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Keynote Address for Major General Henry J. Hatch
Beneficial Uses Workshop - 7 October 1986

I am quite pleased to be making the keynote address at this workshop and to be sharing my views with you on the concept of beneficial uses of dredged material.

C. H. Hatch for Stretch

Before progeeding, I would like to express my appreciation to Colonel Dunn, Jr., the Mobile District Engineer, and Brigadier General Ernest Edgar III, the South Atlantic Division Engineer, and their respective staffs, for their fine job in hosting this workshop, as well as Colonel Dwayne Lee, the Commander and Director of the Waterways Experiment Station, and his staff for coordi ing this workshop. I would also like to thank my colleagues in the Environmental Protection Agency, the National Marine Fisheries Service and the U. S. Fish and Wildlife Service for their willingness to serve as cooperating agencies in this workshop and for the hard work the representatives of these organizations have put in to ensure its success. Also, I am especially pleased that the agenda includes participants from state governments and universities.

A major objective of this "first of its kind workshop" is to provide a national forum in which we can share our experiences in this area, both successful and unsuccessful, as well as your recommendations for future projects in which dredged material can be used beneficially at either no increase in cost or at a reduction in the cost of operations. I urge each of you to take full advantage of this opportunity, and I suggest that the co-chairmen of each of the sessions that follow provide as much time as possible for audience interaction and comments.

When I mention the phrase "beneficial uses of dredged material," I am referring to the concept that dredged material can be disposed of in a manner that is environmentally and economically acceptable and that also accrues natural resource benefits to society. Certainly, the beneficial use concept is

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not a panacea for the disposal of dredged material, no more than is upland disposal, ocean disposal, or any other available disposal option for dredged material. Each has its own set of logistic, economic, legal and environmental considerations. However, regardless of whether one is involved in the actual dredging activity or resource management, this particular tool or concept is quite intriguing in that, under certain circumstances, it will result in a management solution that provides a wide variety of benefits to our society in addition to improving navigation conditions.

There is a lot at stake here. Our National Dredging Program involves the maintenance of over 25,000 linear miles of federal waterways that serve 130 of the nation's largest cities and reach 41 of our 50 states. The vast majority of these navigation channels require periodic dredging to provide safe and efficient operational conditions for maritime traffic. Only one estuary, Puget Sound in the state of Washington, has natural deep water adequate to accommodate the large vessels engaged in commercial and international maritime activities. Because of the significant economic, energy, and defense importance of this extensive navigation system, it is usually not a question of whether or not to dredge, but a question of how best to dredge and dispose of the dredged material.

The maintenance and development of our national waterway system presently involves dredging and disposal of about 300 million cubic yards (MCY) of sediment annually. Another 100-150 MCY are dredged annually by other federal and state agencies and by the private sector. Disposal of all of this material is regulated by the Corps under the provisions of various federal legislation. Of the approximately 400 MCY of sediment requiring disposal within the U. S.:

- About 50 MCY are deposited in ocean waters each year. Nationwide, we have about 130 ocean disposal sites designated for this purpose and about 40 to 50 of these sites are used each year.

- Another 50 MCY are dredged each year from coastal areas and disposed of in open water areas or in diked containment areas.

- The remaining 200 MCY are dredged annually from our inland waterways,

primarily from the Mississippi River and its tributaries, and from the Great Lakes.

For some time, the disposal of dredged material has been the number one blem in the management of the National Dredging Program, and there is every on to think that this will be the case in the future. One aspect of this lem that we have been confronted with is the "feeling" --- and this is the way that I can think of to refer to it --- the "feeling" by some groups ndividuals that the disposal of dredged material in open or ocean waters be a "last resort." It is difficult for me to explain just how this g" evolved, because we and other nations have disposed of large volumes ged material in open and ocean disposal sites for many years. I have ee any engineering or scientific data indicating any adverse effects on posal method. I am pleased to report that the Permanent International on of Navigation Congresses, the prestigious and largest engineering tific society, recently presented to the members of the London Dumping the view that the disposal of dredged material in ocean sites should ed on an equal basis with all other disposal options.

er associated area, we are working with the Environmental gency to revise their Ocean Disposal Criteria to establish separate r the handling of dredged materials rather than having the ese materials included with the sewage sludge provisions.

, we are in the process of finalizing a Memorandum of ith the Environmental Protection Agency on site designation, sediment testing procedures for ocean disposal sites. So, all some important institutional steps being taken to address the ed material and the "last resort" problem.

e on the magnitude of this problem is that each year the dredged material to cover the city of Washington, D. C., to e feet. Some of you folks are no doubt thinking that this e beneficial use of dredged material. I want to make it I am not suggesting such a solution. My boss, who is worried about this matter than I am.

The volume of the annual dredging program that the Corps is responsible for has been fairly constant over the past several years because there have been only a few major deepening projects authorized by the Congress. However, there is reason to believe that the role of dredging in the United States will be significantly expanded in the near future. For about ten years or so, the Congress has not authorized a bill for water resources projects. This was probably due to two factors, the extreme concern over environmental protection in the early years and a provision for cost sharing which has been under consideration for the past five years or so.

It appears that the House and Senate Conference Committee is closer to negotiating an Omnibus Water Resources Bill, HR.6, that will be acceptable to both houses. The bill would authorize $14 billion to $20 billion for water-related development including 35 deep-draft navigation projects. The proposed bill will also include cost-sharing provisions which would require the financial participation of the port authorities for a portion of the new work or improvement dredging as well as the increased maintenance dredging work associated with the deepenings. Before I leave this topic, I want to emphasize that I think cost sharing is a good idea, and it will ultimately lead to our ports being more productive and efficient.

The channel deepenings would involve the removal of large quantities of dredged material which would require disposal. We estimate that the deepening of the channels serving Norfolk, Mobile, Galveston, and New Orleans would require the excavation of about 350 million cubic yards of bottom sediment. We do not expect any significant problems with contaminated material on the deepening projects because our testing program indicates that the pollutants are contained in the sediment particles which are transported by currents into the channel prism and do not penetrate into the virgin soil layer which is beneath the maintenance dredging profile. Nevertheless, because of the large volume involved in the deepening projects, we will devote considerable effort towards minimizing the physical impacts through the identification of the most appropriate disposal alternatives and procedures.

In addition to the large-scale improvement work being considered for port

authorities, projections are being made for significantly increased defense dredging needs in several areas along the coastlines of the country. Plans to expand and to modernize our naval defense fleet are underway. Several categories of naval vessels now entering the fleet may require significantly deeper access channels or more frequent maintenance dredging or both. In addition, the Navy has announced plans to significantly expand the number and types of home ports in each of the coastal regions of the United States to accommodate the expanded fleet.

Another example of expansion concerns the probable role of dredging in a number of identified waterway clean-up projects under the Superfund Program. In the coastal areas alone, NOAA has identified over 100 site specific clean-up requirements. Additional clean-up requirements within our nation's waterway system seem to be surfacing almost monthly. All such clean-up activities involving dredging will require a careful and thorough scientific analysis of the sediments to be dredged, appropriate dredging technology for the removal of these sediments, and appropriate alternatives for disposal.

Another area in which dredging activities may expand is in the removal of significant sediment accumulations that have built up behind a number of our locks and dams in order to effectively restore water quality, floodwater storage, hydroelectric potential, irrigation, and other project design purposes. As in the other cases, we will have to find the means to safely and economically dispose of these large volumes of sediments.

The 35 channel deepening projects now before Congress for consideration under HR.6 would by themselves generate well over a billion cubic yards of new dredged material over the next decade or so. Needless to say, this anticipated future dredging workload will require a great deal of hard work and innovation on the part of everyone involved in these projects to ensure that each proceeds in an environmentally responsible as well as cost-effective manner.

This brings me back to the concept of beneficial uses. We have seen a great deal of innovation in applying this concept over the last 10 years or so, particularly in the environmental or habitat development area. I am convinced that there is room for considerable additional innovation in applying this

concept with, in many cases, a corresponding potential for significant cost savings over our more traditional disposal methods.

The basic concept has been with us for many years. Beach nourishment is a ssic beneficial use example which has been in use for many years. Others ude the use of dredged material as a construction aggregate or as fill for ays and for construction and expansion of many of our major metropolitan ts such as Washington National. In addition, many instances have now cumented throughout the country of beneficial habitat creation with material. Marsh creation, suitable nesting habitat for endangered bird and oyster and other shellfish habitat creation are just a few of the evelopment examples that clearly indicate that dredged material an often be accomplished and provide environmental benefits at a t if the proper conditions are established.

a significant continuing demand by the concerned public for applications. From the considerable Congressional and other which my office receives on our dredging projects, it is In many instances, local concerns over beneficial uses of our are beginning to balance local concerns over environmental

ations require us to fully consider beneficial use dredging projects. A study, soon to be released by the of Technology Assessment on waste disposal practices in cates that while over 95 percent of the total volume of year from the coastal zone is environmentally innocuous variety of beneficial use applications, only 15 percent within the coastal zone for these purposes. This ne concept appears to have been accepted, all of us moving ahead with practical applications.

f life is that logistic considerations, economics, onstraints can sometimes limit the application of ment is a case in point. Institutionally, we are least costly, environmentally acceptable disposal option

Beach Nourishment

for our federal projects. In cases where beach nourishment does not meet this criteria, the entity requesting use of the dredged material for this purpose is required by law to pay the difference in cost, which can often be quite significant. In addition, wave and sea conditions in the nearshore physical regime often preclude the use of pipeline cutterhead dredges, which are the most cost effective type of plant to provide dredged material beach nourishment. In other cases, the material dredged is not always suitable for beach nourishment and sometimes the volumes of materials do not match.

Despite the extensive environmental research data now available on dredged material, we still have a very real problem with the general public's perception of dredged material. People often use the terms "dredged material" and "sewage sludge" as if these materials were the same. Also, despite our extensive efforts to get the term banished from the English language, we still frequently hear the term "dredge spoil," which has a grossly inaccurate connotation for the vast majority of sediments that we dredge.

A closely related problem is that proposed beneficial use alternatives are sometimes viewed with suspicion as a shell game, a fancy name for getting rid of dredged material inexpensively by disposing of it in a convenient manner.

Finally, conflicting opinions on critical habitat needs can also limit the application of the concept. The issue of wetlands versus shallow water habitat is an example that most of you have heard debated for many years.

In my view, if we are to realize the full potential of this concept, an essential next step is the development of a logical, technically based framework or strategy for employing beneficial uses, particularly in the area of habitat development. We in the Corps take considerable pride in the fact that we have developed over 2,000 productive bird islands nationwide, over 19,000 acres of new wetlands, and that we can, in fact, design and construct a wide variety of productive habitat with dredged material. However, before we can reasonably determine the full extent to which dredged material can or should be used for such beneficial purposes, we must have definitive recommendations and guidance from resource managers on physical habitat requirements for each water body and region where we dredge and how much of

each is desirable.

Data from the national wetland inventory, for which the Fish and Wildlife Service serves as lead agency, will be quite valuable in this effort. The Environmental Protection Agency's Administrator, Lee Thomas, has recently announced his support for a proposed coastal waters strategic planning initiative by EPA's Office of Water. Habitat loss and alteration is one of five identified national priority areas which would be addressed by this proposed initiative.

The National Marine Fisheries Service has recently initiated a bold new national effort on coastal habitat restoration and rehabilitation which will be the subject of a separate presentation this afternoon.

In addition, we have just reviewed a draft report containing a series of recommendations by an independent scientific panel to the NOAA Administrator on future research directions for NOAA's ocean program. A major recommendation of that panel is that NOAA establish, as an agency research priority, the delineation and ecological characterization of critical coastal and offshore habitats.

Within the Corps, my staff is reviewing a proposal by our Water Resources Support Center to establish programmatic policy guidance and a national direction for the development of long-term disposal management strategies for our navigation projects. Major proposed components of this national guidance would include incorporating both federal and non-federal dredging and dredged material disposal requirements within these plans, consideration of both structural and non-structural alternatives to maintain efficient navigation projects, and full consideration of the beneficial uses alternative and project specific evaluations.

We are also giving a high priority to the development of innovative dredging and disposal solutions. Application of multiple-use concepts such as mariculture for our upland disposal sites and development of nearshore underwater berms are examples of ongoing developmental work within the Corps. Underwater berms seem to be unusually attractive. They cannot be any more

damaging than the ocean sites we use today, and they might dissipate wave energy and create a habitat conducive to fish as well. Instead of placing dredged material in traditional disposal areas, we could create underwater berms by creating zones generally parallel to the shoreline. But you will be hearing more about this idea later, and I urge all of you to plan on sitting in on that session.

In closing, I would like to leave you with two thoughts. The first is one that was emphasized by Mr. Bill Gordon, Director of NMFS, and his staff, when they discussed their proposed coastal habitat initiative with us. Mr. Gordon presented some very detailed and alarming statistics on coastal habitat losses and reduced fishery landings nationwide scale. He also suggested that instead of resolving dredged material disposal problems and habitat loss problems separately, and sometimes belatedly as had occurred in some cases in the past, perhaps a better approach would be to define to what extent the two issues can be resolved collectively. These are excellent suggestions and we plan to follow up on them.

My second thought can best be summarized by the old adage - "Necessity is the mother of invention." My feeling is that there is significant untapped potential in applying the beneficial uses concept within our dredging program. Certainly, given our longstanding and, in several parts of the country, critical problems in locating suitable disposal sites and our projected future workload, there is a definite need for innovation or invention. We plan to place great emphasis on the beneficial use innitiative and I hope you will join us in this effort.

Thank you for your time and attention.