Working With State & Local Agencies to Facilitate Beneficial Use of Dredged Material: The HTAC Model

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Breaking Barriers to Beneficial Use

Why is Beneficial Use So Difficult?

- Beneficial Use is a **Relatively New Option** for Many Great Lakes Ports, Permitting Agencies and User Groups to Consider
- Once You Get to **The State & Port Level, Barriers to BU Become Much More Greater to Overcome** (More uninformed “players” involved)
- Different States and Different Ports Mean Different Barriers (**Each situation often different than another**)
Breaking Barriers to Beneficial Use

The 3 Major Barriers:

- Lack of Education & Outreach
  - Start from dredging basics, move towards BU details
- Lack of Collaboration Between ALL Potential Partners
  - Involve ALL from beginning of process
- Lack of “Preparedness”
  - When opportunities arise …. Be Ready!
Breaking Barriers to Beneficial Use

Education & Outreach:

- Start With The Basics
  - Connections between a viable port & dredging
Breaking Barriers to Beneficial Use

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Breaking Barriers to Beneficial Use

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Breaking Barriers to Beneficial Use

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**Breaking Barriers to Beneficial Use**

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- **Detail Example BU Projects**
  - USACOE, Workshops & GLDT Members
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- **Detail Example BU Projects**
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- **Identify Potential BU Material**
  - Appropriate testing as needed
  - Match material to *your* potential project lists
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Collaboration:

- Involve All Potential Partners
  - USACE
  - Port Authority
  - Regulatory Agencies (Federal, State & Local)
  - Environmental Advocacy Groups (Habitat Creation!)
  - Consultants, Contractors & Engineers
  - Researchers
  - Elected Officials
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Collaboration:

- Meet Regularly!
  - Continue to address differences
  - Understand some BU’s will be “no-brainers” while others will be “hot buttons”
  - Talk & Listen!
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Preparedness:

- **Have a Plan For Action In Place**
  - Have dredged material ready if possible
  - Have potential projects identified

- **Watch For Demonstration Project Opportunities**
  - USCOE, GLDT Members & new programs

- **Watch For Funding Options**
  - Regular cycle funding programs
    - USCOE, State CMP’s, GLMRI, State HAP’s
  - One-time opportunities (GLRI, etc)

- **Keep At It! Opportunities Can Come Along When You Don’t Expect Them!**
Port of Duluth-Superior

- Largest Port on the Great Lakes in Total Cargo Volume (#18 Nationally) – 40 million Tons Annually
- Primarily a Bulk Port – 40% Iron Ore, 42% Coal, 8% Grain, 10% General Cargo
- 1,100 Vessels Call Annually
- Waterfront – 49 miles long, 17 miles of dredged channel, 19 square miles of land and water in naturally protected harbor
Duluth-Superior Harbor, MN/WI

Superior Entry
Duluth Entry

28' Channel
27' Channel
23' Channel
21' Channel

Erie Pier
Duluth, Minnesota
Superior, Wisconsin

Naturally Shallow Harbor
COE dredges 100,000-125,000 cubic yards per year

Harbor depth 8’ or less outside federal channel
Erie Pier Confined Disposal Facility (CDF) was constructed in 1979 with a capacity of 1.1 million cubic yards and a 10-year life expectancy. Actual site is approx 89 acres.

Some 2.26 million cubic yards of material have been deposited in Erie Pier.

Erie Pier life extended due to raising interior dikes and re-using of about 250,000 cubic yards of coarse dredged material.

Estimates are that Erie Pier has approximately four years capacity left.

Annual channel dredging is approx 100,000 – 125,000 cubic yards.

79% goes to Erie Pier, 19% has been beach nourishment & 2% contractor use.

Material comes from both Minnesota & Wisconsin channels.

A new CDF could cost from 15-25 Million $ and take 10 - 15 yrs or more to permit & construct!
Erie Pier Material Details

- Erie Pier contains approximately **1.5 million** cubic yards of usable material.
- Coarse material: >93% course, <7% fines (Approx 20%)
- Fine material: (Approx 80%)
  - Sand: 29% to 61%
  - Silt: 20% to 50% **Not Contaminated!!!**
  - Clay: 13% to 23%
- Estimates are that Erie Pier has capacity for approx 450,000 cy left.
- **No contaminants present except Cu**, material is purely channel maintenance material (tested before dredging and after sorting).
- **Material meets beneficial reuse standards (MPCA tier I)**. Cu is at background levels for harbor water.
Duluth-Superior Harbor Example: Harbor Technical Advisory Committee (HTAC)

- Diverse 31 Port Stakeholder Voting Member Group that Addresses Harbor-Related Issues Head-on
- Includes Port, USACOE, Regulatory Agencies, Industry, Environmental Advocates, Research Institutions & Elected Representatives (both State & Local)
- Also Includes Technical Advisors (non-voting members)
- Meets Quarterly
- Often 40 – 45 Attendees!
Duluth-Superior HTAC

Mission

- Forum for Harbor Related Issues
- Promote Harbor’s Economic and Environmental Importance
- Provide Sound Planning and Management Recommendations to the MIC*

*Metropolitan Interstate Council
Duluth-Superior HTAC

Harbor Issues:

- Port Security
- Great Lakes Regional Collaboration
  - Superfund Site and Contaminated Sediment Remediation
- Intermodal Freight Facilities
- Harbor Infrastructure
- Great Lakes Maritime Research Institute Updates
- Port Area Development Plans
- Sediment Management Planning
- Dredging & Disposal
Duluth-Superior HTAC
Current Subcommittees

- Great Lakes Ports Advocacy
- Membership and Bylaws
- Modeling
- Dredging
Members: Subset of HTAC (Currently 21 members)

- MnDNR & MPCA (4)
- WiDNR & WisDOT (2)
- Army Corps of Engineers (1)
- Port Authorities (2)
- Sea Grant Programs – WI & MN (2)
- Industry & Environmental Representation (10)
Duluth-Superior HTAC
Dredging Subcommittee

Purpose:

**Open Dialog** on All Dredging Related Projects

- Promote Regional Sediment Management
  - Conservation of watershed sediment
  - Stewardship of watershed sediment
- Dredging Process & Permit Issue Advice
- Dredge Material Disposal/Beneficial Reuse
Duluth-Superior HTAC
Dredging Subcommittee

Example Issues:

- Habitat Creation Opportunities
- WI & MN Dredging Permit and Dredging Guidance
- Erie Pier (Original CDF) Management-
  - Extend life by promoting beneficial use & reuse
  - Promote transition from a conventional CDF to a processing and reuse facility (PRF)
- Material certification issues answered
Erie Pier Longevity Efforts

1. Erie Pier Management Plan (2007) now being updated
   - Changing Erie Pier from CDF to PRF
   - Looking For Opportunities To Demonstrate Material Use
   - Staging Coarse & Fine Material for Future Beneficial Reuse

2. Complete Updated DMMP
   - Allows COE to Allocate Program Funds
   - Reviewed All Alternatives (31 options considered)
   - Identified Additional Projects & Placement Areas (Prioritized top 6)

3. GLMRFI Funded Studies
   - Project Search & Cost Analysis for Beneficial Reuse of Material
   - Material Transportation Study of Material Out of Erie Pier

4. Sea Grant National Law Center Review of Bi-State Erie Pier Use
   - Reviewed Many Legal Issues of Possible Concern
Erie Pier (2003)

Looks like a CDF!
Erie Pier PRF Improvements  
(Since 2006)

- $1.5 Million From USCOE Towards PRF Transformation Activities
- Stockpiling of 140,000 cy Fine Material
- Stockpiling of All Coarse Material
- Continued Material Testing
- Built Transfer Wall & Haul Roads (N & E Side)
- 2012 Elevated Reception Platform
- 2012 Building Haul Road on West Side
Erie Pier PRF Improvements

Water View of First New Transfer Wall
Erie Pier PRF Improvements

Coarse Material Stockpiles

USCOE Photo
Erie Pier PRF Improvements

Stockpiling Fine Material at Erie Pier

USCOE Photo
Erie Pier (2010)

Now Looks like a PRF!
Erie Pier PRF BU Examples

- **Coarse Material**
  - 5 yr Agreement with local contractor to use all coarse material (up to 50,000 cy/yr) for general construction & asphalt plant material.

- **Fine Material**
  - Completed (fall 2010) a fine material demonstration project which used 30,000 cy. Material trucked over 50 miles away for mineland tailings basin berm cover reclamation (USACOE/NRRI).
35 Acre Dredge Material Deposit Site

Active Tails Basin (2,500 Acres)

U.S. Steel - Keetac Photo
Trucks Unloading Fine Material at Tailings Basin

Fall 2010 Work:
- 20 – 30 trucks per day
- 2 -3 trips per day
- Approx 23 cy/load
- Spread to 24”
Erie Pier PRF BU Examples

Grading of Material at Tailings Basin
Erie Pier PRF BU Examples

2011 Work:

- Spread to 18”
- Plant native grasses
- Plant 9000 trees (pine, birch, poplar)

Actual Disposal Site
Approx 18 Acres

U.S. Steel - Keetac Photo

Aerial View After Delivery & Grading
Erie Pier PRF BU
2011/2012 Examples

New Stockpiling & Testing of Fine Material Stockpiles

Moved Over 100,000 cy of Fine Material From Settling Basins
Erie Pier PRF BU
2011/2012 Examples

Other Smaller BU Demo Projects (USACOE/NRRI)

- Moecasin Mike Landfill
  - 1100 cy for turf restoration

- Northland Country Club
  - 500 cy for turf restoration

- Atlas Cement Co.
  - 2000 cy for stormwater basin

Permitting Agency Work

- WDNR Low Hazard Exemption For **Coarse** Material (5 Yrs)
- WDNR Low Hazard Exemption For **Fine** Material (5 yrs)
- WIDOT/MNDOT Acceptance For Road Projects (Ongoing)
Alternative Project Sites to Erie Pier

- Duluth, Minnesota
- LaFarge Slip Fill
- 21st Ave West Habitat
- CN Dock Fill
- 40th Ave West Habitat
- Superior, Wisconsin

Duluth-Superior Harbor, MN/WI
Duluth-Superior HTAC

Breaking Down The 3 Major Barriers:

- Education & Outreach
  - HTAC Quarterly Meetings & Port Authority Publication
- Collaboration Between ALL Potential Partners
  - HTAC & Committee Structure Works!
- Preparedness
  - Continue to “Work the Erie Pier Management Plan” & Apply for Grant Opportunities and Demonstration Projects

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Questions or Comments???

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