

## DIALOGUE AND COOPERATION TO PROTECT RESOURCES AND PROJECTS

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Throughout history, statutory laws have been enacted that unexpectedly create conflicts between government agency objectives (Miller, 1988). Over the last half-century, the conflicts between mandates that favor water resource development and environmental protection of those same waters have become evermore contentious. The focusing of legal intent to the point where they can occur, now, within a single agency has facilitated these mission conflicts. The passage of supplemental legislation in furtherance of either mandate has narrowed the focus and sharpened the conflict with the result that agencies are compelled to act against each other. The conflicts between the three “resource agencies” (US Fish & Wildlife Service [FWS], the National Oceanic and Atmospheric Administration / National Marine Fisheries Service [NMFS], the US Environmental Protection Agency [EPA]) and the US Army Corps of Engineers (Corps) are legendary. Today, as we move into the twenty-first century, the conflict between improving Port infrastructure by providing adequate access and the need to protect public trust resources living within the same waters has become a national concern (NRC, 2001). The conflict is embodied in time-of-year restrictions on dredging and disposal of sediment. Resolution of the matter is problematic because the objectives cannot be reconciled in mutual mandates or economic frameworks. For example, invocation of a “seasonal window” to protect aquatic resources may preclude a single, continuous dredging of a desired access channel. Valuation of the dredging and cost delays is possible, but valuing aquatic resource impacts is not an equally well-grounded practice. Further complicating the discussions is a dearth of information about aquatic resource needs and their adaptability to adverse conditions. In the Port of New York and New Jersey, these conflicts are being dealt with through frank discussions of dredging projects and resource protection measures. The effort is being supplemented by field investigations of the potential impacts of dredging and disposal activities.

### Port Dredging

Last year, international commerce valued in excess of \$500 billion passed through the nation’s ports and waterways (AAPA, 2002). This trade activity contributed billions of dollars to local, state and national economies through direct and indirect revenue disbursements. As the global marketplace and associated economies continue to grow in the 21<sup>st</sup> century, the nation must continue to provide the transportation infrastructure necessary to maintain the flow of international cargo. The infrastructure has to adapt to support new container “megaships” being brought into service and calling on ports along the US coasts. Carrier service is extremely competitive, and the use of megaships is a business strategy for ocean carriers to improve their market position. Ocean carriers maintain profitability by adjusting capacity and speed. The new

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ships can save the carriers as much as 40 percent of the cost of moving cargo (Richardson, 2000). Using regionally located hubports to discharge cargo reduces costs by reducing port calls and increasing the amount of “at sea” time. These vessels require channel depths up to 50 feet (USACE, 1999; USACE, 2000). Port business is also highly competitive, and the larger vessels pressure them to provide suitable infrastructure to maximize efficient handling of vessels and cargoes. To stay competitive, ports throughout the nation, including the Port of New York and New Jersey, must adopt the required efficiencies or suffer the consequences.

In response to these changing conditions, the Congress has authorized improvements to the nation’s navigation infrastructure in numerous ports. For example, more than \$3 billion of new construction has been authorized to provide navigation infrastructure improvements in the Port of New York and New Jersey (Figure 1). Three key projects were advanced in the Water Resources Development Act (WRDA) of 1986. They are the Kill Van Kull/Newark Bay 45-foot channel-deepening project, the Arthur Kill 40/41-foot channel-deepening project, and the Port Jersey 41-foot channel-deepening project. In December 2000, Congress passed the “Port of New York and New Jersey, NY and NJ” harbor navigation improvement project in WRDA 2000. It authorized the Corps of Engineers to design and to construct 50-foot channels in the Port by dredging approximately fifty million cubic yards of sediment from the existing navigation system. The Corps’ New York District is currently constructing the 45-foot Kill Van Kull/Newark Bay Project. The two 41-foot projects are scheduled to start in late 2002, and the 50-foot deepening project is schedule to begin in 2004.

## **Resource Protection**

Since passage of the National Environmental Policy Act in 1969, and, with increasing frequency, resource agencies have requested and regulatory agencies have implemented, environmental controls to protect aquatic resources. The Endangered Species Act of 1973 gave the FWS and NMFS direction on listing and conservation of stressed biological resources and fostered new regulations for the protection of listed biological resources. In 1996, Congress amended the Magnuson-Stevens Fishery Conservation and Management Act. Among other things, it directed the NMFS to coordinate with Regional Fishery Management Councils in identifying and designating Essential Fish Habitats (EFH) for all life stages of Federally managed species of marine and anadromous fish as part of Fishery Management Plans for those species. The EFH obligations focus on resource habitat and its continued availability, regardless of the use level at the time of the evaluation. This action was taken in recognition of the depleted nature of many of the managed stocks. Among the provisions of the Act was a requirement for all Federal agencies to consult with NMFS regarding potential impacts to EFH, and for NMFS to develop Conservation Recommendations (CR) to avoid or minimize impacts of Federal actions authorized, funded or undertaken in those habitats (NMFS, 2002).

Conservation Recommendations can take any form that affords the essential fish habitat the protections deemed appropriate to the situation. In the New York metropolitan area, the CRs typically placed on navigational dredging take one of two forms. When there is a potential conflict between construction activities and an aquatic species, a project or seasonal “restriction” is established; when no threat to a habitat is identified, an “implementation window” is defined, and activities may proceed. Windows and restrictions are an intuitively simple means to avoid

the potential risk to resources thought to be intolerant of conditions induced by an activity (LaSalle *et al.*, 1991). Given the mandate to protect resources, it is expected that a resource agency would err on the side of caution and invoke the precautionary principle. Resource agencies view seasonal constraints as an effective management tool. When the legal requirements for compliance were limited and a few aquatic species were of concern, only a few dredging projects were affected. Today, however, resource agency dictated environmental restrictions impact more than eighty percent of the federal dredging program (Dickerson *et al.*, 1998).

## **Operational Concerns**

The difficulties associated with undertaking a significant port improvement have increased as the number of environmental issues has increased. Today, air and water quality as well as biological resource issues must be addressed before work can commence. On an individual contract basis, an environmental control can often be accommodated without significant cost or time increases. This is accomplished, generally, in the spirit of cooperation with the resource agencies, the conflicting objectives are satisfied and the project advances. However, the agency objectives become difficult to meet when projects have multi-year construction schedules or grow in duration or complexity (*e.g.* when a deepening and O&M project are combined or protracted rock extraction effort is an element of the activity). The situation becomes increasingly problematic when the resource protection constraint is inserted into a work consolidation effort designed to expedite achieving the final objective, reduce the duration of environmental impacts and save money (USACE, 2002).

These complicated construction circumstances are exacerbated, further, by: (1) the diversity of resources and habitats perceived to be at risk (*e.g.* oyster and striped bass in the Chesapeake Bay, winter flounder and shellfish in the Northeast, and salmon runs in the Great Lakes and Pacific Northwest), and (2) the complexity of the specific concerns (*e.g.*, entrainment, turbidity, burial, habitat alteration or loss). Restrictions on dredging to protect multiple resources within the same waterway often do not overlap. Occasionally, there are so many resources requiring protection an operational window is unavailable. In the Northeast, protection of the spawn of winter flounder has eliminated much of the winter period dredging season although winter is generally considered to be a time of low biological activity. Dredging during winter, however, is inherently subject to delays and difficult working conditions because of weather and sea state conditions and often avoided for all but the largest dredging projects. Cumulatively, windows can create unyielding requirements for contracting, mobilization, and conducting dredging projects, with little flexibility for unanticipated shutdowns for repairs or severe weather conditions (NRC, 2001). These constraints have created difficulties in striking a balance between protection of biological resources and dredging in a cost-effective and safe manner in the Port of New York and New Jersey.

Although there are a variety of complex issues raised by the very constructs embraced to support windows, of particular concern has been the lack of consistency across the nation in the negotiation for and application of these protective measures. The key issues of concern include administrative, structural and technical shortcomings (NRC, 2001):

- Resource Agency staff does not uniformly invoke seasonal constraints. Some regions apply more conservative or liberal practices than the same agency applies in other regions or with increasing frequency within the same region;
- Federal and State agencies with overlapping areas of expertise apply different criteria to protect the same species;
- Regional differences exist in the coordination used to involve the stakeholders (marine industry, resource agencies, and environmental groups). The process has become confrontational rather than collaborative;
- Staff turnover is high, resulting in low retention of institutional memory and lack of understanding about the actual biological consequences or value of using of Best Management Practices.

## **National Approach**

In 1999, the Corps of Engineers requested that the National Research Council (NRC) explore the scientific basis for and regulatory procedures currently used for establishing environmental windows. The NRC formed a Steering Committee to oversee the planning and implementation of the workshop and to interpret the results. The team recommended that the NRC hold a workshop designed to identify issues and discuss options that could lead to greater consistency, reliability and predictability in the procedures used in setting environmental windows. The workshop was held in Washington D.C. in March 2001.

The primary product resulting from the workshop was a process or procedural template for setting environmental windows. The “template” is detailed in the environmental windows workshop report (NRC, 2001). A key component of the process is the development of a connection between biological experts responsible for predicting and assessing impacts on natural resources, and engineering experts responsible for developing and recommending technologies to reduce potential biological impacts. The goal of the connection is to increase the exchange and quality of information by insuring consistency, reliability, and predictability in the environmental windows setting process. And, also, create a scientific method for establishing management tools to identify and implement methodologies that essentially mitigate adverse biological impacts resulting from dredging activities.

To demonstrate the utility of the NRC approach and to avoid conflicts on the Port of New York and New Jersey 50-foot harbor-deepening project, a local version of the NRC template has been initiated to address the environmental controls portions of the project. This effort is being applied to the Port Authority of New York and New Jersey proposed consolidation of on-going 45-foot construction projects with the 50-foot project in an attempt to garner economic and environmental benefits while expediting attainment of the final objective. The proposal has created the need to accelerate consideration of environmental controls for future dredging contracts.

## **Consolidated Deepening Project**

The Kill Van Kull/Newark Bay 45-foot deepening project has been underway since 1999 and is approximately half complete. Recently, the Corps awarded the contract to construct the

45-foot channel within the Bergen Point Reach of the project. The Bergen Point Reach has a large amount of bedrock that must be removed. Drilling and blasting rock is the most time-consuming and environmentally and aesthetically disruptive component of the deepening projects (Havis, 1988; USACE, 2002). Consolidating the 45-foot and 50-foot construction activities in this reach could save months on the 50-foot schedule and approximately \$27 million over the two-step construction process. Timesavings would be gained by utilizing the available equipment already on-site (hence no new mobilization), by reducing drilling by 25%, and by eliminating 50% of the blasting. The consolidated work would consist of drilling, blasting, and dredging approximately 1.5 million cubic yards of rock and sediment from the KVK channel.

Facilitating the consolidation of the two deepening projects through the Corps of Engineers has been complicated and delayed by administrative procedures, such as the completing the Record of Decision and negotiation of the Project Cooperative Agreement for the 50-foot navigation project. After discussions with many of the stakeholders, the Port Authority elected to lead an effort to consolidate the work and has applied for the authorizations to piggyback the 50-foot construction on the 45-foot contract.

### **Windows At Bergen Point**

Following the 1999 Department of Commerce designation and implementation of the Essential Fish Habitat (EFH) elements of the Magnuson-Stevens Act, EFH for at least 23 commercially sought, aquatic species was designated in the Harbor, of which 13 species occur in the 50-foot project area. Based on early coordination, the Corps and the Port Authority anticipated that the NMFS could identify critical periods of time when no construction activity should take place in the Bergen Point area and that the periods would be incorporated into the 50-foot project schedule. Discussions among the principals regarding the 45-foot deepening project revealed that it should be considered a completed action and not subject to EFH coordination. However, both New Jersey and New York have been delegated Water Quality Certification (WQC) responsibilities under Section 401 of the Clean Water Act. Because the State of New Jersey was aware of the NMFS proposed seasonal constraints for the 50-foot project and in the process of considering the impacts of the 45-foot deepening, the State perceived that it was obligated to include the recommendations as restrictions in their authorizations for the 45-foot effort.

The NMFS Conservation Recommendations for impact mitigation were based on the Federal coordination for the National Environmental Policy Act and EFH Consultation activities regarding the 50-foot deepening. The recommendations were developed from a series of fact-finding meetings with their State counterparts. In the NMFS communications, the value of project consolidation was recognized and supported. That action facilitated the Port Authority decision to attempt project consolidation. The Port Authority sought and was encouraged to meet with State, Corps and NMFS staff to discuss how construction contracts could be designed to overcome the conflicting objectives of channel deepening and resource protection. These meetings have been successful and, to date, the contracts for portions of the projects have been advanced to implementation without overly restrictive constraints.

Conversely, the NMFS Conservation Recommendations are serving as a component of the New York State Department of Environmental Conservation (NYSDEC) and New Jersey Department of Environmental Protection (NJDEP) regulatory agencies evaluations. Their Water Quality Certifications reflect the NMFS position by placing similar or even more limiting restrictions for the deepening projects. Their actions have essentially made the CRs (described as advisory under the EFH amendment regulations) a permit condition and moved them from the realm of a recommendation to that of a requirement. An example of this synergy is found in the NJDEP use of the EFH protections for winter flounder in Newark Bay in the immediate vicinity of Port Elizabeth. Although yearly consecutive sampling of the EFH designated areas in the project impact zone revealed modest use by winter flounder for the critical lifestage, the habitat meets the criteria for the species and must be afforded protection (NMFS, 2002). NMFS had determined that the project had advanced beyond their opportunity to recommend dredging constraints. However, NJDEP was drafting their WQC for the work and included the NMFS 50-foot recommendations as binding restrictions in the 45-foot authorization. The WQC constrains the Corps ability to accomplish all of the dredging within the scheduled time frame, potentially requiring a contractor to bring in more equipment at added costs and/or incur additional mobilization/demobilization costs to protect life stages of a managed species.

## **Cooperation**

The coordination of the ongoing projects is occurring in parallel with the implementation of the NRC template. The discussions encouraged by the template procedures have shown good results, in part because the region has been involved in dredged material assessment for decades and has developed a number of forums in which to resolve many of the issues. In conjunction with the coordination efforts, a number of efforts are underway to identify data gaps in the dredging impacts and resource use arenas, and work is underway to eliminate those blanks or uncertainties.

Are the problems resolved? Hardly. For instance, in response to the issuance of the Corps' Public Notice for the Port Authority's consolidation request, the NMFS responded, in part, that the EFH assessment was inadequate to the task as defined under their final rule for consultation under the requirements of the MSA. Due to the shortcomings in the EFH Assessment, NMFS felt obligated to require that the entire 2-mile reach west of the Bayonne Bridge be subject to a seasonal constraint on dredging (no work from February 1 to May 31) and blasting (no work from March 1 to May 31). The restriction would have covered virtually all the Bergen Point project area and, by default, might also affect the ongoing 45-foot project. This requirement would have potentially eliminated the benefits of consolidation without a clear benefit to aquatic resources.

Further, there were agency disagreements on the zone of impact and resources meriting protection, which were problematic. In the absence of a unified view of preferred options for providing protection to potential habitat or the actual fishery resource, negotiations were complicated. The various parties had to determine if their individual mandates defined whether seasonal windows, as contained in the NMFS CRs, should be invoked and how they are invoked (in isolation or in combination) to avoid potential impacts to one or more species or their habitat(s). In many cases, the evidence that fish are actually present and thus, subject to

dredging induced resuspended sediment or other physical impacts from dredging is limited, but the MSA states that the presence of suitable habitat alone is sufficient for NMFS to either recommend seasonal dredging windows or, if avoidance is not possible or will not adequately protect EFH, recommended compensatory mitigation to conserve and enhance EFH. Sampling by the Corps over the past two years has shown only limited presence of eggs and other early life stages of winter flounder (the species of particular concern) in Newark Bay. This has created additional grounds for discussions and further highlighted the value of embracing the NRC template to avoid extended completion dates for contract areas and increased costs while providing protection to a resource whose presence during critical lifestage is uncertain.

These open issues encompassed both biological and contractual considerations and needed to be addressed within the coordination activities intended to protect fishery resources and to maintain project schedules. In extended meetings hosted by the Corps and Port Authority, a newfound spirit of cooperation with the construction agencies and the resource/regulatory agencies has been established. The meetings have been ongoing for almost a year. The meetings' agenda revolve around seasonal windows and methods of employing lesser restrictions while maintaining the same protective results for specific species in reaches of all deepening work.

The NMFS is particularly concerned about the potential impact of fine-grained material redeposition on potential spawning activities on the shoal areas adjacent to the channels (Johnson and Pachure, 1999). However, since much of the material to be excavated is either rock or glacial till with little fine-grained material, the agencies agree that the impacts are localized and a less extensive window could be employed. A 500-foot wide "buffer" or redeposition area near the flats would require seasonal constraints. This area occurs on the western side of the Kill Van Kull project area. To protect the Winter Flounder resource in and adjacent to that area, as before, dredging continues to be prohibited from February 1 through May 31 and blasting prohibited from March 1 through May 31. Review by the project engineers found that these environmental windows would not significantly affect the schedule since the contractor can work in other reaches during the restriction.

## **Conclusion**

Mechanically implementing the historic overlay of seasonal constraints on dredging projects is an approach that has worked. It has been workable for years, particularly with respect to maintenance projects where the dredging activities can be shifted around during the fiscal year to accomplish the project and to avoid potential impacts to fish or their habitats. Unfortunately, many fisheries stocks remain depleted and under intense and restrictive management. Although seasonal constraints have been invoked, the stocks are not expected to recover without measures (as outlined in the Regional Fishery Management Plans) beyond environmental windows. Over fishing, water pollution, habitat destruction and the natural population cycles of aquatic resources continue to threaten fishery resources.

Nevertheless, now as a new wave of public maritime development projects is being proposed nationwide, the merits of dredging on a full-time basis must be recognized for its environmental, cost and public benefits. The overlap of project construction zones with the

habitat of troubled fisheries resources demands full appreciation of all aspects of the matter, including assessing what the tradeoffs are and identification of the best course of action. The historic and often rigid approach to these issues neither offers optimal resource protection nor attainment of operations/project objectives.

To be successful in the 21<sup>st</sup> century, resource agencies and development agencies must endeavor to seek new goals that are broader in scope and embrace both public objectives of improved port facilities and environmental protection. Instead of managing to obtain single objectives, construction and resource/regulatory agencies must cooperate to deliver enhanced resource success, sustainability, stewardship and administrative streamlining. An integration of decision-making processes that eliminate or simply cross the artificial boundaries between public water resource projects and environmental protection is essential. A new decision-making framework is evolving in the Port of New York and New Jersey to address the environmental and project complexities. The issues are complex and can only be sorted out by dialogue and cooperation.

## References

American Association of Port Authorities (AAPA). 2002. "U.S. Port Rankings 2000 – Cargo Volumes." Washington, D.C. (<http://www.seaportsoftheamericas.com/pdfweb/usrank1.pdf>).

Dickerson, D., Reine, K. and Clarke, D. 1998. "Economic Impacts of Environmental Windows Associated With Dredging Operations." DOER Technical Notes Collection (TN DOER-E3), US Army Engineer Research and Development Center, Vicksburg, MS.

Havis, Robert N. 1988. "Sediment Resuspension by Selected Dredges," Environmental Effects of Dredging, (EEDP-09-2). US Army Engineer Waterways Experiment Station, Environmental Laboratory, Vicksburg, MS.

Johnson, B.H., and Pachure, T.M. 1999. "Estimating Dredging Sediment Resuspension Sources," DOER Technical Notes Collection (TN DOER-E6), US Army Engineer Research and Development Center, Vicksburg, MS.

LaSalle, Mark W., Clarke, Douglas G., Homziak, Jurij, Lunz, John D. and Fredette, Thomas J. 1991. "A Framework for Assessing the Need for Seasonal Restrictions on Dredging and Disposal Operations," Technical Report D-91, US Army Engineer Waterways Experiment Station, Vicksburg, MS.

Miller, G.T. 1988. Living in the Environment, fifth edition. Wadsworth Publishing, Belmont, CA. 603 pp.

National Marine Fisheries Service (NMFS). 2002. "Final Rule to Revise the Regulations Implementing the Essential Fish Habitat Provisions of the Magnuson-Stevens Act" Federal Register, 67(12): 2343 to 2383.



National Research Council (NRC). 2001. "A Process for Setting, Managing, and Monitoring Environmental Windows for Dredging Projects." Special Report 262, National Academy Press, Washington, D.C. 83 pp.

Richardson, P. 2000. "New Ships Will Hold 7,100 TEUs." Journal of Commerce, 423 (29659): 1, 6.

US Army Corps of Engineers (USACE). 1999. "New York and New Jersey Harbor Navigation Project Environmental Impact Statement." New York District, New York, NY.

US Army Corps of Engineers (USACE). 2000. "New York and New Jersey Harbor Navigation Project Environmental Impact Statement -- Supplemental Sampling Reports." New York District, New York, NY.

US Army Corps of Engineers (USACE). 2002. "DAMOS (Dredging Area Monitoring System) Symposium" New England District, Concord, MA.

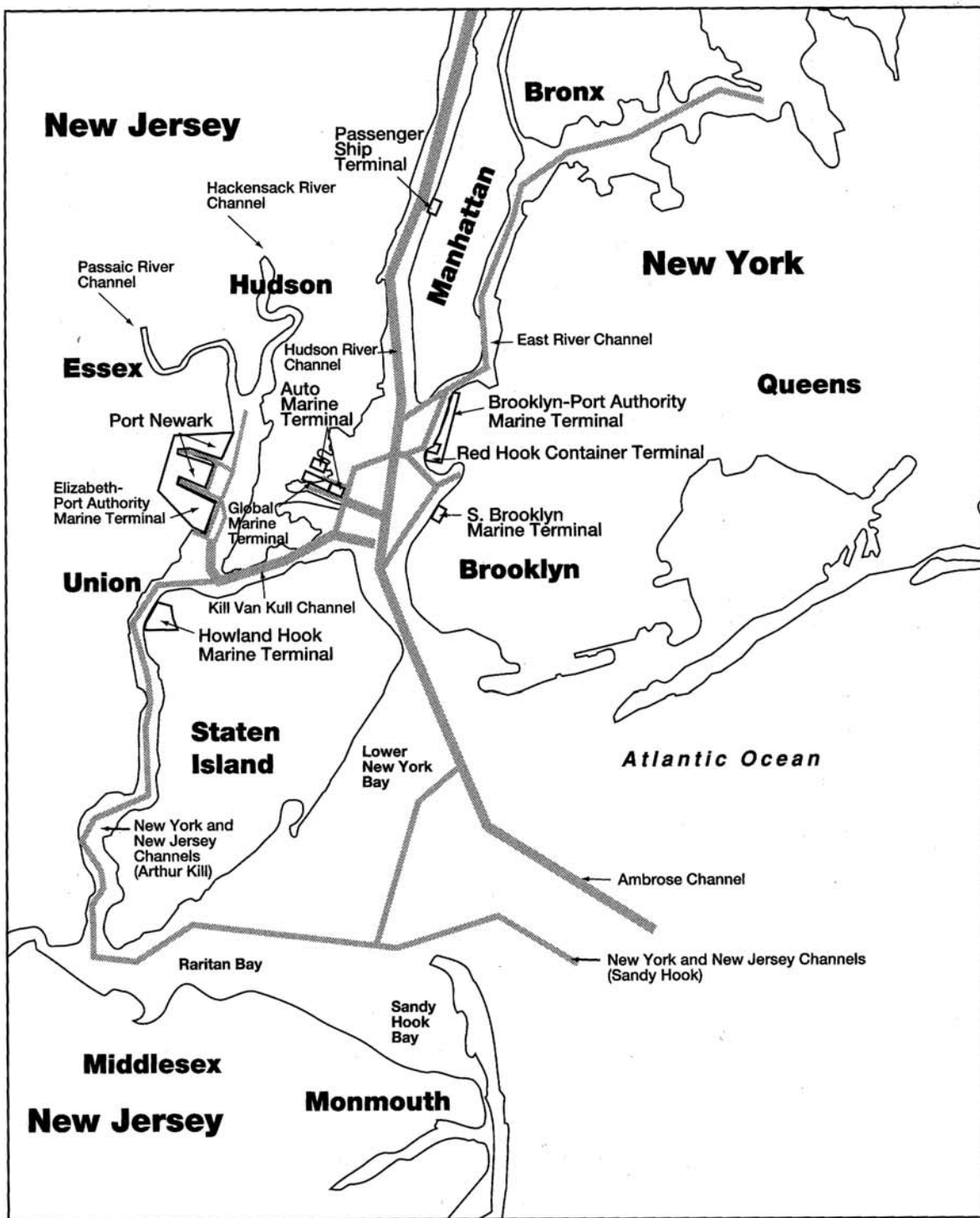


Fig. 1. Port of New York and New Jersey