Erie Pier
Management Plan

June 2007

Produced by the Metropolitan Interstate Council

Erie Pier Management Plan

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Prepared by the

Duluth-Superior Metropolitan Interstate Council
Duluth and Superior urban area communities
cooperating in planning and development
through a joint venture of the
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ACRONYM GUIDE

CAC	Citizens Action Committee	**MPCA**	Minnesota Pollution Control Agency
CDF	Confined Disposal Facility	**NPDES**	National Pollutant Discharge Elimination System
DMMP	Dredged Material Management Plan	**NRRI**	Natural Resources Research Institute
EPA	Environmental Protection Agency	**PCB**	Polychlorinated biphenyls
DSPA	Duluth Seaway Port Authority	**PRF**	Processing and Reuse Facility
ERDC	Engineer Research and Development Ctr	**SDS**	State Disposal System
EVTAC	Eveleth Taconite	**SLRIDT**	St. Louis River Interlake Duluth Tar
HTAC	Harbor Technical Advisory Committee	**SRV**	Soil Reference Value
IMES	Industrial Material Exchange Service	**SW**	Solid Waste
MDNR	Minnesota Department of Natural Resources	**WDNR**	Wisconsin Department of Natural Resources
MIC	Metropolitan Interstate Council	**WLSSD**	Western Lake Superior Sanitary District

TABLE OF CONTENTS

List of Maps, Figures and Tables vii

Chapter 1: Plan Purpose **1**

Chapter 2: Background **4**

Erie Pier History 4

Regulatory Background and Operating Plans 4

Cost of a New CDF 7

Estimated Cost of Operating Erie Pier as a Processing and Reuse Facility 7

Staging of Fine Material for 2006 for Future Beneficial Reuse 7

Chapter 3: Preparation of Material for Reuse **9**

Material Processing 9

Hydraulic Sorting 10

Material Transfer Site 11

Water Management 12

Chapter 4: Certification of Material for Resale **14**

Beneficial Reuse Regulations of Dredged Material 14

Sampling Methodology and Locations 17

Minnesota and Wisconsin Dredged Material Reuse Standards 18

Inspection of Material at Beneficial Reuse Placement Sites 22

Noxious Weed Management 22

Chapter 5: Material Marketing 24

Benefits of Reuse of Dredged Materials 24

Beneficial Reuse of Dredged Materials - Preference for Large Projects 25

Marketing Strategies 28

Chapter 6: Plan Implementation 31

Conclusion 31

Appendix 33

Resolution to Support Beneficial Use of Erie Pier Dredged Materials 34

National Dredging Policy 36

LIST OF MAPS, FIGURES AND TABLES

Maps

Map 1: Erie Pier Location.....2

Figures

Figure 1: Current Erie Pier Operations 9

Figure 2: Recycled Material 1999-2004.....10

Tables

Table 1: Duluth-Superior Harbor Dredged Material Placement 5

Table 2: Sediment Analysis Criteria 19-21

Map Disclaimer

The information contained in the following maps is a compilation of data from various federal, state, county, regional, and municipal sources. Geographic information has limitations due to the scale, resolution, date and interpretation of the original source materials. Users should consult available data documentation (metadata) to determine limitations and the precision to which the data depicts distance, direction, location or other geographic characteristics. These maps and/or data are not legal survey documents to be used for describing land for the purpose of ownership or title.

CHAPTER 1: PLAN PURPOSE

This plan is intended to be a management plan and not an operational plan. It will set management processes in place to facilitate a dredged material reuse program at Erie Pier. Operational components will be developed and may change over time.

The purpose of this plan is to develop a successful dredged materials reuse program and transition Erie Pier Confined Disposal Facility (CDF) into the Erie Pier Processing and Reuse Facility (PRF). The driving force behind this transformation is the fact that at current rates of dredged material placement, Erie Pier will reach capacity in roughly 10 years. The costs of developing additional CDFs are extremely high, which makes the transition of Erie Pier to a recycling facility the most cost effective, environmentally sound, and socially acceptable alternative to current dredged material disposal practices. According to the National Dredging Policy, "dredged material is a resource, and environmentally sound beneficial use of dredged materials for such projects as wetland creation, beach nourishment, and development projects must be encouraged."

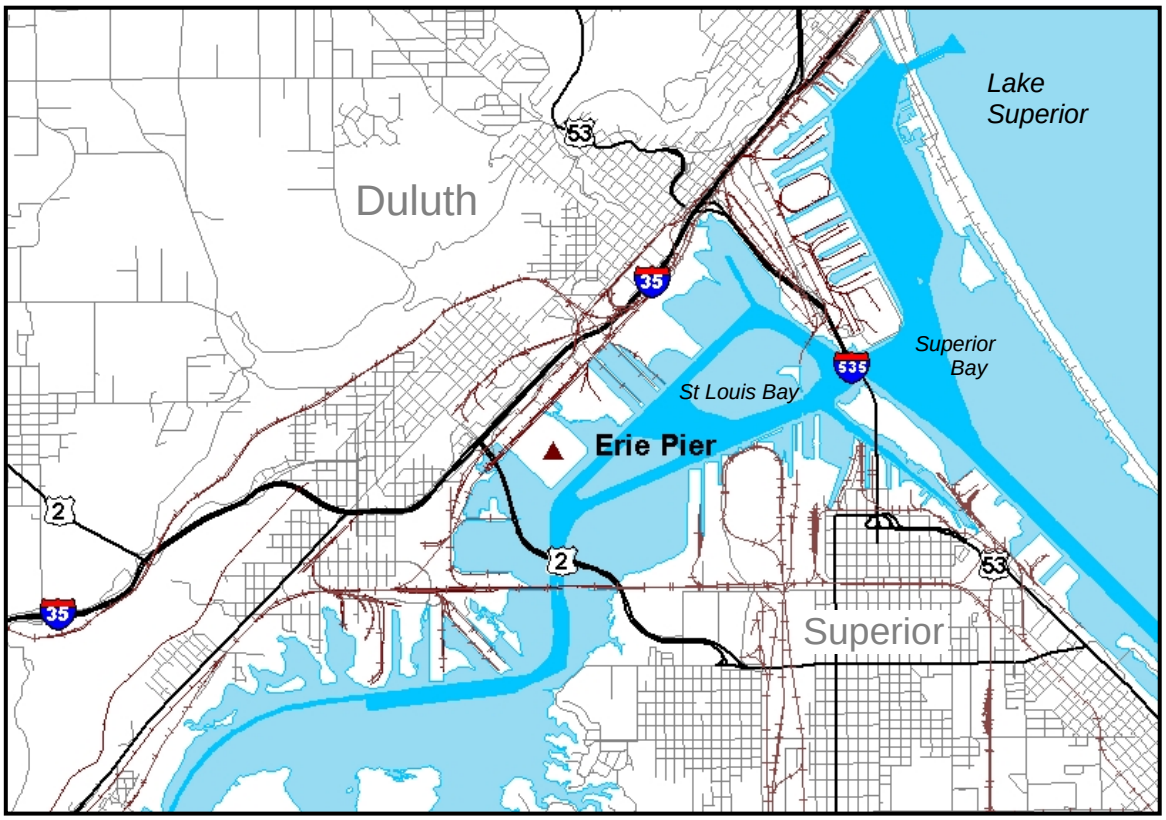
The goal of this plan is to outline the steps necessary to expand the beneficial reuse of dredged materials, and revise management and processing of dredged materials, to assure that the need for another CDF will be avoided indefinitely. This can be accomplished through the following objectives:

- Develop water management, material handling processes, and transportation methods that will cost-effectively facilitate the reuse of the dredged material.
- Determine testing procedures that meet material reuse regulatory requirements of both Minnesota and Wisconsin.
- Educate the public that dredged materials have many beneficial uses.
- Identify markets for dredged materials and marketing strategies that will increase demand for the materials; both coarse and fine grained.
- Dedicate funding to operating the dredged materials processing facility.
- Implement the plan through a Memorandum of Understanding between the agencies participating in HTAC.

This plan follows the premise that the least cost alternatives to dredged material management are not necessarily the most cost effective methods. The currently identified least cost method of disposing of dredged materials, open water dumping, does not consider the environmental and social costs and does not consider the economic benefit of reuse. It is illegal to dispose of dredged materials in the waters of Minnesota and Wisconsin. The other two currently identified least cost alternatives are disposal in a CDF and beach nourishment. Beach nourishment may be an effective

beneficial reuse of dredged materials in some instances, but opportunities are very limited. Disposal in a CDF is not a low cost alternative when the economic, environmental, and social costs of providing a replacement CDF is considered. The actual siting and permitting of a replacement CDF will be extremely expensive. Alternatives that are more cost effective consider the value of the dredged materials, the value of capacity in the dredged material processing facility, and promote beneficial uses that include more costly methods such as material sorting, processing, and management.

Map 1: Location of Erie Pier



This management plan promotes alternatives defined in the Dredge Material Management Plan (DMMP) of 1998. The DMMP was used to identify a base plan for future dredged material placement. Some of the alternatives considered in that plan outlined material reuse from Erie Pier. One alternative was to use Erie Pier as a transfer site for dredged material. The Erie Pier Management Plan is a natural progression to identifying the most cost effective method of dredged material management over the long term.

The National Dredging Policy also states that "dredged material management planning must be conducted on a port or regional scale by a partnership that includes the federal government, the port authorities, state and local governments, natural resource agencies, public interest groups, the maritime industry, and private citizens." This plan was developed by Metropolitan Interstate Council (MIC) staff working closely with the Dredging Subcommittee of the Harbor Technical Advisory Committee (HTAC). The HTAC is a diverse group of port stakeholders representing federal, state, regional and local agencies as well as maritime industry and citizen groups. The Dredging Subcommittee of the HTAC is comprised of members with expertise and experience in harbor maintenance and dredging issues. The plan is a collaborative effort of the members of the Dredging Subcommittee.

This plan can be used by Corps of Engineers, under the direction of the Secretary, to carry out projects to transport and place sediment obtained in connection with the construction, operation, or maintenance of authorized projects at locations selected by a non-federal entity determined to be in the public interest and associated with navigation. This plan is integral to the process of determining the priorities and intent of non-federal entities.

Aerial view of Erie Pier - 2003

The Corps of Engineers can enter into partnership agreements with non-federal interests with respect to projects, if appropriate, for the acquisition, design, construction, management, or operation of a dredged material processing, treatment, contaminant reduction, or disposal facility (including any facility used to demonstrate potential beneficial uses of dredged material, which may include effective sediment contaminant reduction technologies) using funds provided in whole or in part by the federal government.

CHAPTER 2: BACKGROUND

Erie Pier History

Erie Pier is a Confined Disposal Facility (CDF) for placement of dredged materials for the Duluth-Superior Harbor. Duluth-Superior Harbor dredging goes back to the 19th century when Congress first authorized construction of piers and breakwaters at both harbor entries and the dredging and maintenance of the connecting channels. Historically, material dredged from the channels was used in the construction of waterfront property and docks as well as some of the islands within the harbor. Barkers and Hearding Islands and the Duluth Seaway Port Terminal are examples. Subsequent to Public Law 91-611, River and Harbor Act of 1970, Section 123 authorizing the Corps of Engineers to construct, operate, and maintain confined disposal facilities, most maintenance dredging materials have been placed at the Erie Pier site in West Duluth.

Erie Pier property is owned by the Duluth Seaway Port Authority (DSPA) and dredged materials are managed by the US Army Corps of Engineers (Corps). The 89 acre Erie Pier CDF was constructed in 1978-79 and serves both the Wisconsin and Minnesota portions of the Harbor. An earthen dike was constructed using an impervious synthetic liner along the dock walls to improve structural stability. The site was completed in 1979 with a capacity of 1.1 million cubic yards and a 10-year life expectancy.

Since 1979, the Corps has dredged over 2.8 million cubic yards of material from the Duluth-Superior harbor at a cost of almost $19 million (see Table 1). The Corps has dredged approximately 100,000 cubic yards per year at an average annual cost of $700,000. Approximately 79% of these dredged materials have been placed at Erie Pier with the remainder utilized for beach nourishment (19%) or utilized by the dredging contractor (2%). Over 2.2 million cubic yards of dredged materials have been placed in Erie Pier. This total is double the original design capacity of the facility. The life of Erie Pier has been extended by raising the dikes, better-than-expected settling and compaction rates, beach nourishment projects and re-use of a significant amount of dredged material through the hydraulic sorting operations.

Regulatory Background and Operating Plans

Public Law 91-611, River and Harbor Act 1970, section 123

Section 123 of the 1970 River and Harbor Act (Public Law 91-611) authorized the Corps to construct, operate, and maintain confined placement areas for dredged material in the Great Lakes area. This law provided for the construction of CDFs specific to the region and required that there must be a local sponsor for the CDF, typically a city, county or state governmental agency. The local sponsor was required to provide all

lands, easements, and rights of way to the Corps for the CDF site. The local sponsor was also required to provide 25% of the construction funds. This local cost share could, however, be waived if the U.S. EPA certified that the area was in compliance with an approved water quality program. The local sponsor would receive title to the CDF after it was filled and be responsible for long-term maintenance.

Table 1: Duluth-Superior Harbor Dredged Material Placement

Year	Amount (cu. yd.)	Placed	Cost
1979	55,000	Erie Pier	$579,736
1980	191,000	Erie Pier	$1,205,030
1981	3,375	Erie Pier	$94,052
1982	128,308	Erie Pier	$634,927
1983	91,068	Beach Nourishment	$325,935
1984	181,770	Erie Pier	$1,294,242
1985	193,503	Erie Pier	$1,239,834
1986	159,695	Erie Pier	$1,005,792
1987	239,390	Erie Pier	$1,519,583
1988	190,070	Erie Pier	$1,430,490
1989	175,407	Beach Nourishment	$1,513,337
1990	45,303	Construction Fill	$501,179
1990	107,929	Erie Pier	$789,904
1991	136,375	Erie Pier	$1,118,680
1992	53,868	Erie Pier	$472,449
1993	59,058	Erie Pier	$402,381
1994	125,381	Erie Pier	$715,254
1995	86,249	Erie Pier	$639,314
1996	50,362	Beach Nourishment	$270,294
1997	121,330	Erie Pier	$876, 734
1998	112,975	Beach Nourishment	$516,425
1999	0		$0
2000	68,203	Erie Pier	$705,986
2001	15,000	Erie Pier	$546,536
2002	116,684	Beach Nourishment	$813,550
2003	0		$0
2004	43,000	Erie Pier	$580,100
2005	99,740	Erie Pier	NA
TOTAL	**2,850,043**		**$18,915,010**
TOTAL PLACED IN ERIE PIER 2,258,244 cu. yd.			

Source: Army Corps of Engineers

Dredged Material Management Plan (DMMP) for the Duluth-Superior Harbor – November 1998

Every port that needs long-term navigational dredging is required to have a DMMP, which identifies the dredging needs and method(s) for management of the dredged materials for a period of 20 years. Under current regulations and procedures, a DMMP's Base Plan should adhere to the federal standard (33CFR335.7) that is established by Corps. These regulations state that the Corps must select those alternatives that are the least costly, utilize sound engineering principles, and meet the environmental standards outlined in Section 404(b)(1) of the Clean Water Act.

The DMMP for the Duluth-Superior harbor considered 22 alternatives as well as a "no action" option. The alternatives included open water disposal (the established Federal Standard), upland placement, mineland reclamation using dredged materials, beach nourishment, habitat creation, and material reuse. The Base Plan of the DMMP identified three major elements: 1) beach nourishment, 2) continued use of Erie Pier and 3) placing dredged materials in "deep holes" within the Duluth-Superior harbor.

When it was evident that the Corps was going to establish open water disposal of dredged materials as the Federal Standard, state agencies and local stakeholders resisted. Minnesota and Wisconsin prohibit the in-water disposal of dredged materials unless it is part of a beneficial re-use project. The open water disposal alternative proposed by the Corps did not have any beneficial use component. An impasse seemed inevitable as both states indicated they would have to deny Clean Water Act Section 401 water quality certification for the open water disposal alternative. A compromise was reached as the Corps stated that the Base Plan would "be used only for the purpose of establishing the federal baseline costs for future dredging and placement activities at Duluth-Superior Harbor." The essence of this compromise was that the Corps would not pursue the open water disposal alternative. However, the Corps would not spend any more money on dredging and disposal in the Duluth-Superior Harbor than they would have if the open water disposal alternative had been implemented. The Corps also stated that they would further pursue a habitat creation project at the 21st Avenue West Channel in St. Louis Bay which could utilize about 10 years of maintenance dredge material.

If the habitat creation project is implemented as proposed, then the three alternatives as identified in the DMMP for managing dredged materials from the harbor for the next twenty years would be:

1. Continued use of Erie Pier until full (2-5 years);
2. Beach nourishment (5 years); and

3. Habitat creation at 21st Avenue West channel (10 years)

In addition, the Corps and the states committed to pursuing other beneficial re-use alternatives, specifically the processing of materials at Erie Pier for re-use in construction projects and other beneficial purposes.

Cost of a New CDF

In the development of the DMMP in the late 1990s, one of the alternative sites identified for a potential new CDF was the Itasca site. The proposed site was owned by Douglas County at that time and is located along the southern shore of Allouez Bay in the City of Superior. The Itasca site is approximately 32-40 acres in size. The site capacity was estimated at 1,000,000 - 1,300,000 cubic yards, which equates to a 10-13 year life at 100,000 cubic yards per year if no recycling took place. Ideal site capacity should, according to the DMMP, be 20 year life, with a capacity of 3,000,000 cubic yards, based on 150,000 cubic yards per year. The Itasca site would not provide the ideal capacity but it was the only alternative site identified in the DMMP.

According to Corps information, the cost of developing the Itasca site into a CDF was estimated to be $6 to $8 million. This includes the cost of cleaning up an old landfill and assumes the land acquisition cost will be minimal. The total cost does not include social and environmental costs associated with a project of this type. CDFs built in other areas of the Great Lakes with similar capacities to Erie Pier had construction costs ranging from $6 to $16 million when adjusted for inflation.

This information was included to show costs associated with developing new CDFs, and is not meant to imply that a location for any potential future CDF site has been decided at this time. Currently, the viability of the site is in question because the City of Superior has acquired much of the land and has identified housing as the preferred land use in this area.

Estimated Cost of Operating Erie Pier as a Processing and Reuse Facility

The initial cost of operating Erie Pier as a processing and reuse facility is estimated at approximately $250,000 or more per year. Examples of expenditures include dock repairs, developing and maintaining the perimeter road, shoreline rip-rap, bringing electrical service to the site, lighting, and material staging.

Staging of Fine Material in 2006 for Future Beneficial Reuse

During the 2006 construction season approximately 100,000 cubic yards of fine material was staged for future removal from Erie Pier. The overall purpose of this work was to better utilize Erie Pier as a processing and reuse facility over the short term and was accomplished under the Corps' Operations and Maintenance (O&M) program at a cost

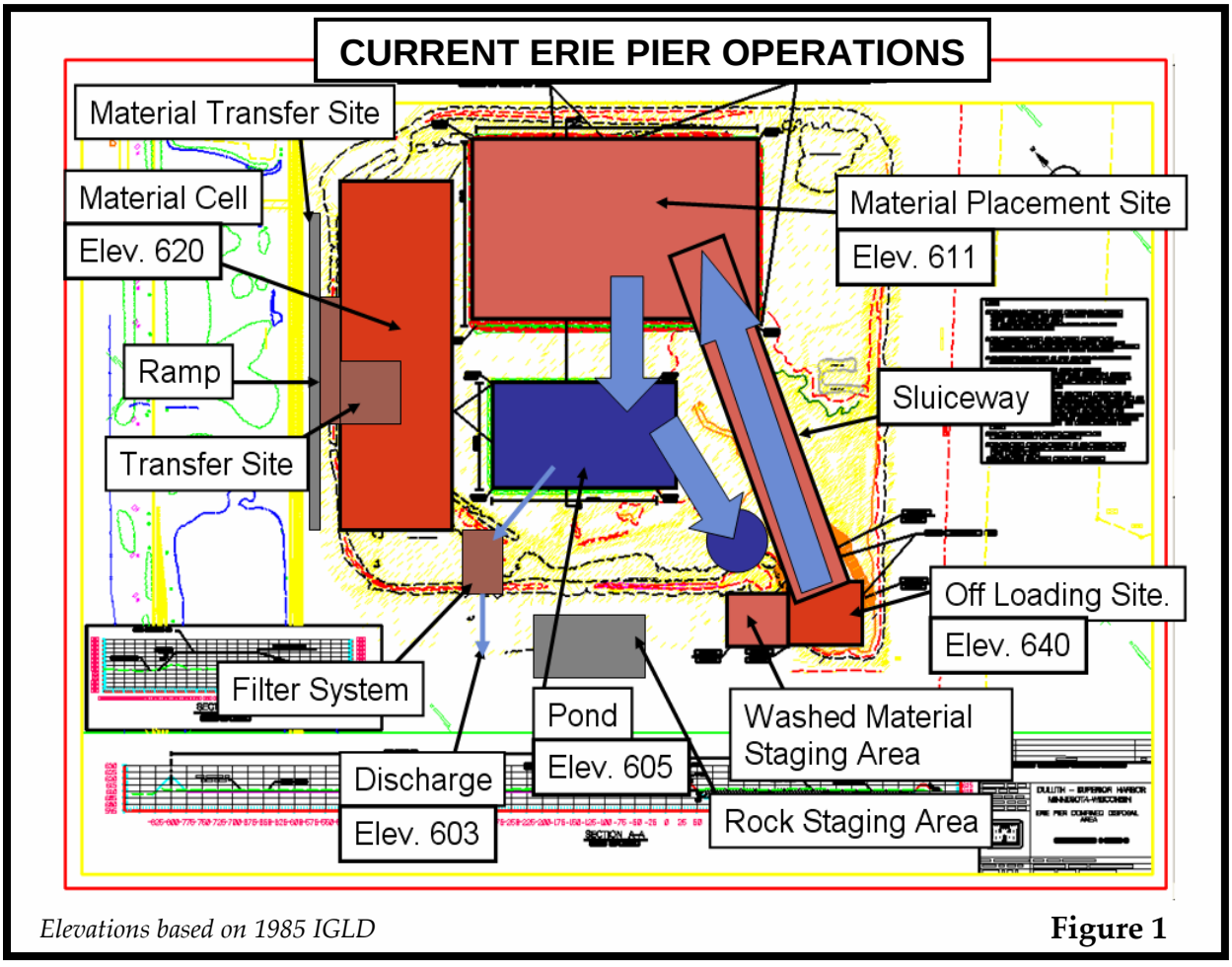
of approximately $500,000. Staging the material at a higher elevation allows the material to drain and become stable. The previous saturated condition of material in Erie Pier was not acceptable for off site transportation. Material was placed in an area that rail and truck transfer of the material would be as convenient as possible. The work also set the operation requirements for further staging of material, as well as allowing better management of material being off loaded into Erie Pier. The staging of the material also allowed for better water management on site for hydraulic sorting and conveyance of fine material into the material placement site.

CHAPTER 3: PREPARATION OF MATERIAL FOR REUSE

Preparing dredged material for beneficial reuse entails a number of steps including off-loading, hydraulic sorting, transshipment of material and managing water at Erie Pier.

Material Processing

The off-loading operations at Erie Pier generally consists of the dredging contractor bringing dredged materials to the site in barges and transferring the materials onto the elevated off load platform. In preparing the site, the contractor constructs a sorting basin where water is introduced allowing the fine materials to move down the sluiceway, while retaining the granular material that will be staged for reuse through a contract with the Port Authority. The material not recovered through the hydraulic sorting operation is conveyed to the material placement site. Water is conveyed to the pond area through the use of a weir system, which exits through a channel to the sorting site for continuous use; the water recycling process is repeated. This process is depicted in Figure 1.



Elevations based on 1985 IGLD

Figure 1

After the material is moved to the material placement site, it remains there until the moisture content is reduced, which takes about six months. The material is then moved to a material staging cell where it is staged for removal. Two sites have been identified as material staging areas, one on the easterly side and one on the northwesterly corner of Erie Pier (see Figure 1). Once the material is in the staging cells, it is in a condition typically seen in any quarry that allows easy removal. The condition of the material is important to the marketing of the material. Unless it is in a condition where it can be loaded efficiently onto truck or rail, the material cannot be successfully marketed.

Hydraulic Sorting

The hydraulic sorting operation involves separating sediment particles based on size, density or surface chemistry differences. The sorting operation allows the removal of the coarse material (sand), which has a higher commercial value and can be more readily re-used in local construction projects. Figure 2 shows the volumes of material that are currently recovered each year. Yearly totals from 1999-2004 vary from 3,400 to 110,000 cubic yards, with an average of over 30,000 yards per year over this six year period. Historically, approximately 15 percent to 20 percent of the incoming material at Erie Pier has been removed as sand each year, which is approximately 15,000-20,000 cubic yards.

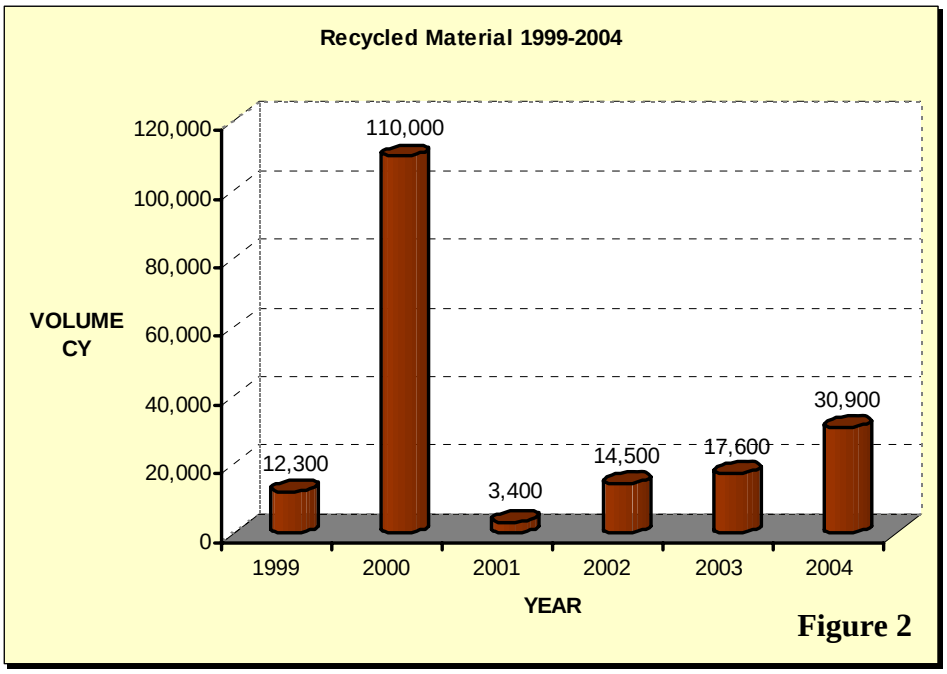


Figure 2

At Erie Pier, hydraulic sorting involves separating the material using a relatively simple sluicing process. Dredged materials are offloaded at the head of a sloping trench within

the facility. Water is then is pumped from inside Erie Pier over the dredged materials. Fine particles are carried down into the material placement site, while the coarser materials settle out and are staged for removal. This coarse material is then excavated and used in construction projects, pilot projects involving habitat creation, mine land reclamation, and capping. Appropriate fine-grain materials are de-watered and prepared for re-use. Permanent retention of fine-grain materials on the Erie Pier Facility will be minimized.

The main advantage of the hydraulic sorting operation is the extension of the operating life of Erie Pier as well as the reduced need to bring in other sources of sand (coarse material) for area construction projects. The operation at Erie Pier is a relatively low technology process, but it is effective. Water must be stored on site and much of the material (about 80 percent) has been placed in the material placement site. The sorting operation allows separation of the coarse and finer materials. If beneficial reuses of the finer materials are not identified, relocation of these materials will be required to perpetually continue operation of Erie Pier as a dredged material processing and re-use facility.

Material Transfer Site

To effectively move dredged materials from Erie Pier, a material transfer site will be developed. Movement of material is intended to accommodate truck, rail and barge traffic. To facilitate movement of materials by truck, road upgrades will be needed within the facility. The rail operation could involve the use of side dump rail cars or other types of rail cars depending on the destination of the material. The dock face and channel will be upgraded to facilitate more effective movement of material by barge.

Erie Pier should also have the ability to receive sand and aggregate materials from outside entities to be utilized in Corps construction and maintenance projects. Aggregate could be off loaded and staged at Erie Pier for further site construction requirements such as building of the transfer site, upgrading of the perimeter road, and construction of the cover stone and core stone staging site. Cover and core stone are used by the Corps for breakwater repairs in Duluth-Superior as well as other harbors on Lake Superior.

Completion of the transfer site and potential development of the dock face and channel adjacent to Erie Pier will facilitate transportation of aggregate, rip-rap, core and cover stone from Iron Range mines for commercial purposes. This will potentially provide a two way exchange of material between Erie Pier and the Iron Range mines with dredged materials going to mine reclamation sites and aggregate and stone going to the transfer site.

Water Management

A critical part to processing dredged materials at the site is managing the water used at Erie Pier, which amounts to as much as 8 to 10 million gallons of water at some times. In the past, depending on the rain fall and snow levels, much of the facility has been covered with water. This was normally not an issue, but excess water in the facility will impair processing and handling operations that will occur under this plan. There have been years when the water came dangerously close to breaching the berms, which could have led to an illegal discharge and/or dike failure. Discharge of treated water from Erie Pier to the St. Louis River will require a National Pollutant Discharge Elimination System (NPDES) permit issued by Minnesotan Pollution Control Agency (MPCA).

In 1993, a pipe was installed connecting Erie Pier to the municipal wastewater collection system so that excess water could be discharged via the WLSSD treatment facility. The limited capacity available through this means is not an effective method of managing water quantities on the Erie Pier site. There are at least three other water management options that should be evaluated:

1) Land applying the water to an onsite or adjacent property;
2) Surface discharging the water to a nearby surface water body (i.e. the St. Louis River); or
3) Other recycling or reuse opportunities that may exist (likely involving pumping the water off site or trucking it off site for reuse/recycling).

In terms of state water quality permits for the various options, land application requires the acquisition of a State Disposal System (SDS) permit. Surface discharging of the water requires the acquisition of a NPDES permit. Land application is a limited option due to the need for additional land. If additional land in the area could be obtained, this option may be viable. If this option is to be considered further, the request for discharge limits should be made with the MPCA.

The design and construction of a treatment system that addresses both the discharge and regulatory requirement is another potential solution. Currently research and development by Natural Resources Research Institute (NRRI) and Engineer Research and Development Center (ERDC) of the Corps could provide some promising results. NRRI has done some work with sand based filters utilizing taconite and a peat based sorbent. ERDC is the research based unit of the Corps in Vicksburg, Mississippi and is currently studying the removal of pollutants such as mercury from water.
The pipeline to the municipal wastewater system has limited capacity but could be used up to its capacity limit, with additional water disposed of via one or a combination of the other two options. An overall mass balance of where the water comes from and its

disposition should be evaluated. Daily, weekly, monthly, and annual volumetric flow rates should be evaluated against the volume of water needed on-site for hydraulic sorting purposes. Excess water should be stored on site up to the site's maximum potential and all remaining water would be discharged via the selected methods.

CHAPTER 4: CERTIFICATION OF MATERIAL FOR RESALE

The Great Lakes Commission, through its Great Lakes Beneficial Use Task Force, created a document titled "*Beneficial Use of Great Lakes Dredged Material"* in October 2001. This report outlines the need to find and advance the beneficial uses of dredged materials as an alternative to open water disposal and placement in a CDF. Recommendations and strategies outlined would coordinate and streamline state and federal efforts to promote the beneficial use of dredged materials. Collectively, the task force served as a vehicle for state-federal cooperation in identification of mechanisms to overcome state and federal regulatory obstacles to beneficial use. The purpose of the Erie Pier Management Plan is to implement many of the policies described in that document.

Beneficial Reuse Regulations of Dredged Material

Minnesota and Wisconsin regulatory agencies have established guidelines to categorize how soils and sediments can be beneficially reused. Primarily, these categories correspond to the level of contamination in the soils and sediments. Dredged materials will be analyzed and will be evaluated against Minnesota and Wisconsin guidelines to classify how the material at Erie Pier can be beneficially reused. State standards will determine how dredged materials can be re-used.

Dredged materials can be appropriate for use as unclassified fill. Fill projects have a diversity of physical requirements (such as compaction and permeability), while dredged materials have a wide range of physical properties. The physical quality of the dredged material must match the project needs.

The following information describes how Minnesota and Wisconsin regulate re-use of dredged materials.

<u>Minnesota</u>

The information in this section is from an MPCA document entitled "*Managing Dredged Materials in the State of Minnesota*." This document is patterned after the Wisconsin dredging guidance. The document is designed to provide a regulatory framework for managing dredged materials, identify best management practices, and identify environmentally appropriate land-based placement options for dredged materials. The major subject matter covered in the document includes regulatory determination, environmental risk assessment, sampling and analysis requirements, management standards, and permitting and other forms. The following information is a brief summary of the major subject matter or chapters of the document.

The chapter describing regulatory determination contains a flowchart that outlines the steps necessary throughout the permitting process. A dredging project is defined as "a discrete one-time excavation of material, or a series of dredging activities, such as with maintenance dredging, which involves multiple projects and multiple stages of a single project that are connected or are phased actions." The types of permits issued for management of dredged materials is described and can be issued under the authority of the National Pollutant Discharge Elimination System (NPDES) and/or the State Disposal System (SDS). The NPDES/SDS Program is structured to provide permit coverage for regulated activities in one of two ways: general or individual permit. Permits that would require identical limits and monitoring are more appropriately controlled by general permits. The more complex the discharge, the more likely an individual permit will be required. In addition, the storage, disposal and re-use of dredged material is regulated by the SDS permitting process.

"An environmental risk assessment is conducted to evaluate the reasonable likelihood that a given pollutant is present in the dredged material. This is done through combination of empirical and technical evaluation of the sediment to be dredged, which may include sampling and analysis. Methods of analysis include grain size analysis, examining past industrial activities/sources of pollutants, and sampling of pollutants likely to be present. In examining past industrial activities a matrix of contaminants and source industries is provided."

The sampling and analysis section states that "characterization of sediment from the proposed dredge site must be completed prior to the initiation of dredging activity. Results of sediment characterization must be compiled and submitted for MPCA review and approval with permit application". Baseline sediment analysis is described with a table of compounds to be analyzed provided. Additional sediment analysis may be required based on historical land use and reasonable likelihood. Three management tiers based on Soil Reference Values (SRVs) were developed to categorize potential uses for dredge materials. Tier 1 material is suitable for use or reuse on properties with a residential or agricultural uses. Tier 2 is suitable for industrial or recreational uses. Tier 3 material requires additional regulatory requirements. Information on site waste water management and sampling location requirements and methods are also included.

The management standards outline how dredged materials may be handled and used, either permitted on-site disposal or a beneficial use or reuse. Requirements for short term placement, how material is handled, temporary storage, dewatering, transportation of material, long term storage and permanent storage are addressed.

The SRVs are described in this chapter as they relate to the management tiers and potential reuse of dredged material.

The final chapter of the document describes the types of permits that are required for each situation depending on the level of pollutants present, the management method selected, and whether there is a discharge of effluent.

Beneficial re-use of dredged materials is in the best interest of the State of Minnesota.

Wisconsin

The following information is a summary of information from the Wisconsin Department of Natural Resources (WDNR) report titled *"The State of Wisconsin Approval Process for Dredging Commercial Ports – Guidance for Applicants and WDNR Staff"* (Publication No. PUB – FH - 061 – 2004 February 2004).

The major difference between Minnesota and Wisconsin in regulating reuse of dredged materials is that Wisconsin considers dredged materials to be a solid waste. However, most dredged material disposal and re-use can be exempted from solid waste rules. Projects likely to be subject to formal regulation are those that include volumes of dredged material that exceed 3,000 cubic yards, contaminated dredged materials, engineered structures, or those proximate to a protected resource such as wetlands. Most projects are considered on a case by case basis. The applicant has to demonstrate that the project will not cause violations of standards or threaten protected resources, such as ground water, surface water, wetland functional values, critical habitat, or endangered species.

Before a formal solid waste approval can be issued, a public meeting must be held in which the applicant presents an overview of the proposed project. Public comments will be recorded and considered in the approval process. If the dredged material is determined to be exempt from solid waste regulation (either by rule or on a case-by-case basis), a public meeting is not required.

The WDNR has adopted a policy of encouraging the beneficial reuse of dredged materials and may grant exemptions from normal solid waste regulatory requirements for the purpose of allowing or encouraging the recycling of solid wastes. In support of the WDNR's policy to encourage beneficial reuse projects, the WDNR is a member of the Great Lakes Dredging Team and contributes to the beneficial reuse initiative and guidance documents developed by that Team (see ww.glc.org/dredging). Examples of beneficial reuse projects include landfill daily cover, habitat protection, habitat

enhancement, habitat restoration, erosion control, construction fill materials, and soil amendments.

Land spreading of dredged materials, while not common, is allowed if it can be shown that the use of the dredged materials will cause no harm to the environment or contribute to additional contamination. Written approval by WDNR is needed prior to beginning land spreading and it is desirable that the land spreading project demonstrate a benefit to the intended use of the land such as a soil conditioner or fertilizer.

The guidance also includes information on disposing of dredged materials in an existing landfill, developing a new landfill solely for dredged materials, disposing of PCB contaminated dredged material, and disposing of dredged material in a CDF.

Applicants who plan to beneficially use dredge material in Wisconsin should try to schedule an initial meeting with WDNR waste management staff at least six (6) months prior to starting the project. WDNR staff can offer assistance to applicants on preparing their application submittals and can usually issue an approval for a low hazard exemption request within 45-60 days of receiving a "complete" application. This review time may be extended if potential wetland, critical habitat, or endangered resource impacts are detected during the project review.

Processing time needed to review and approve a request for land spreading dredge material under Ch. NR 518, Wis. Adm. Code, varies from 45-60 days in length. Similar site conditions or unique features described above may extend the review period.

Sampling Methodology and Locations

The stockpiled areas of dredged materials intended for beneficial re-use will be profiled at various depths and these samples will be laboratory analyzed for pollutants and physical properties. The profile utilized will account for the vertical and horizontal dimensions of the material to be beneficially reused from Erie Pier. Currently, material sorted for re-use has been excavated into two piles which will be sampled to profile the vertical depth of the piles. The borings will be vertically composited and submitted to the laboratory for analyses, including parameters for inorganics, metals, nutrients, organics, and physical characteristics.

Wisconsin's list of test parameters for metals is to be determined by using a total elemental analysis in accordance with EPA SW-846. This method determines the total amount of a particular parameter in a sample and is used to determine the concentration in comparison with direct contact standards, assuming an upland site

location for disposal. Direct contact concerns are related to inhalation and ingestion of soil contaminants and established in Chapter NR 720, Wis. Adm. Code (Soil Cleanup Standards). Based on a review of historical sampling data for dredge sediment removed during maintenance of the Duluth-Superior federally authorized shipping channel, it is not likely that contaminant levels will exceed regulatory levels for a hazardous waste. If the core samples show elevated contaminant levels using a total elemental analysis, WDNR may request that the sediment core samples be re-characterized, using EPA's toxicity characteristic leach method (TCLP), method 1311, for confirmation. If any of dredged material samples exceed the contaminant levels listed in Wisconsin table below, the available options for dredge material re-use become more restrictive. WDNR plan reviewers may deem the material to be unsuitable for use as clean fill. Viable options for re-use of somewhat polluted material include underlayment for road construction and paved parking lots, or use in construction footings to minimize direct contact concerns and leaching of contaminants into the groundwater.

Minnesota and Wisconsin Dredged Material Reuse Standards

The two dredged material guidance documents from Minnesota and Wisconsin are very similar; however, they differ in the standards that determine what material can be re-used without restriction. This document presents the standards in a table format (see Table 2) so the user will have both standards in one place. The results of the dredged material analysis will determine how and where material is used. Table 2 also shows the Minnesota and Wisconsin standards compared to historic ranges taken from dredging sites prior to dredging as tested by the Corps prior to each year's operation. These values do not necessarily represent material placed in Erie Pier.

The dredged material in Erie Pier will be analyzed and the results compared to the standards outlined by each state in their dredged material management guidance. By examining the guidance from each state it is apparent a couple of options exist. Material that meets the highest standard from each state can be used for most any type of project. Material that doesn't meet the highest standards from each state will have fewer options for reuse.

TABLE 2 – Sediment Analysis Criteria

PARAMETER	WISCONSIN STANDARD (MG/KG, DRY WEIGHT BASIS)	MINNESOTA STANDARDS (SOIL REFERENCE VALUES (SRVS))		20-YEAR SEDIMENT LEVEL RANGE FOUND AT DREDGING SITES IN HARBOR
Inorganics-Metals (Totals)	Non – Industrial **(mg/kg, dry weight basis)**	Tier 1 SRV Residential **(mg/kg, dry weight basis)**	Tier 2 SRV Industrial **(mg/kg, dry weight basis)**	Army Corps Data **(mg/kg, dry weight basis)**
Antimony	6.3	12	100	
Arsenic	0.042	5	20	0.2 – 27.2
Barium	1,100	1,200	18,000	10 – 2200
Beryllium	0.014	55	230	---
Boron	1,400	6,000	47,000	---
Cadmium	7.8	25	200	0.05 – 5.5
Chromium (Hex.)	14.5	87	650	1.4 – 70
Chromium (III)	*na*	44,000	100,000	
Copper	*na*	11	9,000	<1 – 54
Cyanide	*na*	62	5,000	0.007 – 1.3
Lead	50	300	700	0.5 – 194
Manganese	2.5	3,600	8,100	84.6 – 1,450
Mercury	4.7	0.5	1.5	0.04 – 0.15
Molybdenum	78	---	---	---
Nickel	310	560	2,500	2 – 56.6
Selenium	78	160	1,300	0.07 – 2.4
Silver	9,400	160	1,300	---
Strontium	9,400	18,000	100,000	---
Thallium	1.3	3	21	---
Vanadium	110	30	250	---
Zinc	4,700	8,700	75,000	14 – 110
Chlorides	125	*na*	*na*	---
Inorganic Nutrients	*na*	*na*	*na*	
Oil & Grease	*na*	*na*	*na*	44 – 3900

Total Phos.	*na*	*na*	*na*	0.42 – 1400
Nitrate & Nitrate	*na*	*na*	*na*	---
Ammonia-Nitrogen	*na*	*na*	*na*	0.8 – 2080
Total Kjeldahl	*na*	*na*	*na*	7.2 – 3000
Organics	*na*	*na*	*na*	
Aldrin	ND*	1	2	0.0036 – 0.5
Chlordane	ND*	13	74	0.0036 – 5
Dieldrin	ND*	0.8	2.0	0.0036 – 0.5
Heptachlor	ND*	2	3.5	0.0036 – 0.5
Lindane (Gamma BHC)	ND*	9	15	0.0036 – 0.5
DDT	ND*	15	88	0.0036 – 0.5
DDD & DDE	ND*	56 DDD 40 DDE	125 DDD 80 DDE	0.0036 – 20
PCBs (Total)	ND*	1.2	8.0	
				0.01 – 1.19
2,3,7,8-dioxin, 2,3,7,8-furan, and 15 2,3,7,8 substituted dioxin and furan cogeners	** See footnote regarding total PAHs > 100 mg/Kg, dry weight basis	0.00002	0.000035	*na*
Toxaphene		13	28	
Phenol	900	1,100	20,203	---
Total Organic Carbon	8.8			200 – 94,000
Anthracene	5,000	7,880	45,400	0.024 – 0.99
Benzo(a) anthracene	0.0088	2***	3***	0.024 – 0.99
Benzo(a) pyrene	0.0088	"	"	0.024 – 0.99
Benzo(b) fluoranthene	0.088	"	"	0.024 – 0.99
Benzo (ghi) pyrylene	0.88	"	"	*na*
Benzo (k) fluoranthene	0.88	"	"	*na*
Crysene	8.8	"	"	*na*

Dibenz (ah) anthracene	0.0088	"	"	*na*
Fluoranthene	600	1080	6800	*na*
Fluorene	600	850	4120	*na*
Indeno (123-cd) pyrene	0.088	2***	3***	*na*
1-methyl napthalene	8.8			*na*
2-methyl napthalene	8.8	100	369	*na*
Napthalene	600	10	28	*na*
Phrenanthene	0.88			*na*
Pyrene	500	890	5,800	*na*

** Footnote: Sediment shall be considered as suitable for reuse for these parameters if the sample concentrations are less than the specified laboratory detection limit, otherwise the beneficial use of the material will be viewed on a case-by-case in Wisconsin.*

*** Footnote: Concentrations found in sediment samples above the specified laboratory detection limit may not be suitable as uncontaminated fill. Further review of the proposed beneficial use project and location is required by State of Wisconsin on a case-by-case basis.*

**** Benzo(a)pyrene (BAP) equivalent – all grouped under this heading*

The Minnesota and Wisconsin standards vary based on each regulatory agency's acceptable level of risk.

Wisconsin's standard is based on non-ecological human-health based affects. This standard reflects direct exposure pathways such as ingestion, inhalation and dermal contact. Contaminant levels are based on standards stated in NR 538-Table IB Beneficial Use rule and do not account for current federal EPA risk considerations. The carcinogenic standards are based on an excess lifetime cancer risk not to exceed 1 in 1,000,000.

Minnesota's standard is based on non-ecological human-health based affects. Exposure pathways considered are ingestion, inhalation, and dermal contact. The Minnesota standards do account for the current federal EPA risk considerations. The carcinogenic standards are based on an excess lifetime cancer risk not to exceed 1 in 100,000.

Note that the dredge material sampling involved here was done in-situ (in place in the harbor) and does not indicate the level of pollutants in Erie Pier itself. It also does not account for the normal background level of these materials.

Inspection of Material at Beneficial Reuse Placement Sites

Monitoring of sites where dredged materials are re-used is critical to the success of a project. Site requirements and the particular beneficial use must be considered in determining the most efficient and effective monitoring plan. The complexity of the monitoring program depends on the beneficial use and the environmental impact.

Monitoring usually takes two forms: physical and biological. Physical monitoring determines whether engineering integrity is maintained and will fall into two broad categories: the effect of the placement on the physical process at the site; and identifying potential environmental impacts through physical monitoring. Biological monitoring involves measures of parameters that determine the effect of the beneficial use project on the environment. The time length and sampling interval of the plan will be determined by the long-term goals for the re-use site and the environmental consequences of the placed material.

Wisconsin's Department of Natural Resources, Waste Materials and Management program, reviews and approves requests to beneficially use dredged sediment as part of a conditional low hazard exemption. As part of the review process, initial site inspections are completed by WDNR's waste management staff, prior to assess the site for compliance with code siting and locational requirements. For construction projects occurring in Wisconsin, other programs such the storm water permit program may need to issue an approval prior to beginning construction of the beneficial use project. Waste management staff inspect the site upon completing construction to ensure that the project has been constructed according to "as-built plans" submitted by the applicant.

Noxious Weed Management

Erie Pier is similar to much of the St. Louis River Estuary in that purple loosestrife can be found growing on or near the site. Because of this, Erie Pier is subject to Minnesota's Noxious Weed Law and Rules as described in Minnesota Statutes Chapter 18, Sections 18.75 to 18.88. Each county must appoint an agricultural inspector whose duty it is to see that the rules described in the statutes are carried out.

Permits are required to move materials that may contain noxious weed propagating parts. Before moving material from Erie Pier, permits will be acquired from St. Louis County. A best management practices system will be developed to safely move

material from Erie Pier so as not to spread purple loosestrife or any other noxious weed. A specific operational plan will be prepared to address noxious weeds and must be approved by St. Louis County, MDNR, and WDNR. This operational plan will include, but may not be limited to, the following tasks and procedures:

- Develop a standard testing procedure;
- Isolate new material so seeds will not contaminate it;
- Pump water to the facility from below the surface to avoid floating seeds;
- Process samples of material in a lab to detect presence of purple loosestrife; and
- Identify necessary permits needed to remove, transport, and re-use materials from Erie Pier.

CHAPTER 5: MATERIAL MARKETING

The goal of this plan is to sell approved dredged materials to recover costs involved in processing. The success of Erie Pier as a processing and re-use facility depends on the ability to market materials. Making the construction industry aware of the capability of the materials, and ensuring that the materials are free of contaminants and noxious weeds (such as purple loosestrife), is crucial to the success of this effort. This plan highlights the steps necessary to ensure the materials are suitable for the intended re-use. The results of the material testing will dictate how materials can be re-used. Physical characteristics of the materials and state environmental standards will identify appropriate uses.

Consensus from local stakeholders was reached in the development of the DMMP to include beneficial re-use of dredged materials in the Base Plan. However, regulations prevented the Corps from incorporating most of these alternatives into the Base Plan (except for beach nourishment) because they did not satisfy the least cost requirements of the "Federal Standard". Many of the alternatives outlined in the DMMP will be considered for this management plan. The following information outlines some material reuse alternatives that will be pursued.

Benefits of Reuse of Dredged Material

Economic Benefits

Productive re-use of dredged materials provides tangible and intangible benefits that enhance the environment, the local community, and society. Economic benefits can be seen in cost recovery from more effective port and channel maintenance dredging and through the use of dredged materials in other applications, such as construction. Long-range planning for dredged material management should consider future needs of the public and private sectors, and which measures would result in the greatest benefit. Use of sand, gravel, or other materials resulting from dredging can be anticipated and plans made accordingly. Beneficial uses may be incorporated in planning for public recreation uses, environmental enhancement, and beach and shore protection. Beneficial uses can result in commercial products and services that result in an increase in employment in the private sector.

Social Benefits

Social benefits are generally a direct consequence of the particular beneficial use adopted. The most tangible direct benefit enjoyed by the local community is financial. This may be in the form of reduced community costs for a construction project or increased community income through improved agriculture, fisheries,

tourism, product manufacturing, or job creation. An enhanced environment may also boost tourism.

Another important social benefit is improvements in recreational and sporting opportunities via environmental enhancements. The local landscape may be enhanced through changes in topography. Enhancements to sporting activities, such as fishing, swimming, surfing, sailing, water skiing, and wildlife observation, may result in a better quality of life.

Other Benefits

Engineered uses of dredged material may produce other benefits such as:

- Ecological management of natural resources by providing raw materials without mining or excavating them;
- Reduction in land or water areas disturbed by disposal operations;
- Reduction in project cost by using the most available and cheapest source of materials; and
- An increase in environmental diversity resulting from habitat protection and restoration using dredged materials.

Beneficial Reuse of Dredged Materials - Preference for Large Projects

Because of the economies of scale and testing procedures, large scale projects are preferable in reusing dredged materials. This section describes some of the potential uses for dredged materials.

Mineland Reclamation Projects

In 1997, the Corps, in cooperation with the Minnesota Department of Natural Resources (MDNR), National Steel Mining and the Duluth Seaway Port Authority (DSPA), initiated a pilot project to use dredged materials from the Erie Pier CDF as a substrate to create wetlands on lands disturbed by mining. Two demonstration areas were established and produced excellent results showing dredged materials work well to create wetlands on former minelands.

Based on the success of National Steel pilot project, a cooperative project was initiated among the U.S. EPA, the Corps, the MDNR, Eveleth Taconite (EVTAC) and the DSPA. The goal was to create a five-acre wetland within a closed taconite tailings basin. In the year 2000, 3,000 cubic yards of dredged material was moved from Erie Pier to the EVTAC site using the Duluth, Missabe & Iron Range Railway. The results showed dredged materials significantly improved vegetation with no

adverse impact on water quality. It is estimated that there could be as many as 1,000 acres of the tailings basin that would be suitable for future reclamation and wetland creation.

Another mineland reclamation project that has been proposed is looking at value added reclamation projects, specifically using dredged materials to grow hybrid poplar for harvest. The project will involve assessment of growth rates on soils amended with dredged material from Erie Pier. Information on growth rates of current commercially-available hybrids, fertilization responses and performance of new hybrid material will be outputs of this project. The project would build upon a well-developed infrastructure of hybrid poplar field experiments and breeding undertaken by the NRRI since the late 1970s. Having access to this large pool of hybrid poplar genetic resource is a unique aspect of this project.

The proposed Erie Pier transfer site will provide rail transportation opportunities of dredged material to the mined land. Trains hauling iron ore from the mines to the Duluth-Superior port may backhaul dredged material at very low cost for these potential projects.

Construction Sites

Some dredged materials can be used as construction material. In some parts of the world, dredging to obtain construction material is a common practice. Dredging to obtain construction materials has occurred in the Duluth-Superior Harbor, as evidenced by several submerged borrow pits that remain. Because of the growing demand for construction materials and dwindling inland resources, this may be an important beneficial use. Depending on the sediment type and processing requirements, dredged material may be used as: concrete aggregates (sand and gravel); backfill material or in the production of bituminous mixtures and mortar (sand); raw material for brick manufacturing (clay with less than 30 per cent sand); ceramics, such as tile (clay); pellets for insulation or lightweight backfill or aggregate (clay); and raw material for the production of riprap or blocks for the protection of dikes and slopes against erosion (rock, mixture).

Road Construction

The lack of local sources of fill material for road projects makes material from Erie Pier more desirable. Sharing information on physical characteristics of dredged materials is critical to the utilization of the materials. Local road authorities should be encouraged to use materials from Erie Pier whenever it meets the physical requirement necessary for their road projects.

Daily Landfill Cover

Landfills are required to provide a daily cover. The cover is normally sandy soil but other types of material may be used as well. This cover allows improved access by trucks, reduces blowing trash, reduces odors and lessens the risk of fire. Dredged materials from Erie Pier may be a good source for daily landfill cover.

Top Soil Creation Enhancement

Maintenance dredging in harbors, access channels, and rivers produces mixtures of sand, silt, clay and organic matter that can be excellent ingredients for topsoil. Some dredged materials may be excellent topsoil, as is. Other dredged material may require blending with other residual materials such as organic matter (yardwaste, wastepaper, storm debris, etc.) and biosolids (sewage sludge or animal manure) to manufacture enhanced fertile topsoil.

Habitat Restoration

Dredged material can be used beneficially to protect, enhance, restore, or create wildlife habitats. For example, nesting meadows and habitat for large and small mammals and songbirds have been developed on upland or floodplain (seasonally flooded) dredged material placement sites. Numerous examples are available where dredged material has been used to create nesting habitat for waterbirds and waterfowl.

In some parts of the country, dredged material has been extensively used to restore and establish wetlands. Where proper sites can be located, and government and private agency cooperation can be coordinated, wetlands restoration is a relatively common and technically feasible use of dredged material.

Habitat Creation

Dredged materials can be used to create habitat such as wetlands and shallow water habitat. Habitat that formally existed in the Duluth-Superior harbor includes deep and shallow marshes containing submergent as well as emergent vegetation. Restoration of these types of habitat would be beneficial to waterfowl, migratory waterfowl and fish.

The 21st Avenue West Habitat Restoration project was proposed and was put on hold in the late 1990s due to the then-unanswered questions about how to manage in-place contaminated sediments. Recent clarification of policy on managing contaminated sediments may revitalize this project. The Corps has completed concept designs for this project. This project could utilize material from Erie Pier as well as placing dredged material directly from current and future dredging projects.

Marketing Strategies

Public Education and Business Outreach

Dredged material has often been used as a resource that is both environmentally and economically beneficial. However, it is not often promoted as such. The transition of Erie Pier from a disposal facility to a processing and re-use facility will be made easier and will be more successful if both the general public and local contractors, landscaping companies, builders and aggregate companies all understand and have confidence that the materials coming from Erie Pier are appropriate for re-use. The materials are a resource, not a waste product previously known as "dredge spoils". Public education materials and business promotional information should be developed to assist in the marketing efforts of the material.

Specific examples of dredged material re-use can be highlighted, as well as presenting information on the general physical characteristics and sampling analysis of the material. There have been many success stories from past beneficial re-use of dredged materials and these stories can serve to demonstrate the value of transitioning Erie Pier to the processing and re-use facility. A representative sample of successful projects which demonstrate the many different uses for dredged material include:

Specific Duluth/Superior Harbor Beneficial Re-use Examples:

- Hearding Island, which evolved into a 32 acre wildlife habitat island within the Duluth-Superior lower harbor, was created from the sandy material dredged from the shipping channels in the estuary during the early 1930's.
- Clure Public Marine Terminal was built in 1958 utilizing approximately 1.2 million cubic yards of dredged material.
- Bayfront Festival Park in Duluth was created using approximately 130,000 cubic yards of washed dredged material to fill two old unused slips owned by the City of Duluth.
- Approximately 20,000 cubic yards of sand from Erie Pier and directly dredged material was used for the deep water portion capping of slip 7 (part of the St. Louis River Interlake/Duluth Tar Superfund Site remediation project).
- Over 369,000 cubic yards of dredged sand from the Duluth/Superior entrance channels and basins have been used as beach nourishment material for Minnesota and Wisconsin Points in five separate nourishment projects since 1983.

Other Great Lakes Regional Examples:

- At Pensaukee Harbor, Wisconsin, approximately 55,000 cubic yards of dredged material was used to create a 4.6 acre island which provides habitat for colonial nesting birds, state-listed endangered species and migratory waterfowl.
- At Waukegan Harbor, Illinois, approximately 50,000 cubic yards per year are dredged from the entrance channel and placed near shore as beach nourishment material.
- The community of Suamico, Wisconsin, utilized 55,000 cubic yards of material dredged from Big Suamico harbor to fill and develop their existing industrial park.
- The city of Toledo, Ohio, uses a mix of dredged material with sewage and lime solids to create a topsoil product which is then used as the final vegetative cover for their city's landfill.
- The city of Oconto, Wisconsin, utilized approximately 51,000 cubic yards of dredged material as the final cap material for the closure of an abandoned landfill.

Materials Exchange Programs

Many industrial operations create by-product materials that other industries can utilize. The creative re-use of materials demonstrates that one company's waste can be a valuable resource material to another. Material exchange programs act as an information clearinghouse, directory, and marketing facilitator for reusable industrial materials. These materials include waste by-products, off-specification items, hazardous and non-hazardous materials, overstock, and damaged or unwanted materials. Many times these materials could have ended up in landfills.

Material exchange programs can help manage an industry's waste streams when other source reduction or pollution prevention applications are not possible or practical, when on-site treatment or disposal is too expensive, or when no in-house expertise is available for on-site waste treatment. The process can work both when waste is routinely generated with properties and volumes that are predictable, or when waste is generated on a one-time only basis.

One current successful program is the Illinois Industrial Material Exchange Service (IMES) coordinated by the Illinois Environmental Protection Agency. IMES publishes a semi-annual directory that goes to 14,000 subscribers nationwide. It lists both materials that are available and materials industries are seeking. Request forms are included in the front of each directory. A survey of IMES clients shows that the program has directly fostered material transactions between companies that

generated more than $204.4 million in cost savings. More than 2,494 million gallons or gallon equivalents of material have been diverted from landfill disposal in the process. The Erie Pier material should be listed in as many of these programs as possible.

CHAPTER 6: PLAN IMPLEMENTATION

The goal of this plan is to prolong the life of Erie Pier indefinitely. As stated earlier, the economic, environmental, and social costs of developing new CDFs is extremely expensive. This new management strategy outlined in this document requires participation from a number of agencies on the local, regional, state and federal level. It is the intent of this planning effort to get these agencies together to agree to implement the outlined management strategies. One method would be to have affected agencies and jurisdictions sign on to a memorandum of understanding and renew the partnering agreement from 1996 and 1999. The agencies that signed the 1996 partnering agreement are:

- Army Corps of Engineers
- Duluth Seaway Port Authority
- City of Superior
- Minnesota Pollution Control Agency
- Minnesota Department of Natural Resources
- Wisconsin Department of Natural Resources
- Arrowhead Regional Development Commission
- Northwest Regional Planning Commission

This should be pursued within three months of approval of this plan and should include high level decision makers within each of the agencies.

Conclusion

Following the federal policy outlined in the National Dredging Policy, this plan was conducted on a port-wide basis utilizing a cooperative effort of port stakeholders and encourages environmentally sound beneficial reuse of dredged materials. The plan outlines management strategies for Erie Pier and operational plans will follow. The operational plans will be compiled in the same cooperative manner and will address issues such as material transfer facilities, noxious weed and exotic species management, material sampling and testing procedures, material marketing, and public education. This Management Plan, along with the subsequent operational plans, will facilitate the most cost-effective method of managing dredged materials in the Duluth-Superior harbor, and if successful, may become the template for managing dredged materials throughout the Great Lakes.

APPENDIX

Resolution to Support the Beneficial Use of Erie Pier Dredged Materials 34

National Dredging Policy.....36

Resolution of Support for Beneficial Use of Erie Pier Dredged Materials

Whereas, the Duluth-Superior Metropolitan Interstate Council (MIC) was created by the Arrowhead Regional Development Commission (ARDC) and the Northwest Regional Planning Commission (NWRPC) as the urban planning policy body and designated Metropolitan Planning Organization (MPO) for the Duluth-Superior metropolitan area; and

Whereas, the Harbor Technical Advisory Committee (HTAC) is an assemblage of stakeholders for the Duluth-Superior port that advises the MIC on harbor related issues; and

Whereas, the National Dredging Policy recommends that federal/state/local partnerships like the HTAC cooperate on dredged material management and promote beneficial reuse of dredged materials; and

Whereas, the Erie Pier Management Plan, compiled by the Dredging Subcommittee of HTAC, directs dredged material management policy for Erie Pier that promotes reuse of dredged materials; and

Whereas, approximately 80 percent of materials dredged from the Duluth-Superior Harbor each year are placed in Erie Pier, which has a limited capacity; and

Whereas, most of the dredged materials placed in Erie Pier are not contaminated and can be used beneficially instead; and

Whereas, with proper testing and guidelines to protect human health and the environment, beneficial use of dredged materials offers a sustainable long-term management option for dredged materials management in the Duluth-Superior Harbor; and

Whereas, successful beneficial use projects have demonstrated that dredged materials can provide an alternative source of material for habitat protection, restoration and creation, landscaping, topsoil creation and enhancement, daily cover for landfills, and construction; and

Whereas, studies by the Great Lakes Commission have found that:

- Re-use and recycling of dredged material should take priority over disposal;
- Technological advances and risk assessment procedures can allow dredged materials to be used safely and beneficially;
- There is currently no federal regulatory framework governing the beneficial use of dredged material;

Therefore, Be It Resolved, the Harbor Technical Advisory Committee (HTAC) and the Metropolitan Interstate Council (MIC) recommend that area jurisdictions and agencies make beneficial use a policy priority for dredged materials management; and

Be It Further Resolved, that HTAC member groups, agencies and jurisdictions work toward making Erie Pier a perpetual processing and re-use facility; and

Be It Finally Resolved, the HTAC and MIC encourages its member states to work with the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency to coordinate state policies in the interest of developing of a port-wide framework for beneficial use of dredged materials.

National Dredging Policy

The Secretary of Transportation convened an Interagency Working Group on the Dredging Process in October 1993 to investigate and recommend actions to improve the dredging review process. In December 1994 the Interagency Group delivered its report, The Dredging Process in the United States: An Action Plan for Improvement (the Report), to the Secretary of Transportation. The Report contained 18 recommendations and a proposed National Dredging Policy (see below). On June 22, 1995, the President of the United States endorsed the National Dredging Policy and directed the federal agencies to implement the Report's 18 recommendations.

Findings and Principles

The findings are:

- A network of ports and harbors is essential to the United States' economy, affecting its competitiveness in world trade and national security. Port facilities serve as a key link in the intermodal transportation chain and can realize their full potential as magnets for shipping and commerce only if dredging occurs in a timely and cost-effective manner.
- The nation's coastal, ocean, and freshwater resources are critical assets which must be protected, conserved, and restored. These resources are equally important to the United States by providing numerous economic and environmental benefits.
- Consistent and integrated application of existing environmental statutes can protect the environment and can allow for sustainable economic growth.
- Close coordination and planning at all governmental levels, and with all aspects of the private sector, are essential to developing and maintaining the nation's ports and harbors in a manner that will increase economic growth and protect, conserve, and restore coastal resources.
- Planning for the development and maintenance of the nation's ports and harbors should occur in the context of broad transportation and environmental planning efforts such as the National Transportation System and the ecosystem/watershed management approach.

The principles are:

- The regulatory process must be timely, efficient, and predictable, to the maximum extent practicable.

- Advanced dredged material management planning must be conducted on a port or regional scale by a partnership that includes the federal government, the port authorities, state and local governments, natural resource agencies, public interest groups, the maritime industry, and private citizens. To be effective, this planning must be done prior to individual federal or non-federal dredging project proponents seeking individual project approval.
- Dredged material managers must become more involved in watershed planning to emphasize the importance of point and non-point source pollution controls to reduce harbor sediment contamination.
- Dredged material is a resource, and environmentally-sound beneficial use of dredged material for such projects as wetland creation, beach nourishment, and development projects must be encouraged.

Recommendations

The Interagency Working Group developed a series of 18 recommendations to improve and expedite the existing dredging project review process. These recommendations require up-front, comprehensive planning with increased public participation, effective interagency communication and cooperation, and better tools to ensure timely and informed project review and decision making. The recommendations represent an approach to the dredging process which recognizes the economic benefits of improving and maintaining our ports and channels and addresses environmental concerns associated with dredging and dredged material disposal.

Specific recommendations for improvement are presented in four areas:

1) Planning mechanisms for materials management
2) Project review process
3) Scientific understanding of dredging activities
4) Funding methods

Each recommendation is numbered for the reader's convenience, though this is not intended to convey any priority or ranking. These final recommendations will be implemented by the headquarters of the relevant federal agencies, except where specifically noted.

Most of the recommendations can be initiated immediately, while others will require legislative and regulatory modification. These recommendations pertain to the dredging of deep-draft channels and berths and do not specifically address inland waterway dredging. However, many elements of the recommendations can be applied to similar issues in the dredging of inland waterways.

Improvement Area 1
Strengthening Planning Mechanisms for Dredging & Dredged Material Management

Recommendation 1: Create and/or augment regional/local dredged material planning groups to aid in the development of regional dredged material management plans.

Recommendation 2: Identify the characteristics of successful federal/state/local partnerships for use in developing dredged material management planning efforts.

Recommendation 3: Develop public outreach and education programs to facilitate stakeholder involvement.

Recommendation 4: Provide guidance to relevant Agency field offices, state and local agencies, and the general public on opportunities for beneficial use of dredged material.

Recommendation 5: Update guidance on disposal site monitoring requirements and procedures.

Recommendation 6: Ensure that dredged material management planners work with pollution control agencies to identify point and nonpoint sources of sediment and sediment pollution, and to implement watershed planning.

Recommendation 7: Review the Federal Economic and Environmental Principles and Guidelines for Water and Related Land Resource Implementation Studies to determine whether changes are needed to better integrate the economic and environmental objectives of National Economic Development and Environmental Quality.

Recommendation 8: Revise the Intermodal Surface Transportation Efficiency Act of 1991 to ensure that the planning process outlined in the legislation provides for linkages with plans which address dredging issues.

Improvement Area 2

Enhancing Coordination and Communication in the Dredging Project Development and Review Process

Recommendation 9: Establish a National Dredging Issues Team and Regional Dredging Issues Teams.

Recommendation 10: Schedule pre-application meetings among the Corps, the applicant, the EPA, other interested federal agencies and relevant state agencies for dredging projects that are potentially controversial or that may involve significant environmental issues.

Recommendation 11: Develop and distribute a permit application checklist which identifies the information required from the applicant.

Recommendation 12: Develop or revise the procedures for coordinating inter-agency review at the regional level to define the process by which various federal parties coordinate on dredging projects.

Recommendation 13: Establish a national MOA to clarify roles and coordination mechanisms between the EPA and the Corps.

Improvement Area 3

Addressing Scientific Uncertainties about Dredged Material

Recommendation 14: Clarify and improve the guidance used to evaluate bioaccumulation of contaminants from dredged materials.

Recommendation 15: Identify the practical barriers to managing contaminated sediments and ways to overcome the barriers.

Recommendation 16: Identify means to reduce the volume of material which must be dredged.

Improvement Area 4

Funding Federal Dredged Material Disposal Projects Consistently and Efficiently

Recommendation 17: Revise Water Resources Development Act to establish consistent federal-local sponsor cost sharing, across all dredged material disposal methods.

Recommendation 18: Study the feasibility of a fee for open-water disposal for non-federal dredging projects.

The 18 recommendations listed above represent practical and productive improvements to the dredging process. Each of the recommendations will be implemented by the federal agencies which participated in the Group.

For the full report of these recommendations go to:
www.epa.gov/owow/oceans/ndt/PDF/action1994_Ch5.pdf