



US Army Corps
of Engineers



Great Lakes
Navigation System

Great Lakes Navigation Regional Needs & Challenges

Cleveland, OH
May 3, 2007

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US Army Corps
of Engineers

Great Lakes Navigation System Challenges

- Backlog Operation and Maintenance Needs
- Aging Infrastructure
- Dredged Material Disposal Issues



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Great Lakes Navigation Program Outreach

Stakeholder Survey

- ✓ What are the most critical system needs at your harbor/project for FY09-13?
- ✓ What factors or issues do you consider critical in developing a strategy to reduce backlog in 5 to 6 years?
- ✓ Comments on the recommended project dimensions
- ✓ Comments on Project Fact Sheets

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Great Lakes Navigation System (GLNS): The Great Lakes navigation system is a continuous 27-foot deep draft waterway that extends from the western end of Lake Superior at Duluth, MN to the Gulf of St. Lawrence on the Atlantic Ocean, a distance of over 2,400 miles. This bi-national resource is composed of the five Great Lakes (Superior, Michigan, Huron, Erie, and Ontario), the connecting channels, the St Lawrence River and the Gulf of St. Lawrence. The U.S. portion of the system includes 136 harbors of which 71 are commercial, four locks, 104 miles of breakwaters and jetties, and over 600 miles of maintained navigation channel. In addition, the GLNS is connected to several other shallow draft waterways (Illinois Waterway, New York State Barge Canal, etc.) to form an important waterborne transportation network, reaching deep into the continent.

Navigation System Volume and Commodities: The GLNS provides the means of transporting significant amounts of waterborne commerce annually. Over 236 million tons of commodities were shipped on the system of waterways that comprise the GLNS in 2004. Part of the area served by the system, commonly referred to as the Mid-continent region, constitutes the industrial and agricultural heartland of North America. It encompasses nineteen States and three Canadian Provinces. Over 80 million people, approximately 30% of the combined populations of Canada and the U.S., live in this area. The region produces nearly 35% of the combined gross national products, a third of their capital investments and about 30% of their combined personal income. In the U.S. the eight Great Lakes states account for a third of the total U.S. exports.

[Click here for detailed for information on Great Lakes Waterborne Commerce.](#)

Great Lakes Navigation Five-Year Development Plan: The Five Year Development Plan (FYDP) is a recently developed instrument to guide the U.S. Army Corps of Engineers in planning for Great Lakes navigation system needs over a given five-year span, defined in this report as the years 2007-2012. The intent is to establish a program that thoroughly engages stakeholders and focuses resources on the system's most critical needs in terms of reducing risk and providing optimal reliability. The goal of the program is to maximize benefits using a cohesive, basin-wide approach and then to structure funding requirements accordingly.

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Great Lakes Fact Sheets: The Great Lakes Navigation Team has created Project Fact Sheets for key harbors on the Great Lakes. The Fact Sheets include information on key harbor features, project needs, consequences of not maintaining the project, and the importance of the project to transportation.

The Fact Sheets were updated in February 2007 to include FY08 needs and Presidents budget. ([Download Updated Fact Sheet](#))

[Great Lakes Coastal Infrastructure:](#) This paper provides an overview of the vital role that coastal infrastructure plays in protecting urban waterfronts from storm surges, waves, and ice.

[Stakeholder Meeting:](#) The Great Lakes Navigation team holds periodic meetings with stakeholders to discuss issues and receive input from stakeholders.

[Stakeholder Survey:](#) The Operations Chief from each Great Lakes District has developed their estimate of the recommended maintained navigation channel footprint. [Click here](#) to view each harbor map. We are soliciting your comments on the recommended maintained channel dimensions and also on issues or constraints associated with reducing the dredging backlog in 5-6 years. Please complete the attached survey on issues related to your harbor.

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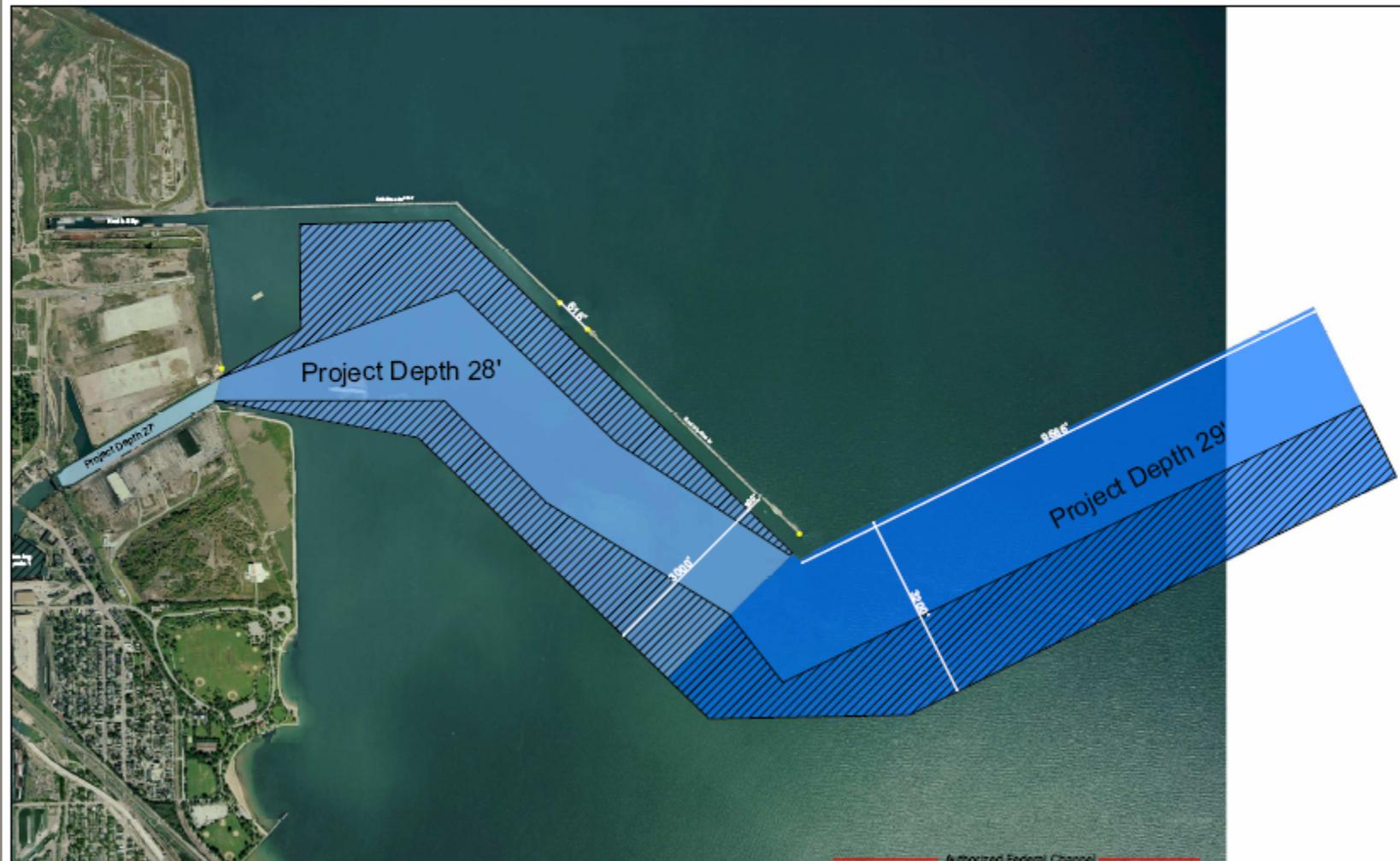
Fully Functional Great Lakes Project Maps

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Great Lakes Project Maps

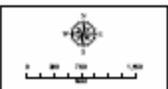
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| Dunkirk Harbor, NY | Erie Harbor, PA | Fairport Harbor, OH |
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| Muskegon Harbor, MI | Ogdensburg Harbor, NY | Ontonagon Harbor, MI |

Calumet Harbor



- US Lights
- Inactive Channel
- Authorized Channel Depth
 - 29'
 - 28'
 - 27'

Project Depths are Related to Low water Datum 577.5 Feet above Mean Water Level at Fairbairn, Quebec I.G.L.D. (1985)



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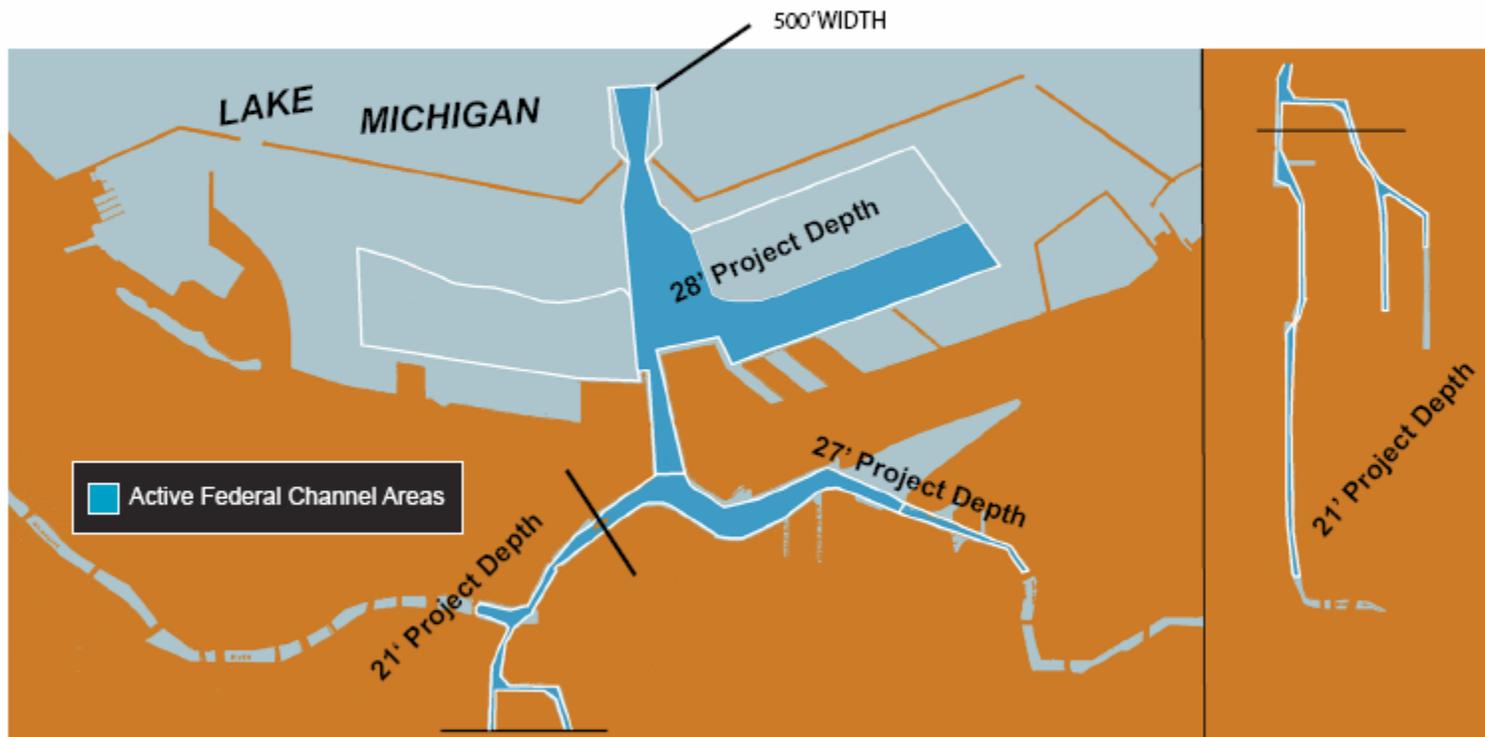
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| Frankfort Harbor, MI | Grand Haven, MI | Green Bay Harbor, MI |
| Harbor Beach Harbor, MI | Holland Harbor, MI | Huron Harbor, OH |
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| Muskegon Harbor, MI | Ogdensburg Harbor, NY | Ontonagon Harbor, MI |

Milwaukee Harbor, Wisconsin



AREA	Authorized Federal Channel =		=	
	DEPTH		WIDTH	
SHOWN	AUTHORIZED	RECOMMENDED	AUTHORIZED	RECOMMENDED
	19'-28'	21'-28'	300'-800'	200'-500'



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Monroe Harbor, MI

Harbor Features

- Located on the lower reach of the Raisin River, which empties into Lake Erie, 36 miles south of Detroit, MI
- Authorization: River & Harbor Acts of 24 Feb 1835, 3 Jul 1930.
- Deep draft commercial harbor.
- Authorized depths – 21 feet in Lake Erie to the turning basin, which has an 18' foot depth.
- 130th leading U.S. port with just under 1.6M tons of material shipped or received in 2005.
- The average of the highest five years over the last ten years of material shipped is 1.8M tons, ranked 35th among the Great Lakes Harbors.
- Approximately 28,000 feet of maintained Federal channel.
- 328 acres available -- zoned for heavy industrial.
- 1,500 feet of public dock on the turning basin
- 1,500 feet of public dock on the River.
- 2,300 feet of private dock on the River (1,600 feet – Detroit Edison, 700 ft – Holcim).
- Sterling State Park Confined Disposal Facility is located just north of the harbor.
- Major stakeholders include The Detroit Edison Company (DTE); Michigan Paving and Materials Co.(MPMC); Monroe Recycling; Holcim, Inc.; Hickman Williams & Co.; The King Company, Inc.; MACSTEEL; Visteon Corp; U.S. Coast Guard; and Lake Carriers' Association.
- Property served by two railroads.
- DTE -- The Monroe Plant is a coal-fired electricity generating station with a capacity of 3,000 MW. Stack emission scrubbers using limestone as feedstock are being installed. Limestone shipment by



- vessel will start in 2009 and will reach an annual average of 300,000 tons by 2013.
- MPMC -- The complex has the ability to store 56 million gallons of asphalt products in eight seven-million gallon tanks, and is the largest asphalt blending facility in the country. One of the asphalt blending materials typically comes only by water.
 - Monroe Recycling (operational fall 2006) – The facility has 1,500 feet of River Raisin dock frontage. Over 4,100 feet of rail line will be extended to and along the River dock at a cost of \$538,000. Water borne shipments will include scrap metal and bulk commodities.

Project Needs

- Dredging of approximately 50,000 to 80,000 cubic yards is completed on a 2 to 3 year cycle. Although maintenance dredging was completed in FY 06, significant shoaling remains throughout the Harbor.
- Shoaling adjacent to the DTE dock is 3 to 3.5 feet.
- The river between the Holcim dock and the Turning Basin has only been dredged 3 times in the last 21 years with areas of shoaling from 1 to 3 feet.

- Monroe Harbor is one of the areas of concern (AOC) identified by the International Joint Commission for the Great Lakes.

Consequences of Not Maintaining the Project

- Significant loss of jobs both locally and regionally.
- Navigational safety issues for all Harbor users related to channel maintenance less than authorized.
- Light loading; loss of between 2 and 3 feet of channel depth results in increased transportation costs of between \$1,800,000 and \$2,900,000 annually.
- The impact of current shoaling on vessel utilization has increased the transportation costs of harbor users more than \$2.0M annually, and has caused more than eight additional vessel shipments per year.
- Restriction to normal vessel delivery to DTE has indirect impacts including higher

risk to operational reliability due to uncertain coal and limestone inventory, and increased reliance on rail coal delivery.

- MPMC is the largest asphalt paving company in Michigan, and their Monroe facility serves one of the largest asphalt pavers in Ohio. Increasing water borne shipment costs will increase the cost of road construction and paving throughout the Midwest.

Transportation Importance

- Major receiving port on the Great Lakes.
- Commodities include petroleum products, coal, and stone and aggregates.
- Between 2003-2006, coal was received at the DTE plant from three other Great Lakes ports: Superior (86%), Sandusky (12%), and Toledo (2%). Limestone procurement is also being planned from a northern Michigan quarry.

**U.S. Army Corps of Engineers Fiscal Year (FY) 2007, 2008 and 2009
Monroe Harbor, MI - Project Needs and President's Budget (\$1,000)**

Work Package	FY07 Need	FY07 Work Plan	FY08 Need	FY08 Budget	FY09 Need	FY09 Budget*
Project Condition Surveys	75	0	92	0	92	
Maintenance Dredging – Primary Work Package	425	0	926	0	926	
Maintenance Dredging – Backlog Work Package					400	
TOTALS	500	0	1,018	0	1,418	

* FY09 President's Budget will be available in February 2008



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Great Lakes Navigation System – Next Steps

- Continued Stakeholder Coordination
 - Survey
 - Fact Sheets
 - Meetings (Nov, Feb, May)
- Communicating Great Lakes Backlog issues
- Conveying Importance of the System



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Key Great Lakes Contacts

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Kathy Griffin – Buffalo District Operations Chief

Shamel Abou-El-Seoud – Chicago Operations Chief

Wayne Schloop – Detroit Operations Chief

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