Great Lakes Navigation Update

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Federal Harbors on the Great Lakes

60 federal commercial projects
80 federal shallow draft/recreational projects

Map showing federal harbors on the Great Lakes, with commercial and recreational projects marked.
Great Lakes Navigation System
Economic Data

- A non-linear interdependent system of 140 deep and shallow draft projects; commercial ports are dependent on each other for the efficiency and health of the system

- 145M tons (5-year average) – (USACE Waterborne Commerce Statistics)

- GLNS saves the country **$3.6 billion** per year compared to the next least costly mode of transportation (USACE Inland Nav Center of Expertise)
Great Lakes Navigation System

Key Challenges
- Balancing System Requirements
  - Dredging
  - Dredged Material Management
  - Harbor Infrastructure
  - Soo Locks
- HQ metrics focus on tonnage – system approach recognized but not used in metrics
Great Lakes Navigation Operations & Maintenance
$102.7M + $51.8M = $154.5M

Key Items
$38.4M + $10M in Dredging (31 projects: 3.2M + 0.73M cy)
$8.86M in Dredged Material Management
$9.6M in Soo Asset Renewal
$30.7M in navigation structure repair (by contract)
FY18 Corps Funding Status

- Awaiting FY18 Appropriation; Continuing Resolution through Dec 8, 2017

- Funding based on FY18 President’s Budget at this time

If Congress passes an Appropriations Bill, additional funds could be allocated to projects across the country. Funding amounts included in House and Senate markups:

<table>
<thead>
<tr>
<th>Additional Funding for Ongoing Work</th>
<th>House</th>
<th>Senate</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Navigation Maintenance</td>
<td>$8.4M</td>
<td>$23M</td>
</tr>
<tr>
<td>- Deep-draft harbor and channel</td>
<td>$334.4M</td>
<td>$287M</td>
</tr>
<tr>
<td>- Small, remote, or subsistence nav</td>
<td>$20M</td>
<td>$51M</td>
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FY 18 Great Lakes Navigation Program

$106.2M  Great Lakes Navigation Operations & Maintenance

Key Items

$38M in Dredging (16 projects – 2.9M cubic yards)
$10.9M in Dredged Material Management
$8.9M in Soo Asset Renewal
Dredging
Dredging Funding Trends 2007-2018

- Appropriation - Add'l Funds for Ongoing Work
- ARRA (Stimulus)
- L. Superior Regional Provisions
- Michigan Regional Provisions
- Commercial Regional Provisions
- Energy & Water Adds
- President's Budget

Quantity Dredged (millions of cubic yards)

FY07 FY09 FY11 FY13 FY15 FY17

3.3M Annual Req’m’t
Historical Funding Great Lakes Low Use Projects (<1M Tons)
Current Dredging Updates

- Calumet Harbor Rock Removal
  - Phase 1 & 2 2017
  - Spring 2018 Phase 3

- Cleveland – completed fall dredging; spring dredging expected in May 2018

- Dredging plans proceeding for President’s Budget projects – primarily moderate and high use commercial harbors/channels
Dredged Material Management
Dredged Material Management Initiatives

- Engage state agencies and other partners and stakeholders in developing innovative long-term solutions to dredged material management challenges
- Foster partnership with USEPA with its Great Lakes Legacy Act (GLLA) and Great Lakes Restoration Initiative (GLRI) programs to leverage funding for projects supporting both environmental goals and navigation benefits
- Maximize the use of fill management and facility adaptation, such as routine raising of perimeter dikes and reworking the material within the facility to create additional capacity
- Aggressively pursue opportunities for beneficially using dredged material to preserve or create CDF capacity within limits of federal rules
- Collaborate with partner agencies leveraging local and federal programs to reduce the amount of material entering federal navigation channels – sediment traps
Current DMM Work Updates

- Cleveland – contract expected in 2018 to remove material from CDF 10B; coordinating on sampling with OEPA; looking for beneficial use opportunities for Ohio harbors

- Ashtabula – working with OEPA on a beneficial use project

- Ohio harbors – pursuing beneficial use opportunities with the State

- Channels in Lake St. Clair – 2017 combined maint. dredging with GLRI restoration project; placed material in shallow water near Clinton River mouth to enhance habitat; less costly placement

- DMM Duluth – exploring new opportunities
Clinton River Mouth Restoration

Beneficially using dredged material from Channels of Lake St. Clair maintenance dredging

- GLRI project placed large woody debris
- Cobble shoreline
- Plantings
- Maintenance dredging material placed in near shore to provide various design depths
Dredged Material Placement Potential
Beneficial Uses

- 21st and 40th Ave Restoration Sites – 886K placed since 2013
- 505K remaining capacity to 2021
- Great potential sites: MN Point, Superior Bay Habitat, WI Piping Plover Site
Minnesota Point Erosion

Potential Benefits from Dredged Material Placement

- Slow/stop erosion and loss of material
- Prevent loss of old growth pines
- Improve coastal resiliency; response to increases in lake level and frequency and magnitude of storms
- Provides piping plover habitat
Lock Reliability
The Soo Locks Lynch Pin of the Great Lakes Navigation System

- 85% of the commercial commodities transiting the Soo Locks are limited by size to the Poe Lock
  - Aging and deteriorating infrastructure; unscheduled outages increasing
  - There is currently no redundancy for the Poe Lock
  - The economic impact of a 30-day unscheduled closure of the Soo Locks = $160M

Two major efforts are underway to improve reliability of the Soo Locks:
1. Maintain existing infrastructure through Asset Renewal Plan
2. New lock with the same dimensions as the Poe Lock – Economic reevaluation required.
Soo Locks Asset Renewal Plan

Asset Renewal Plan will maximize reliability and reduce risk through 2035

$86M funded to date through FY17:
2017 Work:
• MacArthur Lock Embedded Anchorages
• Steamplant Replacement Design
• Replace Stoplog Lifting Beams
• Poe Miter and Quoin Block Replacement
• West Center Pier Repair

Remaining key priorities:
• Poe Lock Gate 1 Replacement
• West Center Pier Repair (final 1,500 ft)
• Davis/Poe Pump Wells
• New heavy lift crane
Soo Locks – 2017/18 Winter Work Repairs

- Poe Gates 1 and 3 Miter and Quoin Block
- Poe Gate 2 Embedded Anchorage
- Mac Gates 2 and 5 Embedded Anchorages
2nd Poe-sized Lock

- Authorized for construction of a redundant Poe-size lock in WRDA 1986; WRDA 2007: Construction at 100% federal expense
- Inconsistent with Administration policy due to BCR of 0.73 computed in 2005 Limited Reevaluation Report (LRR)
- Currently working on Economic Reevaluation Report to recalculate BCR
- Team includes all three GL Districts, Planning Center of Expertise for Inland Navigation (Huntington) and the Civil Works Cost Engineering MCX (Walla Walla)
2005 LRR - Issues

• Unmet Demand Changes
  • Assumed 100% of commodities could be delivered in the event of a lock outage, using existing infrastructure; not possible for this facility
  • Rail capacity was assumed sufficient to handle traffic during an extended outage, without additional capital expense; not possible as noted by the rail industry

• Reliability Changes
  • Assumed major overhaul to the Poe Lock complete in 2017; will not occur under current fiscal constraints
  • Probabilities of component failures are outdated:
    • 2014 SQRA found 4 additional failure modes that would have significant economic impacts and one with loss of life
    • Gate failure outage was not included

• Assumed new vessels would be built to Mac Lock dimensions; not accurate as new Canadian fleet is Poe restricted
Economic Reevaluation Report

- **Reliability**: Information will be leveraged from recent detailed inspections to update reliability and projected outage model.
- **Forecast**: Commodity forecasts are being updated.
- **Alternate Modes of Transportation**: Alternate modes are being developed for various outage lengths.
- **Updated Cost**: The risk-based cost estimate for construction of the new lock will be updated.
- **Agency Technical Review and Independent External Peer Reviews will be conducted**.
- **The entire ERR process is expected to take 24 months**.
Economic Reevaluation Path Forward

- Project was delayed due to lack of funding
- Funding received in Nov and work is resuming
- New authorization increase for higher construction cost – submitted concurrently
- PACR requires ASA (CW) and OMB review before submittal to Congress
- Could continue design efforts in FY18, if funded, while awaiting reauthorization
- Pending a budgetable BCR, could include construction request for FY20 PBUD
Outreach

Waterways Conference – Cleveland February 6-7, 2018

Web Site:  
www.lre.usace.army.mil/greatlakes/navigation
  
  • Harbor Fact Sheets
  • Updated CDF Fact Sheets
  • Presentations

Mailing Lists – send information to glnavigation@usace.army.mil
Questions?