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WEDA 2002 Environmental Commission Panel (Photo Courtesy of IDR)

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AIMS & SCOPE OF THE JOURNAL

The *Journal of Dredging* is published by the Western Dredging Association (WEDA) to provide dissemination of technical and project information on dredging engineering topics. The peer-reviewed papers in this practice-oriented journal will present engineering solutions to dredging and placement problems, which are not normally available from traditional journals. Topics of interest include, but are not limited to, dredging techniques, hydrographic surveys, dredge automation, dredge safety, instrumentation, design aspects of dredging projects, dredged material placement, environmental and beneficial uses, contaminated sediments, litigation, economic aspects and case studies.

FOREWORD

Craig Vogt¹

This issue of the WEDA Journal of Dredging Engineering includes the four papers presented during the technical program session sponsored by WEDA's Environmental Commission during the WEDA XXII Annual Conference in Denver, Colorado, June 13-15, 2002. The theme of the session was "Partnerships Help Get the Job Done".

The papers in this volume were peer-reviewed by three members of the Environmental Commission (Ancil Taylor, Bean Dredging Corporation; Jim Osborne, Environment Canada; and myself). The four papers describe success stories and provide lessons learned, mostly positive. Partnerships do require extra effort and they take time and commitment, but the usual payoff is the accomplishment, in a more effective manner, of the overall goals of a project. I will not repeat the lessons learned here, as I encourage you to read the papers and determine which specific conclusions and lessons can be useful in your own future activities.

During each WEDA Annual Conference, the WEDA Environmental Commission sponsors a technical session on pertinent environmental issues associated with dredging and dredged material management. In 1994, WEDA created the Environmental Commission to focus on the environmental aspects of dredging and dredged material placement. The mission of the Environmental Commission is the following:

"Promote communication and understanding of environmental issues and stimulate new solutions associated with dredging and placement of dredged material such that dredging projects, including navigation and remediation dredging, are accomplished in an efficient manner while meeting environmental goals."

Additional information about WEDA and the Environmental Commission can be found at www.WesternDredging.org.

¹Chair, WEDA Environmental Commission, and Guest Editor, WEDA Journal Issue Vol.5, No.1

DIALOGUE AND COOPERATION TO PROTECT RESOURCES AND PROJECTS

Tom Wakeman ¹, Michael Ludwig ² and Jenine Gallo ³

ABSTRACT

Throughout history, statutory laws have been enacted that unexpectedly create conflicts among 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 more contentious. The focusing of legal intent to the point where conflicts can occur within a single agency has facilitated the creation of these agency 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, the National Oceanic and Atmospheric Administration / National Marine Fisheries Service, the US Environmental Protection Agency) and the US Army Corps of Engineers are legendary within the United States.

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. Evaluation of the dredging expenses and cost delays are 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.

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PORT DREDGING

Last year, international commerce valued in excess of \$500 billion passed through US 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 21st 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 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 US Congress authorized improvements to the nation’s navigation infrastructure in numerous ports. For example, more than \$3 billion of new construction was 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 US Army Corps of Engineers (Corps) 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 scheduled 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 Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (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 (MSA).

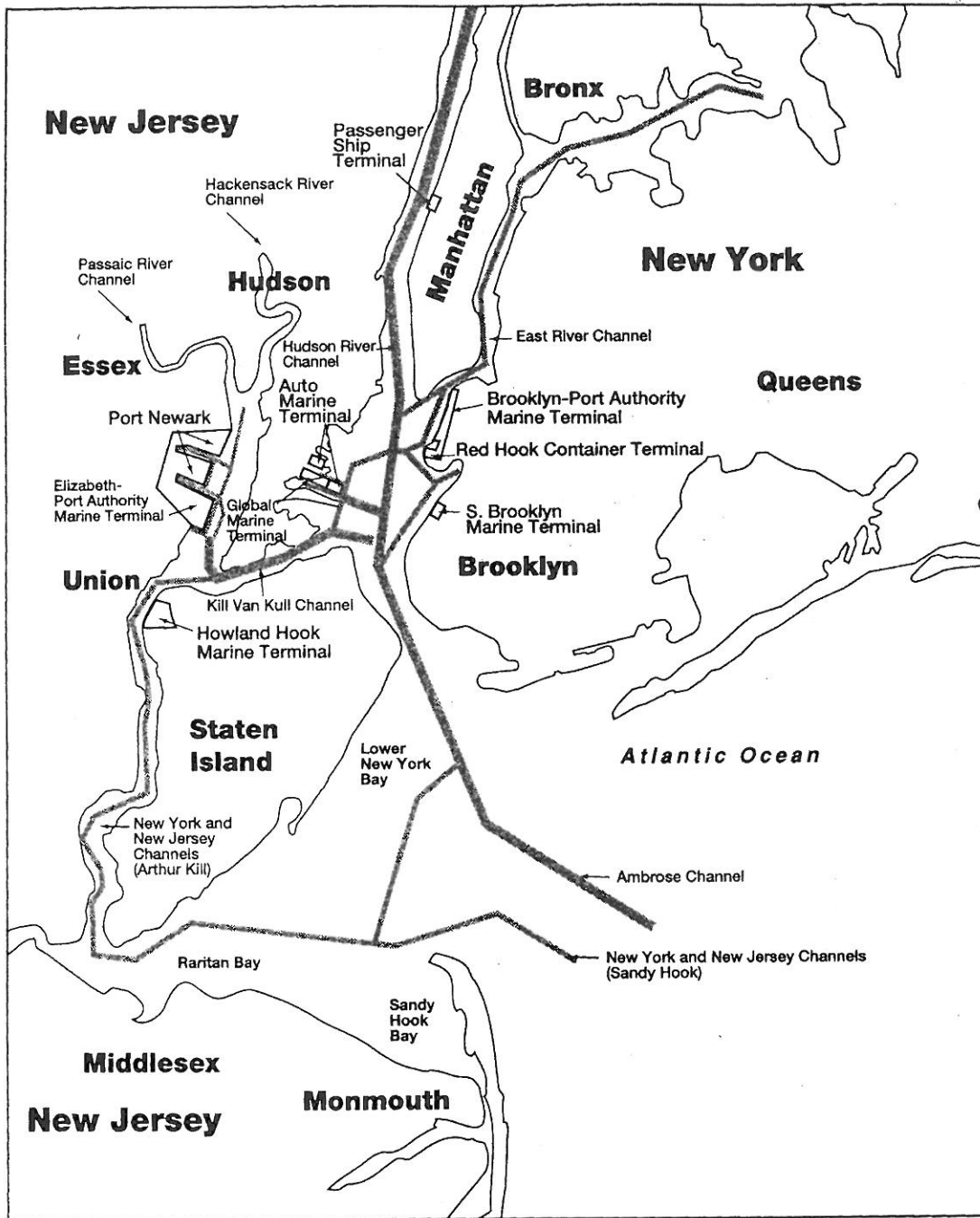


Fig. 1. Port of New York and New Jersey

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 to avoid or minimize impacts of Federal actions authorized, funded or undertaken in those habitats (NMFS, 2002).

Conservation Recommendations (CRs) can take any form that affords the essential fish habitat the protection 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 an 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. The stakeholders need to 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. Time-savings 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. 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 life stage, 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 could be 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 life stage 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 meeting agendas 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 fish 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 the tradeoffs 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 21st 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.

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**LTMS AND DMMO:
MEETING THE DUAL DEMANDS OF DREDGING AND PROTECTING THE
ENVIRONMENT IN THE SAN FRANCISCO BAY AREA**

Brian D. Ross¹

ABSTRACT

The San Francisco Long Term Management Strategy (LTMS) is in its second year of full implementation, following 10 years of planning and development. Notable successes have marked the course of the LTMS to date. For example, the “mudlock” of the 1980s was broken with completion of the decades-delayed Port of Oakland 42-foot deepening project. Lessons learned from this experience, especially regarding stakeholder involvement, were put to good use, allowing rapid (3 year) approval of the Port’s 50-foot deepening project. A more recent challenge has been working with the resource agencies to weave necessary protections for the myriad of threatened and endangered species in the region into the LTMS Management Plan in a way that allows (and even streamlines) ongoing dredging. The result: new Environmental Work Windows that eliminate any need for project-specific Endangered Species Act consultation for many projects. Finally, the nationally recognized interagency Dredged Material Management Office (DMMO) has significantly streamlined additional aspects of the permitting process. Its ongoing success is a strong testament that working in partnership is more efficient and effective – at facilitating dredging projects and protecting the environment – than when agencies focus only on their own narrower responsibilities. This paper presents a brief background of the LTMS, and discusses the Bay Area’s Environmental Work Windows, and the DMMO, as key components of the overall success of the LTMS.

BACKGROUND

The Long Term Management Strategy for Dredged Material Placement in the San Francisco Bay Region (LTMS) is a partnership of the federal and California state agencies that regulate dredging and dredged material disposal in the area. These agencies include Region 9 of the U.S. Environmental Protection Agency (EPA), the San Francisco District of the U.S. Army Corps of Engineers (USACE), the San Francisco Bay Conservation and Development Commission (BCDC), the San Francisco Bay Regional Water Quality Control Board (RWQCB), and the State Lands Commission (SLC). In 1990, these agencies recognized a need to join together to comprehensively address the growing controversy surrounding dredging and disposal in the San Francisco Bay and Estuary, including at one point a physical blockade of the primary in-Bay disposal site by fishing boats and other small vessels. The agencies adopted a new approach recommended by Francinques and Mathis (1990) to tackle the job, and the LTMS planning effort began. A concise overview of the history of the LTMS is presented by Dwinell et al. (2002).

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The overall goals of the LTMS, adopted in 1991, were to:

1. Maintain in an economically and environmentally sound manner those channels necessary for navigation in San Francisco Bay and Estuary, and eliminate unnecessary dredging activities in the Bay and Estuary
2. Conduct dredged material disposal in the most environmentally sound manner
3. Maximize the use of dredged material as a resource
4. Establish a cooperative permitting framework for dredging and dredged material disposal applications

The agencies then set about preparing a “Policy EIS/Programmatic EIR” to evaluate how to best go about meeting those overall goals. From the beginning, the EIS/EIR development process involved extensive coordination with stakeholder groups (the dredging and related maritime industries, fishing organizations, and environmental interests), each of which had a different and strongly held view of how dredging and disposal in the region should be handled.

Ultimately, the EIS/EIR (LTMS, 1998) selected what has come to be known as the “40/40/20 Plan” as the long term approach that, when implemented to the maximum extent practicable, would best balance all the competing views. This approach, which was also identified as the environmentally preferred alternative in the EIS/EIR, calls for a shift from the historic practice of disposing 80 percent or more of all dredged material in the Bay, to long term targets of 40 percent beneficial re-use and 40 percent ocean disposal, with only 20 percent of dredged material continuing to be disposed in the Bay.

This long-term vision did not fully satisfy any of the stakeholder groups. Ocean advocates wanted more beneficial use. Fishermen and Bay advocates wanted a faster transition away from in-Bay disposal. Advocates for seasonal wetlands were concerned that restoration of tidal wetlands using dredged material could damage existing wetlands. Dredgers, of course, feared that the costs of both ocean disposal and beneficial use would be too high. The overall evaluation showed that the “40/40/20” targets represented the greatest beneficial use, and the least in-Bay disposal, that might reasonably be practicable for the region without causing significant (offsetting) environmental impacts.

The agencies recognized that these targets were not achievable immediately, and would not be achievable until regional beneficial use sites could come on-line. Therefore, the LTMS Management Plan (LTMS, 2001), which supplemented the Policy EIS/Programmatic EIR with specific implementation measures, included a multi-year “Transition Period” to allow time for beneficial use sites to be developed, and for dredging project proponents to plan for a new way of doing business. Maximum allowable in-Bay disposal volumes were initially cut by more than one-half; thereafter, the disposal volume target would be further reduced every three years (Figure 1). In response to stakeholder input, the LTMS agencies agreed to allow the dredging community to try meeting the transition targets voluntarily. If they are unsuccessful, the agencies would step in and institute firm regulatory limits. The DMMO is tasked with tracking and managing the targets. The first stage in the transition officially began in 2001, and so far the in-Bay target has not been exceeded.

SOME KEYS TO THE SUCCESS OF LTMS

The San Francisco LTMS is now in its second year of full implementation. Notable successes have marked the course of the LTMS to date. Among them:

- breaking the “mudlock” of the 1980s with completion of the decades-delayed Port of Oakland 42-foot deepening project, followed by rapid (3 year) approval of their 50-foot deepening project;
- designation of the environmentally superior Deep Ocean Disposal Site, which has already resulted in over 8 million cubic yards (mcy) being diverted from in-Bay disposal;
- restoration of hundreds of acres of tidal wetlands through beneficial re-use of over 2.5 mcy of dredged material, with sites for approximately 3,000 more acres (25 mcy) authorized and now in development;
- establishment of Environmental Work Windows that eliminate any need for project-specific Endangered Species Act (ESA) consultation for many projects; and
- creation of the nationally-recognized interagency Dredged Material Management Office (DMMO), which has significantly streamlined the permitting process.

All of these successes have been facilitated by partnerships, both formal and informal. The LTMS itself is a formal partnership, functioning as the Regional Dredging Team for the area (NDT, 1998). The DMMO is another formal partnership, formed via a Memorandum of Understanding among the LTMS agencies (LTMS, 1996; rev. 1998). However, the resource agencies responsible for Endangered Species Act reviews - National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Game (CDFG) - are not official members of the LTMS. A key challenge has been to find a way to coordinate with these agencies in a way that complements, as opposed to undermines, the streamlining LTMS has worked so hard to develop. This was achieved via “programmatic” ESA consultation, which resulted in new Environmental Work Windows for dredging projects in the region. The following sections discuss the Environmental Work Windows, and the DMMO, as critical components of LTMS’s ongoing success.

THE LTMS ENVIRONMENTAL WORK WINDOWS

San Francisco Bay/Estuary is the largest estuarine system on the west coast of the continental United States. It is therefore not surprising that it is home to a large number of threatened and endangered fish and wildlife species. At least some of these species are present, at varying locations in the system, any time during the year. It has been severely affected by habitat loss, fresh water diversion, and pollution (SFEP, 1993). It is therefore not surprising that it is home to a large number of threatened and endangered fish and wildlife species. At least some of these species are present, at varying locations in the system, any time during the year. Although routine navigation dredging and dredged material disposal are not thought to be among the major causes for so many species being under stress in San Francisco Bay, dredging projects must nonetheless generally avoid further impacts to them.

Consultation with the relevant resource agency was essential. However, the resource agencies did not have sufficient staff to consult in a timely manner on the dozens of dredging projects proposed each year in the region. Therefore, the LTMS engaged in “programmatically” formal consultation with the resource agencies as part of the EIS/EIR and Management Plan development processes. Consultation focused on establishing Environmental Work Windows (times and locations where sensitive species would generally not be present), such that work could proceed without the need for further project-specific consultation. The Environmental Work Windows are the green areas shown in Figures 2 and 3.

Two key aspects of the Environmental Work Windows are important to emphasize. First, there are different windows for disposal operations and for dredging operations. Of course, any project involves both operations. However, there are very real differences in the kinds of impact that may occur during dredging versus during disposal. For example, dredging can often involve disturbing contaminated sediments in and near important shallow water habitats around the Bay margins. In contrast, disposal of clean material at established sites in the center of the Bay creates fewer concerns. Separating the sets of windows allowed the agencies to focus attention on where impacts were most likely to occur. It also allowed an overall workable program to be included in the LTMS Management Plan. It is important that the established disposal sites be available at whatever time an individual dredging operation is allowed, based on its own particular dredging windows, to proceed.

Second, if a project cannot be conducted during the established work windows, this does not mean the project is simply prohibited. Rather, it means that project-specific consultation must occur, so that project-specific avoidance and/or mitigation measures can be developed. Project-specific consultation is required at times and locations shown in yellow on Figures 2 and 3. Figure 4 depicts the basic process that must be followed for projects that must do work in these “yellow zones.”

Many projects are able to meet the Environmental Work Windows without too much difficulty. For example, six of the eight maintenance dredging projects planned by the USACE for 2002 will occur within the windows, thus avoiding additional consultation. The other two maintenance dredging projects were approved for operation outside the windows, with only minor mitigation requirements, following consultation. However, greater difficulty may be experienced on some small private dredging projects, many of which occur in shallower water and nearer resources of concern. Also, one of the concerns being raised by applicants is that dredge equipment availability is becoming more of a problem. If nothing else, more projects may have to consult if equipment is busy elsewhere during their window.

The consultation process itself need not be too onerous. The programmatic windows are based primarily on spatial and temporal avoidance. However, it is recognized that in some cases, depending on the mechanism of potential impact, technological or operational measures may be just as satisfactory at avoiding impact even when a species is present. Current practice is to establish such measures via the ESA consultation process. The NMFS, in particular, has made staff available to consult and has been willing to consider project-specific circumstances, or alternate ways to minimize impacts. The LTMS also recently formed a stakeholder’s working

group to look more closely into whether alternate measures could allow the windows to be modified in the future. Another approach, “batching” consultations, also promises to help make the consultation process go more smoothly. One dredging company recently brought about a dozen small projects forward for consultation at the same time. This allowed NMFS to evaluate all the company’s work for the year at one time, and to minimize the cumulative impacts of these multiple projects by identifying which areas and times were relatively more important to avoid than others. The LTMS agencies believe that other sets of projects can be “batched” as well, both streamlining this aspect of the permitting process and benefiting the environment.

The development of comprehensive Environmental Work Windows has been a major step forward for the San Francisco region. The windows protect sensitive species from impacts, and substantially cut down on the workload (for agencies and applicants alike) that would otherwise attend consulting on virtually all Bay area projects. For projects that can meet the windows, no consultation is required at all; thus the windows provide an additional incentive for applicants to plan their projects in a way that minimizes impact. For others with legitimate difficulties meeting the windows, informal consultation may be sufficient and should not necessarily be feared.

THE DMMO

While the broader LTMS program was in its early planning stages, the agencies were able to address one of its overall goals by forming the interagency Dredged Material Management Office (DMMO) in 1995. Modeled in part after the successful Dredged Material Management Program in the Pacific Northwest, the San Francisco DMMO brought together the key regulators to “establish a cooperative permitting framework” for area dredging projects. Since then, the DMMO has done more to streamline the dredging application and permitting process than perhaps anywhere else in the nation.

Through the DMMO, the agencies implemented two key measures, which have proven crucial to both real streamlining and to ongoing active participation of our maritime industry partners in the larger LTMS efforts. These measures are the “one-stop” permit application form, and regular pre-application meetings. The realization of these measures was greatly facilitated by input from stakeholders, especially the dredging-related industries.

The single application form used by projects coming before DMMO today is accepted by all of the DMMO agencies – federal and state – for their separate permitting processes. Although the form itself was effectively produced by combining in one place all the substantive requirements of the agencies’ separate forms, its value goes far beyond simply saving the applicant some ink. First, all the agencies must deem the overall application “complete” before DMMO will begin reviewing it. A consensus that there is sufficient information for all agencies to begin evaluating the proposal increases predictability for the applicant (there should be little chance for “surprises” later). Second, the agencies’ separate permit processing “clocks” (some of which are set rigidly by law) are aligned, based on when the application is deemed complete. All agencies therefore consider essentially the same project at the same time, again increasing predictability for the applicant. This also saves time, for everyone, by reducing both “serial re-evaluation”

(where changes negotiated with one agency at the last minute necessitate revisiting the approval process with other agencies that have already acted) and “divide and conquer” strategies attempted by some applicants.

The simple commitment to have all the key agencies meet regularly to jointly review projects’ sampling proposals and sediment test reports has also had multiple benefits. In their agreement forming the DMMO, the agencies established a set of specific operating principles; perhaps of more importance, they also committed the staff to participate in the ongoing work and agreed that meetings generally would not proceed if all necessary agencies were not present. Although at first fearful to commit resources to “another set of meetings,” the agencies have found that overall staff time spent on reviewing dredging projects often decreased. This is because the USACE staff serves as the single point of contact for all applicants, allowing other agency staff to receive fewer direct inquiries throughout the process. In addition, the USACE staff sets meeting agendas in advance so that time need not be wasted reviewing documents for projects that are not yet ready to be considered. The DMMO meetings themselves are open to applicants and the public. This is especially beneficial to applicants, who can discuss their proposal with all the regulatory agencies at once, again increasing predictability by reducing the likelihood of “surprises” later on.

Since its inception, DMMO has reviewed nearly 400 projects and made disposal suitability determinations on several million cubic yards of dredged material (DMMO, 2000; 2001; and 2002). The application process has been substantially streamlined, without any erosion of environmental protection standards. Since the process is more open, the old public mistrust about how disposal decisions are made rarely surfaces. In fact, applicants sometimes ask to have their non-dredging projects handled under DMMO, because of its perceived credibility and relative efficiency. The agencies themselves are also tasking DMMO to do more and more, including data tracking, coordination of monitoring activities, and alternatives analysis. The DMMO is, in a very real sense, the day-to-day implementation arm of the larger LTMS. As such, it will remain a key formal partnership for the San Francisco area, and a key means of coordination with our other regional stakeholders.

CONCLUSION

As noted, the LTMS has had a number of successes to date. As the program continues to develop, new challenges will undoubtedly arise. Some of the challenges being faced today include: availability of the resource agencies (particularly USFWS) for timely consultations; financing to support additional regional beneficial use opportunities; the flat or diminishing USACE budget for maintenance dredging, which may complicate LTMS’s ability to continue to meet long term in-Bay disposal volume targets ; and policy issues associated with the proposed expansion of San Francisco International Airport (potentially over 100 million cy of combined dredging and filling in the Bay). To meet these and future challenges, it is to be hoped that the LTMS agencies, the resource agencies, and our stakeholders in the dredging industry, the environmental groups, and the fishing community all keep in mind the key lesson from the last several years: working together, as hard as it may be, is still easier, more effective, and more

efficient at both facilitating dredging and protecting and enhancing environmental quality, than working against each other from polarized positions.

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Transition Targets

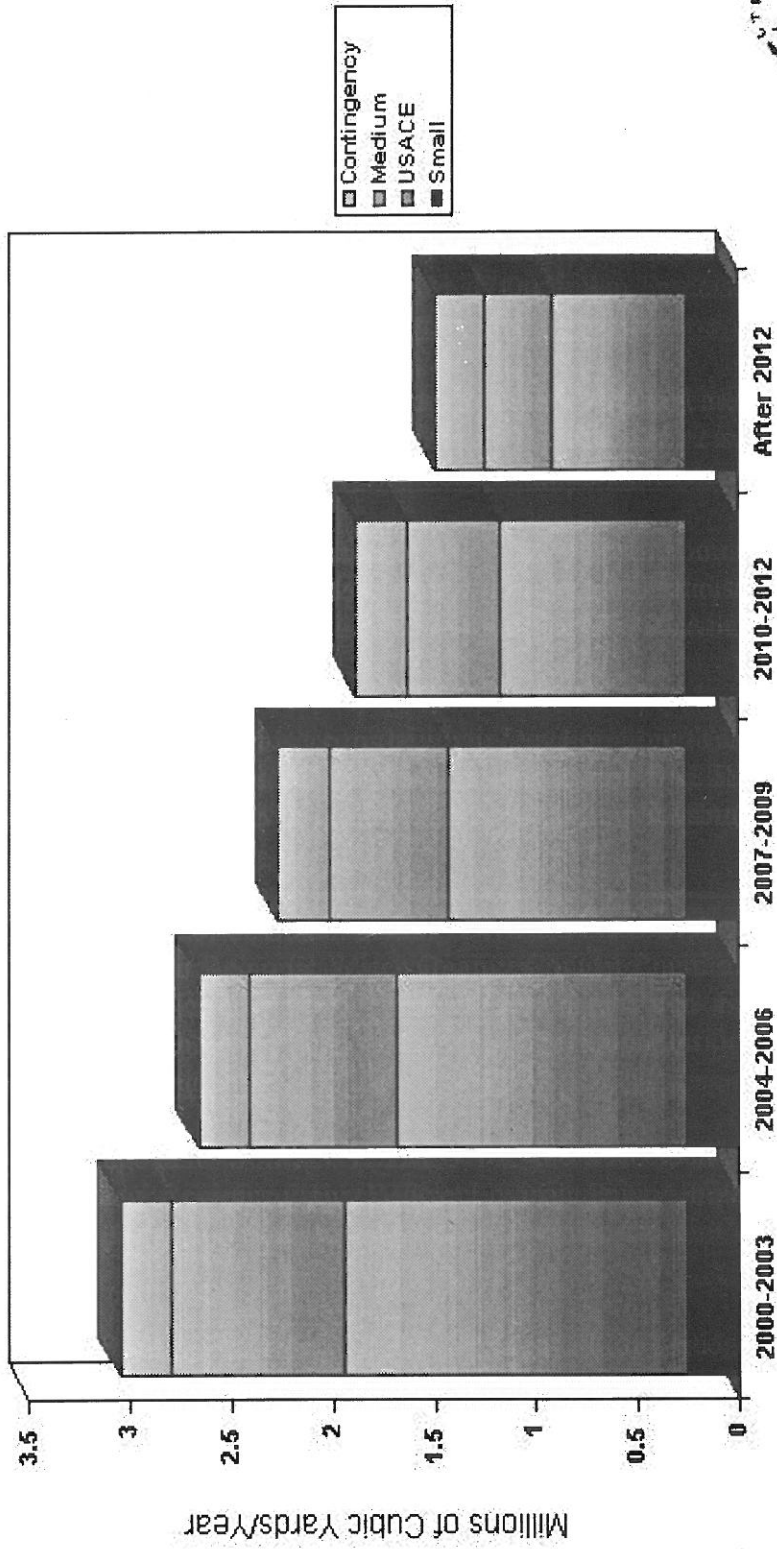


Figure 1. Decreasing Annual Dredged Material Volume Targets during the LTMS “Transition Period”

Summary of Disposal Work Windows

Location & Designation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bar Channel (SF-8)												
Carquinez (SF-9)												
San Pablo (SF-10)												
Alcatraz (SF-11)												
Suisun (SF-16)												
Beneficial Reuse Sites												

Disposal Work Windows

Species	Site	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Chinook Salmon	SF-9 & SF-16												
Steelhead Trout	SF-9, SF-10, & SF-11												
Recreational Marine Fishes	SF-10 & SF-11												
California Brown Pelican	Within 300' of known roost site												
California Clapper Rail, Snowy Plover, Salt Marsh Harvest Mouse, Delta Smelt	Beneficial Reuse Site												
Delta Smelt	Suisun Bay & marshes (not SF-16)												
Least Tern	All eelgrass beds, or within 3 miles of nesting area at Alameda Naval Air Station												

(For more information, see Appendix F or the L TMS EIS/EIR)

WORK WINDOW

MINIMIZED DISPOSAL

CONSULTATION REQUIRED

Figure 2. Environmental Work Windows for DISPOSAL Operations in San Francisco Bay

Dredging Work Windows by Area

Site	Species	Jan	Jan	Feb	Feb	Mar	Mar	Apr	Apr	May	May	Jun	Jun	Jul	Jul	Aug	Aug	Sep	Sep	Oct	Oct	Nov	Nov	Dec	Dec	
		1-15	16-31	1-15	16-28	1-15	16-31	1-15	16-30	1-15	16-31	1-15	16-30	1-15	16-31	1-15	16-31	1-15	16-30	1-15	16-31	1-15	16-30	1-15	16-31	
SF Bay Bridge to Sherman Island	Steelhead Trout																									
	Chinook Salmon Juveniles																									
Carquinez Bridge to Collinsville	Sacramento Splittail																									
	Delta Smelt																									
Pipole Shoal Suisun Bay Channel	Longfin Smelt																									
	Chinook Salmon (Adults)																									
North San Pablo Bay, Napa & Petaluma Rivers	Longfin Smelt																									
	Sacramento Splittail (Juveniles)																									
Napa & Petaluma Rivers, Sonoma Creek	Steelhead Trout																									
	Western Snowy Plover																									
San Pablo Bay & South SF Bay	Dungeness Crab																									
	Pacific Herring																									
North SF Bay & San Pablo Bay shallow berthing areas	Coho Salmon																									
	Richardson Bay, North & South Bay																									
Waters of Marin County from the Golden Gate Bridge to Richmond-San Rafael Bridge	Steelhead Trout																									
	Pacific Herring																									
Central SF Bay	California Least Tern																									
	California Least Tern																									
Berkeley Marina to San Lorenzo Creek within 1 mile of coastline	California Least Tern																									
	California Least Tern																									
Highway 92 Bridge (San Mateo-Hayward)	California Least Tern																									
	California Least Tern																									
In Areas with Eelgrass Beds	California Least Tern																									
	California Least Tern																									
Baywicks in Areas of Salt Marsh Habitat	Clapper Rail																									
	Clapper Rail																									
Baywicks within 250 feet of Salt Marsh Habitat	Clapper Rail																									
	Clapper Rail																									
In and Adjacent to Salt Marsh Habitat	Salt Marsh Harvest Mouse																									
	California Brown Pelican																									

CONSULTATION REQUIRED

WORK WINDOW

(For more detailed information, see Appendix F of the LTMS Management Plan or the LTMS EIR/EIS.)

Figure 3. Environmental Work Windows for DREDGING Operations in San Francisco Bay

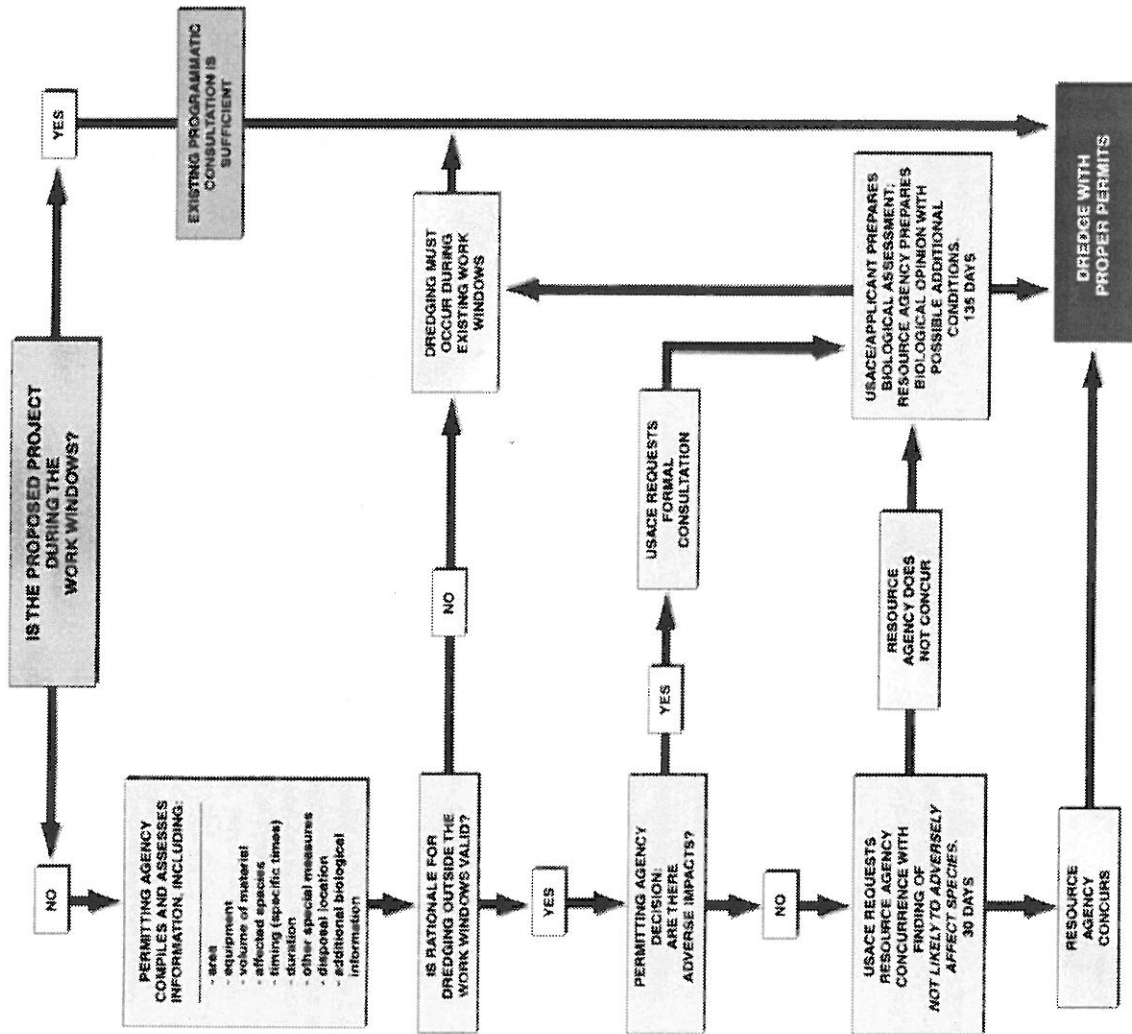


Figure 4. Flowchart of Section 7 Consultation Process

PROVIDENCE RIVER DREDGING PROJECT BREAKING THE DREDGING IMPASSE THROUGH PARTNERING

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ABSTRACT

Substantial dredging has not been conducted in the state of Rhode Island in over 25 years. Because of the lack of acceptable disposal sites, the Providence River and Harbor, the State's principal commercial waterway, has not been maintained since 1976. Attempts to designate a disposal site in the state failed until the most recent attempt, which led to the signing of a Record of Decision (ROD) for the maintenance dredging on March 18, 2002. The ROD recommends a combination of open water, upland, and confined aquatic disposal (CAD) for roughly 6 million cubic yards (mcy) of material that will be dredged from the federal channel and harbor and related facilities. A number of factors contributed to the success of the latest effort to develop the dredging plan, including the partnering process employed. The Corps of Engineers conducted an open process, which involved agencies and stakeholders in determining the issues to investigate as well as the assessment approaches, and emphasized focused, face-to-face communication and side-by-side problem solving. The project partners used education whenever possible to eliminate or reduce knowledge gaps. The partnering effort contributed to working relationships that will improve cooperation through construction and monitoring and beyond.

BACKGROUND

The Corps of Engineers signed a Record of Decision (ROD) for maintenance dredging of the Providence River and Harbor on March 18, 2002. When this dredging is completed, it will be the first major dredging project in the state of Rhode Island in over 25 years. The ROD and Final Environmental Impact Statement (FEIS) recommend a combination of open water disposal, confined aquatic disposal (CAD) cells, and upland disposal for roughly 6 million cubic yards (mcy) of material that will be removed from the federal project and related facilities.

Federal involvement in navigation in the Providence River dates back to 1853 when a 9-ft deep channel was dredged. The channel was subsequently deepened to 25 ft, then 35 ft along its entire length. In 1976, a modification to the project was completed under

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authority of the Rivers and Harbors Act of 1965 when the Corps removed 100,000 cubic yards (cy) of material to deepen the channel and harbor to the presently authorized depth of 40 ft. Previous to that dredging, the last large scale dredging in the State (2,693,000 cy) was completed in 1971. The designated disposal site used for dredged material disposal in 1976 has since been closed due to the concerns of commercial fishing interests. Although the lack of dredging has potentially severe economic implications for the State, attempts to designate a new, acceptable regional disposal site in the late 1970s and early 1980s failed.

The latest efforts to maintain navigation channels in Rhode Island began in 1992 when the Corps of Engineers completed a survey of the ship channel at the request of the Governor. The survey showed mid-channel shoaling of 3 to 11 ft causing the Coast Guard to place emergency one-way traffic and draft restrictions on ship traffic.

Shortly after the survey results were released, then Governor Sundlun established an Interagency Task Force to Preserve Shipping in Narragansett Bay. The charge of the Task Force was to consider the problem of maintaining the Providence River channel and harbor and other commercial and recreational navigation projects and marinas throughout the state. The magnitude of the problem and lack of dredging led the authors of the Task Force's report to declare that a "dredging impasse" existed in the state.

Support for dredging in a cooperative interagency framework continued under present Governor Lincoln Almond, who established the Governor's Commission on Dredging. The State's legislature created the Coastal Resources Advisory Committee (CRAC) whose objective was to develop a solution to the dredging issue and assist the Corps of Engineers with its Environmental Impact Statement (EIS). This is the context within which the National Environmental Policy Act (NEPA) process for the Providence River Maintenance Dredging Project was conducted.

THE PROJECT

The Providence River is the principal commercial waterway in Rhode Island. The federal navigation project in the Providence River consists of a 16.8 mile-long channel, beginning in the cities of Providence and East Providence and following the river on a southerly course to Narragansett Bay. The upper two and one-half miles comprise the Main Harbor. The channel is generally 600 ft wide, except for the Main Harbor, where its width ranges up to 1,700 ft.

The deep-draft vessel traffic in Providence River and Harbor consists mainly of oil tankers, barges and general cargo vessels. There are 27 water terminal facilities serving the port of Providence. At present, there are ten wharves with major oil-handling capabilities on the main channel.

MAJOR ISSUES

The controversy, which led to the dredging impasse, resulted from the lack of viable disposal options and dictated the need for an EIS (rather than a less detailed environmental assessment). Therefore, most of the coordination and collection of information focused on the disposal site location. The overall EIS had a strong focus on disposal site locations and the issue was resolved to a large extent through the public process. Public input helped to change disposal locations for both the suitable and unsuitable material. Several other issues related to disposal as well as dredging emerged during the NEPA process:

- Dredging Windows
- Mixing Zones
- Effects on Fisheries
- Beneficial Uses of Dredged Material
- Alternative Disposal Technologies
- Alternative Project Dimensions

APPROACH

A number of factors contributed to the success of the latest effort to develop a plan to dredge the Providence River, including strong support from elected representatives and marine trade groups, cooperation from other stakeholders, the dire conditions in the channel, the level of experience and empowerment of the Federal and State agency representatives, and the partnering process employed. Webster's Dictionary defines partner as "one who shares" and partnership as "the state of being a partner; a relationship resembling a legal partnership and usually involving close cooperation between parties having specified and joint rights and responsibilities." Certainly, the public, represented by individuals and non-governmental organizations is a partner with rights and responsibilities. Of course, cooperating agencies (...any...agency...which has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal...[40 CFR 1508.5) and state regulatory agencies are partners according to this definition.

Like all Corps of Engineers maintenance dredging projects, dredging of the Providence River channel and harbor is a partnership between Federal and state government. The federal partners, designated as Cooperating Agencies under NEPA, included the US Army Corps of Engineers (USACE), National Marine Fisheries Service (NMFS), US Environmental Protection Agency (EPA), and US Fish and Wildlife Service (USFWS). The State was represented by the Rhode Island Coastal Resources Management Council (RICRMC), the non-federal project sponsor, the Rhode Island Department of Environmental Management (RIDEM), and the Governor's office. The State was an integral part of the planning process and will be a financial partner in construction because of the need to construct disposal facilities for the project.

Key elements of and recommendations concerning the partnering process are described in the following paragraphs.

Conduct an Open Process

Throughout the NEPA process from the beginning of scoping through public review of the FEIS, the Corps of Engineers and its partners encouraged as much input as practical from the public and agencies. Formal scoping meetings were held at various locations surrounding Narragansett Bay at different times of day and during different weeks to encourage as much participation as possible. As is often the case, the attendance at preliminary scoping meetings (92 people) was much lower than the attendance at the public meetings following the release of the draft EIS (176 people) which indicated the locations of our preferred disposal sites. Attendance at the public meeting for the FEIS dropped substantially (60 people) following changes in the preferred plan from the draft to final EIS. The Corps of Engineers, the CRAC, Cooperating Agency partners, and other groups (e.g., commercial fishermen's organizations) continued to meet throughout the development of the EIS. These meetings enabled the partners to identify issues early in the development of the EIS when it could have its greatest impact on the process and outcome.

Document the Scope and Approach in Coordination with the Partners

Soon after the formal scoping process and release of the DEIS, the Corps prepared a draft workplan describing the scope and major issues for the EIS, and the approach to developing the information required for solutions. The partners (the Cooperating Agencies, regulatory agencies, and the CRAC) then worked together to complete the final workplans, which served as the road maps for the different phases of the EIS. Of course, new information invariably surfaces throughout the process creating the need to change tasks, methods, and information requirements. The partners discussed these changes whenever possible to develop consensus with methods before the information was collected.

Reduce Letter Writing

Early on in the NEPA process, the partners recognized that agencies were spending a great deal of time and effort writing letters with very little benefit to the project or process. Letter writing consumes staff resources and there is a potential for miscommunication and posturing. The Corps proposed to the Cooperating Agencies that letter writing be minimized until the agencies had worked through an issue face to face and had come to agreement, or agreed to disagree. These agreements, or points of disagreement were documented in meeting notes and occasional letters, saving hundreds of hours of staff time and facilitating a better working relationship with the agencies. Reducing the amount of documentation concerning positions is possible when the partners work to be trustworthy and share in the process and ultimate outcome.

Use Education

Uneven knowledge about technical matters affecting a project can be a barrier to effective partnering. The lack of significant dredging in Rhode Island over a 20 to 30 year period meant that State, local, and, in some cases, Federal agency staffs were not experienced with dredging projects. As a group, the partners took advantage of opportunities to help educate the each other on various elements of the dredging process. For instance, since the last dredging and disposal operations in 1976, stories had circulated about short dumping, fish and lobster kills and Narragansett Bay being filled with turbidity for months due to dredging. These stories could go unchallenged because many agency representatives had never witnessed dredging and disposal operations. Believing that it is better to discuss the actual rather than the perceived effects of a dredging project, the Corps hosted a number of excursions to view dredging and disposal operations at the nearby dredging in Boston Harbor. The work in Boston is very similar in size and scope to the proposed work in Providence. Although the site visits were not as well attended as they could have been, they allowed agency staff who did attend to help put these claims and perceptions into proper perspective. The Corps also held separate meetings and workshops with invited experts to discuss various technical project issues such as beneficial uses of dredged material and computer modeling. In addition, the RI CRMC held a workshop on alternative technologies for dredged material treatment. These workshops and other efforts at education helped to eliminate the knowledge gap that may otherwise have led to mistrust.

Focus on the Major Issues

Cooperating agencies are selected because of their special expertise and the project benefited from having particularly experienced Federal agency representatives. Recognizing their expertise and seriously addressing their suggestions with the best scientific information available helped to foster a cooperative partnership. This allowed the partners to rapidly flesh out real issues and move beyond less important issues.

Some issues, in particular dredging windows and mixing zones, required special focus to develop information and negotiate issues. When major issues were identified, groups of experts were assembled from the Cooperating Agencies and state regulatory agencies. The Corps developed a specific study approach for each effort with input from the partners, then developed a series of partial draft reports for the partners to edit, revise and, more importantly provide expert information. The Corps invited each agency to add to the document and offered to include a section in the reports with their comments and recommendations. Although they generally did not provide that sort of input, the offer to include their views led to cooperation and a shared interest in the content. This cooperative approach and the working relationships it helped foster was one factor leading to a desire on the part of the partners to use the project as a focus for follow on monitoring. Efforts are currently underway to develop research related monitoring plans, separate from the monitoring needed to document compliance with environmental requirements.

Stakeholder Outreach

Early on in the process it was apparent that open water sites would play a significant role in the disposal of the dredged material. It appeared that virtually every area in Narragansett Bay and Rhode Island Sound was used for some type of finfish or shellfish harvesting. The Corps made significant efforts to keep the various stakeholder groups representing fishermen, environmental groups, and State and Federal Fishery managers involved in the process. This included consulting with local fishermen when site investigations were being developed to gain from their experience and knowledge of the area. Throughout the EIS process, the Corps made significant efforts to inform these groups of the results of our investigations and where the information was leading us to allow them to ask questions and provide input before finalizing the EIS. While there will never be 100% agreement over the sites chosen, this outreach helped to address stakeholder concerns while moving the project forward and forestalling significant opposition to the work.

Expect Comments

All the coordination and cooperation did not reduce the number of comments on the EIS, in particular the draft EIS, as much as expected. This was not entirely surprising based on past experience and the fact that each agency brings a different perspective to the process. A number of comments occurred at public decision points. Lead and cooperating agencies can minimize this problem with a few changes in approach. The number of comments and underlying issues to be resolved can be reduced if the partners share in the goal of producing a better, albeit not perfect decision. Agencies can support the decision-making process by providing their input as early in the process as possible and sharing more completely in the collection of information.

CONCLUSIONS

The Providence River and Harbor Maintenance Dredging Project demonstrates an approach that can be used to improve relationships among partners in major dredging projects. All parties involved were considered partners and encouraged to work side by side to resolve the issues related to dredging and dredged material disposal. The approach applied for the project involved inviting the partners into the process early and conducting an open a process. The partners were included in the development of methods to evaluating the project so that their concerns could be addressed through the process as well as in the interpretation of results. The partners built on the relationships that developed by encouraging face to face over written communication. This reliance on face to face communication decreased the potential for misunderstanding and decreased conflict. Where knowledge was unevenly distributed, the partners took advantage of opportunities to educate each other to increase understanding and cooperation. The partners in the Providence River Dredging Project focused on the major issues by using separate documents and processes to obtain, guide, and display agency input. This process recognizes that complete consensus is not always attainable, but disclosure of alternative views contributes to the decision-making and partnering process.

PARTNERSHIPS FOR ENVIRONMENTAL DREDGING: LESSONS FROM ASHTABULA

Richard L. Nagle¹

ABSTRACT

The Ashtabula River has not been dredged to its navigational depth for over 30 years. Like many other harbors, the sediments in Ashtabula are contaminated and the cost of dredging quite high. In 1994, a decision to adopt a partnership approach was made, partially to avoid the Superfund designation for the water resource and partially to try and bring parties with similar interests together to solve a complex problem. The following paragraphs briefly describe the Partnership, some successes, some unresolved issues, and conclude with some lessons we have learned.

THE PROBLEM

Ashtabula is located 75 miles east of Cleveland, Ohio, on the southern shore of Lake Erie. It has been an active commercial port since 1824. It has also been home to a mid-sized industrial complex since the 1940's. Fields Brook, a tributary of the Ashtabula River and Harbor was contaminated by the industrial complex and is now being remediated under the U.S. EPA's Superfund program. In the lower 2 miles of the river from the mouth of Fields Brook into the Harbor, the sediments are contaminated by PCB's (> 50 parts per million), hydrocarbons, and heavy metals from Fields Brook and other sources. Navigation channel maintenance has been limited in the lower Ashtabula River due to contamination and appropriate disposal issues. While the majority of the harbor is not contaminated enough to preclude unrestricted disposal, the more-contaminated river sediment is moving downstream.

THE PARTNERSHIP

In 1994, U.S. EPA agreed to forestall expansion of the Fields Brook clean up into the Ashtabula River so that a "Public-Private Partnership" could attempt to fashion a dredging project that would address the needs of a wide group of stakeholders. The Partners, by signing the Charter, committed to active participation in solving the community problem. The stakeholders include: members of the local community, recreational boaters, commercial dock owners, local industrial interests, and various local, state and federal agencies. Everyone involved anticipated that the partnership could do the job "smarter, cheaper, and faster" than government alone.

The challenge facing the diverse group of stakeholders was to effectively blend their authorities and resources and create a project that was more inclusive than any individual

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stakeholder could accomplish. To that end, the U.S. Army Corps of Engineers (USACE) and its dredging authorities under the Water Resource Development Act (WRDA) had to be blended with the response agency authorities that could be used to compel clean-up, State requirements for project planning, and local needs for restoration of the beneficial uses of the waterway.

The partnership has no legally binding agreements governing its members. Members signed a Partnership Charter as a pledge to try and do business a new way. Decisions on partnership matters are generally made by consensus, but there are by-laws and votes under the adopted rules. The Partnership adopted the National Environmental Policy Act (NEPA) process as its planning tool, but retains the flexibility to address project needs outside the traditional USACE dredging mandate. Work is done by sub-committees using a mix of agency professionals and local volunteers. The sub-committee reports to a coordinating committee that manages short term operations.

In early 2002, the USACE released the Final EIS for the project for public comment. The Record of Decision (ROD) should be signed in Summer 2002. The recommended project will dredge approximately 700,000 cubic yards of contaminated sediment from the river. It will be disposed of in two upland disposal facilities located about a mile from the river. The projected project cost is just over \$46 million (1999 dollars).

ADVANTAGES OF THE PARTNERSHIP APPROACH

Contaminated sediments pose a complex and expensive problem. One of the clear advantages of a partnering approach is the ability to bring more resources to the table. Any individual stakeholder may lack resources or authorities to deal with the overall problem. Together, the partners can bring a wide range of resources to the table.

In accepting the partnership approach, the stakeholders needed to spend some time initially to define the scope of the problem to be addressed. Traditionally, U.S. EPA would focus on "imminent and substantial endangerment of human health and the environment" and USACE would focus on navigational dredging. The local public, either represented by local boaters or members of the Remedial Action Plan (RAP) process, had interest in restoring the recreational and other beneficial uses of the waterway. Through the scoping exercise, the stakeholders can design a project that meets as many of their needs as feasible through one combined project.

One of the obvious resources is money. Funding for various elements of the investigation and planning phases of the project have come from local companies, city and township government, U.S. EPA grants, and the USACE. With a diverse funding base, different money sources can be used at different and critical times. For example, additional testing that would help refine the cut lines and volume estimates was funded by private resources when public resources could not be made available on short notice. The significant resources available under the Water Resource Development Act generally require local matching funds for a percentage of the funded item. In that situation, state government and private funds fill this need. Administrative costs are always difficult to

fund and the Partnership has relied on a mixture of government and private funds to cover these expenses.

Some partners do not have cash resources but can provide less traditional resources of very high value to the Ashtabula dredging project. First, land for access and disposal are essential to a successful dredging project. The transfer and dewatering station for the project sediments will be on land leased to the project by one of the partners at a very low cost. The property was originally contemplated for direct acquisition, but the lease arrangement meets everyone's needs by allowing the owner (a railroad) to retain a controlling interest. Second, a set of properties in the Ashtabula area were screened as possible disposal sites. With residents guiding the selection committee, a set of locally acceptable disposal locations was established and a final disposal site selected within one mile of the river. Third, USACE projects generally require a local sponsor that is a governmental entity with taxing authority. The City of Ashtabula Port Authority is filling that role and assuming some significant responsibilities. Fourth, the environmental dredging authority available under WRDA section 312(b) requires an analysis of environmental benefit to justify the expenditure. To produce this analysis in a timely fashion, partners from the Ohio Department of Natural Resources and the U.S. Fish and Wildlife Service prepared an analysis of the ecosystem benefits provided by the upstream portion of the project. Fifth, as mentioned above, there are times when the use of governmental money requires lead time that could push back the project schedule. Private resources can facilitate sample analysis and produce results that will keep the project on schedule.

ISSUES RAISED BY THE PARTNERSHIP APPROACH

The partnership approach does raise a number of issues in project planning and implementation. Most of these issues relate to the consensus-based operation of a large group. While not a set of issues that has hurt the Ashtabula partnership process, these are some of the issues that could have a significant impact on project completion.

- First is transaction costs. In any large group, it is costly both in terms of time and money to get to a decision point. Much of the first two years after the Charter signing were spent establishing project goals, writing by-laws and assigning committee tasks.
- Second, consensus decision-making is a slow process. The evaluation process is iterative and options are evaluated relative to individual stakeholder goals. This diversity in perspective can be both a resource and a constraint. It often takes significant discussion to resolve issues, especially in early phases of a partnership.
- Third, it's important to keep a focused project goal. A partnership project should set an attainable goal in a reasonable time frame. The Ashtabula Partnership focused on the contaminated sediments in a selected reach of the River. While larger watershed issues could have been added, the group decided to keep a narrower focus that would help assure success. Additional projects could grow out of a successful sediments project. A related issue is mission creep. As a project starts to take shape, stakeholders may be tempted to add tasks. Sometimes a shift in project scope is warranted, but it is important for the project

coordinators to keep the group from adding baggage that could sink the project either administratively or financially. Ashtabula has struggled with the concept of interim dredging projects to keep recreational navigation open while the main project is planned. These interim projects are now planned outside of the main project effort.

- Fourth, some partners may have institutional incompatibilities. Sometimes, this stems from the adversarial regulatory relationship of agencies and industry. Sometimes, this arises between agency missions. In Ashtabula, the partners had to resolve the issue of the appropriateness of giving government grant dollars and WRDA funding to a project that could arguably be subject to Superfund enforcement.
- Fifth, any cooperative effort is subject to difficulties with holdout stakeholders. Consensus is lost if one party, especially one with a large resource investment, decides to withhold participation pending a favorable decision on the project. While Ashtabula has not had a hold out, there are discussions regarding the allocation of stakeholder liability that could result in a major partner withdrawing support.

LESSONS LEARNED

After eight years of the partnership process to address contaminated sediments in Ashtabula, there are a number of partnership attributes that have helped generate a Final EIS for this project.

- First, a commitment by the parties to solve the defined problem. The Partnership has remained focused on the attainable goal set years ago and has resisted mission creep. Calls for additional interim dredging or expanded watershed development plans have been kept at a respectful distance.
- Second, early participation by a wide range of stake holders, while slow in the early stages, results in a broadly acceptable project down the road. The broad support and inclusive project design have helped smooth the approval process in the later stages, and while not speeding up the process, provide continued progress toward project implementation.
- Third, cooperation requires both carrots and sticks. A successful cooperative enterprise is most likely when all the stakeholders would benefit from cooperation. For some stakeholders, solving the local contamination problem is enough to elicit cooperation. For parties removed from the local effect of the contamination, the threat of legal action may be required to enhance cooperation.
- Fourth, partnerships reflect an approach, not a formula. Each site has it's own unique history and set of stakeholders. In Ashtabula, a non-binding charter was enough to start the process. In other situations, a more formal arrangement may be necessary. If the parties have residual animosity, a mediator may prove useful. For smaller projects, there may be fewer parties and less focus on building common goals.
- Last, you need parties with the potential adequate resources at the start. Many problems can be solved by a committed partnership. Raising all of the tens of

millions of dollars necessary to implement a solution is just too large an obstacle to solve.

The Partnership approach to environmental dredging holds great promise as a tool for addressing complex projects. Our experience in Ashtabula has taught us that there is no magic formula, but if the project is properly scoped, if a wide range of stakeholders are brought to the table early, if stakeholders remain committed to the cooperative approach (with either carrots or sticks), and if parties with adequate resources are available, you are have every reason to expect a better project in the end, maybe not cheaper and faster, but better.

NOTES FOR CONTRIBUTORS

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Hunt, J.B. (1995). "*Environmental Dredging*". Smith & Son, Inc., New York, NY.

Donegan, T.M., and Dinicola, W.J. (1986). "*Turbidity Associated With Dredging Operations*". Technical Report, XYZ Consultants, Inc., Baltimore, MD., 60 p.

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