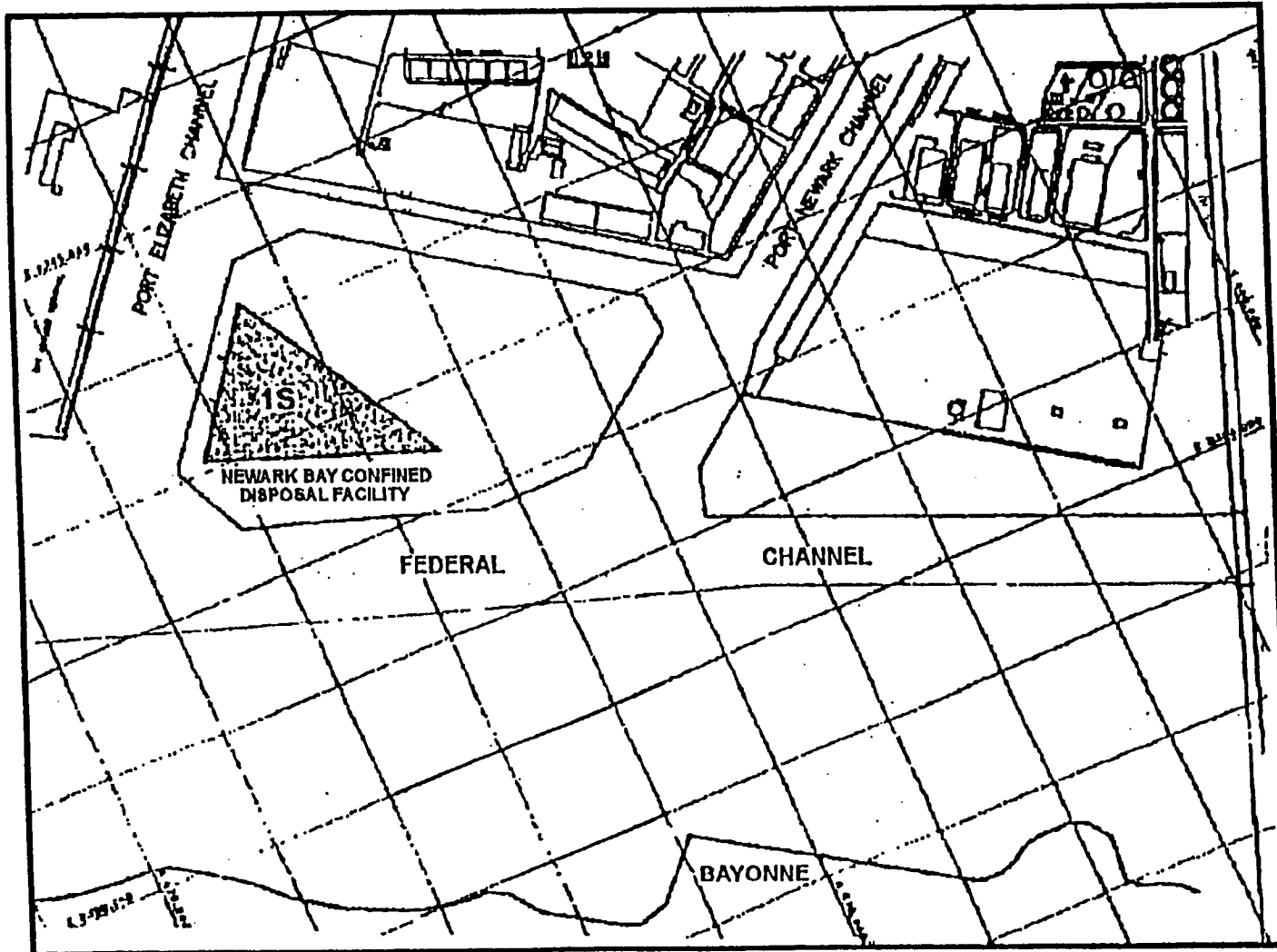
The second type of placement option is a local contained aquatic disposal facility (CAD) which offers a large volume of disposal capacity for HARS unsuitable dredged material. The CAD facility is a depression excavated into the bottom of a Newark Bay for the purposes of disposing and confining dredged material. Depending upon the character and nature of the material excavated from the channel bottom, the material excavated to create the CAD facility would either be used beneficially (including remediation of the HARS) or disposed of in an appropriate manner if other beneficial use options were not available or feasible. For area 4a, dredged material would be placed into the CAD facility and then covered by natural sedimentation or, if necessary, capped with an appropriate layer of sediment to isolate the contaminants from both the surrounding water column and the marine/estuarine organisms that inhabit the area (USACE, September 1999).

The non-Federal sponsor has proposed the Newark Bay Confined Disposal Facility (NBCDF) as a local sub-aqueous placement alternative for Area 4A of the Kill Van Kull/Newark Bay project:

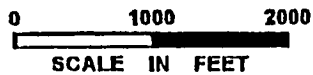
The Newark Bay Confined Disposal Facility (NBCDF) is located in a shallow water area seaward of Port Newark/Elizabeth (Figure 5). The construction of the first sub-aqueous cell of the NBCDF was completed in November 1997 and has approximately 830,000 CY of remaining capacity. The NBCDF is permitted and available for disposal of unsuitable dredged material. The NBCDF is currently operating and undergoing extensive environmental monitoring as disposal occurs. Two NBCDF CAD cells, which are permitted but not yet constructed, would have the additional capacity of 1.5 MCY for HARS unsuitable material. A complete description of the NBCDF is presented in the Dredged Material Management Plan for the Port of New York and New Jersey Draft Interim Report and Technical Appendix (USACE, September 1999).

3.5 Long -Term Placement Strategies

A third group of placement options contains solutions that are anticipated to become available over the projected life (50 years) of the Kill Van Kull/Newark Bay Channels Phase II Deepening Project (USACE, FEA/FONSI 1997). Within this timeframe, maintenance dredging will be required. Any additional placement alternatives developed subsequent to this EA also will be considered for the placement of dredged material



PLAN



THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY

Figure 5: Newark Bay Confined Disposal Facility Site Location

generated by the Operations and Maintenance (O&M) Program. It is estimated that deepening the channels to -45 ft MLW will increase annual shoaling rates by about 138,700 CY (USACE, FSEIS 1986).

Long-term placement alternatives are dependent on implementation of the policies mandated in the "Three Party Letter" of July 24, 1996 (see Appendix B). In that statement and in other authorizations, the USACE has been directed to evaluate all feasible dredged material placement alternatives needed to maintain and improve the Port of NY/NJ (USACE, 1999). This process is currently underway. The NYD has recently issued a draft Implementation Report for DMMP (September 1999) documenting the progress to date, as well as potential alternatives for incorporation into the scoping process for a comprehensive EIS. Two of the many DMMP alternatives which may become available for the O&M needs of the Kill Van Kull/Newark Bay project are the construction of additional land remediation sites and the implementation of emerging decontamination technologies. If placement alternatives that are considered viable for the Kill Van Kull/Newark Bay project become available, and if potential impacts relating to any additional alternatives have not been addressed by a state or Federal regulatory process, then the NYD will supplement this NEPA document.

3.6 Recommended Plan

The recommended plan for dredged material removed during implementation of Area 4A of the Kill Van Kull/Newark Bay Channels Phase II Deepening Project, which is unsuitable for ocean disposal, will be placement at the Newark Bay Confined Disposal facility or upland beneficial use sites. One or all of the four sites proposed by the non-federal sponsor and described in Sections 3.3 and 3.4 of this EA may be selected based on need, availability and sponsor preference at the time of construction. Selection of placement sites will not be made until all Federal, state, and local regulatory agencies have issued the required permits. Site selection will be coordinated with the New Jersey Maritime Resources (NJMR), New Jersey Dredging Inter-Agency Group Program (NJDIG).

4.0 AFFECTED ENVIRONMENT

The selection of potential placement sites is documented in this EA, which addresses appropriate Federal, state, and local regulatory permitting requirements. All proposed sites have been, or will be, permitted and in compliance with all appropriate regulatory and permitting requirements. The environmental and biological characterization of the affected environment for each of the potential placement sites is the responsibility of, and has been completed by or will be conducted by, the applicants via the permitting process. Placement site utilization will not occur until all Federal, state, and local regulatory agencies have issued the required permits.

A complete environmental description of the deepening project area was summarized in the Final EA for the Kill Van Kull/Newark Bay Channels Phase II Deepening Project (USACE, FEA/FONSI 1997). An environmental description of the HARS also has been entered into the public record as part of the Supplement to the Environmental Impact

Statement On New York Dredged Material Disposal Site Designation for the Historic Area Remediation Site (HARS) and the New York Bight Apex, May, 1997; hereafter cited as: (USEPA, SEIS 1997). The selection of potential placement sites would not affect any additional project area resources.

5.0 ENVIRONMENTAL IMPACTS

The administrative decision selecting potential sites for the placement of unsuitable dredged material that may be removed during the Kill Van Kull/Newark Bay Channels Phase II Deepening Project would not result in impacts on resources beyond those discussed in the Final EA (USACE, FEA/FONSI 1997) and the HARS SEIS (USEPA, SEIS 1997). The NYD is committed to implementing appropriate mitigation measures for any long-term or major environmental impacts that may result from channel construction. Potential environmental impacts of all proposed placement sites discussed above have been, or will be, addressed via the placement site permitting process by the site owner/lessee of each potential site prior to dredged material placement.

6.0 CONCLUSIONS

The purpose of this EA is to propose candidate sites for the placement of dredged material that is unsuitable for ocean placement at the HARS. This material will be removed during the authorized channel deepening and navigation improvements within Area 4a of the Kill Van Kull and Newark Bay Channels. This EA primarily documents the administrative decision selecting potential sites identified for placement of dredged material unsuitable for ocean placement. Other potentially affected environmental resources were not identified, nor were there additional potential impacts to such resources associated with the proposed action. The NYD concludes that the proposed action described above would involve no changes within the project area since the publication of the FEIS, and accordingly does not warrant preparation of a supplement to the EIS. Any and all potential environmental impacts resulting from the use of the sites will be addressed by the owner/lessee of each candidate placement site via the permitting process. The beneficial impacts that will result directly from the implementation of the proposed action is contingent upon the timely availability of sites for placement of dredged material. Ultimately, benefits will be manifested in the increased and more efficient use of navigational channels in the Port of NY/NJ and beneficial use of dredged material.

All appropriate Federal, state, and local regulatory requirements, including NEPA, U.S. Fish and Wildlife Coordination Act, Endangered Species Act, National Historic Preservation Act, and State Water Quality and CZM regulations, necessary for the use of any placement site (or sites) shall be met, and an opportunity for public review and comment ensured, prior to placement site utilization.

7.0 COORDINATION

The NYD is coordinating with all appropriate agencies, including the USEPA, U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), the NJDEP, and New York State Department of Environmental Conservation (NYSDEC) on updating the CZM consistency, and Water Quality Certification for the project and this specific area (4A). The New Jersey and New York CZM Evaluations are included in Appendices E and F of this document, respectively. The Clean Water Act, Section 404(b)(1) Guidelines evaluation is included in Appendix G. All relevant correspondence and project comments are included in Appendices D and H, respectively. A Clean Air Statement of Conformity is included in Appendix J.

8.0 REFERENCES

- New Jersey Department of Environmental Protection. (1997). The Management and Regulation of Dredging Activities and Dredged Material in New Jersey's Tidal Waters.
- Pennsylvania Department of Environmental Protection. (1998). Operating Plan for Dredge Stabilization Project at the Bark Camp Mine Facility. Pennsylvania Department of Environmental Protection, Land Recycling and Waste Management, Williamsport, PA.
- U.S. Army Corps of Engineers, New York District (September 1999). Dredged Material Management Plan for the Port of New York and New Jersey, Draft Implementation Report, Programmatic EIS and Technical Appendix.
- U.S. Army Corps of Engineers, New York District (September 1999). Draft Feasibility Report for New York and New Jersey Harbor Navigation Study, Volume 1, Main Report.
- U.S. Army Corps of Engineers, New York District. (1999). Beneficial uses of dredged material for habitat creation, enhancement and restoration in NY/NJ Harbor.
- U.S. Army Corps of Engineers – New York District. December (1998). Dredged Material Management Plan for the Port of New York and New Jersey.
- U.S. Army Corps of Engineers. (April 1997). Final Environmental Impact Statement on the Newark Bay Confined Disposal Facility.
- U.S. Army Corps of Engineers – New York District. (December 1997). Final Limited Reevaluation Report and Final Environmental Assessment/Finding of No Significant Impact, Kill Van Kull-Newark Bay Channels Phase II Deepening Project.
- U.S. Army Corps of Engineers – New York District. (September, 1996). Dredged Material Management Plan for the Port of New York and New Jersey, Interim Report.
- U.S. Army Corps of Engineers. (1987). Newark Bay/Kill Van Kull Navigation Project, Final Supplement to the Final Environmental Impact Statement.
- U.S. Army Corps of Engineers. (1986). Final Supplemental Environmental Impact Statement, Newark Bay/Kill Van Kull Navigation Project.
- U.S. Army Corps of Engineers. (1980a). Navigation Study on Improvements to Existing Federal Navigation Channels, Main report.
- U.S. Army Corps of Engineers. (1980b). Navigation Study on Improvements to Existing Federal Navigation Channels, Technical Appendices.
- U.S. Environmental Protection Agency. (May, 1997). Supplement to the Environmental Impact Statement On New York Dredged Material Disposal Site Designation for the Historic Area Remediation Site (HARS) and the New York Bight Apex.

Appendix A - Mailing List for Draft Environmental Assessment

Federal Agency Mailing List

Federal Transit Administration
Region II
26 Federal Plaza, Suite 2940
New York, NY 10278

Office of Federal Activities
U.S. EPA
NEPA Compliance Division
EIS Filing Section
Mail Code 2252-A
401 M Street S.W.
Washington, DC 20400

U.S. Geological Survey
425 Jordan Rd.
Troy, NY 12180

Mr. Anthony Ward
Executive Coordinator
Military Ocean Base
Bayonne, NJ 07002

Mr. Anton J. Sidoti
Federal Energy Regulatory Commission
19 West 34th Street, Suite 400
New York, NY 10001

Ms. Marie Rust
Regional Director, North Atlantic Region
National Park Service, Dept. of the Interior
15 State St.
Boston, MA 02109-3572

Ms. Sheila Huff
Office of Env. Policy and Compliance
U.S. Dept. of the Interior
1849-C St. NW, Room 2340
Washington, DC 20240

Mr. Terry Martin
Environmental Affairs
Dept. of the Interior
Office of the Secretary
Washington, DC 20240

Mr. Ronald Lambertson
Regional Director
U.S. Fish & Wildlife Service
Dept. of the Interior
300 Westgate Center Dr.
Hadley, MA 01035-9589

Mr. F. L. Rath, Deputy Commissioner
Div. of Historic Preservation
NYS Dept. of Parks and Recreation
Bldg. 1, Empire State Plaza
Albany, NY 12238

Mr. David Bardin, Preservation Officer
NJ Dept. of State Historic Environmental
Protection
P.O. Box 1390
Trenton NJ 08625

Mr. Robert Hargrove, Chief
Attn: Mr. Joseph Bergstein
Strategic Planning & Multimedia Programs
Branch
U.S. Environmental Protection Agency, Region
II
290 Broadway
New York, NY 10007-1866

Mr. Clifford G. Day
Supervisor
U.S. Fish & Wildlife Service
927 North Main St., Bldg. D 1
Pleasantville, NJ 08232

Mr. Robert F. McKeon
U.S. Maritime Administration
26 Federal Plaza
New York, NY 10278

Ms. Diane Rusanowsky
U.S. Department of Commerce
National Marine Fisheries Service
212 Rogers Avenue
Milford, CT 06460-6499

Mr. Stanley W. Gorski
Attn: Ms. Karen Green
National Marine Fisheries Service
Habitat & Protected Resources Division
Sandy Hook Biological Laboratory
74 Magruder Rd.
Highlands, NJ 07732

Mr. Don L. Kilma, Director
Advisory Council on Historic Preservation
The Old Post Office Building
1100 Pennsylvania Ave. NW #809
Washington, DC 20004

Mr. Joe Picciano, Division Chief
Federal Emergency Management Agency
Region 2
26 Federal Plaza
New York, NY 10278

Ms. Grace Musumech
Strategic Planning & Multimedia Programs
Branch
U.S. Environmental Protection Agency, Region
II
290 Broadway
New York, NY 10007-1866

Mr. Anthony G. Carr
Federal Transit Administration
One Bowling Green, Room 429
New York, NY 10004-1415

Mr. Michael Ludwig
Attn: Ms. Diane Rusanowsky
U.S. Department of Commerce
National Marine Fisheries Service
212 Rogers Avenue
Milford, CT 06460-6499

State Agencies Mailing List

Mr. Vance Barr
NYS Department of State
Division of Coastal Resources and Waterfront
Revitalization
Albany, NY 12231-0001

Mr. Stephen Zahn
Marine Resources Specialist
New York State Dept. of Environmental
Conservation
47-40 21st. St.
Long Island City, NY 11101

Mr. John Ferguson
New York State Dept. of Environmental
Conservation
47-40 21st. St.
Long Island City, NY 11101

Thomas Wakeman
Port Authority of New York & New Jersey
One World Trade Center
New York, NY 10048

Mr. Thomas Costanzo
Port Authority of New York & New Jersey
One World Trade Center
New York, NY 10048

Director of Field Services
Div. of Historical Preservation
New York State Dept. of Parks and Recreation
Empire State Plaza, Bldg. 1
Albany, NY 12238

Mr. George Stafford, Director
New York State Dept. of State
Coastal Management Program
162 Washington Avenue, 4th Floor
Albany, NY 12231-0001

Mr. Robert James
New Jersey Dept. of Transportation
1035 Parkway Avenue, CN 600
Trenton, NJ 08625-0600

State of New Jersey
Dept. of Community Affairs
101 South Broad Street, CN 800
Trenton, NJ 08625-0800

Mr. Peter King
State of New York
Dept. of Transportation
Hunters Point Plaza
47-40 21st St.
Long Island City, NY 11101

Mr. Howard Golub, Acting Director
Interstate Sanitation Commission
311 West 43rd Street, Suite 201
New York, NY 10036

Mr. Ron Mieszkowski
State of New Jersey
Highway Authority
P.O. Box 5050
Woodbridge, NJ 07095

Mr. John Yencik
New Jersey Dept. of Labor & Industry
P.O. Box V
Trenton, NJ 08625

Mr. Joel Peccioli
NEPA Coordinator
NJ Dept. of Environmental Protection
501 East State Street, CN 401
Trenton, NJ 08625-0401

Mr. Lawrence Schmidt, Director
Office Of Program Coordination
New Jersey Dept. of Environmental Protection
P.O. Box 418
Trenton, NJ 08625-0418

Commander Larry Leahy
ACTNY - Waterway
Bldg. 108
Governors Island, NY 10004

Ms. Dorothy Guzzo, Deputy Preservation
Officer
NJ Dept. of State Historic Environmental
Protection
P.O. Box 404
Trenton, NJ 08625-0404

Mr. Larry Baier
NJDEP Office of Dredging and Sediment
Technology
401 E. State Street
Trenton, NJ 08625

Local Mailing List

Landmarks Preservation Commission
Director of Environmental Review
100 Old Slip
New York, NY 10005

Ms. Roberta Scott Boatti
Director, Business Development
Staten Island Chamber of Commerce
130 Bay Street
Staten Island, NY 10301

Ms. Omi Medford-Ryan
Dept. of City Planning, Waterfront Division
22 Reade St.
New York, NY 10278

Mr. John Doherty
New York City Dept. of Sanitation
125 Worth Street, Room 72
New York, NY 10013

Ms. Esther Siskind
New York City Dept. of Environmental
Protection
59-17 Junction Blvd.
Corona, NY 11368

Ms. Georgina Morgenstern
Bureau of Environmental Engineering
New York City Dept. of Environmental
Protection
96-05 Horace Harding Expressway
Corona, NY 11368

Mr. William Holzapfel
City Attorney
City of Elizabeth, New Jersey
Dept. of Law, Office of the City Attorney
50 Winfield Scott Plaza
Elizabeth, NJ 07201-2462

Ms. Christina Adidjaja
New York Metropolitan Transportation Council
347 Madison Avenue - 10th Floor
New York, NY 10017

Mr. Peter Janosik
City Council of New York Land Use Division
250 Broadway - 17th Floor
New York, NY 10007

Mr. Christopher Lynn, Commissioner
New York City Dept. of Transportation
40 Worth Street, 10th Floor (CEQR)
New York, NY 10013

Mr. Gary Surmay and Mr. Jorge Valencia
Housing Authority
City of Elizabeth, New Jersey
668 Maple Avenue
Elizabeth, NJ 07202

Mr. Mark Matsil, Director
Natural Resources
New York City Dept. of Parks
1234 5th Avenue, Room 233
New York, NY 10029

Ms. Annette Barbaccia
New York City Office of Environmental
Coordination
52 Chambers St., Room 215
New York, NY 10007

Director of Planning
Metropolitan Transportation Authority
347 Madison Avenue
New York, NY 10017-3739

Mr. Floyd Lapp
Director of Transport
Dept. of City Planning
2 Lafayette Street, Suite 1200
New York, NY 10007

Senior Director Service Planning
New York City Transit Authority
130 Livingston Street
Brooklyn, NY 11201

Director
New York MetroTransportation Council
One World Trade Center, Suite 82E
New York, NY 10048

Office of the Mayor
City of Elizabeth, New Jersey
City Hall
50 Winfield Scott Plaza
Elizabeth, NJ 07201-2462

Ms. Linda Corcoran
Vice President
New York City Economic Development Corp.
110 William Street, 4th Floor
New York, NY 10038

Mr. George Ververides
Director of County Planning
Middlesex County Planning Board
40 Livingston Avenue
New Brunswick, NJ 08901

Mr. Armand Fiorletti
Union County Engineer
P.O. Box 2607
Westfield, NJ 07091-2607

Mr. Stephen Van Hecke
Economic Development
Union County
1085 Morris Avenue
Union, NJ 07083

Ms. Janet Treamont
Essex County Dept. of Planning and
Economics
120 Fairview Avenue
Cedar Grove, NJ 07009

Mr. John Rose, Director
New York City Dept. of City Planning
22 Reade Street
New York, NY 10007-1216

Ms. Susan Kath
Environmental Law Division
New York City Law Dept.
100 Church Street, 3rd Floor
New York, NY 10007

Office of the Mayor
City of Bayonne
City Hall
630 Avenue C
Bayonne, NJ 07002

Office of the Mayor
City of Jersey City
280 Grove Street
Jersey City, NJ 07302

Office of the Mayor
City of Newark
920 Broad Street
Newark, NJ 07102

The Honorable Guy Molinari
Staten Island Borough President
Borough Hall
Staten Island, NY 10301

Community Board No. 3
Borough of Staten Island
655-218 Rossville Avenue
Staten Island, NY 10309

The Honorable George Pataki
Governor of the State of New York
The Executive Chamber
Albany, NY 12224

The Honorable Christine Todd Whitman
Governor of the State of New Jersey
Office of The Governor
125 West State Street, CN 001
Trenton, NJ 08625-0001

Congressional Delegates Mailing List

The Honorable Frank Lautenberg
United States Senate
506 Hart Senate Office Building
Washington, DC 20510-3002

The Honorable Robert Torricelli
United States Senate
Senate Office Building
113 Dirksen
Washington, DC 20510-3010

The Honorable Daniel P. Moynihan
United States Senate
464 Russell Senate Office Bldg.
Washington, DC 20510-3201

The Honorable Alfonse M. D'Amato
United States Senate
520 Hart Senate Office Building
Washington, DC 20510-3202

The Honorable Robert Menendez
House of Representatives
1730 Longworth House Office Building
Washington, DC 20515-3013

The Honorable Donald M. Payne
2244 Rayburn House Office Bldg.
House of Representatives
Washington, DC 20515-3010

Mr. Todd Turner
Office of State Senator Gentile
664 Bay Street
Staten Island, NY 10304

Interested Parties Mailing List

Natural Resources Defense Council
40 West 20th Street
New York, NY 10011

New York City Sierra Club
250 Riverside Drive
New York, NY 10025

Ms. Cindy Zipf
Executive Director
Clean Ocean Action
P.O. Box 505
Sandy Hook, NJ 07732

Sierra Club New York City Group
625 Broadway, 8th Floor
New York, NY 10012

Sierra Club
310 Walnut Street
Englewood, NJ 07631

Ms. Beth Milleman, Executive Director
Coast Alliance
235 Pennsylvania Avenue
SE Washington, DC 20003

Mr. Peter Mott
New York City Audubon Society
71 West 23rd Street, Room 606
New York, NY 10010-4102

Mr. John Santacrose, Executive Director
Audubon Society of New York State
46 Rarick Road
Selkirk, NY 12158

United NY and NJ Sandy Hook Pilots
201 Edgewater Street
Staten Island, NY 10305

Mr. Mark Mascaro
President and Chief Executive Officer
Staten Island Chamber of Commerce
130 Bay Street
Staten Island, NY 10301

Mr. Gregory Storey
New York Shipping Association
Two World Trade Center, 20th Floor
New York, NY 10048

United Pilots Association
10 Richmond Avenue
Staten Island, NY 10302

Mr. Tad Deshler
EVS
200 W. Mercer St., Suite 403
Seattle, WA 98119

Mr. James Brown
JMZ Geology, Inc.
43 Emery Avenue
Flemington, NJ 08822

Mr. James Tripp
Environmental Defense Fund
257 Park Avenue South
New York, NY 10010

Mr. Thomas J. Gilmore, Executive Director
New Jersey Audubon Society
P.O. Box 125
790 Ewing St.
Franklin Lakes, NJ 07417

Mr. D.W. Bennett, Executive Director
American Littoral Society
Sandy Hook, Building #18
Highlands, NJ 07732

Hudson River Foundation
40 West 20th St. Ninth Floor
New York, NY 10011

New Jersey Alliance For Action
P.O. Box 6438
Raritan Plaza II
Edison, NJ 08818-6438

Mr. Andrew Willner
NY/NJ Harbor Baykeeper
Sandy Hook, Building #181
Highlands, NJ 07732

Dr. Katherine Parsons
Manomet Bird Observatory
P.O. Box 1770
Manomet, MA 02345

Dr. Henry Ross
Union County Alliance
P.O. Box 411
Union, NJ 07083

Utilities Mailing List

Bell Atlantic, New Jersey, Inc.
540 Broad Street
Newark, NJ 07012

Mr. Perry Boynton
Jersey Central Power & Light
300 Madison Avenue
Morristown, NJ 07960

Getty Petroleum Corporation
125 Jericho Turnpike
Jericho, NY 11753

Transcontinental Gas Pipe Line Corp.
Wood Avenue
South Linden, NJ 07036

Mr. Raymond A. Tripodi
Public Service Electric & Gas Co.
80 Park Plaza - T17H
P.O. Box 570
Newark, NJ 07012

The Reactance Corporation
P.O. Box 256
Bayonne, NJ 07002

Mr. James Keeter
Coastal Corporation
Nine Greenway Plaza, Suite 468
Houston, TX 77046-0995

NYNEX Corporation
230 W. 36th Street
New York, NY 10018

Mr. Brian Clemence
Camp, Dresser & McKee
10 Cambridge Center
Cambridge, MA 02142

Mr. Thomas Echikson
Sidley & Austin
1722 I Street, N.W.
Washington, DC 20006

Mr. Jack Frost
TOSCO Refining Company
1400 Park Avenue
Linden, NJ 07036

Ms. Ruth Hierro
Chemical Landholdings
1015 Bellville Turnpike
Kearny, NJ 07032

Mr. Mike Karlovich
Director of Community Relations
TOSCO Bay Refinery
1400 Park Avenue
Linden, NJ 07036

Appendix B - Administration's Closure of Mud Dump Site (July 24, 1996 Letter)

ENCLOSURE

July 24, 1996

The Honorable Frank Pallone
United States House of Representatives
Washington, D.C. 20510

Dear Congressman Pallone:

Your leadership and support have been essential in advancing our shared goals of protecting the ocean environment, while ensuring the competitiveness of the Port of New York and New Jersey and the economic health of the region. We are writing to announce our commitment to several substantial new steps to provide additional Administration support for those goals. We believe the three-point plan outlined below demonstrates this Administration's commitment to the continued growth and vitality of the port, to protective regulation of ocean disposal, and to a stronger partnership with the states in protecting regional commerce and the marine environment.

1. We will close the Mud Dump Site by September 1, 1997

After years of contention, this Administration is prepared to help resolve the controversy over disposal at the Mud Dump Site (MDS) off the New Jersey coast.

Environmental, tourism, fishing, and other community groups have long contended that the MDS should be closed immediately. These views reflect the important environmental values that New Jersey's communities identify with their coastal environment. Community concerns have been heightened by the unhappy history of other environmental threats that these communities have had to endure - ranging from oil spills to the littering of shorelines with medical waste. This history warrants sensitivity to concerns about the MDS, including concerns about continued use of the site for so-called "category 2" material. When these concerns are coupled with the limited category 2 disposal capacity we expect the site to provide, we must conclude that long-term use of this site for disposal activity is not realistic.

Accordingly, the Environmental Protection Agency (EPA) will immediately begin the administrative process for closure of the MDS by September 1, 1997. The proposed closure shall be finalized no later than that date. Post-closure use of the site would be limited, consistent with the management standards in 40 C.F.R. Section 228.11(c). Simultaneous with closure of the MDS, the site and surrounding areas that have been used historically as disposal sites for contaminated material will be redesignated under 40 C.F.R. Section 228 as the Historic Area Remediation Site. This designation will include a proposal that the site be managed to reduce impacts at the site to acceptable levels (in accordance with 40 C.F.R. Section 228.11(c)). The Historic Area Remediation Site will be remediated with uncontaminated dredged material (i.e. dredged material that meets current Category I standards and will not cause significant undesirable effects including through bioaccumulation). Our ongoing environmental assessment activities at the site will be

modified to reflect these new commitments. We also will seek to reinforce this approach in appropriate legislation.

Although we recognize that eventual closure of the MDS, followed by remediation, is appropriate, immediate closure could jeopardize the Port, which may need short-term use of the site to dispose of category 2 material. To strike the appropriate balance, use of the site for category 2 material will have to be supported with certifications by the permit applicant, and a finding by the Corps of Engineers that: 1) the affected states or ports were asked to provide alternative sites for disposal of the material identified by the permit, and that the states or ports failed to provide a reasonable alternative site; and 2) the disposal of category 2 material at the MDS will not increase the elevation at the MDS higher than 63 feet below the surface. Any elevation limits will be designed to contain material within the current lateral limits of the MDS, and will be set based on scientific evidence.

2. We will help remove the immediate obstacles to dredging the Port

The Port Authority of New York and New Jersey, terminal operators, shipping lines, and labor groups have identified numerous ways in which we can help expedite dredging in the Port. We have heard, and are responding to, their concerns.

Making the MDS available for category 2 material for the next 12 months, and allowing the elevation at the site for category 2 material to increase, would remove the most immediate and major federal obstacles to dredging. The designation of the Historic Area Remediation Site will assure long-term use of category 1 dredge material.

Our outreach to the companies, longshoremen, harbor pilots, and others whose livelihood depends on the Port, has identified many additional steps our agencies can take to further facilitate adequate dredging in the Port. A major source of concern and potential cost for permit applicants has been uncertainty surrounding the testing that must support permit applications. Accordingly, by the end of August, EPA will finalize its proposal that tests of only two species, not three, will be required of permit applicants. EPA then will invest at least nine months in a process for all affected groups — industry, labor, and environmental groups — to help the Agency review the ocean disposal testing requirements and assure that any further revision reflects both sound policy and sound science.

The Corps of Engineers will expedite the processing of dredging permit applications and completion of its own dredging projects. The Corps will issue public notices for dredging permits within 15 days after a completed application is submitted, or will have requested any additional information necessary to make the application complete. Within 90 days, the Corps will either issue the permit, deny the permit, or commit in writing to a deadline for the permit decision. The Corps responsibility for the federal channels will also be met: with cooperation from the states and the funding requested by the President, the Corp. will ensure maintenance dredging for 10 high-priority federal channel projects before the end of 1997.

The Honorable Frank Pallone

Page 3

In addition, the Corps and EPA will accelerate their work with the affected state and local governments on a sound dredge material management plan, and complete the interim plan by August 30, 1996. This interim plan will identify any steps that are necessary to sustain dredging through 1997. The final plan will be completed by September, 1998.

Most importantly, we expect that our commitments concerning the MDS will diminish or eliminate the possibility of litigation challenging permits and the EPA rule change during the period prior to September 1, 1997. This proposal is predicated on that result.

3. We will help ensure the health of the Port and the environment for the 21st Century

The short-term efforts identified here cannot truly help the Port without effective long-term strategies to ensure that dredge material is managed properly. We recognize the significant efforts and commitments that New York and New Jersey have made with us to put those strategies in place. We will reinforce those efforts, so that long-term growth of the Port is sustained and sustainable.

Recognizing that a vital Port should be able to accommodate the full range of world-class ships, the Corps will soon begin an expedited feasibility study of alternatives for a 50 foot deep Port, including recent legislative proposals on this issue. The Corps will seek Congressional authorization and take steps to reprogram funds to allow the study to begin in 1996, and the study will be designed for completion in 1999. Recognizing that dredging is not the only issue affecting the future of this and other Ports, the Department of Transportation is committed to a six-month study of the causes of cargo diversion from our East Coast ports. This study, which will be developed in consultation with other affected agencies, will recommend any additional measures that are needed to enhance the international competitiveness of our East Coast ports.

Continued growth of the Port must be coupled with aggressive development of disposal alternatives and expanded efforts to reduce toxic pollution in the harbor. The Administration will continue to support legislation and appropriations to support cost-sharing of inland disposal alternatives. The Administration will also seek support for the range of continuing efforts to develop acceptable alternatives. For example, EPA is today announcing \$1.2 million in contract awards to support development of detoxification technologies for dredge material. In addition, the Corps will immediately seek necessary authorization and funding to begin the technical design and feasibility studies needed for environmentally sound confined containment facilities, in anticipation that such facilities may be part of the final dredge material management plan. We also will pursue additional steps to reduce and address toxic pollution in the estuary. We will seek to minimize polluted runoff by funding and supporting local and region-wide watershed planning and implementation activities. By September 1996, EPA will invest \$100,000 to facilitate pollution reduction in the Arthur Kill. All of these efforts will be coordinated with the Harbor-Estuary Comprehensive Conservation and Management Plan, which is the blueprint for working cooperatively with

The Honorable Frank Pallone

Page 4

state and local governments, businesses, and citizens to reduce toxic pollution in the watershed.

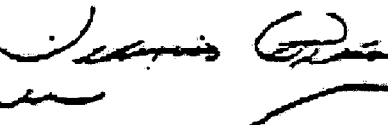
We will be calling upon every member of the New Jersey and New York delegations, as well as the affected state and local governments, to continue our constructive and cooperative efforts to sustain port growth and environmental protection. We will also be submitting periodic reports to the President on our success in implementing this plan and on any continuing obstacles to harbor dredging.

We appreciate your continuing leadership and advice as we work together to ensure a healthy economy and a healthy environment for the region.

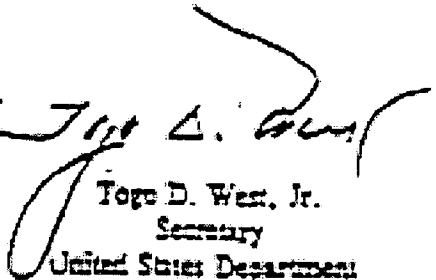
Sincerely,



Carol M. Browner
Administrator
United States Environmental
Protection Agency



Federico F. Pena
Secretary
United States Department
of Transportation



Togo D. West, Jr.
Secretary
United States Department
of the Army

**Appendix C - U.S. Fish & Wildlife Coordination Act Section 2(B) Report (April
1997)**

FISH AND WILDLIFE COORDINATION ACT
SECTION 2(b) REPORT

ASSESSMENT OF KILL VAN KULL AND NEWARK BAY CHANNELS
NAVIGATION PROJECT, NEW YORK AND NEW JERSEY



Prepared by:

U.S. Fish and Wildlife Service
Ecological Services, Region 5
New Jersey Field Office
Pleasantville, New Jersey 08232

April 1997



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
927 North Main Street (Bldg. D1)
Pleasantville, New Jersey 08232

BY REPLY REFER TO:

FP-97/12

Tel: 609-646-9310

FAX: 609-646-0352

April 21, 1997

Colonel Gary Thomas, District Engineer
New York District
U.S. Army Corps of Engineers
26 Federal Plaza
New York, New York 10278-0090

Dear Colonel Thomas:

This is the report of the U.S. Fish and Wildlife Service (Service) on anticipated impacts on fish and wildlife resources from the U.S. Army Corps of Engineers (Corps) proposed Kill Van Kull and Newark Bay Channels navigation project, New York and New Jersey. This report was prepared pursuant to Section 2(b) of the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

This report is provided in accordance with our Fiscal Year - 1995 scope-of-work agreement and is based on plans and information provided by the Corps. Additionally, this report reflects the February 18, 1997 comments of the Corps regarding the draft report submitted to your office with a cover letter dated December 6, 1996. Further, a copy of the draft report was forwarded to the New Jersey Division of Fish, Game and Wildlife (NJDFGSW), and the New York State Department of Environmental Conservation (NYDEC) for review. The NJDFGSW concurred with the findings of the draft report in a letter to the Service dated January 10, 1997, and the NYDEC provided a letter of concurrence dated April 8, 1997 (Appendix B).

The Service is currently reviewing the Biological Assessment provided by the Corps regarding potential project-related effects to the federally listed endangered peregrine falcon (*Falco peregrinus*). Additional Service comments pursuant to Section 7 of the Endangered Species Act will be forthcoming under separate cover.

Additional information regarding this report can be provided by Peter Benjamin or my staff. The Service would appreciate any written comments on this report within 30 days.

Sincerely,

Clifford G. Day
Supervisor

Enclosure

FISH AND WILDLIFE COORDINATION ACT
SECTION 2(b) REPORT

ASSESSMENT OF THE KILL VAN KULL AND NEWARK BAY CHANNELS
NAVIGATION PROJECT, NEW YORK AND NEW JERSEY

Prepared for:

U.S. Army Corps of Engineers
New York District
New York, New York 10278

Prepared by:

U.S. Fish and Wildlife Service
Ecological Services, Region 5
New Jersey Field Office
Pleasantville, New Jersey 08232

Preparer: Peter M. Benjamin
Assistant Project Leader: John C. Staples
Project Leader: Clifford G. Day

April 1997

EXECUTIVE SUMMARY

The U.S. Fish and Wildlife Service (Service) reviewed project plans and other information supplied by the U.S. Army Corps of Engineers (Corps) regarding the Kill Van Kull and Newark Bay Channels navigation project, New York and New Jersey. Presented herein is the Service's Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, 16 U.S.C. 661 et seq.), Section 2(b) report on the fish and wildlife resources and supporting ecosystems in the project area.

This FWCA report updates the Service's previous FWCA report on the Kill Van Kull and Newark Bay Channels project, based on revised project plans and the results of recent fish and wildlife studies in the project area. This report documents the fish and wildlife resources in the project area, provides an assessment of the effects of the proposed project on fish and wildlife resources, and provides recommendations to mitigate adverse impacts to those resources.

The selected plan for the Kill Van Kull and Newark Bay Channels project includes the deepening of the federal navigation channels in the Kill Van Kull and lower Newark Bay from the previously authorized depth of 40 feet below Mean Low Water (mlw) to a depth of 45 feet below mlw, plus a 2-foot allowance for safety clearance and maintenance to ensure project depth is achieved. The estimated volume of material to be removed during construction of the improved navigation channel is 8.5 million cubic yards, including approximately 1.0 million cubic yards of rock. It is anticipated that some of the rock material could be removed with standard dredging equipment, while the remainder would require blasting.

Service review of the project has concluded that implementation of the selected plan would result in a number of adverse impacts to fish and wildlife resources in the project area. To minimize these adverse impacts, the Service provides eight specific recommendations, including:

- (1) continued consultation with the Service regarding potential project-related effects to the federally listed endangered peregrine falcon;
- (2) coordination with National Marine Fisheries Service regarding potential adverse impacts to federally listed marine species;
- (3) initiation of a survey of the project area to determine the distribution and abundance of over-wintering blue crabs and winter flounder throughout the project area;
- (4) continued interagency coordination regarding appropriate measures to avoid adverse impacts to nesting waterbirds;
- (5) initiation of a water quality monitoring program in conjunction with project implementation;

- (6) identification of areas where shoaling has occurred since completion of Phase I of the project and completion of additional testing to determine the suitability of sediments from these areas for ocean disposal using current testing protocol;
- (7) continued interagency coordination to identify sites and develop plans for the beneficial use of uncontaminated dredged material; and,
- (8) continued interagency coordination to identify research needs, and to develop and implement investigations to meet these needs.

TABLE OF CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY	i
LIST OF FIGURES	iv
LIST OF APPENDICES	iv
I. INTRODUCTION	1
II. METHODS	1
III. THE PHYSICAL ENVIRONMENT	1
IV. PROJECT DESCRIPTION	3
V. FISH AND WILDLIFE RESOURCES	4
A. MACROINVERTEBRATES AND FISH	4
1. Macroinvertebrates	4
2. Fish	5
B. AVIFAUNA	6
C. OTHER WILDLIFE	7
D. FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES AND CANDIDATE SPECIES	8
VI. IDENTIFICATION OF PROJECT-RELATED EFFECTS TO FISH AND WILDLIFE AND POTENTIAL MITIGATIVE MEASURES	9
A. AQUATIC ORGANISMS	10
B. NESTING WATERBIRDS	10
C. WATER QUALITY	10
D. ENVIRONMENTAL CONTAMINANTS	11
E. HABITAT IMPROVEMENT OPPORTUNITIES	12
VII. IDENTIFICATION OF DATA GAPS AND RECOMMENDATIONS FOR FUTURE STUDIES	13
VIII. CONCLUSIONS AND RECOMMENDATIONS	13
IX. REFERENCES	14
A. LITERATURE CITED	14
B. PERSONAL COMMUNICATIONS	17

LIST OF FIGURES

Figure 1. Study area for the Kill Van Kull and Newark Bay Channels navigation project, New York and New Jersey 2

LIST OF APPENDICES

Appendix A. Kill Van Kull and Newark Bay Channels navigation project, New York and New Jersey, U.S. Fish and Wildlife Service reports and technical assistance as of November 1996.

Appendix B. Intagency coordination

Appendix C. Federally listed endangered and threatened species and candidate species in New Jersey.

Appendix D. State-listed endangered and threatened species in New Jersey.

I. INTRODUCTION

The U.S. Fish and Wildlife Service (Service) has reviewed project plans and other information supplied by the U.S. Army Corps of Engineers (Corps) regarding the Kill Van Kull and Newark Bay Channels navigation project, New York and New Jersey. This is the Service's updated Fish and Wildlife Coordination Act (FWCA) (42 Stat. 401, 16 U.S.C. 661 et seq.), Section 2(b) report on the fish and wildlife resources and supporting ecosystems in the project area. This report is provided in accordance with a Fiscal Year-1995 scope-of-work agreement with the New York District of the Corps.

This FWCA report updates the Service's previous FWCA report on the Kill Van Kull and Newark Bay Channels project (Kulp, 1980), based on revised project plans and the results of recent fish and wildlife studies in the project area. This report documents the fish and wildlife resources in the project area, provides an assessment of the effects of the proposed project on fish and wildlife resources, and provides recommendations to mitigate adverse impacts to those resources.

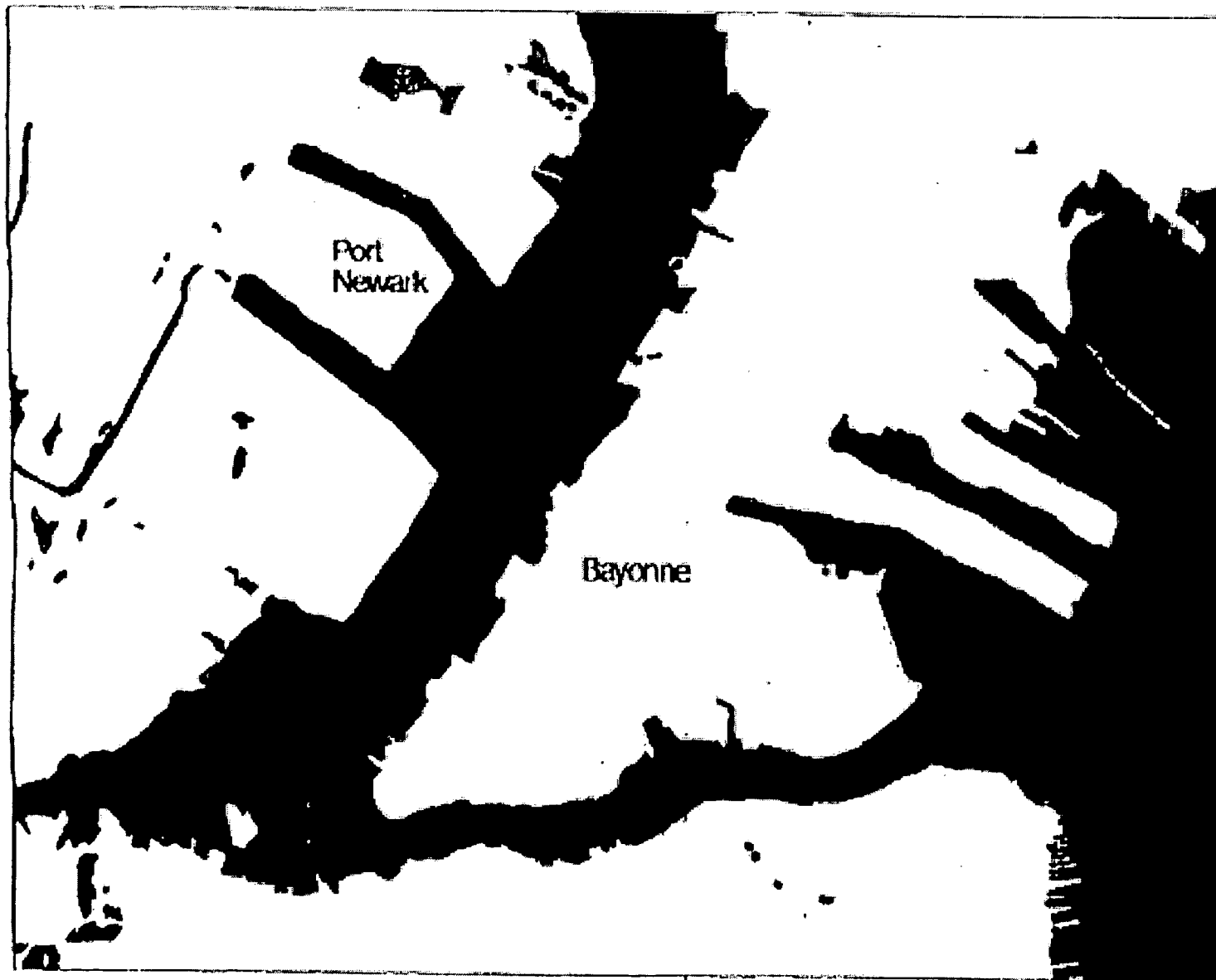
II. METHODS

The Service has been involved in the planning of the Kill Van Kull and Newark Bay Channels project for over 20 years and has provided planning aid to the Corps in a number of technical reports (Appendix A). The information and findings presented in this report are based on review of previous Service reports and updated project plans and other information provided by the Corps. The content of this report is also based on review of Service files and library material, and coordination with the New Jersey Department of Environmental Protection, Division of Fish, Game and Wildlife (NJDFG&W), and the New York Department of Environmental Conservation (NYDEC) (Appendix B).

III. THE PHYSICAL ENVIRONMENT

The study area is part of the federal navigation project known as the New York and New Jersey Channels and is located within the Port of New York and New Jersey (U.S. Army Corps of Engineers, 1987). The waterways under study include the Kill Van Kull from Constable Hook at the intersection with Anchorage Channel in Upper New York Bay to Newark Bay, a distance of about 5 miles; the Newark Bay Channels, a distance of about 3 miles; and, the Newark Bay docking channels, totaling about 5 miles (Figure 1).

The Kill Van Kull, along with the Arthur Kill, forms the boundary between Staten Island, New York, and New Jersey. Newark Bay is formed by the confluence of the Hackensack and Passaic River. The land area surrounding these waterways is a mixture of residential, industrial, and commercial



LEGEND

△ CHANNELS

■ EMERGENT

▨ OPEN WATER

- - - UNCONSOLIDATED SHORE

Figure 1. Study area for the Kill Van Kull and Newark Bay Channels navigation project, New York and New Jersey. Source: U.S. Army Corps of Engineers, 1987.

0.5 0 0.5 1 Miles



development. The vast majority of the shoreline in the vicinity of the study area is bulkheaded and rip-rapped; consequently, there is limited natural vegetation or intertidal habitat. The Kill Van Kull ranges in depth from 11 to 50 feet below mean low water (mlw). There are few shallow water areas in the Kill Van Kull, because most of this waterway lies within the Federal navigation channel or has been otherwise dredged for dock and pier space. The Newark Bay portion of the study area ranges from 1 to 26 feet in depth outside the federal navigation channels. There is more shallow water and intertidal habitat in Newark Bay, particularly in the southwestern portion of Newark Bay, on the western side of Shooters Island, and along the eastern shoreline adjacent to Bayonne, New Jersey.

The New York / New Jersey Harbor is a eutrophic (nutrient rich) estuary with high loadings of nutrients and organic matter originating primarily from sewage treatment plants, as well as a variety of other point and non-point sources. These loadings result in low dissolved oxygen levels in many areas of the Harbor, particularly in highly developed areas, such as the Kill Van Kull. Improvements in sewage treatment facilities and improved controls on point sources have resulted in improvements in water quality in recent years; however, water quality problems such as low dissolved oxygen, high turbidity, and high sediment concentrations of environmental contaminants persist, and continue to limit the productivity of the area for fish and wildlife.

IV. PROJECT DESCRIPTION

The selected plan for the Kill Van Kull and Newark Bay Channels project includes the deepening of the federal navigation channels in the Kill Van Kull and lower Newark Bay from the previously authorized depth of 40 feet below mlw to a depth of 45 feet below mlw, plus a 2-foot allowance for safety clearance and maintenance to ensure project depth is achieved (U.S. Army Corps of Engineers, 1997). The estimated volume of material to be removed during construction of the improved navigation channel is 8.5 million cubic yards, including approximately 1.0 million cubic yards of rock. It is anticipated that some of the rock material could be removed with standard dredging equipment, while the remainder would require blasting.

The Final Environmental Impact Statement (FEIS) for the project was issued in 1980, and a supplemental FEIS was issued by the New York District in 1987. Phase I of the project (deepening the navigation channels to 42 feet below mlw) was completed in 1995. The rock that was removed during Phase I construction was used to create an artificial reef in the Atlantic Ocean off the shore of Sandy Hook, New Jersey. The non-rock material was disposed of at the Mud Dump Site, located in the Atlantic Ocean approximately 5 miles east of Sandy Hook. The current re-evaluation study is intended to update existing information to prepare for initiation of Phase II (deepening the navigation channel to 45 feet below mlw).

V. FISH AND WILDLIFE RESOURCES

A. MACROINVERTEBRATES AND FISH

1. Macroinvertebrates

Although the beaches of Newark Bay is impaired by pollution, mean abundance of benthic invertebrates is higher than other nearby nearshore areas such as Raritan Bay, Flushing Bay, Bovey Bay and much of New York Harbor (Cerrato, 1986). Cerrato (1986) sampled 30 stations in Newark Bay, including both channel and shoal areas in May (spring) and August (summer) of 1985. During the spring sampling, the spionid polychaete *Sereblospio benedicti* was found to be both the most ubiquitous and most abundant species, representing 27 percent of the total fauna in terms of number of individuals collected. Other dominant species included the spionid *Scolecopleides viridis* (21 percent), the soft-shell clam (*Mya arenaria*) (15 percent), the spionid *Polydora ligni* (12 percent), the colonial polychaete *Sabellaria vulgaris* (7 percent), and the polychaete *Nereis succinea* (6 percent). *Scolecopleides viridis* was restricted to more sandy sites and soft-shell clam was more characteristic of sites with higher percentages of silt and clay.

Summer sampling by Cerrato (1986) identified the bay barnacle (*Jalagus improvisus*) as the most numerically dominant species (24 percent of individuals collected). Other dominant species included the colonial polychaete *Sabellaria vulgaris* (17 percent), the spionid polychaete *Spio setosa* (15 percent), the soft-shell clam (14 percent), *Sereblospio benedicti* (13 percent), and the tunicate *Molgula manhattanensis* (5 percent).

Of the 9 dominant species found during Cerrato's spring and summer sampling, five have been identified as characteristic of polluted or organically enriched environments by other researchers (Cerrato, 1986). These species are: *Nereis succinea*; *Polydora ligni*; *Scolecopleides viridis*; *Sereblospio benedicti*; and, soft-shell clam.

Both abundance and diversity of animals per square meter were lower in the northern portion of Newark Bay than in the southern portion (Cerrato, 1986). Additionally, Cerrato (1986) found that sandy substrates (greater than 50 percent sand and gravel) had significantly higher abundance, species richness, and diversity than areas dominated by silt and clay (greater than 50 percent silt and clay). Cerrato (1986) did not find a statistical association between depth and faunal association.

In a biological and hydrographical study of Newark Bay, the National Marine Fisheries Service (NMFS) (1993) documented the presence of the following species of macroinvertebrates in Newark Bay: blue crab (*Callinectes sapidus*); rock crab (*Cancer irroratus*); lady crab (*Ovalipes ocellatus*); spider crab (*Libinia emarginata*); horseshoe crab (*Limulus polyphemus*); American oyster (*Crassostrea virginica*); soft-shell clam; longfin squid (*Loligo pealei*); and, mantis shrimp (*Squilla empusa*).

In addition to the above sampling conducted by the NMFS (1995) and Carrato (1986) in Newark Bay, the NJDFG&W (1984) conducted fish sampling in the lower Hudson River from November 1982 to December 1983, which produced incidental catches of macroinvertebrates showing similar species composition.

It seems likely that the macroinvertebrates identified above as occurring in Newark Bay and the lower Hudson River near Jersey City, New Jersey would also be present in the Kill Van Kull. Although not captured in the above-mentioned surveys of Newark Bay, MacKanzie (1990) reports that American Lobster (*Homarus americanus*) occurs in the deeper waters (shipping channels) of Raritan Bay. Therefore, it is possible that American Lobster is also present in the deeper waters of the Kill Van Kull.

2. Fish

The NMFS (1995) captured 47 species of fish in Newark Bay during sampling from May 1993 to April 1994. Three fish sampling techniques were employed: 8.5-meter otter trawl; 4.9-meter otter trawl; and gill nets. The 8.5-meter otter trawls were used in the navigation channels; the 4.9-meter otter trawls and experimental gill nets were used to sample the shallower areas of Newark Bay.

The five most numerically dominant fish species collected in the 8.5-meter otter trawl were: striped bass (*Morone saxatilis*); Atlantic tomcod (*Microgadus tomcod*); white perch (*Morone americana*); weakfish (*Cynoscion regalis*), and winter flounder (*Pleuronectes americanus*). The greatest numbers of these species were collected by the 8.5-meter otter trawl in the following months: striped bass - November, February, March; Atlantic tomcod - June, July, August; white perch - November, February, March; weakfish - August, September, October; winter flounder - August, November, December.

The five most numerically dominant fish species collected in the 4.9-meter otter trawl were: bay anchovy (*Anchoa mitchilli*); Atlantic herring (*Clupea harengus*); Atlantic tomcod; winter flounder; and, striped bass. The greatest numbers of these dominant species were collected by the 4.9-meter otter trawl in the following months: bay anchovy - July, August, September; Atlantic herring - May, June; Atlantic tomcod - May, June; winter flounder - May, June, July; striped bass - September, October.

The five most numerically dominant fish species collected by experimental gill net were: Atlantic menhaden (*Brevoortia tyrannus*); striped bass; bluefish (*Pomatomus saltatrix*); blueback herring (*Alosa aestivalis*); and, Atlantic herring. The greatest number of these species were collected by experimental gill net in the following months: Atlantic menhaden - May, October, June; striped bass - May, June, July; bluefish - May, June, September; blue-backed herring - May, June, October; Atlantic herring; - November, October.

It should be noted that the greatest overall numbers of fish were taken with the 8.5-meter otter trawl. Therefore, species listed as dominant in the 4.9-meter otter trawl and the experimental gill net sampling may not accurately reflect the species composition of fish in the shallow water areas of Newark

Bay. For example, striped bass was a dominant species for each of the three sample methods; however, the 8.5-meter otter trawl had a month-high capture of 1,844 individuals, whereas the 4.9-meter otter trawl and the experimental gill nets had month-high captures of 37 and 59 individuals, respectively.

Review of the limited sampling of the lower Hudson River from November 1982 to December 1983 by the NJDFG&W (1984) indicates that many of the species of fish found in Newark Bay by the NMFS (1995) study were also found in the lower Hudson River. The NJDFG&W study identified that juvenile striped bass are abundant within the lower Hudson River and Harbor in November. During winter months, the NJDFG&W found that between the George Washington Bridge and Bayonne, New Jersey juvenile striped bass had a significant preference, compared to other fish species, for inter-pier habitat. Juvenile striped bass made up 89.7 percent of the fish caught in inter-pier basins, 32.4 percent of the fish caught in shallow river habitat (6 to 20 feet below mlw), and 7.1 percent of the fish caught in deep river habitat (greater than 20 feet below mlw).

It is likely that many of the fish species identified in Newark Bay and the lower Hudson River near Jersey City, New Jersey are also present in the Kill Van Kull. Based on the NJDFG&W (1984) findings of inter-pier use by juvenile striped bass and the finding by NMFS (1995) that juvenile striped bass were a dominant species caught in Newark Bay during the winter, it seems likely that inter-pier areas of both Newark Bay and the Kill Van Kull provide important habitats for juvenile striped bass during the winter.

In addition to the information on striped bass, findings from the two above-referenced studies demonstrate that a diverse community of fishes use the waters of the study area. Notable are the large numbers of benthic-feeding fish in the study area such as: Atlantic tomcod; winter flounder; ~~summer~~ flounder (*Paralichthys dentatus*); fourspot flounder (*P. oblongus*); windowpane (*Scophthalmus aquosus*); hogchoker (*Trinectes maculatus*); red hake (*Urophycis chuss*); spotted hake (*U. regia*); striped searobin (*Prionurus volans*); northern searobin (*P. carolinus*); and, northern kingfish (*Hemicirrhus saxatilis*). Based on the large numbers of benthic-feeding fishes in the study area, maintenance and enhancement of benthic communities should be considered during project planning, as these communities are a critical component for maintaining a healthy fishery in the study area.

B. AVIFAUNA

Within the study area, Shooters Island is notable for its breeding population of long-legged waders, seabirds, and waterfowl. Kerlinger (1996) reported the following species as nesting on Shooters Island during May of 1996: great egret (*Casmerodius albus*); snowy egret (*Egretta chula*); tricolored heron (*E. tricolor*); cattle egret (*Bubulcus ibis*); black-crowned night heron (*Nycticorax nycticorax*); glossy ibis (*Plegadis falcinellus*); green heron (*Bucoridus striatus*); double-crested cormorant (*Phalacrocorax auritus*); herring gull (*Larus argentatus*); great black-backed gull (*L. marinus*); Canada goose (*Branta canadensis*); and, mallard (*Anas platyrhynchos*). Two additional species, yellow-crowned night heron (*Nycticorax violaceus*) and gallinule (*Anas strepera*) were reported as possible nesters on Shooters Island.

The Service (1990) documented a nesting colony of least terns (*Sterna albifrons*) on the west side of Newark Bay immediately south of Interstate Route 78. This colony no longer exists; however, there is the potential for the least tern and other terns to nest in the area should suitable nesting conditions return. The NJDFG&W notes that least terns have recently nested at Newark International Airport, west of Newark Bay (Canale, pers. comm., 1996).

Both the Service's 1986 and the NJDFG&W's 1996 Midwinter Waterfowl Surveys reported that Newark Bay was used heavily by greater scaup (*Aythya marila*) and lesser scaup (*A. affinis*). Over 6,000 scaup were counted in Newark Bay during the 1996 Midwinter Waterfowl Survey (New Jersey Division of Fish, Game and Wildlife, 1996). Ballrose (1976) reported that scaup wintering in Long Island Sound, along the Coast of Connecticut, and in the bays of Rhode Island feed primarily on animal life, with mollusks making up a large percentage of their diet. Important food items identified for wintering scaup in southern New England include: soft-shelled clams, eastern mud clam, dwarf surf clam, and blue mussel. Plant material has been found to make up only a small percentage (4.6 percent) of the food items taken by greater scaup wintering in Connecticut (Ballrose, 1976).

The 1996 Midwinter Waterfowl Survey also indicated that Newark Bay receives substantial use by wintering canvasback (*Aythya valisineria*). Over 300 canvasback were counted in Newark Bay during the 1996 Midwinter Waterfowl Survey (New Jersey Division of Fish, Game and Wildlife, 1996). Ballrose (1976) reports that canvasback prefer plants to animals as a food source, but are highly adaptable and will feed on small clams and mussels as well as aquatic insects when preferred plant foods are not available.

Other waterfowl documented by the Service (Kulp, 1986) and NJDFG&W (1996) to use Newark Bay during the winter include mallard, black duck (*A. rubripes*), gadwall (*A. strepera*), bufflehead (*Bucephala albeola*), hooded merganser (*Lophodytes cucullatus*), common merganser (*Mergus merganser*), and red-breasted merganser (*M. serrator*). In addition to the waterfowl identified as occurring in Newark Bay, Canada goose (*Branta canadensis*) and mute swan (*Cygnus olor*) have been identified in the Arthur Kill by the NJDFG&W's 1996 Midwinter Waterfowl Survey. These species may also occur in the project area.

C. OTHER WILDLIFE

The diamondback terrapin (*Malaclemys terrapin*) is known to occur in the Hackensack Meadowlands. Additionally, the NJDFG&W (1984) captured one diamondback terrapin in the lower Hudson River adjacent to Jersey City, New Jersey, during fish sampling in July 1983. Although Newark Bay and the Kill Van Kull do not provide optimal habitat for the diamondback terrapin, it is possible, based upon the above findings, that limited numbers of diamondback terrapin occur in the study area. Additionally, seals are known to inhabit the nearshore waters in the vicinity of the study area and are likely to occur in the study area. The harbor seal (*Phoca vitulina*) is the most commonly observed seal in nearshore waters along this section of the Atlantic coast.

D. FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES AND CANDIDATE SPECIES

The federally listed endangered peregrine falcon (*Falco peregrinus*) is known to nest on the Bayonne Bridge, which spans the Kill Van Kull. Additionally, documented peregrine falcon nest sites are located north of the study area adjacent to the Hackensack River in Kearny, New Jersey, and south of the study area on the Goethals Bridge over the Arthur Kill. The peregrine falcon feeds primarily on shorebirds, waterfowl, and passerines, and may travel 10 to 13 miles in search of prey, seeking feeding opportunities in marshes and riparian areas where these prey concentrate. Due to its high position in the food chain, the peregrine falcon is sensitive to the effects of bioaccumulating environmental contaminants such as dioxins. Therefore, if channel deepening were to cause resuspension of contaminated sediments, dioxins and other contaminants could be transported through the food chain and result in adverse impacts to peregrine falcons.

The lead federal agency for a project has the responsibility under Section 7(c) of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) to prepare a Biological Assessment, if the proposal is a major construction project that requires an Environmental Impact Statement (EIS). The assessment should contain information concerning federally listed species and any species proposed for listing that may be present in the action area and an analysis of any potential effect of the proposed action on such species. The following may be considered for inclusion in a Biological Assessment of the proposed project, although actual contents are at the discretion of the federal authorizing agency:

- (1) results of field surveys to determine if listed species are present or occur seasonally;
- (2) views of recognized experts on the species;
- (3) literature reviews;
- (4) analysis of direct, indirect, and cumulative effects of the action on the species; and,
- (5) analysis of alternative actions.

Biological Assessments may be consolidated with documents produced under interagency cooperation procedures required by other statutes such as the Fish and Wildlife Coordination Act or the National Environmental Policy Act of 1969 (83 Stat. 852, as amended; 42 U.S.C. 4321 et seq.). However, satisfaction of the requirements of these other statutes does not in itself relieve a federal agency of its obligation to comply with the Biological Assessment procedures of the Endangered Species Act. The results of a Biological Assessment may be incorporated into the draft EIS. If the Biological Assessment indicates that no listed or proposed species are present or will be affected, and the Service concurs in writing with the assessment, then no formal consultation pursuant to Section 7 will be required.

Consultation pursuant to Section 7 is currently ongoing. The Corps submitted a Biological Assessment to the Service with a cover letter dated March 12, 1987. The Service is currently reviewing the Biological Assessment and will provide additional comments regarding the protection of endangered species under separate cover.

Except for the peregrine falcon and an occasional transient bald eagle (*Haliaeetus leucocephalus*), no other federally listed or proposed threatened or endangered flora or fauna under Service jurisdiction are known to occur in the study area. Appendix C provides a current list of federally listed threatened and endangered species and candidate species in New Jersey.

Marine turtles are known to use bay habitats during summer months in the vicinity of the study area. Marine turtles that could occur in the study area include the endangered Atlantic ridley (*Lepidochelys kempi*), hawksbill (*Eretmochelys imbricata*), and leatherback (*Dermochelys coriacea*) as well as the threatened green (*Chelonia mydas*) and loggerhead (*Caretta caretta*).

The shortnose sturgeon (*Acipenser brevirostrum*), a federally listed endangered species, may occur in the study area. The shortnose sturgeon is an anadromous fish that was once common; however, over-fishing and increased water pollution have led to drastic reductions in its populations.

Principal responsibility for threatened and endangered marine species, including marine turtles and the shortnose sturgeon, is vested with the NMFS. Therefore, the NMFS must be contacted to fulfill consultation requirements pursuant to Section 7(a)(2) of the Endangered Species Act:

National Marine Fisheries Service
Habitat and Protected Resources Division
Sandy Hook Laboratory
Highlands, New Jersey 07732
(908) 872-3023

Appendix D provides a current list of State-listed threatened and endangered species in New Jersey. As previously mentioned, the State-listed threatened yellow-crowned night heron may nest on Shooters Island.

VI. IDENTIFICATION OF PROJECT-RELATED EFFECTS TO FISH AND WILDLIFE AND POTENTIAL MITIGATIVE MEASURES

The Service's previous planning aid letters and FWEA reports (listed in Appendix A) raised a number of concerns regarding the effects of this project on fish and wildlife resources including direct mortality of aquatic organisms during dredging and blasting; the effects of the project on water quality, salinity and circulation patterns in the New York / New Jersey Harbor; potential resuspension of environmental contaminants; and, loss of shallow water habitat.

A. AQUATIC ORGANISMS

The proposed blasting and dredging would likely result in direct mortality of aquatic organisms that are caught in the blasting impact zone or that are unable to avoid the dredging equipment. The risk of direct mortality is of greatest concern in regard to winter flounder and blue crabs that may over-winter in the navigation channel. Currently, there is insufficient data to determine whether these species utilize the navigation channel in the Kill Van Kull and Newark Bay as an over-wintering area, or if so, to determine which areas are most heavily used; although, it appears that the Kill Van Kull receives relatively little use by winter flounder and blue crab. Therefore, the Service recommends a survey of the project area to determine the distribution and abundance of over-wintering blue crabs and winter flounder throughout the project area, with emphasis on the Newark Bay portion of the project. If this survey identifies blue crab and / or winter flounder concentration areas, the Service would recommend that dredging not occur in these areas between November and May of any given year.

B. NESTING WATERBIRDS

Another potential direct adverse impact of project implementation would be disturbance of nesting waterbirds on Shooters Island due to blasting and / or the operation of dredging equipment in close proximity to Shooters Island during the nesting season. A determination regarding exactly where blasting will be conducted in relation to Shooters Island is dependent on the completion of surveys currently being conducted by the Corps (Burlas, pers. comm., 1996). The Service recommends that the Corps coordinate with the Service and the NJDEP upon completion of these surveys to determine appropriate measures to avoid adverse impacts to nesting waterbirds as a result of construction activities. Depending on the results of these surveys, the Service may recommend that no dredging occur in proximity to Shooters Island between April 1 and August 31.

C. WATER QUALITY

Channel deepening could have a variety of effects on hydraulic and water quality parameters within the project area, which could result in indirect effects to fish and wildlife resources. Analyses conducted by the Corps (U.S. Army Corps of Engineers, 1987) concluded that the channel deepening project would likely result in alteration of several hydraulic and water quality parameters of the project area including flushing rates, salinity patterns, and shoaling rates. Specifically, the Corps predicted, based on modeling studies, that project implementation would result in the following changes:

- (1) a slight to moderate decrease in flushing ability;
- (2) slightly higher bottom salinities (0.3 parts per thousand) in Newark Bay with a trend toward greater stratification from surface to bottom; and,

- (3) a change in shoaling rates and patterns with a 61 percent increase in shoaling in the Kill Van Kull and Newark Bay and a shift in the location of shoaling toward upper Newark Bay.

Channel deepening may also cause changes in other water quality parameters such as temperature regimes, dissolved oxygen levels, and turbidity. All of these parameters affect the distribution and abundance of aquatic organisms in the project area. For example, Carrato (1986) found that the benthic community in Newark Bay was more diverse, abundant, and stable in areas with coarse-grained substrate (i.e., sand and gravel) than in areas with predominantly fine-grained substrate (i.e., silt and clay). Carrato further found that sampling stations with fine-grained substrate were typically located in areas with shoaling rates of greater than 1 inch per year. Based on the findings of Carrato, the Service (Kulp, 1986) concluded that project-induced increases in shoaling rates could result in areas currently comprised of coarse-grained substrate being converted to fine-grained substrate, with a resulting loss of habitat for benthic macro-invertebrates. Similarly, changes in salinity patterns, dissolved oxygen levels, temperature regimes and turbidity could affect the distribution and abundance of aquatic organisms.

As previously mentioned, the Corps analysis of the potential effects of channel deepening on the above-mentioned water quality parameters concluded that the effects would be relatively minor (U.S. Army Corps of Engineers, 1987). However, these modeling studies only evaluated this project, and did not evaluate the cumulative effects of this channel deepening project in relation to other channel deepening projects in the New York / New Jersey Harbor. As indicated above, the specific effects of this project on water quality parameters may influence the distribution and abundance of aquatic organisms in Newark Bay and Kill Van Kull. The cumulative effects of this project and the numerous other existing and proposed dredging projects in the New York / New Jersey Harbor area could be substantial and must be assessed. Therefore, the Service recommends that the Corps initiate a water quality and biological monitoring program in conjunction with the Kill Van Kull and Newark Bay Channels project. The goal of this monitoring program would be to identify and quantify dredging-induced changes to water quality parameters including salinity, turbidity, circulation, shoaling, dissolved oxygen, and temperature. The monitoring program must be sufficiently detailed to separate dredging-related changes in water quality parameters from the effects of storm events and normal ship traffic. Monitoring should also be designed for use in verifying and refining the hydrodynamic models of New York / New Jersey Harbor to allow more accurate assessments of the effects of future dredging projects on the area. The Corps should coordinate the design of the monitoring program with the Service, NJDFG&W, and NYDEC.

D. ENVIRONMENTAL CONTAMINANTS

Channel deepening may also result in the resuspension and redistribution of environmental contaminants sequestered in the material to be dredged. Based on sediment sampling conducted during the preparation of the original EIS, the Corps concluded that the sediment to be removed from the Kill Van Kull was predominantly Pleistocene age glacial sediment or Cretaceous sediments, and as

such was not likely to be contaminated because these sediments had never been exposed to anthropogenic contaminants (U.S. Army Corps of Engineers, 1987). The Corps also reported that the Newark Bay portion of the project area was overlain with recently deposited sediments of varying degrees of contamination (U.S. Army Corps of Engineers, 1987). The Corps analysis of sediment samples from Newark Bay concluded that the sediments to be dredged were suitable for ocean disposal, and that the level of contamination of these sediments was the same or worse than deeper sediments that would be exposed by the dredging. Therefore, the Corps concluded that the dredging would not expose aquatic organisms in Newark Bay to increased levels of environmental contaminants (U.S. Army Corps of Engineers, 1987).

The Service notes that the testing protocol for evaluating dredged material proposed for ocean disposal (U.S. Environmental Protection Agency, 1991), commonly referred to as "the Green Book," has changed since the completion of the original EIS for this project and that the tests conducted in association with the original EIS do not meet current standards. Therefore, it is possible that sediments that were classified as suitable for unrestricted ocean disposal under the previous criteria would be found unsuitable for unrestricted ocean disposal under current standards.

Given that Phase I of the project was only recently completed, it is reasonable to assume that most of the remaining material to be removed, particularly from the Kill Van Kull, consists of pre-historic sediments that are relatively free of environmental contaminants. However, it is still possible that Phase II dredging will encounter some sediments, particularly in the Newark Bay portion of the channel and in side slope areas, that are recently deposited and potentially contaminated. Therefore, the Service recommends that the Corps identify these areas and conduct additional testing to determine suitability for ocean disposal using current testing protocol. The results of these additional tests should be provided to the Service for review and comment.

E. HABITAT IMPROVEMENT OPPORTUNITIES

The Service's original FWA report raised a number of concerns regarding project-related loss of fish and wildlife habitat, particularly the loss of shallow water habitat (Kulp, 1986). Although subsequent investigations were unable to quantify the effect of project-related loss of shallow water habitat on fish and wildlife resources, it is clear from the above discussion that channel deepening will affect fish and wildlife resources throughout the project area. It is also apparent that substantial opportunities for habitat improvement exist within Newark Bay, particularly in regard to the beneficial use of the large volume of rock proposed to be removed from the navigation channels. Potential beneficial uses include creation of artificial reefs, shoreline stabilization, and wetlands creation. Use of dredged rock for habitat enhancement projects would not only benefit fish and wildlife resources, but may also represent a cost effective means of disposing of dredged material without sacrificing valuable disposal site capacity. The Service recommends that the Corps work closely with the Service, NMFS, NYSDEC, and NYDEC to identify sites and develop plans for the beneficial use of dredged material.

VII. IDENTIFICATION OF DATA GAPS AND RECOMMENDATIONS FOR FUTURE STUDIES

The primary data gaps identified by the Service include the above-mentioned need for information regarding the proximity of proposed blasting in relation to nesting waterbirds at Shooters Island, and the need to adequately characterize the extent of contamination of the material to be removed during Phase II of the project. In regard to sediment testing, the Corps intends to conduct bathymetric surveys of the project area to identify areas where shoaling has occurred since the completion of Phase I of the project. If areas of substantial shoaling are identified, sediments from these areas will be collected and analyzed to determine their degree of contamination (Burlas, pers. comm., 1986). The Service requests that the review of the results of these surveys be coordinated with this office.

Although not necessarily representing data gaps in regard to the proposed Kill Van Kull deepening project, the current project offers substantial opportunities to gather information that will be necessary to assess future channel deepening projects in the New York / New Jersey Harbor. As previously stated, the effects of this project on water quality parameters may be relatively minor, but the cumulative effect of this project and future channel deepening projects could be substantial. Additionally, more research is needed to establish the relationship between changes in water quality parameters and biological populations. For example, Cerrato (1986) hypothesized that changes in shoaling rates could result in changes in benthic community structure. Research directed at testing this hypothesis would be directly applicable to assessing the effects of future dredging projects. The Kill Van Kull project provides an opportunity to test this and other hypotheses. The Service recommends that the Corps continue to coordinate with the Service, NMFS, and the affected State agencies to identify research needs and develop and implement investigations to meet those needs.

VIII. CONCLUSIONS AND RECOMMENDATIONS

While much attention has been focused recently on the adverse effects of ocean disposal at the Mud Dump Site, the Service has always been concerned about the numerous effects of dredging on the aquatic resources within the New York / New Jersey Harbor. As discussed above, even the dredging of uncontaminated material can affect fish and wildlife resources through direct disturbance of benthic communities and alterations to aquatic habitat through changes in substrate, turbidity, dissolved oxygen, salinity, and circulation patterns.

The scope of the Kill Van Kull and Newark Bay Channels project is large in and of itself. When viewed in the context of other projects currently under consideration, the amount of maintenance and new dredging contemplated to occur within the New York / New Jersey Harbor over the next several years is

substantial. Undertakings of this magnitude demand thorough scrutiny to protect the public interest for fish and wildlife resources. The Kill Van Kull and Newark Bay Channels project offers an unique opportunity to initiate the investigations that will be necessary to adequately evaluate the effects of harbor dredging on fish and wildlife and to develop effective measures to sustain and safeguard these resources. Therefore, in order to minimize the adverse effects of this project on fish and wildlife resources and to take advantage of the opportunities this project provides, the Service is providing the following recommendations to the Corps.

1. Continue consultation with the Service regarding potential project-related effects to the federally listed endangered peregrine falcon.
2. Coordinate with the NMFS regarding potential adverse impacts to threatened and endangered species under that agency's jurisdiction.
3. Conduct a survey of the project area to determine the distribution and abundance of over-wintering blue crabs and winter flounder throughout the project area.
4. Determine the proximity of proposed blasting to nesting waterbird colonies on Shooters Island and coordinate with the Service and the NJDEGW regarding appropriate measures to avoid adverse impacts to nesting waterbirds.
5. Initiate a water quality monitoring program in conjunction with the Kill Van Kull and Newark Bay channel deepening project. The Corps should coordinate the design of the monitoring program with the Service, NJDEGW, and NYDEC.
6. Identify areas where shoaling has occurred since completion of Phase I of the project and conduct additional contaminant testing to determine the suitability of sediments from these areas for ocean disposal using current testing protocol. The results of these additional tests should be provided to the Service for review and comment.
7. Coordinate with the Service, NMFS, NJDEGW, and NYDEC to identify sites and develop plans for the beneficial use of uncontaminated dredged material.
8. Continue to coordinate with the Service, NMFS, and the affected State agencies to identify research needs, especially pertaining to potential cumulative impacts, and develop and implement investigations to meet those needs.

It is noted that, with the exception of recommendation number 3, the Corps concurred with these recommendations in a letter to the Service dated February 18, 1997. In regard to recommendation number 3, the Corps indicated that recent fish and macroinvertebrate surveys of Newark Bay conducted by the NMFS (1995) may be sufficient to characterize use of the project area by winter flounder and blue crab. The Corps offered to coordinate with the Service and NMFS to assess the need to include additional biological monitoring in order to determine appropriate measures to avoid adverse impacts to these species. The Service agrees to this approach and looks forward to further coordination with the Corps regarding this project.

IX. REFERENCES

A. LITERATURE CITED

- Balchosa, R.C. 1976. Ducks, geese and swans of North America. Wildlife Management Institute. Stackpole Books. Harrisburg, Pennsylvania. 495 pp. + appendices.
- Carrato, Robert, M. 1986. The benthic fauna of Newark Bay. Marine Sciences Research Center, State University of New York, Stony Brook, New York. 104 pp.
- Karlingar, F. 1996. The New York City Audubon Society harbor ecosystem study: nesting population of aquatic birds of the New York Harbor, 1995. Prepared for the New York City Audubon Society. New York, New York. 22 pp.
- Kulp, C.J. 1980. Fish and Wildlife Coordination Act reports on the proposed improvements to existing federal navigation channels in Newark Bay and Kill Van Kull, New York and New Jersey. U.S. Department of the Interior, Fish and Wildlife Service. State College, Pennsylvania.
- Kulp, C.J. 1966. Planning aid letter, dated March 27, 1966, to Colonel F.H. Griffis, District Engineer, regarding the Newark Bay and Kill Van Kull navigation channels project, New York and New Jersey. U.S. Department of the Interior, Fish and Wildlife Service. State College, Pennsylvania.
- MacKenzie, G.L., Jr. 1990. History of Fisheries of Raritan Bay, New York and New Jersey. Marine Fisheries Review. 52(4). 45 pp.
- National Marine Fisheries Service. 1995. Results of a biological and hydrographic characterization of Newark Bay, New Jersey; May 1993 - April 1994. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service. Highlands, New Jersey.
- New Jersey Division of Fish, Game and Wildlife. 1964. Inventory of the fishery resources of the Hudson River from Bayonne to Piermont. Trenton, New Jersey. 37 pp. + appendices.
- _____. 1996. Unpublished midwinter waterfowl survey data. New Jersey Department of Environmental Protection. Trenton, New Jersey.
- U.S. Army Corps of Engineers. 1967. Newark Bay / Kill Van Kull navigation project: final supplement to the final environmental impact statement. U.S. Army Corps of Engineers, New York District. New York, New York.

U.S. Army Corps of Engineers. 1997. Draft environmental assessment: Kill Van Kull / Newark Bay federal channels New York and New Jersey phase II deepening. U.S. Army Corps of Engineers, New York District. New York, New York.

U.S. Environmental Protection Agency. 1991. Evaluation of dredged material proposed for ocean disposal - Testing Manual (EPA-503/B-91/001). U.S. Environmental Protection Agency, Office of Water. Washington, D.C.

U.S. Fish and Wildlife Service. 1990. Coastal waterbird colonies: Maine to Virginia 1984-85. U.S. Department of the Interior, Fish and Wildlife Service. Newton Corner, Massachusetts. 807 pp.

B. PERSONAL COMMUNICATIONS

Burlas, Mark. 1996. Biologist. U.S. Army Corps of Engineers, New York District, New York, New York.

Canale, Susan. 1996. Biologist. New Jersey Division of Fish, Game and Wildlife, Endangered and Nongame Species Program. Trenton, New Jersey.

APPENDIX A

Kill Van Kull and Newark Bay Channels
Navigation Project, New York and New Jersey,
U.S. Fish and Wildlife Service Reports and
Technical Assistance as of November 1996

SERVICE REPORTS AND TECHNICAL ASSISTANCE AS OF NOVEMBER 1996

- Charik, M.T. 1991. Planning aid letter, dated June 24, 1991, to Colonel R.H. Danielson, District Engineer, regarding the Kill Van Kull and Newark Bay Channels Navigation Project and the New York Harbor Drift Removal Project. U.S. Department of the Interior, Fish and Wildlife Service. Pleasantville, New Jersey.
- Chupp, M.R. 1978. Comment letter, dated September 20, 1978, regarding review of the draft environmental impact statement for the Newark Bay / Kill Van Kull navigation project. U.S. Department of the Interior, Fish and Wildlife Service. Harrisburg, Pennsylvania.
- Hamilton, P.P. 1985. Interim Fish and Wildlife Coordination Act, Section 2(b) letter, dated May 7, 1985, to Colonel F.H. Griffis regarding the Newark Bay / Kill Van Kull navigation project. U.S. Department of the Interior, Fish and Wildlife Service. Cortland, New York.
- Kulp, C.J. 1976. Preliminary Fish and Wildlife Coordination Act, Section 2(b) letter, dated October 22, 1976, to Colonel Thomas C. Hunter, Jr., District Engineer. U.S. Department of the Interior, Fish and Wildlife Service. State College, Pennsylvania.
- Kulp, C.J. 1980. Fish and Wildlife Coordination Act report on the proposed improvements to existing federal navigation channels in Newark Bay and Kill Van Kull, New York and New Jersey. U.S. Department of the Interior, Fish and Wildlife Service. State College, Pennsylvania.
- Kulp, C.J. 1985. Planning aid letter, dated November 21, 1985, to Colonel F.H. Griffis, District Engineer, regarding the Newark Bay and Kill Van Kull navigation channels project, New York and New Jersey. U.S. Department of the Interior, Fish and Wildlife Service. State College, Pennsylvania.
- Kulp, C.J. 1986. Planning aid letter, dated March 27, 1986, to Colonel F.H. Griffis, District Engineer, regarding the Newark Bay and Kill Van Kull navigation channels project, New York and New Jersey. U.S. Department of the Interior, Fish and Wildlife Service. State College, Pennsylvania.
- Party, E. 1985. Planning aid letter, dated March 27, 1985, to Colonel F.H. Griffis, District Engineer, regarding review of a notice of intent to prepare a draft supplemental environmental impact statement for the Kill Van Kull and Newark Bay Channels navigation project. U.S. Department of the Interior, Fish and Wildlife Service. State College, Pennsylvania.

APPENDIX B

Interagency coordination

47-40 21st Street, Long Island City, New York 11101



John P. Cahill
Acting Commissioner

April 8, 1997

Clifford G. Day, Supervisor
U.S. Fish & Wildlife Service
927 North Main Street (Bldg. D1)
Pleasantville, NJ 08232

attn: Peter Benjamin

Dear Mr. Day:

This letter responds to your request for comment on the draft U.S. Fish and Wildlife Coordination Act Report entitled, "Assessment of the Kill Van Kull and Newark Bay Channels navigation project, New York and New Jersey." The Department is generally in concurrence with the findings and recommendations of the draft document.

DEC suggested that the Corps consider combining this project with the ongoing harbor-wide channel deepening project. There is a definite linkage between the two projects, and a similar level of data gathering is necessary for each. Lacking this coordination of effort, the Corps would be required to do a separate level of modeling to predict project impacts on aspects of water quality and hydrodynamics.

Please contact me at (718)452-6461 if you have any questions concerning these comments.

Sincerely,

Stephen M. Zahn
Marine Resources Specialist



State of New Jersey

Department of Environmental Protection
Division of Fish, Game and Wildlife
CN 400
TRENTON, NJ 08625-0400

Christine Todd Whitman
Governor

Robert C. Shinn
Commissioner

January 10, 1997

Clifford G. Day
US Fish and Wildlife Service
927 N Main St. (Bldg. D1)
Pleasantville, NJ 08252

Dear Mr. Day:

This serves to inform you that the Bureau of Marine Fisheries in the Division of Fish, Game and Wildlife has reviewed the draft Fish and Wildlife Coordination Act Report entitled *Assessment of the Kill Van Kull and Newark Bay Channels Navigation Project, New York and New Jersey, December 1996*; we concur with the concerns and recommendations pertaining to fishery resources. Our fisheries staff is available to assist the Corps of Engineers and other fish and wildlife resource management agencies in the development of the recommended surveys / monitoring programs and to help identify other research needs pertaining to potential cumulative impacts of channel deepening programs within the New York / New Jersey Harbor area. In addition, we note that the Bureau's Artificial Reef Coordinator has previously informed the Corps of Engineers of our interest in rock materials from the channel deepening for use in enhancing New Jersey's nearshore reef habitat.

We hope this information is of service to you.

Sincerely,

Robert McDowell, Director
Division of Fish, Game and Wildlife

c. W. Andrews
A. Didun

APPENDIX C

Federally listed endangered and threatened species
and candidate species in New Jersey.



FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN NEW JERSEY



An **ENDANGERED** species is any species that is in danger of extinction throughout all or a significant portion of its range.

A **THREATENED** species is any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

	COMMON NAME	SCIENTIFIC NAME	STATUS
FISHES		<i>Acipenser brevirostrum</i>	E
REPTILES		<i>Chelydra mydas</i>	PT
		<i>Lepidochelys kempi</i>	E
		<i>Chelonia mydas</i>	T
		<i>Eretmochelys imbricata</i>	E
		<i>Dermochelys coriacea</i>	E
		<i>Caretta caretta</i>	T
BIRDS		<i>Falco peregrinus anatum</i>	E
		<i>Haliaeetus leucocephalus</i>	T
		<i>Charadrius melodus</i>	T
		<i>Sterna dougallii dougallii</i>	E
MAMMALS		<i>Felis concolor cougar</i>	E+
		<i>Myotis sodalis</i>	E
		<i>Canis lupus</i>	E+
		<i>Balaenoptera musculus</i>	E
		<i>Balaenoptera physalus</i>	E
		<i>Megaptera novaeangliae</i>	E
		<i>Balaena glacialis</i>	E
		<i>Balaenoptera borealis</i>	E
	<i>Physeter macrocephalus</i>	E	

	COMMON NAME	SCIENTIFIC NAME	STATUS
INVERTEBRATES		<i>Alasmidonax heterodon</i>	E
		<i>Cicindela dorsalis dorsalis</i>	T
		<i>Neonympha m. mitchelli</i>	E+
		<i>Nicrophorus americanus</i>	E+
PLANTS		<i>Isotria medeoloides</i>	E
		<i>Helonias bullata</i>	T
		<i>Platanthera leucophaea</i>	T+
		<i>Rhynchospora kneriensis</i>	T
		<i>Schwalbea americana</i>	E
		<i>Aeschynomene virginica</i>	T
		<i>Amaranthus pumilus</i>	T+

STATUS			
E	endangered species	PE	proposed endangered
T	threatened species	PT	proposed threatened
÷	presumed extirpated		

Except for sea turtle nesting habitat, principal responsibility for these species is vested with the National Marine Fisheries Service.

Note: for a complete listing of Endangered and Threatened Wildlife and Plants, refer to 50 CFR 17.11 and 17.12.

For further information, please contact:

U.S. Fish and Wildlife Service
 New Jersey Field Office
 927 N. Main Street, Building D
 Pleasantville, New Jersey 08232
 Phone: (609) 646-5310
 Fax: (609) 646-0352



FEDERAL CANDIDATE SPECIES IN NEW JERSEY



CANDIDATE SPECIES are species that appear to warrant consideration for addition to the federal List of Endangered and Threatened Wildlife and Plants. Although these species receive no substantive or procedural protection under the Endangered Species Act, the U.S. Fish and Wildlife Service encourages federal agencies and other planners to give consideration to these species in the environmental planning process.

SPECIES	SCIENTIFIC NAME
[Illegible]	<i>Narkecium americanum</i>

Note: For complete listings of taxa under review as candidate species, refer to *Federal Register* Vol. 61, No. 40, February 28, 1996 (Endangered and Threatened Wildlife and Plants; Review of Plant and Animal Taxa that are Candidates for Listing as Endangered or Threatened Species).

Revised 2/97

APPENDIX D

State-listed endangered and threatened species in New Jersey



ENDANGERED AND THREATENED WILDLIFE OF NEW JERSEY

Endangered Species are those whose prospects for survival in New Jersey are in immediate danger because of a loss or change in habitat, over-exploitation, predation, competition, disease, disturbance or contamination. Assistance is needed to prevent future extinction in New Jersey.

Threatened Species are those who may become endangered if conditions surrounding them begin to or continue to deteriorate.

BIRDS

Endangered

Pied-billed Grebe, * *Podilymbus podiceps*
 Bald Eagle, *Haliaeetus leucocephalus***
 Northern Harrier, * *Circus cyaneus*
 Cooper's Hawk, *Accipiter cooperii*
 Red-shouldered Hawk, *Buteo lineatus* (Breeding)
 Peregrine Falcon, *Falco peregrinus***
 Piping Plover, *Charadrius melodus***
 Upland Sandpiper, *Bartramia longicauda*
 Roseate Tern, *Sterna dougalli*
 Least Tern, *Sterna antillarum*
 Black Skimmer, *Rynchops niger*
 Short-eared Owl, * *Asio flammeus*
 Sedge Wren, *Cistothorus platensis*
 Loggerhead Shrike, *Lanius ludovicianus*
 Vesper Sparrow, *Pooecetes gramineus*
 Henslow's Sparrow, *Ammodramus henslowii*

Threatened

American Bittern, *Botaurus lentiginosus*
 Great Blue Heron, *Ardea herodias*
 Little Blue Heron, *Egretta caerulea**
 Yellow-crowned Night Heron, *Nyctanassa violacea*
 Osprey, *Pandion haliaetus*
 Northern Goshawk, *Accipiter gentilis*
 Red-shouldered Hawk, *Buteo lineatus* (Nonbreeding)
 Black Rail, *Laterallus jamaicensis*
 Long-eared Owl, *Asio otus*
 Barred Owl, *Strix varia*
 Red-headed Woodpecker, *Meigalea erythrocephala*
 Cliff Swallow, * *Hirundo pyrrhonota*
 Savannah Sparrow, *Passerculus sandwichensis*
 Ipswich Sparrow, *Passerculus sandwichensis princei*
 Grasshopper Sparrow, *Ammodramus savaanarum*
 Bobolink, *Dolichonyx oryzivorus*

* Only breeding population considered endangered or threatened

** Federally endangered or threatened

REPTILES

Endangered

Bog Turtle, *Clemmys muhlenbergi*
 Atlantic Hawkbill, *Eretmochelys imbricata***
 Atlantic Loggerhead, *Caretta caretta***
 Atlantic Ridley, *Lepidochelys kempi***
 Atlantic Leatherback, *Dermochelys coriacea***
 Corn Snake, *Elaphe g. guttata*
 Timber Rattlesnake, *Crotalus h. horridus*

Threatened

Wood Turtle, *Clemmys insculpta*
 Atlantic Green Turtle, *Chelonia mydas***
 Northern Pine Snake, *Pituophis m. melanoleucus*

** Federally endangered or threatened

ENDANGERED AND NONGAME SPECIES PROGRAM

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
 DIVISION OF FISH, GAME AND WILDLIFE

AMPHIBIANS

Endangered

Tremblay's Salamander, *Ambystoma tremblayi*
 Blue-spotted Salamander, *Ambystoma laterale*
 Eastern Tiger Salamander, *Ambystoma t. tigrinum*
 Pine Barrens Treefrog, *Hyla andersonii*
 Southern Gray Treefrog, *Hyla chrysoscelis*

Threatened

Long-tailed Salamander, *Eurycea longicauda*
 Eastern Mud Salamander, *Pseudotriton montanus*

MAMMALS

Endangered

Bobcat, *Lynx rufus*
 Eastern Woodrat, *Neotoma floridana*
 Sperm Whale, *Physeter, macrocephalus***
 Fin Whale, *Balaenoptera physalus***
 Sei Whale, *Balaenoptera borealis***
 Blue Whale, *Balaenoptera musculus***
 Humpback Whale, *Megaptera novaeangliae***
 Black Right Whale, *Balaena glacialis***

INVERTEBRATES

Endangered

Mitchell's Satyr (butterfly), *Neonympha m. mitcha*
 Northeastern Beach Tiger Beetle, *Cicindela d. dorsa*
 American Burying Beetle, *Nicrophorus americanus*
 Dwarf Wedge Mussel, *Alasmidonta heterodon***


** Federally endangered

FISH

Endangered

Shortnose Sturgeon, *Acipenser brevirostrum***

List revisions: March 29, 1979
 January 17, 1984
 May 6, 1985
 July 20, 1987
 June 3, 1991




The lists of New Jersey's endangered and nongame wildlife species are maintained by the DEP&E's Division of Fish, Game and Wildlife's, Endangered and Nongame Species Program. These lists are used to determine protection and management actions necessary to insure the survival of the State's endangered and nongame wildlife. This work is made possible only through voluntary contributions received through the Wildlife Check-off on the New Jersey State Tax Form. The Wildlife Check-off is the only major funding source for the protection and management of the State's endangered and nongame wildlife resource. For more information about the Endangered and Nongame Species Program or to report a sighting of endangered or threatened wildlife contact: Endangered and Nongame Species Program, Northern District Office, Box 383 R.D. 1, Hampton, N.J. 08827 or call (908) 735-8975.

Appendix D - Correspondence

THE PORT AUTHORITY OF NEW YORK & NEW JERSEY



PORT COMMERCE DEPARTMENT
ONE WORLD TRADE CENTER
NEW YORK, NY 10048-0682

August 3, 1999

(212) 435-7000
(973) 961-6600

Dr. Raimo A. Liias
Deputy Chief of Programs
And Project Management
New York District, Corps of Engineers
Jacob K. Javits Federal Building
New York, NY 10278-0090

Dear Dr. Liias:

The Final Environmental Assessment ("EA") for the deepening of the Kill Van Kull and Newark Bay Channels to 45 feet, dated April 1997, states that the New York District adopts a tiered strategy to select the project's disposal sites for contaminated material. The strategy deferred final site selection until the appropriate time when the final site decision was needed for contracting. As you know, the Port Authority and the New York District have been working with the New Jersey Maritime Resources ("NJMR") to actuate the New Jersey DIG program ("NJDIG"). This program, which perhaps can best be described as a clearinghouse for available upland disposal sites/processes, is in its early stages of development. We anticipated designating NJDIG as the sponsor provided disposal site for Contract 4A. However, there are contractual issues that need to be resolved before the program can be implemented. Therefore, the Port Authority wishes to continue the site selection process for the Kill van Kull and Newark Bay Channels project.

In the EA, the Port Authority, in its role as local sponsor, identified two upland sites - Koppers Kearney and OENJ Bayonne - as potential repositories for contaminated material. Contract 4A, scheduled for award in very early 2000, is the first project contract where contaminated material (less than 100,000 cubic yards) is expected to be encountered. For Contract 4A, the Port Authority wishes to augment the EA site list (Koppers Kearney and OENJ Bayonne) with a third option - the Bark Camp site in Pennsylvania as a demonstration placement site for contaminated material. If acceptable production rates are achieved, the use of any of these three sites should not adversely impact the schedule for Contract 4A. By selecting the three aforementioned upland sites, the Port Authority hopes to further examine and demonstrate the operational aspects of the NJDIG concept and to advance its viability.

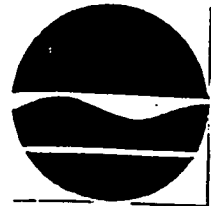
Please advise us at the earliest date possible if this approach is acceptable and if all or some of the three identified sites are acceptable to the Corps of Engineers for the receipt of contaminated material from Contract 4A. If you have any questions, please contact Tom Costanzo or me.

Sincerely,

Thomas H. Wakeman III
Program Manager
Dredging Division

Cc: Frank McDonough, NJMR
Hal Hawkins, NYD-COE
Arthur Connolly, NYD-COE

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 2
47-40 21st Street Long Island City, NY 11101
Tel: (718) 482-4997 Fax: (718) 482-4975



John P. Cahill
Commissioner

August 26, 1999

Mr. Frank Santomauro, P.E.
NY District, Corps of Engineers
Jacob K. Javits Federal Building
New York, NY 10278-0090

Re: Permit Modification Request - Seasonal Windows: Special Condition 20 (Shooters Island) and
Special Condition 21 (Contract Reach 3 - Winter flounder, Blue crab)
Kill Van Kull Deepening
DEC No. 2-6499-00002/00004

Dear Mr. Santomauro:

This is in response to your letters of June 7, 1999 and August 16, 1999 to Steven Zahn of NYSDEC, Marine Resources regarding the seasonal restrictions on dredging activities for the Kill Van Kull Deepening project. Special Condition No. 20 requires a 1000 foot buffer surrounding Shooters Island during the period of March 1 - August 31. Special Condition No. 21 contains a provision for a seasonal window from November 15 - May 31 in any portion of Contract Reach 3 determined to harbor significant populations of Winter flounder of Blue-claw crab.

Special Condition 21.

The department has determined, based on biological and habitat surveys conducted by the Corps, that Contract Reach 3 does not support significant populations of Winter flounder or Blue-claw crab. Therefore, the provision for a seasonal dredging window from November 15 - May 31 is not required. Special Condition 21 is deleted.

Special Condition 20.


DEC does not agree that there is sufficient information to consider a reduction in the seasonal dredging window surrounding Shooters Island at this time. Shooters Island has been well documented as an important nesting and foraging area for wading birds and shore birds. Over the past two breeding seasons, one-day surveys by New York Audubon have indicated that there may be a significant reduction in the number of herons using the island. However, these surveys are not as detailed or extensive as previous surveys conducted by Manumet and can not predict whether the herons will return to prior levels during the next, or subsequent breeding seasons. More detailed studies will be necessary to document the use of Shooters Island by herons and other birds. If your assessment is based on additional surveys, please forward them to us.

There is also some evidence that recent, temporary disturbance due to human activities on Shooters Island may have played a role in the apparent reduction in the use of the area by herons and other birds. The NYC Department of Parks and Recreation is currently responsible for the maintenance of the area. We intend pursue this matter with NYC Parks in order to investigate and rectify this situation.

Your letters stated that pre-construction monitoring will be necessary to establish the use of Shooters Island as a nesting site. We agree and express our willingness to work with you to determine the level of data necessary to make a supportable decision regarding the seasonal window. This will be needed for each breeding season that may be affected by the project. We also expect to work with you in the development of monitoring studies to evaluate dredging and blasting impacts on the wading bird and shore bird populations should they be determined necessary. If breeding populations are shown to be present, we request that the monitoring studies be designed to evaluate the impact of construction activities, particularly blasting, which may have a greater impact than dredging, beginning at a distance of at least 2500 feet from the shoreline of Shooters Island.

The Corps should plan based on the assumption that the dredging window for Shooters Island will remain in effect until it can be definitively shown that there will be no adverse affect on the nesting colonies. Since this work can not start until the beginning of next spring's breeding season, Special Condition No. 20, requiring a 1000 foot buffer around Shooters Island from March 1 - August 31, will remain in effect.

If you have any questions, please contact me at the above address, or by telephone at (718) 482-4077.

Sincerely,

Charles de Quillfeldt
Environmental Analyst 3

cc: J. Gilmore
J. Pane
S. Zahn
H. Ruben, USACE

August 27, 1999

Dr. Raimo A. Liias
Deputy Chief of Programs
and Project Management
Department of the Army
New York District, Corps of Engineers
Jacob K. Javits Federal Building
New York, NY 10278-0090

Dear Dr. Liias:

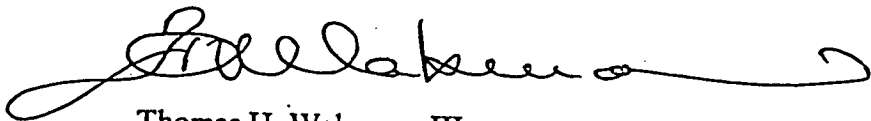
This is in reference to the Kill Van Kull & Newark Bay Channel Deepening Project – Contract 4A.

In my letter of August 3, the Port Authority updated potential upland disposal sites for the subject contract so that the New York District could complete the required Environmental Assessment. The identified sites were Koppers Kearney, OENJ Bayonne and the Bark Camp site in Pennsylvania.

In order to ensure that all options are addressed in the Environmental Assessment, the Port Authority hereby supplements the aforementioned list of three sites with two additional sites. The two additional sites are the Newark Bay Confined Disposal Facility and Subchannel cells in Newark Bay. As you know, the Subchannel cells are the subject of an ongoing permit application before the New York District and the New Jersey Department of Environmental Protection.

If you have any questions, please contact Tom Costanzo or me.

Sincerely,



Thomas H. Wakeman III
Program Manager
Dredging Division

Cc: Frank McDonough, NJMR
Hal Hawkins, NYD-COE
Arthur Connolly, NYD-COE

Appendix E - New Jersey Coastal Zone Management Evaluation

APPENDIX E: NEW JERSEY COASTAL ZONE MANAGEMENT EVALUATION

The Coastal Zone Management Act of 1972 (16 U.S.C. §§1451-1464) was enacted by Congress to balance the competing demands of growth and development with the need to protect coastal resources. Its stated purpose is to "... preserve, protect, develop and, where possible to restore or enhance, the resources of the nation's coastal zone..." The primary means of achieving this balance is through coastal zone management programs adopted by the states and designed to regulate and use activities that could affect coastal waters. The act offered incentives to encourage the coastal states and territories to exercise their full authority over coastal areas through development of coastal zone management programs, consistent with the minimum federal standards. The Coastal Zone Act Reauthorization Act Amendments of 1990 strengthened the Act by requiring the state programs to focus more on controlling land use activities and the cumulative effect of activities in coastal zones.

New Jersey administers its Federally approved coastal zone program (N.J.A.C. 7:7, 7:7E) through the Department of Environmental Protection. Pursuant to the Federal Coastal Zone Management Act, New Jersey has defined its coastal zone boundaries and the policies to be utilized to evaluate projects occurring within the designated zones. The Waterfront Development Law (N.J.S.A. 12:5-3) and related requirements (N.J.A.C. 7:7-23) provide the authority for issuance of permits for, among other activities, the placement or construction of structures, pilings, or other obstructions in any tidal waterway. New Jersey's Rules on CZM are employed by the state's Land Use Regulation Program in the review of permit applications and coastal decision making; they address issues of location, use and resources. New Jersey's rules provide for a balancing between economic development and coastal resource protection, recognizing that coastal management involves explicit consideration of a broad range of concerns, in contrast to other resource management programs which have a more limited scope of concern.

The proposed project is within the coastal zone boundaries of New Jersey. The following assessment identifies the coastal zone policies and evaluates the project's consistency with the applicable policies. The consistency evaluation is provided to enable New Jersey to consider the effect of the project on their coastal zone resources.

E.I NEW JERSEY COASTAL ZONE MANAGEMENT POLICIES

SUBCHAPTER 3 - SPECIAL AREAS

7:7E-3.2 Shellfish Habitat

This policy generally limits disturbance of shellfish habitat. Over-wintering blue crabs are known to exist in the project area. As part of the coordination for the authorized plan and prior to construction of Phase I of the KVK/NB Navigation Project, the District initiated a survey to monitor fishery impacts and collected baseline data. A recent study

titled "A Biological and Hydrographical Characterization of Newark Bay, New Jersey, May 1993-April 1995" is available to update the baseline study. The District has agreed with the USFWS, NMFS, and NJDEP Division of Game, Fish, and Wildlife, to assess the need for including additional biological monitoring in order to determine appropriate measures to avoid adverse impacts to blue crabs as a result of construction activities.

7:7E-3.3 Surf Clam Areas

This policy prohibits development that would destroy or contaminate surf clam beds. The project area does not support surf clam beds; therefore, this policy is not applicable.

7:7E-3.4 Prime Fishing Areas

This policy prohibits sand or gravel submarine mining in prime fishing areas. The project does not involve submarine mining and the project area is not considered a prime fishing area; therefore, this policy is not applicable.

7:7E-3.5 Finfish Migratory Pathways

This policy prohibits construction of dams or dikes which would create physical barriers to migratory fish. Development which reduce lower water quality so as to interfere with fish movement is also prohibited. While the project area is not a designated finfish migratory pathway, it is used by migratory fish. The proposed project would not interfere with fish movement; therefore, this policy is not applicable.

7:7E-3.6 Submerged Vegetation Habitat

This policy prohibits or restricts dredging so as to protect water areas that support submerged vegetation. This project area is an existing and maintained navigation channel; therefore, this policy is not applicable.

7:7E-3.7 Navigation Channels

This policy prohibits construction that would extend into a navigation channel and restricts dredging in navigation channels. The proposed project deepens the Kill Van Kull and Newark Bay Navigation Channels in the project area. Dredging standards would meet all applicable conditions for maintenance dredging in navigation channels; therefore, the project is consistent with this policy.

7:7E-3.8 Canals

This policy prohibits actions that would interfere with boat traffic in canals used for navigation. The project area is not a canal as defined by the NJDEP; therefore, this policy is not applicable.

7:7E-3.9 Inlets

This policy prohibits filling and discourages submerged infrastructure in coastal inlets. The project area is not an inlet as defined by the NJDEP; therefore, this policy is not applicable.

7:7E-3.10 Marina Moorings

This policy prohibits non-water dependent development in marina mooring areas. Construction of the proposed project would not involve development in any marina mooring areas; therefore, this policy is not applicable.

7:7E-3.11 Ports

This policy prohibits actions which would interfere with port uses. The proposed project would not interfere with port uses. By deepening the project area navigation channels, the proposed project would benefit port related activities (*e.g.*, improve navigation, efficiency of cargo delivery); therefore, the project is consistent with this policy.

7:7E-3.12 Submerged Infrastructure Routes

This policy prohibits any activity which would increase the likelihood of submerged infrastructure damage or interfere with maintenance operations. Several submerged pipelines exist within the project area. According to Federal policy, all buried pipelines and cables must be at least 7 feet below the authorized navigation channel project depth. Exceptions may be made provided plans providing less top cover are found to be technically sound and owners guarantee that the Government and its contractors would be held free of any liability for damage during construction and maintenance. Construction of the project would meet all applicable Federal and state guidelines; therefore, the project is consistent with this policy.

7:7E-3.13 Shipwrecks and Artificial Reefs

This policy restricts the use of special areas with shipwrecks and artificial reefs which would adversely affect the usefulness of this special area as a fisheries resource. The project area does not contain any known shipwrecks or artificial reefs; therefore, this policy is not applicable. Known abandoned vessels in the vicinity of the project will not be impacted by this project action.

7:7E-3.14 Wet Borrow Pits

This policy restricts the use and filling of wet borrow pits. The project area does contain any known wet borrow pits; therefore, this policy is not applicable.

7:7E-3.15 Intertidal and Subtidal Shallows

This policy discourages disturbance of shallow water areas (*i.e.*, permanently or twice daily submerged areas from the spring high tide to a depth of four feet below MLW). Disturbance of shallow water areas generally requires mitigation by creating similar habitat at a ratio of one acre created to one acre lost, unless the dredged area is reduced to the minimum extent practicable. The proposed KVK/NB project will disturb approximately 16 acres of shallow water habitat. The overall project area encompasses approximately 1500 acres. This area will be converted from shallow to deep water habitat. Construction of the project would meet all applicable Federal and state guidelines or permit requirements (*e.g.*, mitigation/monitoring); therefore, the project is consistent with this policy.

7:7E-3.16 Dunes

This policy protects and preserves ocean and bayfront dunes. The project area does not contain any dunes; therefore, this policy is not applicable.

7:7E-3.17 Overwash Areas

This policy restricts development in overwash areas due to their sensitive nature. The project area does not contain any overwash areas; therefore, this policy is not applicable.

7:7E-3.18 Coastal High Hazard Areas

This policy restricts development in coastal high hazard (*i.e.*, flood prone) areas. The project area is not a coastal high hazard area; therefore, this policy is not applicable.

7:7E-3.19 Erosion Hazard Areas

This policy prohibits development under most circumstances to protect public safety. The project area is not an erosion hazard area; therefore, this policy is not applicable.

7:7E-3.20 Barrier Island Corridor

This policy restricts new development on barrier islands. The project area is not a barrier island corridor; therefore, this policy is not applicable.

7:7E-3.21 Bay Islands

This policy restricts development on bay islands. The project area does not contain any bay islands; therefore, this policy is not applicable.

7:7E-3.22 Beaches

This policy restricts development on beach areas. The project area does not contain any beach areas; therefore, this policy is not applicable.

7:7E-3.23 Filled Water's Edge

This policy seeks to promote water dependent uses at areas along the waterfront that have been previously filled. The proposed project is not a waterfront development; therefore, this policy is not applicable.

7:7E-3.24 Existing Lagoon Edges

This policy restricts development at lagoon edges because of potential water quality problems. The project area does not contain any lagoon edges; therefore, this policy is not applicable.

7:7E-3.25 Flood Hazard Areas

This policy is designed to restrict development in flood hazard areas and ensure that the waterfront is not preempted by uses which could function equally well at inland locations. Construction of the proposed project would not involve development in a flood hazard area; therefore, this policy is not applicable.

7:7E-3.26 (Reserved)

7:7E-3.27 Wetland

This policy restricts disturbance in wetland areas and requires mitigation if wetlands are destroyed or disturbed. The proposed project will not impact any wetlands. Construction of the project would meet all applicable guidelines or permit requirements (*e.g.*, mitigation); therefore, the project is consistent with this policy.

7:7E-3.28 Wetland Buffers

This policy restricts development in wetland buffer areas in order to protect wetlands. The proposed project would not affect wetland buffer areas; therefore, this policy is not applicable.

7:7E-3.29 (Reserved)

7:7E-3.30 (Reserved)

7:7E-3.31 Coastal Bluffs

This policy restricts development on coastal bluffs. The project area does not contain coastal bluffs; therefore, this policy is not applicable.

7:7E-3.32 Intermittent Stream Corridors

This policy restricts actions in stream corridors. The project area does not contain intermittent stream corridors; therefore, this policy is not applicable.

7:7E-3.33 Farmland Conservation Areas

This policy seeks to preserve large parcels of land used for farming. The project area does not contain farmland conservation areas; therefore, this policy is not applicable.

7:7E-3.34 Steep Slopes

This policy seeks to preserve steep slopes by restricting development in such areas. Steep slopes help to control erosion and reduce flooding. The project area does not have steep slopes, therefore, this policy is not applicable.

7:7E-3.35 Dry Borrow Pits

This policy restricts the excavation and filling of dry borrow pits. The project area does not contain any dry borrow pits; therefore, this policy is not applicable.

7:7E-3.36 Historic and Archaeological Resources

This policy protects the value of historic and archaeological resources and may require cultural resource surveys and other protective measures.

Recent cultural resources investigation conducted in connection with the New York Harbor Collection and Removal of Drift Project have identified a number of vessels eligible or potentially eligible for the National Register of Historical Places (NRHP) along the Kill Van Kull shoreline. Ten vessels are found within five clusters along the Staten Island side of the waterway, and three vessels are located along the Bayonne shoreline. A structure, the B&O Transfer Bridge, was identified along the Staten Island shore. Another vessel at Port Johnson was also determined potentially significant as a contributing element to the Port Johnson Historic Sailing Vessels cluster. Coordination with the NY/NJ State Historic Preservation Office (SHPO) will be undertaken to determine specific monitoring requirements during blasting. Monitoring will be conducted to ensure there are no impacts to the B&O Transfer Bridge or historic vessels.

7:7E-3.37 Specimen Trees

This policy seeks to protect specimen trees. The project area does not contain specimen

trees; therefore, this policy is not applicable.

7:7E-3.38 Endangered or Threatened Wildlife or Vegetation Species Habitats

This policy restricts development in endangered or threatened wildlife or vegetation species habitat areas. The peregrine falcon, nesting on local area bridges (see Section 4.1.5 Threatened and Endangered Species), was the only threatened and/or endangered species for which potential adverse impacts were identified. The proposed project would have no adverse impact on habitat areas for this species; therefore, the proposed project would be consistent with this policy. The district will employ any and all measures recommended by the USFWS and NJDEP to avoid adverse impacts to state and Federally listed threatened and endangered species.

7:7E-3.39 Critical Wildlife Habitats

This policy discourages development that would adversely affect critical wildlife habitat. The coastal heron rookery located on Shooters Island (part of the Harbor Herons Complex) was listed as a rare natural community by the NJDEP. The District will continue to follow the USFWS recommendation that no blasting or dredging be conducted within 300 feet of Shooters Island. The District will further coordinate with both the USFWS and the NJDEP Division of Game, Fish, and Wildlife regarding appropriate measures to avoid adverse impacts to nesting waterbirds and other sensitive biological components of the environment. The proposed project would not affect this critical habitat; therefore, the proposed project would be consistent with this policy.

7:7E-3.40 Public Open Space

This policy encourages new public open spaces and discourages development that might adversely affect existing public open space. Construction of the proposed project would not affect any public open space; therefore, this policy is not applicable.

7:7E-3.41 Special Hazard Areas

This policy discourages development in hazard areas due to potential dangers. The project area does not contain special hazard areas; therefore, this policy is not applicable.

7:7E-3.42 Excluded Federal Lands

Federal lands are beyond the jurisdiction of the New Jersey Coastal Zone. New Jersey has the authority to review activities on Federal lands if there may be spillover impacts on New Jersey's Coastal Zone. There are no excluded federal lands in the project area; therefore, this policy is not applicable.

7:7E-3.43 Special Urban Areas

This policy seeks to encourage waterfront development that would benefit certain municipalities that receive state aid. The project area is located near Elizabeth, which qualifies as a special urban area. Construction of the proposed project would provide indirect economic benefits to Elizabeth, NJ because of improved shipping efficiencies and commercial navigation access. Therefore, the proposed project would be consistent with this policy.

7:7E-3.44 Pinelands National Reserve and Pinelands Protection Area

This policy allows the Pinelands Commission to serve as the reviewing agency for actions within the Pinelands National Reserve. The proposed project is not located within the pinelands; therefore, this policy is not applicable.

7:7E-3.45 Hackensack Meadowlands District

This policy allows the Hackensack Meadowlands Development Commission to serve as the reviewing agency for actions within the Hackensack Meadowlands District. The proposed project is not located within the Hackensack Meadowlands District; therefore, this policy is not applicable.

7:7E-3.46 Wild and Scenic River Corridors

This policy recognizes the outstanding value of certain rivers in New Jersey by restricting development to compatible uses. The proposed project is not located within a wild and scenic river corridor; therefore, this policy is not applicable.

7:7E-3.47 Geodetic Control Reference Marks

This policy discourages disturbance of geodetic control reference marks. There are no known geodetic control reference marks in the project study area; therefore, this policy is not applicable.

7:7E-3.48 Hudson River Waterfront Area

This policy restricts development along the Hudson River Waterfront and requires development, maintenance, and management of a section of the Hudson Waterfront Walkway coincident with the shoreline of the development property. The proposed project is not located within the Hudson River Waterfront Area; therefore, this policy is not applicable.

SUBCHAPTER 3A - STANDARDS FOR BEACH AND DUNE ACTIVITIES

These standards apply to routine beach maintenance, emergency post-storm beach restoration, dune creation and maintenance, and construction of boardwalks. The proposed project is not located within a beach or dune area; therefore, these standards are not applicable.

SUBCHAPTER 3B - WETLAND MITIGATION PROPOSALS

This section details the requirements of a wetland mitigation proposal. Construction of the project would meet all applicable guidelines or permit requirements; therefore, the project is consistent with this section.

SUBCHAPTER 3C - IMPACT ASSESSMENT FOR ENDANGERED AND THREATENED WILDLIFE SPECIES.

This section details the performance and reporting standards for impact assessments for endangered and threatened wildlife species. The peregrine falcon, nesting on local area bridges, was the only threatened and/or endangered species for which potential adverse impacts were identified. The impact assessment for endangered and threatened wildlife species is described in sections 4.1.5 and 5.1.5 Threatened and Endangered Species. A biological assessment has been prepared by the USACE and submitted to the USFWS on March 12, 1997 and assesses potential dredging impacts to the peregrine falcon. This action is consistent with the standards provided with this policy.

SUBCHAPTER 4 - GENERAL WATER AREAS

This section defines general water areas. For purposes of definition, the Kill Van Kull is considered a tidal straight, a waterway connection between two estuarine bodies of water.

7:7E-4.2 Acceptability Conditions for Uses

This section defines the important uses of general water areas and sets conditions or standards of acceptability for certain uses. Only those standards applicable to the proposed project area are listed:

- (g) Standards relevant to new dredging
- (h) Standards relevant to dredged material placement

Dredging and dredged material placement would meet the acceptability conditions for both applicable standards; therefore, the proposed project is consistent with this policy.

SUBCHAPTER 5 - GENERAL LAND AREAS

The proposed project area includes the Cities of Newark and Bayonne. From a coastwide perspective, development in these regions is preferred over development in other regions. No development is associated with the proposed project; therefore, this policy is not applicable.

SUBCHAPTER 6 - GENERAL LOCATION RULES

7:7E-6.1 Location of Linear Development

This rule sets conditions for acceptability of linear development (*e.g.*, roads, walkways, pipelines). The proposed project is consistent with the rules on location of linear development.

7:7E-6.2 Basic Location

This rule states that NJDEP may reject or conditionally approve a project for safety, protection of certain property, or preservation of the environment. The proposed project is consistent under the location rule.

7:7E-6.3 Secondary Impacts

This rule sets the requirements for the secondary impact analysis. The proposed project would be consistent with the requirements for secondary impact analysis.

SUBCHAPTER 7 - USE RULES

7:7E-7.2 Housing Use

These rules set standards for housing construction in the coastal area. The proposed project does not involve housing construction. therefore, this policy is not applicable.

7:7E-7.3 Resort Recreational Use

This rule sets standards for resort and recreational uses in the coastal area. The proposed project does not involve resort recreational uses; therefore, this policy is not applicable.

7:7E-7.3A Marina Development

This rule sets standards for marina development in the coastal area. The proposed project does not involve marina development; therefore, this policy is not applicable.

7:7E-7.4 Energy Use

This rule sets standards for energy uses in the coastal area. The proposed project does not involve energy uses; therefore, this policy is not applicable.

7:7E-7.5 Transportation Use

This rule sets standards for roads, public transportation, foot paths and parking facilities in the coastal area. The proposed project does not involve construction of roads, public transportation, foot paths, or parking facilities; therefore, this policy is not applicable.

7:7E-7.6 Public Facility Use

This rule sets standards for public facilities (*e.g.*, solid waste facilities) in the coastal area. The proposed project does not involve construction of a public facility; therefore, this policy is not applicable.

7:7E-7.7 Industry Use

This rule sets standards for industrial uses in the coastal area. Construction of the proposed project would improve commercial navigation and access to existing industrial centers in the port of New York and New Jersey and allow for more efficient movement of cargo to the Port Newark and Elizabeth - Port Authority Marine Terminal, Tosco Oil Refinery, GATX Facility, and Gulfport petroleum storage facility. Therefore, the proposed project would be consistent with this policy.

7:7E-7.8 Mining Use

This rule sets standards for mining in the coastal area. The proposed project does not involve mining; therefore, this policy is not applicable.

7:7E-7.9 Port Use

This rule sets standards for port uses and port-related development. The standards are designed to ensure that port facilities retain their economic vitality. Deepening the Kill Van Kull Channel will improve navigation and cargo movement to established facilities in the Port of New York/New Jersey; therefore, the proposed project is consistent with this policy.

7:7E-7.10 Commercial Facility Use

This rule sets standards for commercial facilities such as hotels, and other retail services in the coastal zone. The proposed project does not involve construction of commercial facilities; therefore, this policy is not applicable.

7:7E-7.11 Coastal Engineering

This rule sets standards to protect the shoreline, maintain dunes, and provide beach nourishment. Standards applying to structural shore protection are included. Deepening of the navigation channels would be consistent with standards for shoreline protection; therefore, the proposed project would be consistent with this policy.

7:7E-7.12 Dredged Material Placement on Land

This rule sets standards for placement of dredged materials. Dredging operations and placement of dredged material would be done in accordance with the DMMP and the NJDEP's Management and Regulation of Dredging Activities and Dredged Material in New Jersey Tidal Waters, and would comply with applicable state and Federal regulations. Therefore, the proposed project would be consistent with this policy.

7:7E-7.13 National Defense Facility Use

This rule sets standards for the location of defense facilities in the coastal zone. The proposed project does not involve location of a defense facility; therefore, this policy is not applicable.

7:7E-7.14 High Rise Structures

This rule sets standards for high rise structures in the coastal zone. The proposed project does not involve construction of high rise structures; therefore, this policy is not applicable.

SUBCHAPTER 8 - RESOURCE RULES

7:7E-8.2 Marine Fish and Fisheries

This rule sets standards of acceptability so as to cause minimal feasible interference with the reproductive and migratory patterns of estuarine and marine species of finfish and shellfish. While the project area is used by migratory estuarine and marine fish, the proposed project would not interfere with the reproductive and migratory patterns of fish; therefore, the project is consistent with this policy.

7:7E-8.3 (Reserved)

7:7E-8.4 Water Quality

This rule sets standards for coastal development so as to limit effects on water quality. Construction of the project would meet all applicable Federal and state guidelines or permit requirements and regulations for water quality; therefore, the project is consistent with this policy.

7:7E-8.5 Surface Water Use

This rule sets standards for coastal development so as to limit effects on surface water. Deepening of the navigation channels will not cause unacceptable surface water disturbances (e.g., drawdown, alteration of flow patterns); therefore, the proposed project is consistent with this policy.

7:7E-8.6 Groundwater Use

This rule sets standards for coastal development so as to limit effects on groundwater reserves. The proposed project will not involve groundwater supplies; therefore, this policy is not applicable.

7:7E-8.7 Stormwater Management

This rule sets standards for coastal development so as to limit effects of stormwater runoff. The proposed project does not involve stormwater runoff; therefore, this policy is not applicable.

7:7E-8.8 Vegetation

This rule sets standards for coastal development so as to protect vegetation. The proposed project does not involve the disturbance of vegetation; therefore, this policy is not applicable.

7:7E-8.9 (Reserved)

7:7E-8.10 Air Quality

This rule sets standards for coastal development with requirements that projects meet applicable air quality standards. The proposed project would not contravene Federal or state air quality standards. Reduction of marine traffic and congestion would benefit overall air quality in the project area. Therefore, the proposed project would be consistent with this policy.

7:7E-8.11 Public Access to the Waterfront

This rule requires that coastal development adjacent to the waterfront provide perpendicular and linear access to the waterfront to the extent practicable, including both visual and physical access. Construction of the proposed project would not preclude access to public water related recreation resources and facilities located along the Kill Van Kull and Newark Bay. Deepening of the navigation channels will maintain access to public water related recreation resources and facilities. Therefore, the project would be consistent with this policy.

7:7E-8.12 Scenic Resources and Design

This rule sets standards for new coastal development to be visually compatible with its surroundings. The project area consists mainly of industrial uses, roadways, and some recreational uses. The proposed project would be consistent with this policy.

7:7E-8.13 Buffers and Compatibility of Uses

This rule sets standards for adequate buffers between uses found to be not compatible. The proposed project would be consistent with this policy.

7:7E-8.14 Traffic

This rule sets standards for coastal development to not disturb traffic systems. The proposed project does not involve existing traffic systems; therefore, this policy is not applicable.

7:7E-8.15 through 8.20 (Reserved)

7:7E-8.21 Subsurface Sewage Disposal Systems

This rule sets standards for subsurface sewage disposal systems in the coastal zone. The proposed project does not involve sewage disposal; therefore, this policy is not applicable.

Appendix F - New York Coastal Zone Management Evaluation

**APPENDIX F:
NEW YORK COASTAL ZONE MANAGEMENT EVALUATION**

The Coastal Zone Management Act of 1972 (16 U.S.C. §§1451-1464) was enacted by Congress to balance the competing demands of growth and development with the need to protect coastal resources. Its stated purpose is to "...preserve, protect, develop and, where possible to restore or enhance, the resources of the nation's coastal zone..." The primary means of achieving this balance is through coastal zone management programs adopted by the states and designed to regulate land use activities that could affect coastal waters. The act offered incentives to encourage the coastal states and territories to exercise their full authority over coastal areas through development of coastal zone management programs, consistent with the minimum federal standards. The Coastal Zone Act Reauthorization Act Amendments of 1990 strengthened the Act by requiring the state programs to focus more on controlling land use activities and the cumulative effect of activities in coastal zones.

New York currently administers its Federally approved coastal zone program (Executive Law §§910-921) through the Department of State. Pursuant to the federal Coastal Zone Management Act, New York State has defined its coastal zone boundaries and the policies to be utilized to evaluate projects occurring within the designated zones. In 1981 New York State adopted the Waterfront Revitalization and Coastal Resources Act, creating the New York State Coastal Management Program (CMP). The CMP embodies 44 policy statements supportive of the act's intent to promote a balance between economic development and coastal resource preservation and optimization.

The proposed project is within the coastal zone of New York State. The following assessment identifies the coastal zone policies and evaluates the project's consistency with the applicable policies. The consistency evaluation is provided to enable New York to consider the effect of the project on their coastal zone resources.

F.1 NEW YORK STATE COASTAL ZONE MANAGEMENT POLICIES

- 1) Restore, revitalize and redevelop deteriorated and underutilized waterfront areas for commercial, industrial, cultural, recreational and other compatible uses.

Construction of the proposed project would contribute to the revitalization of the Staten Island waterfront area if the project deepening spurs the development of additional water dependent uses of the Staten Island waterfront which would otherwise not occur without the proposed project. Therefore, the proposed project would be consistent with this policy.

- 2) Facilitate the siting of water dependent uses and facilities on or adjacent to coastal waters.

The proposed project would improve the existing navigation channel serving existing water dependent facilities and assist in the placement of water dependent uses adjacent to

coastal waters. Therefore, the proposed project would be consistent with this policy.

- 3) Further develop the state's major ports of Albany, Buffalo, New York, Ogdensburg, and Oswego as centers of commerce and industry, and encourage the siting, in these port areas, including those under the jurisdiction of state public authorities, of land use and development which is essential to, or in support of, the waterborne transportation of cargo and people.

Construction of the proposed project would improve commercial navigation and access to existing centers of commerce and industry in the Port of New York and New Jersey and allow for more efficient movement of cargo to Port Newark and Elizabeth - Port Authority Marine Terminal. This in turn could result in greater port development and increased port related commerce. This will sustain the numerous maritime support industries currently located along the Kill Van Kull, including tug and barge companies, marine repair and drydock facilities, oil and petroleum transporters, vessel outfitters and converters, and marine operations. Therefore, the proposed project would be consistent with this policy.

- 4) Strengthen economic base of smaller harbor areas by encouraging the development and enhancement of those traditional uses and activities which have provided such areas with their unique maritime identity.

Construction of the proposed project would not strengthen the economic base of smaller harbor areas. Therefore, this policy does not apply.

- 5) Encourage the location of development in areas where public services and facilities essential to such development are adequate.

Construction of the proposed project would not result directly in any new development in the area requiring additional public services or facilities. Therefore, this policy does not apply.

- 6) Expedite permit procedures in order to facilitate the siting of development activities at suitable locations.

Construction of the proposed project would not involve the siting of development activities. Therefore, this policy does not apply.

- 7) Significant coastal fish and wildlife habitats, as identified on the coastal area map, shall be protected, preserved, and where practicable, restored so as to maintain their viability as habitats.

Potential impacts to significant coastal fish and wildlife habitats (*e.g.*, Shooters Island) and measures to protect and mitigate potential adverse effects are described in Section 5.0. By avoiding or mitigating for potential impacts, the proposed project would be consistent with this policy.

- 8) Protect fish and wildlife resources in the coastal area from the introduction of hazardous wastes and other pollutants which bio-accumulate in the food chain *or* which cause significant sublethal or lethal effect on those resources.

Potential impacts to fish and wildlife resources include exposure to contaminants released from sediments during dredging or placement operations. Potential impacts would be limited due to the low potential for contaminated sediments at the proposed project depth. Best management practices will be employed during dredging in order to minimize disturbance and resuspension of solids in the water column. By utilizing these mitigation measures for contaminated sediments, the proposed project would be consistent with this policy.

- 9) Expand recreational use of fish and wildlife resources in coastal areas by increasing access to existing resources, supplementing existing stocks, and developing new resources. Such efforts shall be made in a manner which ensures the protection of renewable fish and wildlife resources and considers other activities dependent on them.

Construction of the proposed project would not affect recreational use of fish and wildlife resources. There is no commercial fishing in the Kill Van Kull and Newark Bay. Therefore, this policy does not apply.

- 10) Further develop commercial finfish, shellfish and crustacean resources in the coastal area by encouraging the construction of new, or improvement of existing onshore commercial fishing facilities, increasing marketing of the state's seafood products, maintaining adequate stocks, and expanding aquaculture facilities. Such efforts shall be made in a manner which ensures the protection of renewable fish and wildlife resources and considers other activities dependent on them.

Construction of the proposed project would not affect commercial fishing. There is no commercial fishing in the Kill Van Kull and Newark Bay. Therefore, this policy does not apply.

- 11) Buildings and other structures will be sited in the coastal area so as to minimize damage to property and the endangering of human lives caused by flooding and erosion.

The proposed project does not include the siting of buildings or other structures in the coastal area. Therefore, this policy does not apply.

- 12) Activities or development in the coastal area will be undertaken so as to minimize damage to natural resources and property from flooding and erosion by protecting natural protective features including beaches, dunes, barrier islands, and bluffs. Primary dunes will be protected from all encroachments that could impair their natural protective capacity.

Construction of the proposed project would not involve beaches, dunes, barrier islands, or bluffs. The project would not adversely impact wetlands. Construction of the project would not involve other types of natural protective features as noted under this policy. Therefore, this policy does not apply.

- 13) The construction or reconstruction of erosion protection structures shall be undertaken only if they have a reasonable probability of controlling erosion for at least thirty years as demonstrated in design and construction standards and/or assured maintenance or replacement programs.

The proposed project does not include the construction or reconstruction of erosion protection structures. Therefore, this policy does not apply.

- 14) Activities and development, including the construction or reconstruction of erosion protection structures, shall be undertaken so that there will be no measurable increase in erosion or flooding at the site of such activities or development, or at other locations.

The proposed project does not include the construction or reconstruction of erosion protection structures. Therefore, this policy does not apply.

- 15) Mining, excavation or dredging in coastal waters shall not significantly interfere with the natural coastal processes which supply beach materials to land adjacent to such waters and shall be undertaken in a manner which will not cause an increase in erosion of such land.

Dredging and excavation associated with the proposed project would not affect natural coastal processes or increase the potential of erosion from adjacent land. Therefore, the proposed project would be consistent with this policy.

- 16) Public funds shall only be used for erosion protective structures where necessary to protect human life, and new development which requires a location within or adjacent to an erosion hazard area to be able to function, or existing development; and only where the public benefits outweigh the long-term monetary and other costs including the potential for increasing erosion and adverse effects on natural protective features.

The proposed project does not include erosion protective structures. Therefore, this policy does not apply.

- 17) Use nonstructural measures to minimize damage to natural resources and property from flooding and erosion shall be used whenever possible. Such measures shall include: (i) the setback of buildings and structures; (ii) the planting of vegetation and the installation of sand fencing and draining; (iii) the reshaping of bluffs; and (iv) the flood-proofing of buildings or their elevation above the base flood level.

Construction of the proposed project would not include structural flood control elements. Therefore, this policy does not apply.

- 18) To safeguard the vital economic, social and environmental interests of the state and of its citizens, proposed major actions in the coastal area must give full consideration to those interests, and to the safeguards which the state has established to protect valuable coastal resource areas.

Construction of the proposed project would promote the economic interests of the region. Potential impacts to valuable coastal resources (*e.g.*, colonial wading bird rookery) and measures to mitigate adverse effects (*i.e.*, safeguards), are described in Section 5.0. The proposed project would be consistent with this policy.

- 19) Protect, maintain, and increase the level and types of access to public water related recreation resources and facilities, so that these resources and facilities may be fully utilized in accordance with reasonably anticipated public recreation needs and the protection of historic and natural resources.

Construction of the proposed project would not preclude access to public water related recreation resources and facilities located along the Kill Van Kull and Newark Bay. Deepening of the navigation channels will maintain access to public water related recreation resources and facilities. Therefore, the project would be consistent with this policy.

- 20) Access to the publicly-owned foreshore and to lands immediately adjacent to the foreshore or the water's edge that are publicly-owned shall be provided and it shall be provided in a manner compatible with adjoining uses. Such lands shall be retained in public ownership.

No publicly-owned foreshore is located in the project area. Construction of the proposed project would not preclude public access to waterfront land in the project vicinity. Therefore, this policy does not apply.

- 21) Water-dependent and water-enhanced recreation will be encouraged and facilitated, and will be given priority over non-water related use along the coast, provided it is consistent with the preservation and enhancement of other coastal resources and takes into account demand for such facilities. In facilitating such activities, priority shall be given to areas where access to the recreation opportunities of the coast can be provided by new or existing public transportation, services, and to those areas where the use of the shore is severely restricted by existing development.

Construction of the proposed project would not preclude access to public water related recreation resources and facilities located along the Kill Van Kull and Newark Bay. Deepening of the navigation channel will maintain access to public water related

recreation resources and facilities. Therefore, the project would be consistent with this policy.

- 22) Development, when located adjacent to the shore, will provide for water related recreation, whenever such use is compatible with reasonably anticipated demand for such activities, and is compatible with the primary purpose of the development.

The proposed project does not include shoreline development. Therefore, this policy does not apply.

- 23) Protect, enhance, and restore structures, districts, areas or sites that are of significance in history, architecture, archaeology or culture of the state, its communities, or the nation.

Recent cultural resources investigation conducted in connection with the New York Harbor Collection and Removal of Drift Project have identified a number of vessels eligible or potentially eligible for the NRHP along the Kill Van Kull shoreline. Ten vessels are found within five clusters along the Staten Island side of the waterway, and three vessels are located along the Bayonne shoreline. A structure, the B&O Transfer Bridge, was identified along the Staten Island shore. Another vessel at Port Johnson was also determined potentially significant as a contributing element to the Port Johnson Historic Sailing Vessels cluster. Coordination with the NY/NJ SHPOs will be undertaken to determine specific monitoring requirements during blasting. Monitoring will be conducted to ensure there are no impacts to the B&O Transfer Bridge or historic vessels.

- 24) Prevent impairment of scenic resources of statewide significance as identified on the coastal area map. Impairment shall include: (i) the irreversible modification of geologic forms, the destruction or removal of structures, whenever the geologic forms, vegetation or structures are significant to the scenic quality of an identified resource; and (ii) the addition of structures which, because of siting or scale will reduce identified views or which because of scale, form, or materials, will diminish the scenic quality of an identified resource.

No scenic resources of statewide significance are located in the project area. Therefore, the policy does not apply.

- 25) Protect, restore or enhance natural and man-made resources which are not identified as being of statewide significance but which contribute to the overall scenic quality of the coastal area.

The proposed project would not adversely impact the overall scenic quality of the coastal area. Therefore, this policy does not apply.

- 26) To conserve and protect agricultural lands in the state's coastal area, an action shall not result in a loss nor impair the productivity of important agricultural lands as identified on the coastal area map, if that loss or impairment would adversely affect the viability of agriculture in an agricultural district, or if there is no agricultural district, in the area surrounding such lands.

The project study area is not located adjacent to agricultural lands. Therefore, this policy does not apply.

- 27) Decisions on the siting and construction of major energy facilities in the coastal area will be based on public energy needs, compatibility of such facilities with the environment, and the facility's need for a shorefront location.

Construction of the proposed project would not involve siting of an energy facility. Therefore, this policy does not apply.

- 28) Ice management practices shall not interfere with the production of hydroelectric power, damage significant fish and wildlife and their habitats, or increase shore line erosion or flooding.

This policy is not applicable to the project area.

- 29) Encourage the development of energy resources on the outer continental shelf in Lake Erie and in other water bodies, and ensure the environmental safety of such activities.

Construction of the proposed project does not involve development of energy resources. Therefore, this policy does not apply.

- 30) Municipal, industrial, and commercial discharge of pollutants, including but not limited to, toxic and hazardous substances, into coastal waters will conform to state and national water quality standards.

The project would conform with the applicable permitting requirements. Therefore, the proposed project would be consistent with this policy.

- 31) State coastal area policies and management objectives of approved local waterfront revitalization programs will be considered while reviewing coastal water classifications and while modifying water quality standards; however, those waters already overburdened with contaminants will be recognized as being a development constraint.

Construction of the proposed project would not affect the water classification or water quality standards of the Kill Van Kull and Newark Bay. Therefore, this policy does not apply.

- 32) Encourage the use of alternative or innovative sanitary waste systems in small communities where the costs of conventional facilities are unreasonably high, given the size of the existing tax base of these communities.

Construction of the proposed project would not involve sanitary waste systems. Therefore, this policy does not apply.

- 33) Best management practices will be used to ensure the control of stormwater runoff and combined sewer overflows draining into coastal waters.

The proposed project would not involve stormwater runoff or construction of combined sewer overflows. Therefore, this policy does not apply.

- 34) Discharge of waste materials into coastal waters from vessels subject to state jurisdiction will be limited so as to protect significant fish and wildlife habitats, recreational areas and water supply areas.

Construction of the proposed project would not affect discharge from vessels into the Kill van Kull and Newark Bay. Therefore, this policy does not apply.

- 35) Dredging and dredged material placement in coastal waters will be undertaken in a manner that meets existing state dredging permit requirements, and protects significant fish and wildlife habitats, scenic resources, natural protective features, important agricultural lands, and wetlands.

Dredging operations and placement of dredged materials would be done in accordance with the District's DMMP and would comply with applicable state and Federal regulations including the protection of significant fish and wildlife habitats, social resources and wetlands. Therefore, the proposed project would be consistent with this policy.

- 36) Activities related to the shipment and storage of petroleum and other hazardous materials will be conducted in a manner that will prevent or at least minimize spills into coastal waters; all practicable efforts will be undertaken to expedite the cleanup of such discharges; and restitution for damages will be required when these spills occur.

Construction of the proposed project would provide safer and more efficient transportation of petroleum. Therefore, the proposed project would be consistent with this policy.

- 37) Best management practices will be utilized to minimize the non-point discharge of excess nutrients, organics and eroded soils into coastal waters.

Construction of the proposed project does not involve the non-point discharge of nutrients, organics and eroded soils. Therefore, this policy does not apply.

- 38) The quality and quantity of surface water and groundwater supplies will be conserved and protected, particularly where such waters constitute the primary or sole source of water supply.

The proposed project would not affect surface water or groundwater reserves in the area. Therefore, this policy does not apply.

- 39) The transport, storage, treatment and disposal of solid wastes, particularly hazardous wastes, within coastal areas will be conducted in such a manner so as to protect groundwater and surface water supplies, significant fish and wildlife habitats, recreation areas, important agricultural land, and scenic resources.

The proposed project does not involve the transport, storage, treatment and disposal of solid wastes. Therefore, this policy does not apply.

- 40) Effluent discharged from major steam electric generating and industrial facilities into coastal waters will not be unduly injurious to fish and wildlife and shall conform to state water quality standards.

The proposed project would not affect any effluent discharge from generating and industrial facilities into the Kill Van Kull and Newark Bay. Therefore, this policy does not apply.

- 41) Land use or development in the coastal area will not cause national or state air quality standards to be violated.

The proposed project would not contravene air quality standards. Marine traffic reduction and congestion would benefit overall air quality in the project area. Therefore, the proposed project would be consistent with this policy.

- 42) Coastal management policies will be considered if the state reclassifies land areas pursuant to the prevention of significant deterioration regulations of the Federal Clean Air Act.

The proposed project would not affect state classifications of land areas. Therefore, this policy does not apply.

- 43) Land use or development in the coastal area must not cause the generation of significant amounts of acid rain precursors: nitrates and sulfates.

The proposed project would not cause the generation of significant amounts of acid rain precursors nitrates and sulfates. Therefore, this policy does not apply.

- 44) Preserve and protect tidal and freshwater wetlands and preserve the benefits derived from these areas.

The proposed project would not cause any impacts to tidal and freshwater wetlands; therefore, this policy does not apply.

NEW YORK CITY

CONSISTENCY WITH WATERFRONT REVITALIZATION PROGRAM (WRP) POLICIES

The twelve New York City WRP policies are discussed below. Insight into the objectives of these policies and the rationale behind their development were provided by the following documents: State of New York Coastal Management Program and Final Environmental Impact Statement (Section 6, August 1982), CEQR Technical Manual (Appendix 1, December 1993), New York City Waterfront Revitalization Program (September 1982).

New York City WRP Policies

Policy A

Improve urban shorelines by maintaining, removing, or recycling waterfront structures (piers, docks, wharves, etc.) in accordance with waterfront development policies and plans. Identify alternative uses for underutilized waterfront structures.

The purpose of this policy is to address rehabilitation of the waterfront consistent with the City's economic and recreational needs. The project does not directly include piers, docks, or wharves within the Staten Island portion of the project. To this extent, this policy does not apply. Indirect benefits may occur to support maritime industries located along the Kill Van Kull.

Policy B

Improve channels as necessary to maintain and stimulate economic development.

The purpose of this policy is to add specificity to New York State Policy 2 and identifies the need to develop or modify federal waterways on a timely basis and where needed to support water dependent uses.

The proposed project would improve the existing federal navigation channel serving existing water dependent facilities and assist in the placement of water dependent uses adjacent to coastal waters. Therefore, the proposed project would be consistent with this policy.

Policy C

Provide shorefront protection against coastal erosion hazards where there is public benefit and public use along non-public shores.

This policy adds specificity to New York State Policies 11 and 16 by providing erosion protection and by identifying a particular public resource endangered by erosion. The proposed project does not include the siting of buildings or other structures in the coastal area and the proposed project does not include erosion protective structures. Therefore, this policy does not apply.

Policy D

Provide technical assistance for the identification and evaluation of erosion problems, as well as the development of erosion control plans along privately-owned eroding shores.

This policy adds specificity to New York Policies 11 and 16 since it addresses erosion protection for private property which may impact other sites. The proposed project does not include the siting of buildings or other structures in the coastal area and the proposed project does not include erosion protective structures. Therefore, this policy does not apply.

Policy E

Implement public and private structural flood and erosion control projects only when:

- Public economic and environmental benefits exceed public economic and environmental costs;
- non-structural solutions are proven to be ineffective or cost prohibitive;
- projects are compatible with other coastal management goals and objectives, including aesthetics, access and recreation;
- adverse environmental impacts are minimized;
- natural protective features are not impaired; and
- adjacent (downdrift) shorelines are not adversely affected.

This policy adds specificity to New York State Policies 11, 12, 13, 14, 15, 16, and 17 by identifying potential problems associated with structural flood control projects. These state policies address the siting of activities and development in hazard areas. The proposed project is not a structural flood and erosion control project, therefore this policy does not apply.

Policy F

Priority shall be given to the development of mapped parklands and appropriate open space where the opportunity exists to meet the recreational needs of:

- immobile user groups; and
- communities without adequate waterfront park space and/or facilities.

This policy was developed to address the concerns of recreational needs of special user groups who rarely enjoy water-related activities. The policy also adds specificity to New York State Policy 21.

The project would not result in a reduction of existing or required access to or along coastal waters, public access areas, public parks or open spaces. Therefore, this policy does not apply.

Policy G

Maintain and protect New York City beaches to the fullest extent possible.

This policy adds specificity to New York State Policy 21 by insuring that water dependent recreation will be encouraged and facilitated, and adds specificity to New York State Policy 16 by identifying a particular public resource endangered by erosion. The project area and vicinity does not contain any New York City public beaches, therefore this policy is not applicable.

Policy H

Insure ongoing maintenance of all waterfront parks and beaches to promote full use of secure, clean areas with fully operable facilities.

The purpose of this policy is to address the operation and maintenance of New York City waterfront parks and outdoor recreational facilities. The project area does not contain any waterfront parks or beaches, therefore this policy is not applicable.

Policy I

Siting of liquefied and substitute natural gas facilities, including those associated with the tinkering of such gas, shall take into consideration state and national energy needs, public safety concerns and the necessity for a shorefront location.

The purpose of this policy is to address the safety of locating liquefied natural gas facilities in metropolitan areas. The proposed project does not involve the siting of natural gas facilities, therefore this policy does not apply.

Policy J

Adopt end-use plans for landfill areas which specify the following:

- final capacity
- final contours
- leachate, erosion and gas control systems
- revegetation strategies
- interim review schedules.

The proposed project will not affect landfill areas, therefore this policy is not applicable.

Policy K

Curtailed illegal dumping throughout the coastal zone and restore areas scarred by this practice.

This policy adds specificity to New York State Water Quality Policy 39. The proposed project will follow best management practices during project construction. All required permits for construction of the project and placement of dredged material will be obtained. Illegal dumping will not occur. Therefore, the proposed project would be consistent with this policy.

Policy L

Encourage energy development from waste and waste landfills.

The purpose of this policy is to assist in achieving the national objective of energy independence through recovering or producing energy from waste. The proposed project does not involve energy development from waste and waste landfills, therefore, this policy does not apply.

Appendix G - Clean Water Act Section 404 (B)(1) Guidelines Evaluation

APPENDIX G: SECTION 404(b)(1) GUIDELINES EVALUATION

G.1 INTRODUCTION

This appendix of the Draft Potential Dredged Material Placement Sites EA for the Kill Van Kull and Newark Bay Federal Navigation Channel Deepening project presents a Section 404(b)(1) guidelines evaluation for the placement of the dredged material from the proposed project that is determined to be unacceptable for ocean placement. The evaluation is based on the regulations found at 40 CFR 230, Section 404(b)(1): Guidelines for Specification of Disposal Sites for Dredged or Fill Material. The Regulations implement Sections 494(b) and 401(a) of the Clean Water Act, which govern the placement of dredged and fill material inside the territorial sea baseline (§230.2(b)).

G.2 DRAFT 404(b)(1) EVALUATION

The following Section 404(b)(1) evaluation is presented in a format consistent with typical evaluations in the NY/NJ Harbor area and addresses all required elements of the evaluation.

I. Project Description

- a. Location: The Kill Van Kull & Newark Bay Federal Navigation Deepening Project area extends from the confluence of the Kill Van Kull & Anchorage Channels to Station 168+22N, the northern edge of the Port Newark Reach.
- b. General Description: The authorized project plan entails deepening of existing navigational channels from the confluence of the Kill Van Kull and Anchorage channels to the northern edge of the Port Newark Reach in Newark Bay (Station 168+22N) to -45 feet MLW plus a 2-foot overdepth allowance for dredging tolerance. This will approach or equal the depth of the Ambrose-Anchorage channel feeder arteries which connect the harbor with the Atlantic Ocean. At this time, construction of the Port Newark Channel and a portion of the Newark Bay Channel (Station 139+20N to Station 168+22N) has been deferred at the request of the non-federal sponsor (Port Authority of New York and New Jersey and/or State of New Jersey).
- c. Authority and Purpose: The project is authorized in the Supplemental Appropriations Act of 1985 and in Section 202 (b) of the Water Resources Development Act (WRDA) 1986 IPL 99-88). The Limited Reevaluation Study, which includes this EA was initiated at the request of the non-federal sponsor (the Port Authority of New York and New Jersey and/or the State of New Jersey) for the purpose of accommodating deeper draft and otherwise larger ocean-going vessels entering Port Newark and Elizabeth - Port Authority Marine Terminal.

- d. General Description of Dredged Material: Approximately 10.7 million cubic yards (mcy) of dredged material would be removed by the proposed action. This includes about 1.1 mcy of rock.
- e. Proposed Discharge Sites: Potential discharge sites that are proposed include the Newark Bay Confined Placement Facility (permitted), the Bayonne Landfill (permitted), and Kearny Koppers Coke (permit pending) site.
- f. Placement Method: the District will utilize a site (or sites) listed above pending approval through a separate compliance process or through the DMMP process.

II. Factual Determinations

a. Physical Substrate Determinations

- (1) Substrate Elevation and Slope: No Impact
- (2) Sediment Type: No Impact
- (3) Dredged Material Movement: Minor short term movement
- (4) Physical Effects on Benthos: Minimal to no impact
- (5) Other Effects: None identified
- (6) Action to Minimize Impacts: Not applicable

b. Water Circulation, Fluctuations, and Salinity Determinations

- (1) Water
 - (a) Salinity: The proposed deepening of the Kill Van Kull and Newark Bay Channels will have no effect on salinity because the project does not influence the water mass movements (tidal flow and river discharge) that control salinity.
 - (b) Water Chemistry: The proposed channel deepening project will have localized effects on water chemistry during the dredging operations. The effects are associated with sediment resuspension from dredging activities (see Section 5.5). The localized effects will be limited to the period of time that the dredging activities take place.

- (c) Clarity: Temporary increase in turbidity will occur from sediment resuspension from dredging activities (see Section 5.5).
 - (d) Color: Minor temporary changes possible
 - (e) Odor: Odor typical of dredging operations will be created in the project area during operations. Because the site is remote from residential areas the potential odor problem will be minimal to no impact.
 - (f) Taste: Not applicable
 - (g) Dissolved Gas Levels: Not applicable
 - (h) Nutrients: No long-term increase in nutrients and eutrophication will result from the proposed project.
 - (i) Eutrophication: A short-term, localized increase in nutrients could contribute to an increase in algal growth. However, the limited quantity of disturbed sediments will result in minimal short-term nutrient releases which will not result in project area eutrophication.
 - (j) Other: None identified.
- (2) Current Patterns and Circulation: No impacts identified
 - (3) Normal Water Level Fluctuations: No impacts identified
 - (4) Salinity Gradients: No impacts identified
 - (5) Actions to Minimize Impact: Not applicable
- c. Suspended Particulate/Turbidity Determination
- (1) Change at Placement Site: Not applicable
 - (2) Effects on Chemical and Physical Properties of the Water Column: Impact should be minimal since dredging activities would cause prior disturbance.
 - (3) Effects on Biota: There will be short-term, localized increases in suspended particulates/turbidity due to dredging activity. Motile fauna are capable of avoiding the impacted area.

(4) Action to Minimize Impacts: Not applicable

d. Contaminant Determination: As noted in the Code of Federal Regulations, 40 CRF §227.13 (b) dredged material which meets the criteria set forth in the following paragraphs (b) (1), (2), or (3) of this section is environmentally acceptable for ocean disposal without further testing under this section (*if*):

(1) Dredged material is composed predominantly of sand, gravel, rock or any other naturally occurring bottom material with particle sizes larger than silt, and the material is found in areas of high current or wave energy such as streams with large bed loads or coastal areas with shifting bars and channels; or

(2) Dredged material is for beach nourishment or restoration and is composed predominantly of sand, gravel or shell with particle sizes compatible with material on the receiving beaches; or

(3) *When* (ii) The site from which the material proposed for placement is to be taken is far removed from known existing and historical sources of pollution so as to provide reasonable assurance that such material has not been contaminated by such pollution.

Channel deepening may result in the temporary and localized resuspension and distribution of sediments within the project area. On the basis of current analysis, it is estimated that approximately 6.8 mcy of sediments meet the criteria listed above under (b)(1) and (b)(3)(ii) for ocean placement. Borings data indicate that approximately 3.3 mcy of sediments may contain contaminants known to exist in the harbor. For this material, a sampling design will be developed to evaluate the nature and extent of contamination as well as compliance with required discharge permit limitations.

Rock material removed from the project area will be used in the construction of artificial reefs. Both the NJDEP and the NYSDEC have indicated an interest in obtaining the rock material for this purpose.

e. Aquatic Ecosystems and Organisms Determination: No impact

f. Proposed Placement Site Determination: The selection of potential dredged material placement sites is a result of extensive alternatives analyses, as included in the Final EA for the KVK/NB navigation project and other documents. The analyses took into account all pertinent factors,

including timing, constructability, capacity, permitability, and environmental acceptance, as well as all methods of placement. The selection of potential placement sites will have no direct impact on any environmental resource.

- g. Determination of Cumulative Effects on the Aquatic Ecosystem: None identified
- h. Determination of Secondary Effects on the Aquatic Ecosystem: None identified

III. Findings of Compliance or Noncompliance

- a. There are no practicable alternatives for the proposed action under the jurisdiction of Section 404 (b)(1) Guidelines.
- b. The proposed action does not appear to violate applicable state water quality standards or effluent standards.
- c. The USFWS is concerned that channel deepening may cause resuspension of contaminated sediments and that the contaminants could be transported through the food chain and result in adverse impacts to peregrine falcons. Pursuant to the Endangered Species Act, the District has prepared a Biological Assessment to evaluate the potential impacts of resuspension of contaminants during dredging. The District will continue to consult with the USFWS to evaluate the need for and design of a monitoring program which will fully evaluate the nature and extent of any outstanding concerns.

The proposed action would result in moving the channel away from the colonial wading bird rookery on Shooters Island. Minimal short-term impacts and no long-term impacts are expected.

- d. The proposed action will not result in significant adverse impacts on human health or welfare, including municipal and private water supplies, recreational and commercial fishing, plankton, shellfish, wildlife and special aquatic sites.
- e. All appropriate steps to minimize adverse environmental impacts have been taken.
- f. No significant adaptation of the guidelines were made relative to this evaluation.

IV. Conclusions

Based on all of the above, the proposed action is determined to be in compliance with the Section 404(b)(1) Guidelines, subject to appropriate and reasonable conditions, to be determined on a case-by-case basis, to protect the public interest.

Appendix H – Project Comments

**Appendix I - USFWS Biological Opinion on the Effects of Channel Deepening
Activities Within the Arthur Kill, Kill Van Kull, and Newark Bay Channels, New
York and New Jersey, on the Peregrine Falcon**



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
927 North Main Street (Bldg. D1)
Parsippany, New Jersey 08212

IN REPLY REFER TO:

ES-97/218

Tel: 609-646-3310
FAX: 609-646-3352

December 22, 1997

Stuart Piken, P.E.
Chief, Planning Division
New York District, U.S. Army Corps of Engineers
Jacob K. Javits Federal Building
New York, New York 10278-0090

Dear Mr. Piken:

The U.S. Fish and Wildlife Service (Service) has reviewed the project plans for channel deepening activities proposed by the New York District, U.S. Army Corps of Engineers (Corps) for the Kill Van Kull / Newark Bay Navigation Channels and Arthur Kill / Howland Hook Navigation Channels projects, New York and New Jersey. Your June 23, 1997 request for formal consultation regarding potential impacts to the federally listed endangered peregrine falcon (*Falco peregrinus*) from the proposed channel deepening activities was received on June 27, 1997. This document represents the Service's biological opinion on the effects of the proposed channel deepening activities for the aforementioned projects on the peregrine falcon and is in accordance with Section 7 of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) (ESA). No specific dredged material disposal sites were identified within the Corps project plans; therefore, this biological opinion does not address potential impacts to federally listed species from the disposal of project-generated dredged material. Further consultation pursuant to Section 7 of the ESA will be required if disposal sites for project-generated dredged material are identified within the vicinity of documented occurrences of federally listed species.

If you have any questions or concerns regarding this consultation, please contact Annette Scherer of my staff.

Sincerely,

Clifford G. Day
Supervisor

Enclosure

**BIOLOGICAL OPINION ON THE EFFECTS OF
CHANNEL DEEPENING ACTIVITIES WITHIN THE
ARTHUR KILL, KILL VAN KULL, AND NEWARK BAY CHANNELS,
NEW YORK AND NEW JERSEY, ON THE PEREGRINE FALCON**



Prepared for:

U.S. Army Corps of Engineers
New York District
New York, New York 10278

December 1997

**BIOLOGICAL OPINION ON THE EFFECTS OF
CHANNEL DEEPENING ACTIVITIES WITHIN THE
ARTHUR KILL, KILL VAN KULL, AND NEWARK BAY CHANNELS,
NEW YORK AND NEW JERSEY, ON THE PEREGRINE FALCON**

Prepared for:

U.S. Army Corps of Engineers
New York District
New York, New York 10278

Prepared by:

U.S. Fish and Wildlife Service
New Jersey Field Office
Ecological Services
Pleasantville, New Jersey 08252

Preparers:

Annette M. Scherer (Coordinator)
Catherine Zeeman, Ph.D.
Peter M. Benjamin

Assistant Project Leaders:

John C. Staples
Robert A. Frakes, Ph.D.

Project Leader: Clifford C. Day

December 1997

TABLE OF CONTENTS

	Page
I. INTRODUCTION	1
II. CONSULTATION HISTORY	1
III. BIOLOGICAL OPINION	3
A. DESCRIPTION OF THE PROPOSED ACTION	3
1. Kill Van Kull and New York Bay Navigation Channels	3
2. Arthur Kill / Howland Hook Navigation Channel	3
B. STATUS OF THE SPECIES RANGEWIDE	5
C. ENVIRONMENTAL BASELINE	7
1. Status of the Species Within the Action Area	7
2. Effects of the Action	8
a. <u>Disturbance</u>	8
b. <u>Contaminants</u>	9
(1) Effect Levels of PCDDs, PCDFs, and PCBs on Avian Species	10
(a) <u>Dioxins and furans in eggs</u>	11
(b) <u>Dioxins and furans in avian diets</u>	11
(c) <u>PCBs in eggs</u>	13
(d) <u>PCBs in avian diets</u>	13
(e) <u>Benchmarks for dioxins and furans in peregrine falcons</u>	16
(f) <u>Benchmark levels for PCBs in peregrine falcons</u>	17
(2) Potential Exposure	17
(a) <u>Concentrations of PCDDs, PCDFs and PCBs in project sediments</u>	17
(b) <u>Concentrations of PCDDs, PCDFs and PCBs in prey species from the project area</u>	18
(c) <u>Peregrine prey from the local aquatic based food web</u>	28
(d) <u>Current level of exposure in peregrines</u>	20
(3) Cumulative Effects	20
D. CONCLUSION	21

IV.	INCIDENTAL TAKE STATEMENT	21
A.	DEFINITION OF INCIDENTAL TAKE	21
B.	AMOUNT OR EXTENT OF TAKE	22
C.	EFFECT OF THE TAKE	23
D.	REASONABLE AND PRUDENT MEASURES	23
E.	TERMS AND CONDITIONS	24
V.	CONSERVATION RECOMMENDATIONS	26
VI.	REINITIATION - CLOSING STATEMENT	27
VII.	REFERENCES	28
A.	LITERATURE CITED	28
B.	PERSONAL COMMUNICATIONS	34

LIST OF FIGURES

		<u>Page</u>
FIGURE 1	Kill Van Kill and Newark Bay Navigation Channels Study Area . . .	4
FIGURE 2	Study Area for the Arthur Kill / Houlard Hook Navigation Channel	6

LIST OF TABLES

		<u>Page</u>
TABLE 1	Peregrine Falcon Breeding Summary	8
TABLE 2	Observed Effect Levels of TCDD and ICDD Equivalents in Bird Eggs	12
TABLE 3	Observed Effect Levels of PCB 77 and PCB 126 in Bird Eggs	14
TABLE 4	Observed Effect Levels of Total PCBs in Bird Eggs	15
TABLE 5	Observed Effect Levels of PCBs in Bird Diets	16

I. INTRODUCTION

This document represents the Service's biological opinion on the effects of channel deepening activities proposed by the New York District, U.S. Army Corps of Engineers (Corps) within the Arthur Kill, Kill Van Kull, and Newark Bay channels, New York and New Jersey, on the peregrine falcon (*Falco peregrinus*) in accordance with Section 7 of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) (ESA). This biological opinion addresses two separate, but adjacent, dredging projects proposed by the Corps: the Kill Van Kull and Newark Bay Navigation Channels project and the Arthur Kill / Howland Hook Navigation Channel project. Due to the similarity and proximity of the two projects, the Service and the Corps agreed that the projects should be addressed collectively for the purpose of determining project-related impacts to the peregrine falcon. No specific dredged material disposal sites were identified within the Corps project plans; therefore, this biological opinion does not address potential impacts to federally listed species from the disposal of project-generated dredged material. Further consultation pursuant to Section 7 of the ESA will be required if disposal sites for project-generated dredged material are identified within the vicinity of documented occurrences of federally listed species.

This biological opinion is based on information provided within the Corps' Limited Reevaluation Study, Deepening of the Arthur Kill / Howland Hook Navigation Channel (1986), Draft Environmental Assessment, Kill Van Kull / Newark Bay Federal Channels, New York and New Jersey, Phase II Deepening (1997a), Biological Assessment for the Peregrine Falcon (*Falco peregrinus*) in the Area of Arthur Kill, Kill Van Kull and Newark Bay, New York and New Jersey (1997b), and other information provided by the Corps for Service review. A complete administrative record of this consultation is on file in the Service's Ecological Services, New Jersey Field Office.

II. CONSULTATION HISTORY

October 22, 1976

The Service provided the Corps with a preliminary report on the fish and wildlife resources in the vicinity of the Kill Van Kull and Newark Bay navigation channels project (U.S. Fish and Wildlife Service, 1976). Peregrine falcon and bald eagles were noted as occasional transients through the project area. Informal consultation was concluded with a finding that the proposed project was not likely to adversely affect any federally listed species.

January 17, 1986

The Service provided the Corps with a final Fish and Wildlife Coordination Act report on the Arthur Kill / Howland Hook navigation project (U.S. Fish and Wildlife Service, 1986). The report noted that, except for occasional transient individuals, no federally listed species were known to occur in the project area.

Informal consultation was concluded with a finding that the proposed project was not likely to adversely affect any federally listed species.

June 1996

The Corps provided the Service with a limited re-evaluation study for the Arthur Kill / Howland Hook navigation project (U.S. Army Corps of Engineers, 1996). The report noted the presence of a peregrine falcon nest within the project area (Geethals Bridge).

June 28, 1996

The Service notified the Corps that the proposed Arthur Kill / Howland Hook navigation project may adversely affect the peregrine falcon, if the proposed dredging were to cause resuspension of contaminated sediments. The Service notified the Corps of its responsibility to prepare a Biological Assessment to address potential project-related effects to peregrine falcons.

March 12, 1997

The Corps provided the Service with its Biological Assessment of impacts to the peregrine falcon from the subject project and a determination that the peregrine falcon was likely to be adversely affected by proposed project activities (U.S. Army Corps of Engineers, 1997b).

May 16, 1997

The Service provided concurrence with the Corps finding of likely to adversely affect and provided written comments on the Corps Biological Assessment.

June 27, 1997

The Service received the Corps June 23, 1997 letter requesting initiation of formal consultation.

July 2, 1997

Representatives from the Corps and the Service met to review the formal consultation process, to discuss the subject project, and exchange information relevant to the consultation.

July 7, 1997

The Service received updated project site maps and additional information regarding sediment sampling strategies from the Corps.

July 17, 1997

The Service provided written acknowledgement of the Corps request for initiation of formal consultation and provided the Corps with the timeframes for the formal consultation period and anticipated date for issuance of the Service's Biological Opinion.

October 2, 1997

The Service provided the Corps with a draft of the Service's Biological Opinion on the subject project.

November 21, 1997

The Service received notification from the Corps via telephone that the Corps would not be providing comments on the Service's draft Biological Opinion.

III. BIOLOGICAL OPINION

A. DESCRIPTION OF THE PROPOSED ACTION

The project areas encompass two separate, but adjacent, dredging projects proposed by the Corps: the Kill Van Kull and Newark Bay Navigation Channels project and the Arthur Kill / Howland Hook Navigation Channel project. Due to the similarity and proximity of the two projects, the Service and the Corps agreed that the projects should be addressed collectively for the purpose of determining project-related impacts to the peregrine falcon. No specific dredged material disposal sites were identified within the Corps project plans; therefore, this biological opinion does not address potential impacts to federally listed species from the disposal of project-generated dredged material.

1. Kill Van Kull and Newark Bay Navigation Channels

The selected plan for the Kill Van Kull and Newark Bay Channels project includes the deepening of the federal navigation channels in the Kill Van Kull and lower Newark Bay from the previously authorized depth of 40 feet below mean low water (mlw) to a depth of 45 feet below mlw, plus a 2-foot allowance for safety clearance and maintenance to ensure project depth is achieved (U.S. Army Corps of Engineers, 1997a). Those portions of the Corps study area for the Kill Van Kull and Newark Bay Channels deepening project that are addressed within this biological opinion are shown in Figure 1. The estimated volume of material to be removed during construction of the improved navigation channel is 8.5 million cubic yards, including approximately 1.0 million cubic yards of rock. It is anticipated that some of the rock material could be removed with standard dredging equipment, while the remainder would require blasting.

The Final Environmental Impact Statement (FEIS) for the project was issued in 1980 (U.S. Army Corps of Engineers, 1980), and a supplemental FEIS was issued by the New York District in 1987 (U.S. Army Corps of Engineers, 1987). Phase I of the project (deepening the navigation channels to 42 feet below mlw) was completed in 1995. The rock that was removed during Phase I construction was used to create an artificial reef in the Atlantic Ocean off the shore of Sandy Hook, New Jersey. The non-rock material was disposed of at the Mud Dump Site, located in the Atlantic Ocean approximately 6 miles east of Sandy Hook. The current re-evaluation study is intended to update existing information to prepare for initiation of Phase II (deepening the navigation channel to 45 feet below mlw).

2. Arthur Kill / Howland Hook Navigation Channel

The recommended plan for the Arthur Kill / Howland Hook navigation channel deepening project includes the deepening of the federal navigation channel in the Arthur Kill and lower Newark Bay from the previously authorized depth of 35 feet below mlw to a depth of 41 feet below mlw from the confluence of the



Figure 1. Kill Van Kull and Newark Bay Navigation Channels Study Area

Arthur Kill channel with the Newark Bay and Kill Van Kull channels to the Howland Hook Marine Terminal, and to a depth of 40 feet below msl from the Howland Hook Marine Terminal to the Bayway and Tosco oil facilities; a total distance of approximately 3.1 miles. The recommended plan also includes selected bend widening and channel realignment to improve navigation safety. Those portions of the Corps study area for the Arthur Kill / Howland Hook navigation channel deepening project that are addressed within this biological opinion are shown in Figure 2. The estimated volume of material to be removed during construction of the improved navigation channel is 4.6 million cubic yards, including a large volume of rock to be removed via blasting. Additionally, project implementation would include the removal of the dilapidated U.S. Dike, located in Newark Bay, north of the navigation channel (U.S. Army Corps of Engineers, 1996).

The Final Environmental Impact Statement (FEIS) for the project was issued in 1986 (U.S. Army Corps of Engineers, 1985). The recommended plan was not implemented due to uncertainty regarding the effects of rock blasting on the foundation of the Goethals Bridge, the lack of commitment by the local project sponsor, and the absence of a tenant at the Howland Hook Marine Terminal. The Corps has since resolved the rock blasting issue and there is now a tenant at the Howland Hook Marine Terminal; therefore, the study has been revived (Burlas, pers. comm., 1996).

B. STATUS OF THE SPECIES RANGEWIDE

The American peregrine falcon (*Falco peregrinus anatum*) historically occurred throughout much of North America. In the early 1940s, the eastern United States peregrine falcon population was roughly estimated at 350 pairs. Following World War II, peregrine falcon populations declined precipitously in North America (U.S. Fish and Wildlife Service, 1987). Based on a survey conducted in 1975, the original eastern population of the American peregrine falcon was determined to be extirpated (Sylle et al., 1976). Research implicated the use of organochlorine pesticides, particularly DDT, as the primary cause of this decline (Risebrough and Peakall, 1988). Other less significant factors included shooting, natural predation, illegal egg collection, disease, human disturbance at nesting sites, and loss of habitat to human encroachment (U.S. Fish and Wildlife Service, 1987).

Due to population declines of the American peregrine falcon, the Service listed the subspecies in 1970 as endangered under the Endangered Species Conservation Act of 1969 (Public Law 91-135, 85 Stat. 275). The subspecies was later included as an endangered species on the United States list of endangered and threatened species on October 13, 1970 (35 Federal Register 16047) and subsequently was listed in 1973 as endangered under the ESA. Five recovery regions were established for the American peregrine Falcon: Alaska, Canada, Pacific Coast, Rocky Mountain / Southwest United States, and Eastern United States. The Eastern United States peregrine falcon recovery region is further subdivided into five recovery units: Mid-Atlantic Coast, Northern New York and New England, Southern Appalachians, Great Lakes, and Southern New England / Central Appalachians. New Jersey is included in the Mid-Atlantic Coast recovery unit (U.S. Fish and Wildlife Service, 1995). In 1995, the

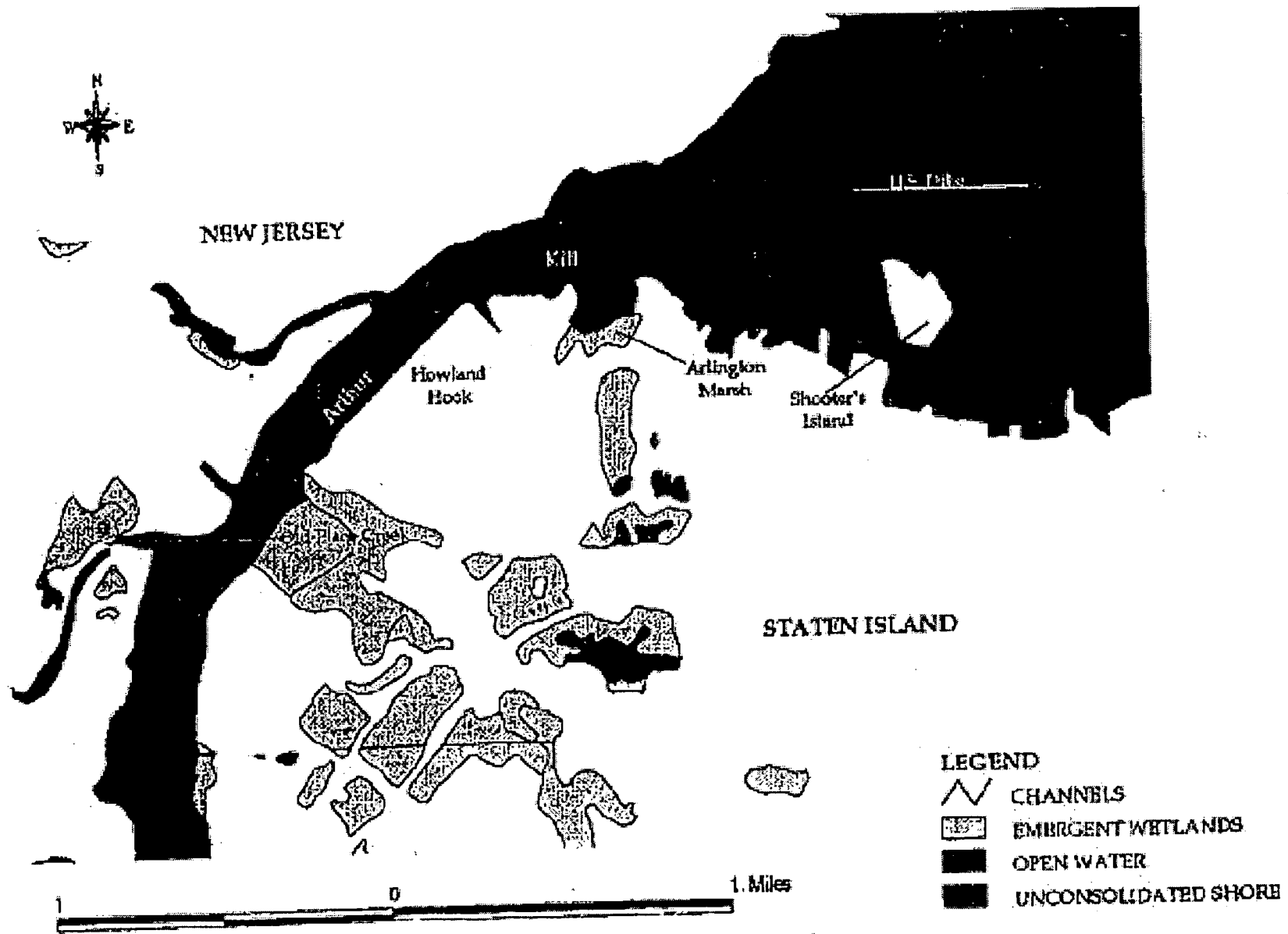


Figure 2. Study Area for the Arthur Kill/Howland Hook Navigation Channel

Service published an advance notice of intent to prepare a proposal to delist the peregrine falcon (U.S. Fish and Wildlife Service, 1995). However, the peregrine falcon has not yet been officially proposed for delisting. A final decision is pending while the Service reviews the scientific information received in response to the advance notice.

Following the ban on use of DDT and other organochlorine pesticides in the early 1970s, reintroduction programs were initiated that successfully re-established breeding populations of the peregrine falcon in the eastern United States (U.S. Fish and Wildlife Service, 1995). As a result of captive breeding programs, approximately 1,150 peregrines have been reintroduced into the eastern United States (The Peregrine Fund, 1996). By 1994, an estimated 145 pairs had established nesting territories and raised 248 young in the five recovery units within the Eastern United States recovery region. Although the rate of recovery varies somewhat among the four remaining recovery regions, positive trends in all areas suggest that peregrine falcon populations are recovering (U.S. Fish and Wildlife Service, 1995).

Peregrine falcons generally reach sexual maturity at three years of age. Usually, the male arrives at a nesting site and begins a series of acrobatic displays to attract a mate (U.S. Fish and Wildlife Service, 1987). Peregrines typically scrape shallow hollows for nests in gravel or debris on a ledge or bluff, in an area with a clear view of the surroundings (DeGraaf and Rudis, 1986). Reintroduced peregrines are also known to nest on tall buildings, bridges, and other man-made structures. Peregrines tend to return to the same nest each year and vigorously defend individual nesting territories. An average clutch of four eggs is laid in late March or April (U.S. Fish and Wildlife Service, 1987).

Peregrine falcons generally prefer open areas such as coastal marshes, high mountains, and open forested regions with rocky ledges overlooking rivers, lakes, or other water, near an abundance of prey items (DeGraaf et al., 1991). In the northeast, some peregrine falcons have adapted to a more urban environment, nesting and roosting on tall buildings or artificial nest structures. In the eastern United States, peregrines winter primarily along the Atlantic Coast on barrier beaches or in cities (DeGraaf and Rudis, 1986). Peregrines generally prey on common passerine birds, gulls, terns, shorebirds, wading birds, and waterfowl (U.S. Fish and Wildlife Service, 1987; Ehrlich et al., 1988).

C. ENVIRONMENTAL BASELINE

1. Status of the Species Within the Action Area

A total of 12 pairs of peregrine falcons are known to nest on buildings and bridges in the New York City metropolitan area (Clark, 1996; Nadarowski, pers. comm., 1997). Two of these peregrine falcon nesting sites occur within the project area at the Goethals and Bayonne Bridges. In addition, peregrines nesting on the Outerbridge Crossing may occasionally forage within wetland habitats that may be affected by resuspended sediments from the proposed project activities.

In general, overall productivity of bridge nesting pairs is low due to poor nest sites and disturbance. However, nesting success can be enhanced through the use of nesting boxes placed on bridges. A summary of breeding success for nesting peregrine falcon pairs that may be adversely affected by the proposed project is provided in Table 1.

Table 1. Peregrine Falcon Breeding Summary

Site Name	Nest Outcome (Young Hatched / Fledged)							
	1989	1990	1991	1992	1993	1994	1995	1996
Outerbridge Crossing	T ¹	T	T	T	T	T	AF ²	U ³
Goethals Bridge	-	T	T	T	4/4	3/3	3/3	AF
Bayonne Bridge	-	-	-	-	-	-	AF	T

- 1 Territorial pair observed during breeding season
- 2 Site Active breeding, but failed
- 3 Outcome Unknown

2. Effects of the Action

In evaluating the effects of the Federal action under consideration in this consultation, 50 CFR 402.2 and 402.14(g)(3) requires the Service to evaluate both the direct and indirect effect of the action on the species, together with the effects of other activities that are interrelated or interdependent with the action that will be added to the environmental baseline.

a. Disturbance

The direct effect of the action on peregrine falcons will be the disturbance created during the dredging operations. While the Service acknowledges that peregrines nesting within the New York City area appear to have adapted to daily levels of ambient noise and line-of-sight visual disturbances that are greater than levels found at tower or natural cliff sites, the threshold levels of disturbance that cause nest abandonment or stress-induced reproductive failure are not clearly understood and may vary from bird-to-bird. Dredging and blasting activities will necessitate human activity directly beneath the Goethals and Bayonne Bridges and will increase noise and use of equipment at these sites during the initial deepening activities and periodically during maintenance dredging operations over the life of the project (50

years). These activities may cause the birds to abort a nesting attempt during a particular year or may disturb the birds during incubation by causing stress or by flushing the incubating bird off of the nest. During such disturbance, eggs could be expelled from the nest inadvertently by adults. Excessive stress during incubation could cause increased metabolism, which could increase the need for food. This additional need would lengthen the amount of time the birds are required to spend away from the nest engaged in foraging activity. Egg cooling could result, causing the death of one or more embryos. Disturbance from dredging activities could have similar effects on hatchlings by causing increased stress and therefore increased food demands on adults and hatchlings. Disturbance-induced stress on hatchlings could result in their exiting the nest prematurely and may result in unfledged birds falling from the nesting support structure. Such breeding interruptions could cause nest abandonment, reduced clutch size, embryo death, malnutrition of hatchlings or adults, and/or premature nest departure and death of fledglings.

Due to the transient nature of peregrine falcons during the non-breeding season, the Service does not anticipate adverse impacts to non-nesting birds. If flighted birds are disturbed by construction activities during the non-breeding season, they will most likely move to other similar habitat for roosting, resting, and feeding.

b. Contaminants

Indirect effects are defined as those that are caused by the proposed action and are later in time, but are still reasonably certain to occur (50 CFR 402.02). Channel deepening may result in the resuspension and redistribution of sediments that contain high levels of contaminants. While suspended, contaminated sediments may be transported into shallow water habitats that attract and support wildlife, which in turn may comprise a prey base for peregrine falcons.

Contaminants that bioaccumulate have the potential to increase in concentration through trophic transfer to levels in resident biota that are harmful to their predators. Due to its high position in the food chain, the peregrine falcon is at risk of significant dietary exposure to persistent, bioaccumulating environmental contaminants.

Because of the concentrations that have been found in the system, and their toxicity, persistence, and potential for bioaccumulation, polychlorinated dibenzo-p-dioxins (PCDDs, or dioxins), polychlorinated dibenzofurans (PCDFs, or furans) and polychlorinated biphenyls (PCBs) are considered the contaminants of concern (COCs) in the sediments within the proposed project area.

Dioxins and furans are a family of 210 compounds of which the most familiar and most toxic is 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). The other dioxin and furan congeners have the same effects as TCDD, but are less potent. Common effects of TCDD and related compounds in avian

species include, but are not limited to, wasting syndrome, immunotoxicity, reproductive impairment, porphyria, and liver damage. Dioxins and dioxin-like compounds accumulate in birds primarily through dietary exposure. Portions of the substances accumulated in the tissues of female birds are translocated to eggs where they have the potential to cause embryotoxicity (e.g., Nosak et al., 1991; 1993). Developing embryos and young are more sensitive than adults to the toxic effects of dioxins, and symptoms of dioxin toxicity are species-specific (Hoffman et al., 1996). Depending on the species, the most sensitive signs of toxicity in exposed avian embryos may be enzyme induction, gross deformities, or mortality (Nosak et al., 1993).

Polychlorinated biphenyls are a group of 129 compounds, of which the most toxic are congeners that assume a coplanar conformation similar to that of TCDD (Hoffman et al., 1996). Because they are dioxin-like, coplanar PCBs add to the potential for adverse effects caused by exposure to TCDD. Although coplanar PCBs have the same effects as TCDD, they are not as potent as TCDD. Dioxin-like PCBs have been shown to cause embryo mortality in wildlife species such as ring-necked pheasant (*Phasianus colchicus*), mallard (*Anas platyrhynchos*), goldeneye (*Bucephala clangula*) and black-headed gull (*Larus ridibundus*) (Strunstrom, 1980; Brunstrom and Rautergardh, 1986). A clear picture of congener-specific toxicity has not yet emerged. The potency of individual congeners is highly dependent on both the test species and the measured response (Hoffman et al., 1996). Congeners 77 and 126 appear to be the most potent of the coplanar congeners.

Most of the PCBs are non-coplanar compounds that exert toxicity separate from that of the dioxin-like congeners. Toxicological effects observed with PCBs, which are generally present as complex mixtures (Aroclors), depend on the mixture and the species of the receptor. Death, reproductive failure, immunosuppression, liver damage, and wasting syndrome have been attributed to PCB exposure in wildlife (Hoffman et al., 1996).

(1) Effect Levels of PCDDs, PCDFs, and PCBs on Avian Species

The potential for adverse effects was assessed by considering effect levels for dioxins, furans and PCBs in eggs and in the diet. As lipophilic compounds, dioxins, furans and PCBs are readily transferred from the adult female to the egg. Therefore, measured contaminant concentrations in eggs can indicate the potential for reproductive failure, as well as provide an indication of exposure of the female bird to contaminants prior to egg-laying.

Diet is the primary route of exposure for the COCs. Consequently, dietary effect levels provide a measure of exposure when direct measures are not possible.

(a) Dioxins and furans in eggs

Effect levels have been identified for TCDD alone and in combination with other less-potent dioxin and furan congeners. Concentrations of dioxin / furan mixtures are expressed in terms of TCDD equivalents (TCDD-EQ), using conversion factors for the non-TCDD dioxins, furans, and dioxin-like PCBs such as those described by Ahlborg et al. (1992; 1994) and Hoffman et al. (1996).

Concentrations in eggs of TCDD and TCDD-EQ associated with adverse effects are shown in Table 2. As indicated, TCDD concentrations at which adverse effects have been observed among avian embryos in laboratory studies have ranged from 6 parts per trillion (ppt) in chickens to 2,200 ppt in ring-necked pheasants. Reports of TCDD and TCDD-EQ concentrations associated with adverse effects in wild populations have ranged from approximately 20 ppt to 230 ppt in a variety of species.

(b) Dioxins and furans in avian diets

No reports have been found relating dietary TCDD or TCDD-EQ concentrations to adverse effects in birds. However, in studies on resident gulls from Lake Ontario, Braune and Norstrom (1989) related concentrations of PCDDs, PCDFs and PCBs in bird tissues and eggs to concentrations in fish upon which the gulls feed. Because the birds were resident, contaminant concentrations in their tissues were assumed to be steady state. Braune and Norstrom (1989) observed that the concentration of TCDD in gulls was 32 times that in their diet. The concentration of TCDD in eggs was 21 times that measured in fish. Factors observed by Braune and Norstrom (1989) provide a preliminary means for back calculating from effect levels in eggs to potential effect concentrations in the diet of the egg-laying parent. Using factors from Braune and Norstrom (1989) and effect levels summarized in Table 2, it is estimated that dietary TCDD concentrations that may lead to unsafe levels in eggs range from 0.3 ppt to 105 ppt.

Table 2. Observed Effect Levels of TCDD and TCDD Equivalents in Bird Eggs

Species	Endpoint	Effect Level	Reference
TCDD (pg/g or parts per trillion)			
Chicken	embryo mortality in egg injection study (onset)	10 - 20	Verrett, 1970 (as cited by Hoffman et al., 1996)
	cardiovascular malformations in egg injection study (20% increase)	6	Cheung et al., 1981
	embryo mortality in egg injection study (median)	147	Verrett, 1976
	embryo mortality in egg injection study (median)	250	Allred and Strange, 1977 (as cited by Nosek et al., 1993)
	embryo mortality in egg injection study (100%)	1,000	Higginbotham et al., 1968
Ring-necked pheasant	embryo mortality in egg injection study (median)	1,300 - 2,200	Nosek et al., 1993
Eastern bluebird	embryo mortality in egg injection study (median)	<10,000	Nosek et al., 1993
Great blue heron	brain asymmetry in wild populations	211	Hanberg et al., 1995 (as cited by Hoffman et al., 1996)
TCDD EQUIVALENTS (pg/g or parts per trillion)			
Great blue heron	reproductive failure in wild populations	230	Elliott et al., 1989
Wood duck	reproductive impairment threshold	20 - 50	White and Seginak, 1994
Forster's tern	No effect in wild populations	23	Tillitt et al., 1993
	embryotoxicity, poor hatching success, congenital deformities in wild populations	215	Tillitt et al., 1993
Double-crested cormorant	embryo mortality increased in wild populations	85	Tillitt et al., 1992

(c) PCBs in eggs

Observed effect levels in eggs of individual PCB congeners and Aroclor mixtures (total PCBs) are shown in Tables 3 and 4, respectively. Studies on PCBs historically related effects to total Aroclor concentrations. More recent studies have focused on individual congeners. Results of both kinds of studies are provided to: (1) better define critical effect levels, and (2) enable comparisons with earlier studies in which concentrations are reported as total PCBs.

Depending on the species examined, the toxicity associated with individual coplanar PCB congeners has been shown to range over several orders of magnitude (Table 3). Concentrations of PCB 77 as low as 3 ppb have caused mortality in chicken embryos whereas concentrations as great as 5,000 ppb have had no discernable effect on duck embryos. Observed adverse effect levels of PCB 126 are lower than those reported for PCB 77. Concentrations of PCB 126 that cause median lethality among exposed embryos range from 0.3 ppb in chickens to 65 ppb in American kestrel. Although reduced hatching success and embryo mortality are commonly reported effects of exposure to PCBs 77 and 126, other adverse effects have been observed as well (Table 3).

Total PCB concentrations greater than 5 parts per million (ppm) have been shown to reduce egg hatchability and cause embryotoxicity such as edema, growth retardation, and deformities in laboratory birds (Platonow and Reinhart, 1973, as cited by Hoffman et al., 1996). Results of egg injection studies indicate that total PCB concentrations associated with embryotoxicity have ranged from 0.05 ppm for chickens to 105 ppm for mallards (Table 4).

(d) PCBs in avian diets

Potential dietary effect levels for individual PCB congeners may be estimated using biotransfer factors measured by Braune and Norstrom (1989) for tetra-, penta-, and hexachloro- PCB congeners in herring gulls. Results of their study showed that concentrations of PCBs in gulls were 68 times the concentration in their diet. The PCB concentration in gull eggs was 26 times that measured in fish. Based on effect levels in eggs shown in Table 3, estimated dietary PCB 77 concentrations that may lead to embryotoxicity range from approximately 0.12 to 38 ppb. Estimated dietary PCB 126 concentrations that may lead to embryotoxicity range from 0.02 to 2.5 ppb.

Studies on dietary effect levels of total PCBs have been conducted with Aroclor mixtures. Reproductive effect levels observed with Aroclor mixtures are summarized in Table 5. Dietary effect levels that have been observed with Aroclor 1254 range from 5 to 33 ppm. Limited data indicate that effect levels for Aroclors 1242 and 1248 are also within that range.

Table 3. Observed Effect Levels of PCB 77 and PCB 126 in Bird Eggs

Species	Endpoint	Effect Level	Reference
PCB 126 (ng/g or parts per billion)			
Chicken	embryo mortality in egg injection study (median)	0.4 - 3	Hoffman et al., 1998 Brunstrom and Andersson, 1988
American kestrel	embryo mortality (10%), hatchling weight, liver weight, edema and malformations, in egg injection study	2.3	Hoffman et al., 1998
	embryo mortality (24%), hatchling weight, liver weight, edema and malformations in egg injection study	23	Hoffman et al., 1998
	embryo mortality in egg injection study (median)	65	Hoffman et al., 1998
Bobwhite	embryo mortality in egg injection study (median)	24	Hoffman et al., 1995*
Common tern	embryo mortality in egg injection study (35%)	45	Hoffman et al., 1995*
	embryo mortality in egg injection study median	104	Hoffman et al., 1998
PCB 77 (ng/g or parts per billion)			
Chicken	embryo mortality in egg injection study (median)	3 - 40	Hoffman et al., 1998 Brunstrom and Andersson, 1988 Vos et al., 1982*
American kestrel	reduced hatching in egg injection study (40%)	100	Hoffman et al., 1998
Turkey	embryo mortality in egg injection study	200 - 1,000	Brunstrom and Lund, 1988*
Mallard	no effect in egg injection study	5,000	Brunstrom, 1988
Goldeneye	no effect in egg injection study	5,000	Brunstrom, 1988

* As cited in review by Hoffman et al., 1995

Table 4. Observed Effect Levels of Total PCBs in Bird Eggs

Species	Endpoint	Effect Level	Reference
Total PCB (µg/g or parts per million)			
Chicken	embryo mortality in egg injection study	10 (Aroclor 1242)	Blazak and Markam, 1973*
	reduced hatching in egg injection study	5 (Aroclor 1248)	Brunstrom and Orberg, 1982*
	reduced enzyme activity in egg injection study	0.03 - 0.10 (Aroclor 1234)	Srebocan et al., 1977*
Ringed turtle dove	embryo mortality, parental insitention in parental diet study	16 (Aroclor 1254)	Peakall and Peakall, 1973*
Forsters turn	hatchability 50% below normal in wild populations	6 - 26 (total PCB)	Kubiak et al., 1989
White-tailed sea eagle	No effect in a wild population	5 - 10 (total PCB)	Helander et al., 1982*
	Increased incidence of bill defects in a wild population	19 - 159 (total PCB)	Helander et al., 1982*
Mallard	decreased eggshell thickness in parental diet study	165 (Aroclor 1242)	Haseltine and Prouty, 1980*
Screech owl	no effect in parental diet study	4 - 18 (Aroclor 1248)	McLano and Hughes, 1980
Atlantic puffin	no effect, parent dosed by implant	10 - 81 (Aroclor 1254)	Harris and Osborn, 1981*

* As cited in review by Hoffman et al., 1996

Table 5. Observed Effect Levels of PCBs in Bird Diets

Species	Endpoint	Effect level (ug/g or ppm)	Reference
American kestrel	reduced semen quality	33 (Aroclor 1254)	Bird et al., 1983
mallard	no effect on reproductive success	25 (Aroclor 1254)	Custer and Heinz, 1980
mourning dove	courtship behavior	10 (Aroclor 1254)	Tori and Peterle, 1983
chicken	egg hatchability	20 (Aroclor 1242)	Britton and Huston, 1973
	reduced egg production	5 (Aroclor 1254)	Platonow and Reinhan, 1973 (as cited by USEPA, 1995)
	reduced chick growth	2 (Aroclor 1248 or 1254)	Lillie et al., 1974 (as cited by USEPA, 1995)

(c) Benchmarks for dioxins and furans in peregrine falcons

Three toxicity threshold concentrations were used to evaluate potential for toxicity by dioxins and furans in peregrine eggs. The benchmarks are as follows.

- (i) A concentration of 10 ppt was selected as the benchmark for effects in sensitive species for TCDD and TCDD-EQ. This concentration has been demonstrated to cause embryonic mortality, edema, and teratogenic effects in the most sensitive avian species (i.e., chicken) (Verratt, 1970). The 10 ppt benchmark has also been used in the Great Lakes Initiative to evaluate the sublethal effects of TCDD (U.S. Environmental Protection Agency, 1995). TCDD-EQ levels exceeding the 10 ppt toxicity reference value would be predictive of the above toxicological effects in sensitive species.
- (ii) A TCDD-EQ concentration of 50 ppt is the toxicity benchmark for documented effects in wild birds. Eggs with TCDD-EQ concentrations greater than 50 ppt have been associated with effects on reproduction or development in wood ducks, Forster's terns, and double-crested cormorants.
- (iii) A TCDD-EQ concentration of 147 ppt is the benchmark for embryonic lethality. This concentration caused median lethality in chickens (Verratt, 1976).

Preliminary estimates of dietary concentrations that may result in benchmark concentrations for TCDD in eggs are 0.03 ppt for adverse effects in sensitive species, 2.4 ppt for observed effect levels in wild avian species, and 7.0 ppt for lethality.

(F) Benchmark levels for PCBs in peregrine falcons

Benchmark concentrations were identified for PCB 77, PCB 126 and total PCBs in eggs to evaluate potential for embryotoxicity in peregrines. The benchmark for PCB 126 is 2.3 ppb and the benchmark for PCB 77 is 100 ppb. These values are based on studies with closely related species and represent observed increases in embryonic mortality of 10 and 40 percent, respectively (Hoffman et al., 1998).

The estimated dietary concentrations of PCB 126 and PCB 77 that correspond with benchmark concentrations and potential effects in eggs are 0.09 ppb and 3.8 ppb, respectively.

A benchmark of 5 ppm was selected for total PCBs in eggs. This benchmark is based on effect levels observed with eggs of laboratory birds. Concentrations greater than 5 ppm have been shown to reduce egg hatchability and cause embryotoxicity in laboratory birds (Hoffman et al., 1996). The selected benchmark is comparable to conclusions of Kubiak and Best (1991) and Malander et al. (1982), who independently determined that a level of 5 to 10 ppm or less in eggs was necessary for "healthy" reproduction in eagles (as cited in Hoffman et al., 1996).

An observed effect level of 3 ppm was selected as the benchmark for total PCBs in the diet. Dietary concentrations greater than 3 ppm have resulted in reduced fertility and chick growth in chickens (Lillis et al., 1974; Platonow and Reinhart, 1973).

(2) Potential Exposure

The potential for peregrine falcons to be exposed and adversely affected by dioxins, furans and PCBs as a result of the proposed project depends on a number of factors. Major factors to consider include: (1) the concentration of contaminants in project sediments; (2) contaminant levels in components of the aquatic food web; (3) peregrine consumption of prey from local aquatic-based food webs; and, (4) the current level of exposure in peregrines.

(A) Concentrations of PCDDs, PCDFs and PCBs in project sediments

Contaminant concentrations have not yet been measured in project sediments per se (U.S. Army Corps of Engineers, 1997a). Using bathymetry, the U.S. Army Corps of Engineers (1997a) estimated that only 30 percent of the material to be removed from the Kill Van Kull / Newark Bay project will be contaminated. Approximately 70 percent of the material to be removed for the Arthur Kill / Howland Hook project is

expected to bear significant levels of contamination. Portions of the projects that entail removal of sand, rock, and bedrock raise no contaminant-related concerns. Fine-grained sediment that has been chemically analyzed and shown to have relatively low levels of contamination (e.g., preindustrial subsurface sediment) is also of no concern from a contaminants perspective.

Fine-grained sediments deposited since approximately 1945 are assumed to have high levels of COCs, among other contaminants. Studies conducted by the National Oceanic and Atmospheric Administration (NOAA) (1995) provide some indication of dioxin and PCB concentrations in surface sediments from the project areas. The mean concentrations of TCDD observed by NOAA (1995) in the top two centimeters of sediments from 53 Newark Bay stations was 100 ppt, with a range of 5 ppt to 453 ppt. Bopp et al. (1991) observed TCDD concentrations between 230 ppt and 310 ppt in surface sediments from three Newark Bay locations. Neither study determined TCDD concentrations in Arthur Kill sediments. Total PCB concentrations found by NOAA (1995) were between 400 and 2,000 ppb (mean of 800 ppb) in Newark Bay sediments and between 200 ppb and 800 ppb (mean of 530 ppb) in Arthur Kill sediments.

The TCDD concentrations reported by NOAA (1995) are among the highest for sediments from dioxin-contaminated sites in the United States (U.S. Environmental Protection Agency, 1993). Similarly, total PCB concentrations observed by NOAA (1995) in Newark Bay and Arthur Kill sediments are comparable to the highest (top 13) reported by NOAA (1988) for sediments from 200 coastal and estuarine sites throughout the United States. Results of the study by Bopp et al. (1991) demonstrate that the TCDD concentration in subsurface sediments deposited between approximately 1945 and 1970 may be an order of magnitude higher (i.e., over 1,000 ppt). If the highly contaminated subsurface sediments are resuspended during dredging and migrate into neighboring shallow water habitats, contaminant concentrations in surface sediments in those areas may be significantly increased.

(b) Concentrations of PCDDs, PCDFs and PCBs in prey species from the Project Area

No data have been found on dioxin, furan, and PCB concentrations in avian species likely to be consumed by peregrine falcons in the New York - New Jersey Harbor area. However, concentrations of PCBs have been measured in peregrine prey species from less contaminated aquatic-based systems in New Jersey (U.S. Fish and Wildlife Service, 1991). Willet (*Catoptrophorus semipalmatus*), fish crow (*Corvus ossifragus*) and short-billed dowitcher (*Limnodromus griseus*) are among the species identified as preferred prey for peregrine falcons nesting in coastal areas of Cape May County, New Jersey (Steidl, 1990). Samples of the first two species were collected in 1989 for chemical analysis by the Service (1991). Total PCB concentrations observed in willet and fish crows were 0.38 ppm and 1.7 ppm, respectively. Such PCB concentrations approach the benchmark of 5 ppm for effects in sensitive species.

Results of the Service's (1991) study demonstrate that: (1) peregrine falcons may be exposed to bioaccumulating contaminants transported through aquatic-based food webs; and, (2) PCB loads in potential peregrine prey species from areas in New Jersey with less contamination than the New York - New Jersey Harbor approach dietary effect levels for avian species.

Results of studies conducted since 1983 demonstrate that aquatic biota in the Newark Bay system contain unusually high levels of dioxins and PCBs. Concentrations of TCDD measured in filets of finfish species have ranged from 1.7 ppt in winter flounder (*Pleuronectes americanus*) (Skinner et al., 1997a) to more than 31 ppt in filets of adult striped bass (*Morone saxatilis*) (Belton et al., 1985; Skinner et al., 1997a). Concentrations of TCDD measured in the muscle of blue crabs (*Callinectes sapidus*) from Newark Bay range from 3 ppt to 30 ppt (Skinner et al., 1997a; Cai et al., 1994), whereas concentrations in the hepatopancreas range from 155 ppt to 620 ppt (Belton et al., 1985; Skinner et al., 1997a; Cai et al., 1994). Concentrations of total PCBs observed by Skinner et al. (1997b) in Newark Bay biota were between 0.12 ppm and 4.7 ppm in finfish filets (13 species sampled), approximately 0.25 ppm in two species of bivalve mollusks, 0.05 ppm in blue crab muscle, and 6.6 ppm in blue crab hepatopancreas. Studies to determine whole body TCDD and PCB concentrations in Newark Bay finfish were recently undertaken by the Service's New Jersey Field Office to specifically address ecological concerns. Preliminary results indicate that mean whole body TCDD concentrations in white perch (*Morone americana*) and juvenile striped bass from Newark Bay are 153 ppt and 27 ppt, respectively. Once computed, whole body TCDD-EQ concentrations will be even greater due to the presence of other dioxin congeners, furans, and coplanar PCBs. Mean whole body concentrations of total PCBs were found to be 2.9 ppm in white perch and 1.8 ppm in juvenile striped bass (U.S. Fish and Wildlife Service, unpublished data).

Concentrations of TCDD observed in finfish from Newark Bay are among the highest reported for fish from sites throughout the United States. According to the U. S. Environmental Protection Agency (1993), the maximum TCDD concentration observed in fish collected in 1983 from 395 locations for the National Dioxin Survey was 85 ppt. By comparison, the maximum concentration observed in white perch from Newark Bay was 208 ppt (U.S. Fish and Wildlife Service, unpublished data). Concentrations of total PCBs in Newark Bay finfish are typical of total PCB concentrations (1 ppm to 15 ppm) reported for finfish from marine ecosystems with sources of local contamination (Nimis, 1996). Species that routinely consume fish from Newark Bay are expected to have correspondingly high levels of TCDD and PCBs in their tissues, as has been documented for Lake Ontario gulls (Braune and Norstrom, 1989).

(c) Peregrine prey from the local aquatic-based food web

Avian species whose diets may include highly contaminated fish from the Newark Bay system include terns and colonial nesting water birds (egrets, herons, and cormorants) that comprise the "Harbor Herons" (U.S. Fish and Wildlife Service, 1996). Studies on species consumed by peregrine falcons nesting in Manhattan are reviewed in the biological assessment conducted by the U.S. Army Corps of Engineers (1997b). As indicated, preliminary analyses by the New York City Department of Environmental Conservation indicate that peregrines residing in the city primarily consume rock dove (*Columba livia*), blue jay (*Cyanocitta cristata*) and European starling (*Sturnus vulgaris*). However, prey taken by peregrines nesting nearer the water was not determined. Peregrines are known to consume a variety of species that include grebes (Podicipodidae), small herons, ducks, coots (*Fulica americana*), small gulls and terns (Bent, 1961). Willot, Fish crow, and short-billed dowitcher were found by Steidl (1990) to constitute nearly 50 percent of the biomass in the diet of peregrine falcons nesting in coastal Cape May County, New Jersey. It is assumed for this biological opinion that species linked with the aquatic food web are a significant portion (up to 50 percent by mass) of the diet of peregrines residing in the New York - New Jersey Harbor area.

(d) Current level of exposure in peregrines

Whether increased environmental dioxin and PCB levels caused by the proposed project will be sufficient to adversely affect peregrines depends in part on pre-project contaminant levels in peregrines and their eggs. If exposure levels are high to begin, even small increases in exposure may result in the exceedance of thresholds for adverse effects.

In recent studies reported by the Service and New Jersey Department of Environmental Protection (1997), previously collected non-viable peregrine falcon eggs from nests in coastal areas of southern New Jersey were analyzed for PCBs and dioxins. The mean concentration of TCDD-EQ in eggs from Atlantic coast nests was 496 ppt. This concentration exceeds benchmark levels at which adverse effects are expected in peregrine falcons. Contaminant levels have not been measured in eggs of peregrines from the New York - New Jersey Harbor area. However, the dioxin and PCB concentrations are expected to be higher than those observed in eggs from less contaminated coastal areas in New Jersey. It is likely that current exposure levels are significant and even small increases will have adverse effects.

(3) Cumulative Effects

Cumulative effects include the effects of future State, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future federal actions that are unrelated to the proposed action are not considered in this section

because they require separate consultation pursuant to Section 7 of the ESA. No specific dredged material disposal sites were identified within the Corps project plans; therefore, this biological opinion does not address potential impacts to federally listed species from the disposal of project-generated dredged material. Further consultation pursuant to Section 7 of the ESA will be required if disposal sites for project-generated dredged material are identified within the vicinity of documented occurrences of federally listed species.

Indirect cumulative effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur. Indirect cumulative effects on peregrine falcons will occur from increased shipping traffic within federal navigation channels beneath the Goethals, Bayonne, and Outerbridge Crossing bridges, potentially causing increased stress on peregrine falcons nesting at these sites.

D. CONCLUSION

After reviewing the current status of the peregrine falcon, the environmental baseline for the action area, the effects of the proposed dredging projects and the potential cumulative effects, it is the Service's biological opinion that the channel deepening activities proposed by the Corps within the Arthur Kill, Kill Van Kull, and Newark Bay channels, New York and New Jersey, are not likely to jeopardize the continued existence of the peregrine falcon. No critical habitat has been designated for this species; therefore, no critical habitat will be affected.

IV. INCIDENTAL TAKE STATEMENT

A. DEFINITION OF INCIDENTAL TAKE

Sections 4(d) and 9 of the ESA, as amended, prohibit take (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns, which include, but are not limited to, breeding, feeding or sheltering. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by a Federal agency or an applicant. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be implemented by the Corps so that they become binding conditions of any grant, permit, or contract issued to an applicant or contractor, as appropriate, in order for the exemption in Section 7(e)(2) to apply. The Corps has a continuing responsibility to regulate the activity covered by this incidental take statement. If the Corps: (1) fails to require adherence to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit, grant, or contract document and / or, (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of Section 7(e)(2) may lapse.

B. AMOUNT OR EXTENT OF TAKE

The Service anticipates that channel deepening activities proposed by the Corps within the Arthur Kill, Kill Van Kull, and Newark Bay channels, New York and New Jersey, could result in unsuccessful nesting attempts, nest abandonment, or impaired reproduction in up to three pairs of peregrine falcons each year for the life of the project (50 years). The incidental take is expected to occur in the form of harassment of adults and their progeny and impaired reproduction in up to three pairs of peregrine falcons, resulting in the loss of up to four peregrine falcon fledglings (total) per year over the life of the project. This level of take is based on the current number of pairs occupying the project area and current nest outcome. The Service anticipates that this level of incidental take of peregrine falcons will be difficult to detect because identifying the precise source of reproductive impairment in an individual bird or a non-viable egg is unlikely.

Take in the form of harassment would result from increased audible and visual disturbance to peregrines during project construction. Although peregrine falcons nesting on the Goethals, Bayonne, and Outerbridge Crossing bridges are currently subjected to a great deal of ambient noise, sounds associated with construction will be louder and more constant than those to which peregrines at these sites have become accustomed. Such noises may include human voices, generators, cranes, dredges, waterborne vessel motors, and blasting devices. Increased human and watercraft presence in the vicinity of the nesting sites may increase line-of-sight visual disturbance. Harassment will continue after construction through periodic maintenance dredging and increased shipping activity in the immediate vicinity of Goethals, Bayonne, and Outerbridge Crossing bridges.

Take in the form of reproductive impairment would result from audible and visual disturbance and from exposure to contaminants due to resuspension and redistribution of previously buried sediments containing exceptionally high levels of dioxins and PCBs. This conclusion of reproductive impairment due to contaminant exposure is based on evidence that sediments in Newark Bay and the Kill Van Kull have high levels of dioxins and PCBs, and that concentrations may be an order of magnitude higher in subsurface sediments. There is also evidence that biota in the Newark Bay system have among the highest observed levels in the United States of dioxins and PCBs in their tissues.

Evidence from studies conducted outside the New York - New Jersey Harbor area indicates that: (1) avian species that consume aquatic biota may accumulate dioxins and PCBs to levels that are 30 (dioxins) to 68 (PCBs) times those in the diet; (2) the diet of peregrine falcons nesting in coastal areas may include birds that consume aquatic biota; and, (3) peregrines nesting in coastal, less contaminated parts of New Jersey currently experience dioxin and PCB exposures that exceed thresholds for adverse effects.

Given existing levels of contamination in the system, peregrine falcons feeding in the area of the proposed project are likely to have levels of dioxins and PCBs in their diets and their tissues that exceed thresholds for adverse effects. Activities that increase the concentration of dioxins and PCBs available for uptake by aquatic biota, such as resuspension of subsurface sediments, will only add to the frequency and / or severity of adverse effects that may result.

This assessment is based on assumptions that: (1) existing levels of dioxins and furans in peregrine falcons from the New York - New Jersey Harbor area exceed thresholds for adverse effects; (2) avian species that consume aquatic biota from Newark Bay accumulate dioxins and PCBs to levels in their tissues that exceed dietary benchmarks for adverse effects in peregrines; (3) avian species that consume aquatic biota from Newark Bay constitute a significant component of the peregrine diet; and, (4) resuspension of highly contaminated subsurface sediments will effectively increase the amount of dioxins and PCBs available for uptake by food web organisms. Studies that address the aforementioned assumptions would reduce uncertainty about the potential for peregrine falcons to experience significant exposure to dioxins and PCBs from the proposed project.

C. EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

D. REASONABLE AND PRUDENT MEASURES

The Service has concluded that the following reasonable and prudent measures are necessary and appropriate to minimize take of peregrine falcons.

1. Implement time-of-year restrictions on channel construction / maintenance activities to minimize the likelihood that nesting birds will abandon the nest or that unfledged young will die.
2. Reduce the likelihood of peregrine falcon exposure through the aquatic food web to resuspended and redistributed contaminants due to channel deepening activities.

E. TERMS AND CONDITIONS

In order to be exempt from the prohibitions of Section 9 of the ESA, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary.

1. During each year of the period of project construction, the Corps must conduct surveys to monitor peregrine nesting activity on the Goethals and Bayonne Bridges. Surveys must be conducted by a qualified individual, approved by the Service, on a weekly basis during the period of March 1 through July 31 of each year, unless the Service has determined that nesting activity has been discontinued during that particular nesting season. The Corps must submit the results of each weekly survey to the Service's New Jersey Field Office within one week after the survey.
2. During the period of March 1 - July 31 of each year during project construction and subsequent maintenance dredging, if nesting is confirmed, the Corps may not conduct any construction activities within 0.25 mile of a peregrine falcon nest. No operation of waterborne channel deepening equipment will be allowed within a 0.25-mile radius of the point directly below the nest at the river surface. If nesting is confirmed, this 0.25-mile radius must be marked by buoys between March 1 and July 31 of each year while construction or maintenance is ongoing. These conditions must be adhered to unless the following conditions exist and have been agreed to by the Service:
 - a. the nest has been abandoned, or
 - b. the nestlings have fledged prior to July 31 and it is determined that construction conducted after fledging and before July 31 will have no effect on the fledged peregrine falcons or their parents, or
 - c. all hatchlings have been removed from the nest for biological purposes by qualified, Service-approved individuals.
3. Conduct both surface and subsurface testing of potentially contaminated (i.e., fine grained) materials for dioxins and PCBs.
4. Use environmentally sensitive methods for dredging, such as closed clamshell dredge and no barge overflow or other best management practices, in reaches with potentially contaminated (i.e., fine grained) materials unless chemical analysis of surface and subsurface sediments demonstrates that dioxin and PCB levels are at or below the minimums reported by NOAA (1995) for surface sediments in Newark Bay (5 ppt TCDD and 400 ppb total PCBs).

5. Establish the baseline contaminant exposure levels in peregrine falcons nesting on the Goethals, Bayonne, and Outerbridge Crossing bridges and conduct monitoring to ensure exposure is not occurring through:
 - a. analysis of archived and any future non-viable eggs for congener-specific dioxins / furans, total PCBs, and coplanar PCBs; and.
 - b. analysis of specimens of dead peregrines for the above contaminant loads.

6. Determine the prey base of peregrine falcons nesting on the Goethals, Bayonne, and Outerbridge Crossing bridges to determine the potential pathway for exposure to resuspended bioaccumulating contaminants through:
 - a. analysis of any available archived prey items taken from the subject peregrine falcon nests; and / or,
 - b. observations of foraging activity by adult birds and of prey items fed to nestlings.

7. Monitor prey species by chemical analysis or non-destructive biomarkers (if available) for evidence of exposure to resuspended bioaccumulating compounds.

8. Care must be taken in handling any specimens of dead peregrine falcon adults, nestlings, or non-viable eggs to preserve biological material in the best possible state. In conjunction with the preservation of any specimens, the finder has the responsibility to ensure that evidence intrinsic to determining the cause of death of the specimen is not unnecessarily disturbed. The finding of dead or non-viable specimens does not imply enforcement proceedings pursuant to the ESA. The reporting of dead specimens is required to enable the Service to determine if take is reached or exceeded and to ensure that the terms and conditions are appropriate and effective. Upon locating a dead bird, initial notification must be made to the following Service Law Enforcement office:

Senior Resident Agent
U.S. Fish and Wildlife Service
Division of Law Enforcement
Hemisphere Center
Routes 1 & 9 South
Newark, New Jersey 07114
(201) 645-5910

Upon locating a non-viable egg specimen, initial notification must be made to the following Service office:

Supervisor
U.S. Fish and Wildlife Service
New Jersey Field Office
927 N. Main Street, Bldg. D-1
Pleasantville, New Jersey 08232
(609) 646-9310

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action. With implementation of these measures the Service estimates that no more than four non-viable peregrine falcon eggs or unfledged young will be incidentally taken per year. If, during the course of the action, this minimized level of incidental take is exceeded, such incidental take would represent new information requiring review of the reasonable and prudent measures provided. The Corps must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

V. CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of ESA directs federal agencies to utilize their authorities to further the purposes of ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitats, to help implement recovery plans, or to develop information.

- A. Conduct studies that will reduce uncertainty about exposure of peregrine falcons to dioxins and PCBs from sediments in the New York - New Jersey Harbor. Although this action may not reduce impacts per se, it will promote more refined estimates of impacts from dredging projects in the future. In so doing, concerns about potential contaminant-related impacts of dredging projects may be reduced.
- B. Monitor the effectiveness of dredged material containment methods to determine whether resuspended contaminated materials are migrating into shallow water habitats.

The Service must be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats; therefore, the Service requests notification of the implementation of any conservation recommendations.

VI. REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the effects of channel deepening activities proposed by the Corps within the Arthur Kill, Kill Van Kull, and Newark Bay channels, New York and New Jersey, on the peregrine falcon. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or, (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

VII. REFERENCES

A. LITERATURE CITED

- Ahlborg, U.G., A. Brower, M.A. Fingorhus, J.L. Jacobson, S.W. Jacobson, S.W. Kennedy, A.A.F. Kattrup, J.H. Koeman, H. Folger, C. Kappel, S.H. Safe, E.F. Seegal, J. Tuomisto, and M. Van Den Berg. 1982. Impact of polychlorinated dibenzo-p-dioxins, dibenzofurans, and biphenyls on human and environmental health, with special emphasis on application of the toxic equivalency factor concept. *European Journal of Pharmacology, Environmental Toxicology and Pharmacology Section*. 228:179-199.
- Ahlborg, U.G., G.C. Becking, L.S. Birnbaum, A. Brower, H.J.G.M. Derks, M. Feeley, G. Golor, A. Hanberg, J.G. Larsen, A.K.D. Lien, S.H. Safe, C. Schlatter, F. Waern, M. Younes, and E. Yrjanheikki. 1984. Toxic equivalency factors for dioxin-like PCBs. *Chemosphere* 28(6):1049-1057.
- Allred, P.M. and J.R. Strange. 1977. The effects of 2,4,9-trichlorophenoxyacetic acid and 2,3,7,8-tetrachlorodibenzo-p-dioxin on developing chicken embryos. *Archives of Environmental Contamination and Toxicology* 5:483-489.
- Belton, I.J., R. Hazen, B.E. Ruppel, K. Lockwood, R. Mueller, E. Stevenson, and J.J. Post. 1985. A study of dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin) contamination in select finfish, crustaceans and sediments of New Jersey waterways. New Jersey Department of Environmental Protection, Office of Science and Research, Trenton, New Jersey.
- Bent, A.C. 1961. Life history of North American birds of prey. Dover Publications, Incorporated, New York, New York.
- Bird, D.M., P.H. Tucker, G.A. Fox, and P.C. Lagac. 1983. Synergistic effects of Aroclor 1254 and Mirex on the eggs of American kestrels. *Archives of Environmental Contamination and Toxicology* 12:633-640.
- Blazak, W.F. and J.B. Markam. 1975. Attempts to induce chromosomal breakage in chicken embryos with Aroclor 1242. *Poultry Science* 54:310-312.
- Bopp, R.F., M.L. Gross, H. Tong, H.J. Simpson, S.J. Monson, B.L. Deck, and F.C. Moser. 1991. A major incident of dioxin contamination: Sediments of the New Jersey estuaries. *Environmental Science and Technology* 25:951-956.
- Braune, B.M. and R.J. Norstrom. 1989. Dynamics of organochlorine compounds in herring gulls: III. Tissue distribution and bioaccumulation in Lake Ontario gulls. *Environmental Toxicology and Chemistry* 8:957-968.
- Britton, W.M. and T.K. Houston. 1973. Influence of polychlorinated biphenyls in the laying hen. *Poultry Science* 52:1620-1624.

- Brunstrom, B. 1988. Sensitivity of embryos from duck, goose, herring gull, and various chicken breeds to 3,3',4,4'-tetrachlorobiphenyl. *Poultry Science* 67:52-57.
- Brunstrom, B. and L. Andersson. 1988. Toxicity and 7-ethoxyresorufin O-deethylase-inducing potency of coplanar polychlorinated biphenyls (PCBs) in chick embryos. *Archives of Toxicology* 62:263-266.
- Brunstrom, B. and J. Lund. 1988. Differences between chick and turkey embryos in sensitivity to 3,3',4,4'-tetrachlorobiphenyl and in concentration / affinity of hepatic receptor for 2,3,7,8-tetrachlorodibenzo-p-dioxin. *Comparative Biochemistry and Physiology* 91C:307-312.
- Brunstrom, B. and J. Orberg. 1982. A method for studying embryotoxicity of lipophilic substances experimentally introduced into hens' eggs. *Ambio* 11:209-211.
- Brunstrom, B. and L. Sautergardh. 1986. Differences in sensitivity of some avian species to the embryotoxicity of a PCB, 3,3',4,4'-tetrachlorobiphenyl, injected into eggs. *Environmental Pollution (Series A)* 42:37-45.
- Cai, Z., V.M.S. Ramamujan, M.L. Gross, A. Cristini, and R.K. Tucker. 1990. Levels of polychlorinated dibenzo-p-dioxins and dibenzofurans in crab tissues from the Newark / Raritan Bay system. *Environmental Science and Technology* 24:1528-1534.
- Cheung, M.O., E.P. Gilbert, and R.E. Peterson. 1981. Cardiovascular teratogenicity of 2,3,7,8-tetrachlorodibenzo-p-dioxin in the chick embryo. *Toxicology and Applied Pharmacology* 61:197-204.
- Clark, K.E. 1996. Research and management of the peregrine falcon. September 1, 1994 to August 31, 1995. Unpublished Federal Aid Performance Report. New Jersey Department of Environmental Protection, Division of Fish Game and Wildlife, Endangered and Nongame Species Program, Trenton, New Jersey. 11 pp.
- Custer, T.W. and G.H. Heinz. 1980. Reproductive success and nest attentiveness of mallard ducks fed Aroclor 1254. *Environmental Pollution (Series A)* 21:313-318.
- DeGraaf, R.M. and D.D. Rudis. 1986. New England wildlife: habitat, natural history, and distribution. General Technical Report NE-108, U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station, Broomall, Pennsylvania. 491 pp.
- DeGraaf, R.M., V.E. Scott, R.H. Haire, L. Ernst, and S.H. Andersson. 1991. Forest and rangeland birds of the United States, natural history and habitat use. *Agriculture Handbook* 688. U.S. Department of Agriculture, Amherst, Massachusetts. 625 pp.

- Ehrlich, P.R., D.S. Dobkin, and D. Whyte. 1988. The birder's handbook. Simon and Schuster, Inc., New York, New York. 785 pp.
- Elliott, J.E., R.W. Butler, R.J. Norstrom, and F.E. Whitehead. 1989. Environmental contaminants and reproductive success in great blue heron (*Ardea herodias*) in British Columbia, 1986-1987. *Environmental Pollution* 59:91-114.
- Fyfe, R., S.A. Temple, and T.J. Cade. 1976. The 1975 North American peregrine falcon survey. In U.S. Fish and Wildlife Service. 1987. Eastern peregrine falcon recovery plan, first revision. U.S. Department of the Interior, Fish and Wildlife Service, Newton Cornet, Massachusetts. 35 pp. + appendices.
- Harris, H.J. and D. Osborn. 1981. Effect of polychlorinated biphenyl on the survival and breeding of puffins. *Journal of Applied Ecology* 18:471-479.
- Haseltine, S.D. and R.M. Froudy. 1980. Aroclor 1242 and reproductive success of adult mallards (*Anas platyrhynchos*). *Environmental Research* 23:29-34.
- Helander, B., M. Olsson, and L. Reutergårdh. 1982. Residue levels of organochlorine and mercury compounds in unhatched eggs and the relationships to breeding success in white-necked sea eagles *Haliaeetus albicilla* in Sweden. *Holarctic Ecology* 5:349-366.
- Henshel, D.S., J.W. Martin, R. Norstrom, F. Whitehead, J.B. Steeves, and P.M. Cheng. 1995. Morphometric abnormalities in brains of great blue heron hatchlings exposed to PCBs. *Environmental Health Perspectives* 103, supplement 4:61-66.
- Higginbootham, G.R., A. Huang, D. Fitzstons, J. Varrert, J. Reas, and A.D. Campbell. 1968. Chemical and toxicological evaluations of isolated and synthetic chloroderivatives of dibenzo-p-dioxin. *Nature* 220:702-703.
- Hoffman, D.J., M.J. Melancon, J.D. Eisenmann, and P.N. Klein. 1995. Comparative toxicity of planar PCB congeners by egg injection. *Society of Environmental Toxicology and Chemistry Abstracts* 16:207.
- Hoffman, D.J., C.P. Rice, and I.J. Kubiak. 1996. PCBs and dioxins in birds. Pages 165-208 In: W.N. Seyer, G.H. Heinz, and A.W. Redmon-Sorwood (eds.). *Environmental contaminants in wildlife, interpreting tissue concentrations*. SETAC Publication, Lewis Publishers, CRC Press, Boca Raton, Florida.
- Hoffman, D.J., M.J. Melancon, P.N. Klein, J.D. Eisenmann, and J.W. Sporn. 1996. Comparative developmental toxicity of planar PCB congeners in chickens, American kestrels, and common terns. *Environmental Toxicology and Chemistry*. (in press).

- Kubiak, T.J., H.J. Harris, E.R. Schwartz, D.L. Stalling, J.A. Trick, L. Sileo, D.E. Docherty, and T.G. Erdman. 1987. Microcontaminants and reproductive impairment of the Forster's Tern on Green Bay, Lake Michigan - 1983. Archives of Environmental Contamination and Toxicology 18:706-727.
- Kubiak, T.J. and D.A. Best. 1991. Wildlife risks associated with passage of contaminated anadromous fish at Federal Energy Regulatory Commission licensed dams in Michigan. U.S. Fish and Wildlife Service, East Lansing, Michigan.
- Lillie, R.J., H.C. Cecil, J. Bitman, and G.F. Fries. 1974. Differences in response of caged white leghorn layers to various polychlorinated biphenyls (PCBs) in the diet. Poultry Science 53:726-732.
- Melane, M.A.R. and D.L. Hughes. 1980. Reproductive success of screech owls fed Aroclor 1248. Archives of Environmental Contamination and Toxicology 9:651-665.
- National Oceanic and Atmospheric Administration. 1984. A summary of selected data on chemical contaminants in sediments collected during 1984, 1985, 1986, and 1987. NOAA Technical Memorandum NOS OMA 44. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Rockville, Maryland.
- _____. 1993. Magnitude and extent of sediment toxicity in the Hudson-Raritan Estuary. NOAA Technical Memorandum NOS ORCA 88. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Silver Spring, Maryland.
- Miami, A.J. 1996. PCBs in aquatic organisms. Pages 117-152 in: W.N. Beyer, G.H. Hainz, and A.W. Redmon-Nogwood (eds.). Environmental contaminants in wildlife. Interpreting tissue concentrations. SETAC publication, Lewis Publishers, CRC Press, Boca Raton, Florida.
- Nosek, J.A., S.R. Craven, J.R. Sullivan, S.S. Hurley, and R.E. Peterson. 1991. Toxicity and reproductive effects of 2,3,7,8-tetrachlorodibenzo-p-dioxin in ring-necked pheasant hens. Journal of Toxicology and Environmental Health 39:187-198.
- Nosek, J.A., J.R. Sullivan, S.R. Craven, A. Gaudron-Fitzpatrick, and R.E. Peterson. 1993. Embryotoxicity of 2,3,7,8-tetrachlorodibenzo-p-dioxin in the ring-necked pheasant. Environmental Toxicology and Chemistry 12:1215-1222.
- Peakall, D.B. and M.L. Peakall. 1973. Effects of a polychlorinated biphenyl on the reproduction of artificially and naturally incubated dove eggs. Journal of Applied Ecology 10:853-858.

- Platonow, M.S. and B.S. Reinhart. 1973. The effects of polychlorinated biphenyls (Arochlor 1254) on chicken egg production, fertility and hatchability. *Canadian Journal of Comparative Medicine* 37:314-325.
- Risebrough, R.W. and D.E. Peakall. 1988. The relative importance of several organochlorines in the decline of peregrine falcon populations. Pages 449-462 In T.J. Cade, J.E. Enderson, C.G. Thalander, and C.C. White (eds.). *Peregrine Falcon populations: Their management and recovery*. The Peregrine Fund, Inc., Boise, Idaho.
- Skinner, L.C., R. Prince, J. Waldman, A.J. Nowell, and J. Shastay, Jr. 1997a. Chemical residues in fish, bivalves, crustaceans and a cephalopod from the New York - New Jersey Harbor Estuary: Dioxins and furans. New York State Department of Environmental Conservation, Albany, New York.
- Skinner, L.C., S.J. Jackling, C. Kimber, J. Waldman, J. Shastay, Jr., and A.J. Nowell. 1997b. Chemical residues in fish, bivalves, crustaceans and a cephalopod from the New York - New Jersey Harbor Estuary: PCB, organochlorine pesticides and mercury. New York State Department of Environmental Conservation, Albany, New York.
- Srebocan, V., J. Pompi-Gocaj, V. Brzajic, and M. Plazonic. 1977. Effect of polychlorinated biphenyls (Arochlor 1254) on liver gluconeogenic enzyme activities in embryonic and growing chickens. *Poultry Science* 56:732-735.
- Steidl, R.J. 1990. Reproductive ecology of ospreys and peregrine falcons nesting in southern New Jersey. M.S. Thesis, University of Massachusetts, Amherst.
- The Peregrine Fund. 1996. The Peregrine Fund World Center for Birds of Prey. 1995 annual report, Boise, Idaho. 22 pp.
- Tillitt, D.E., G.T. Ankley, J.P. Giesy, J.P. Ludwig, H. Kurita-Matsuba, D.V. Weseloh, P.S. Ross, C.A. Bishop, L. Sileo, K.L. Stromberg, J. Larsson, and T.J. Kubiak. 1992. Polychlorinated biphenyl residues and egg mortality in double-crested cormorants from the Great Lakes. *Environmental Toxicology and Chemistry* 11:1281-1288.
- Tillitt, D.E., T.J. Kubiak, G.T. Ankley, and J.P. Giesy. 1993. Dioxin-like toxic potency in Forster's tern eggs from Green Bay, Lake Michigan, North America. *Chemosphere* 26:2079-2084.
- Tori, G.M. and T.J. Paterla. 1983. Effects of PCBs on mourning dove courtship behavior. *Bulletin of Environmental Contamination and Toxicology* 30:46-49.
- U.S. Army Corps of Engineers. 1980. Kill Van Kull and Newark Bay channels navigation study on improvements to existing federal channels, final environmental impact statement. U.S. Army Corps of Engineers, New York District, New York, New York.

- _____ . 1986. Feasibility report: Navigation study on improvements to existing federal navigation channels - the Arthur Kill Channel and Howland Hook Marine Terminal, Staten Island, New York; main report and environmental impact statement. U.S. Army Corps of Engineers, New York District, New York, New York.
- _____ . 1987. Newark Bay / Kill Van Kull navigation project: Final supplement to the final environmental impact statement. U.S. Army Corps of Engineers, New York District, New York, New York.
- _____ . 1996. Environmental scoping document: Limited reevaluation study, deepening of the Arthur Kill / Howland Hook navigation channel. U.S. Army Corps of Engineers, New York District, New York, New York. 26 pp.
- _____ . 1997a. Draft environmental assessment: Kill Van Kull / Newark Bay Federal channels, New York and New Jersey, phase II deepening. U.S. Army Corps of Engineers, New York District, New York, New York. 33 pp. + appendices.
- _____ . 1997b. Biological assessment for the peregrine falcon (*Falco peregrinus*) in the area of Arthur Kill, Kill Van Kull and Newark Bay, New York and New Jersey: U.S. Army Corps of Engineers, New York District, New York, New York. 10 pp.
- U.S. Environmental Protection Agency. 1993. Interim report on data and methods for assessment of 2,3,7,8-tetrachlorodibenzo-p-dioxin risks to aquatic life and associated wildlife. EPA/600/R-93/035. U.S. Environmental Protection Agency, Office of Research and Development, Washington, D.C.
- _____ . 1995. Great Lakes Water Quality Initiative criteria documents for the protection of wildlife. Office of Water, Washington, D.C. EPA/620/B-95/008.
- U.S. Fish and Wildlife Service. 1976. Preliminary report on the fish and wildlife resources associated with the navigation project for Kill Van Kull and Newark Bay, New Jersey and New York. U.S. Department of the Interior, Fish and Wildlife Service, State College, Pennsylvania. 14 pp.
- _____ . 1986. Report on the effects of the proposed navigation improvement project at the Arthur Kill Channel - Howland Hook Marine Terminal area, Staten Island, New York. U.S. Department of the Interior, Fish and Wildlife Service, Cortland, New York. 22 pp.
- _____ . 1987. Eastern peregrine falcon recovery plan, first revision. U.S. Department of the Interior, Fish and Wildlife Service, Newton Corner, Massachusetts. 35 pp. + appendices.

- _____. 1991. Environmental contaminants in the prey of Delaware Bay peregrine falcons (*Falco peregrinus*). Technical Assistance Report. New Jersey Field Office, Pleasantville, New Jersey. 20 pp. + appendices.
- _____. 1995. Endangered and threatened wildlife and plants; advance notice of a proposal to remove the American peregrine falcon from the list of endangered and threatened wildlife. 50 CFR Part 17, Federal Register, Vol. 60, No. 126:34406-09.
- _____. 1996 (Draft). Significant habitats and habitat complexes of the New York Bight Watershed. Southern New England - New York Bight Coastal Ecosystems Program, Charlestown, Rhode Island.
- U.S. Fish and Wildlife Service and New Jersey Department of Environmental Protection. 1997 (Draft). Reproductive success and egg contaminant concentrations of southern New Jersey peregrine falcons. U.S. Fish and Wildlife Service, Pleasantville, New Jersey and New Jersey Department of Environmental Protection, Division of Fish, Game and Wildlife, Tuckahoe, New Jersey.
- Verrett, M.J. 1970. Witness statement. Hearings before the Subcommittee on Energy, Natural Resources and the Environment of the Committee on Commerce, U.S. Senate. Serial 91-60. U.S. Government Printing Office, Washington, D.C. pp. 190-203.
- _____. 1976. Investigation of the toxic and teratogenic effects of halogenated dibenzo-p-dioxins and dibenzofurans in the developing chicken embryo. Memorandum Report. U.S. Food and Drug Administration, Washington, D.C.
- Vos, J.S., A. De Liefde, F.L. van Velsen, and M.J. van Logten. 1982. Acute toxicity of PCB isomers in the chick embryo assay. (Rep. 517714001). National Institute of Public Health, Bilthoven, the Netherlands. 15 pp.
- White, D.H. and J.T. Seginak. 1994. Dioxins and furans linked to reproductive impairment in wood ducks. Journal of Wildlife Management 58:100-106.

B. PERSONAL COMMUNICATIONS

- BarLas, Mark. 1996. Biologist. U.S. Army Corps of Engineers, New York District, New York, New York.
- Nadarecki, Christopher. 1997. Biologist. New York City Department of Environmental Protection, Natural Resources Section, New York, New York.

Appendix J – Clean Air Statement of Conformity

DRAFT
CLEAN AIR ACT
STATEMENT OF CONFORMITY

UPPER BAY OF NEW YORK HARBOR
NEW YORK/NEW JERSEY HARBOR
KILL VAN KULL
FEDERAL NAVIGATION PROJECT

Based on the conformity analysis in the subject report, I have determined that the proposed action conforms to the applicable State Implementation Plan (SIP). The Environmental Protection Agency had no adverse comments under their Clean Air Act authority. All air quality comments were fully addressed, and the project would not lead to adverse air emission as compared to the no-action alternative; and thus, would comply with Section 176 (c) (1) of the Clean Air Act Amendments of 1990.

DATE

WILLIAM H. PEARCE
Colonel, Corps of Engineers
District Engineer