

Great Lakes Navigation Update

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Great Lakes Navigation Session

Great Lakes Navigation Program

- Great Lakes Navigation Funding Status
- FY14 Navigation Program
- Soo Locks Reliability

Mike O'Bryan

District Operations Chiefs

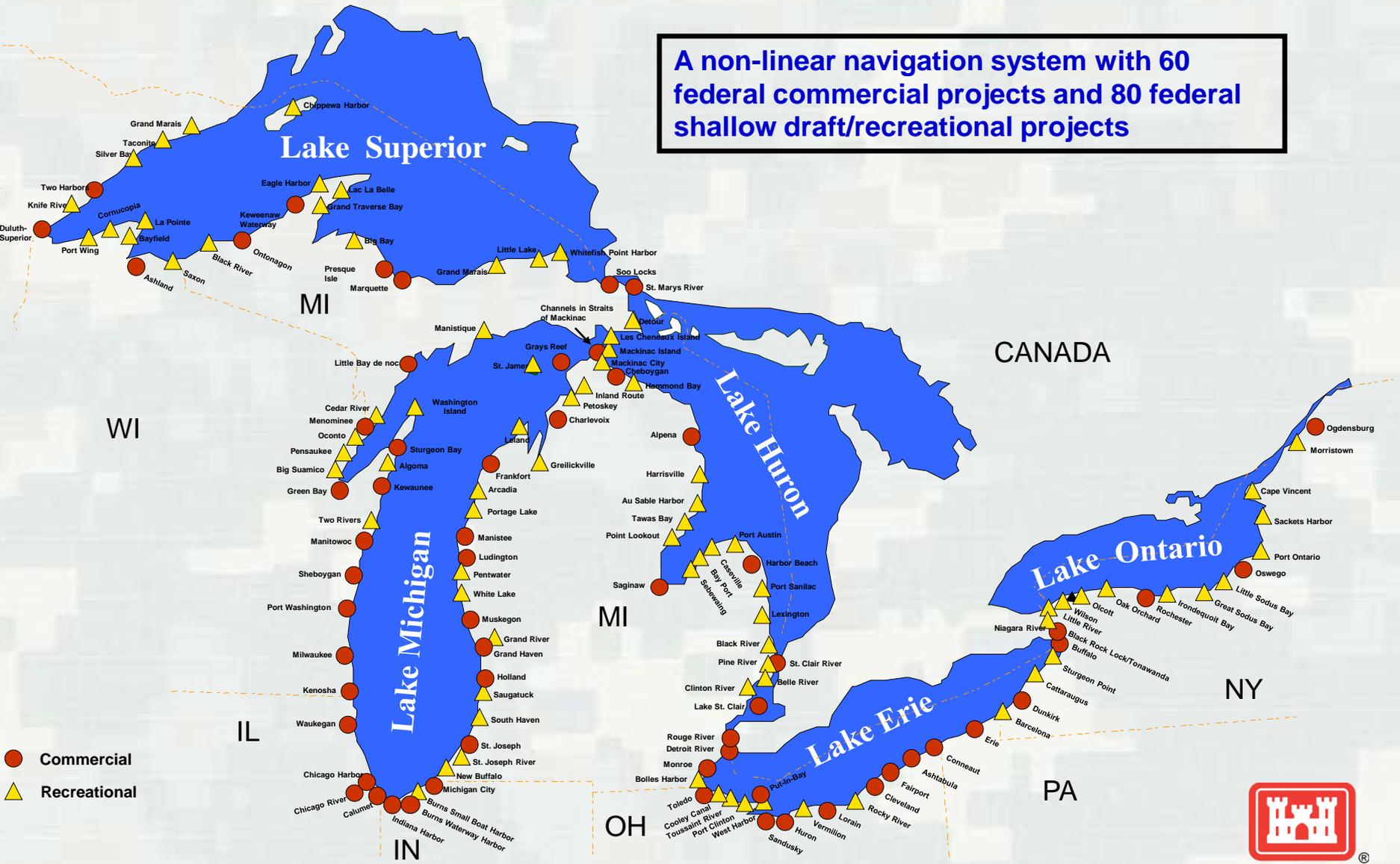
- Key Project Updates

Josh Feldmann
Shamel Abou-El-Seoud
Dave Wright



Federal Projects on the Great Lakes

A non-linear navigation system with 60 federal commercial projects and 80 federal shallow draft/recreational projects



- Commercial
- ▲ Recreational



Corps Great Lakes Navigation Funding Status



FY14 Corps Funding Status

- Congress passed the FY14 Consolidated Appropriations Act; enacted Jan 17, 2014.
- The FY14 Appropriations bill included FY14 President's Budget plus additional O&M funds for ongoing work – to be allocated by USACE HQ.
- FY15 President's Budget is expected to be released the first week in March.



FY 14 Great Lakes Navigation O&M

\$94.9M Great Lakes Navigation Operations & Maintenance

Key Items in FY14 Appropriation

\$39.9M in Dredging (18 projects – 3.1M cubic yards)

\$10.6M in Dredged Material Management

\$1.6M in Soo Asset Renewal

Additional Funding for Ongoing Work

- | | |
|-------------------------------------|----------|
| - Navigation Maintenance | \$25.72M |
| - Deep-draft harbor and channel | \$128M |
| - Inland waterways | \$42M |
| - Small, remote, or subsistence nav | \$40M |



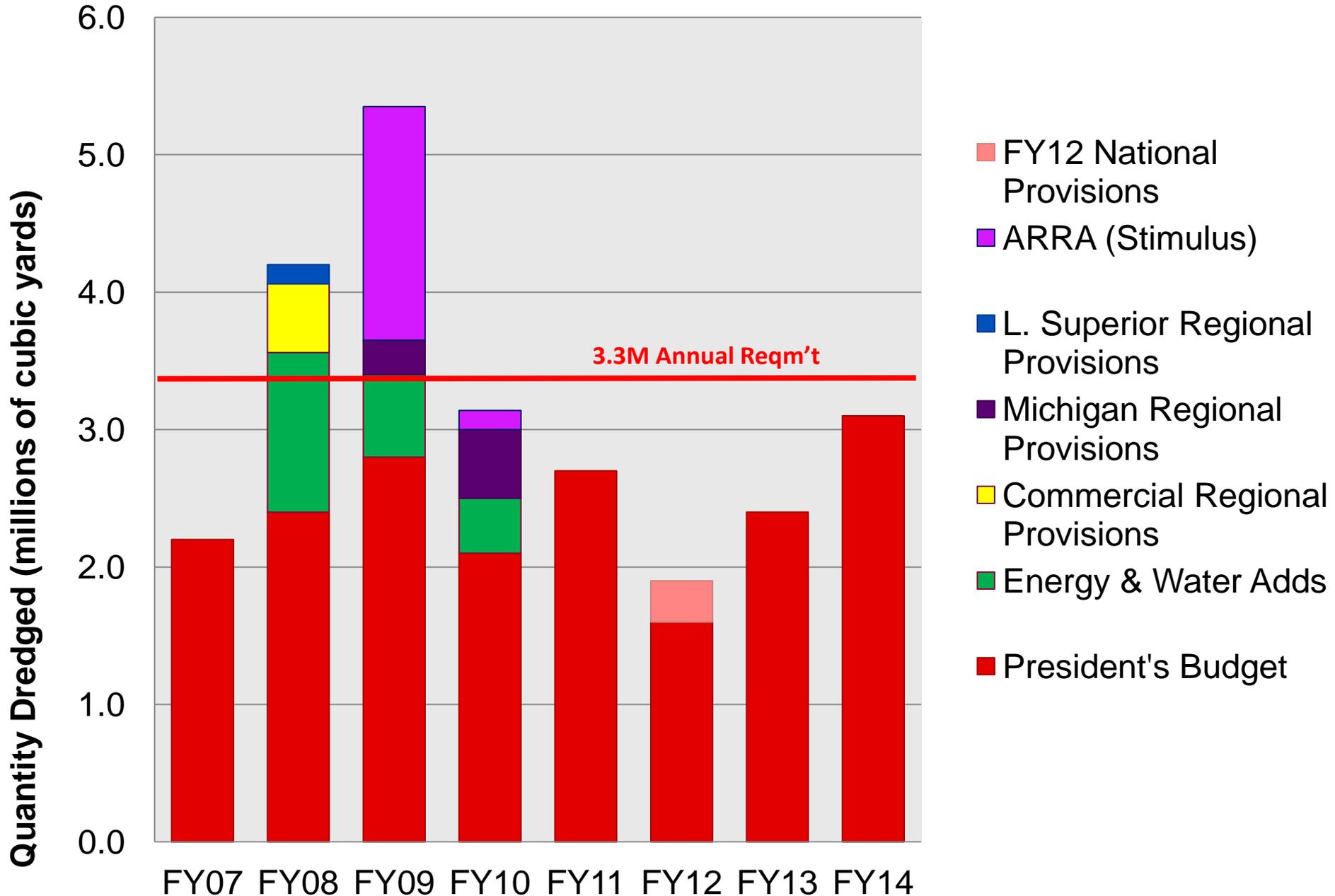
FY14 Dredging Funding and Dredging Requirements



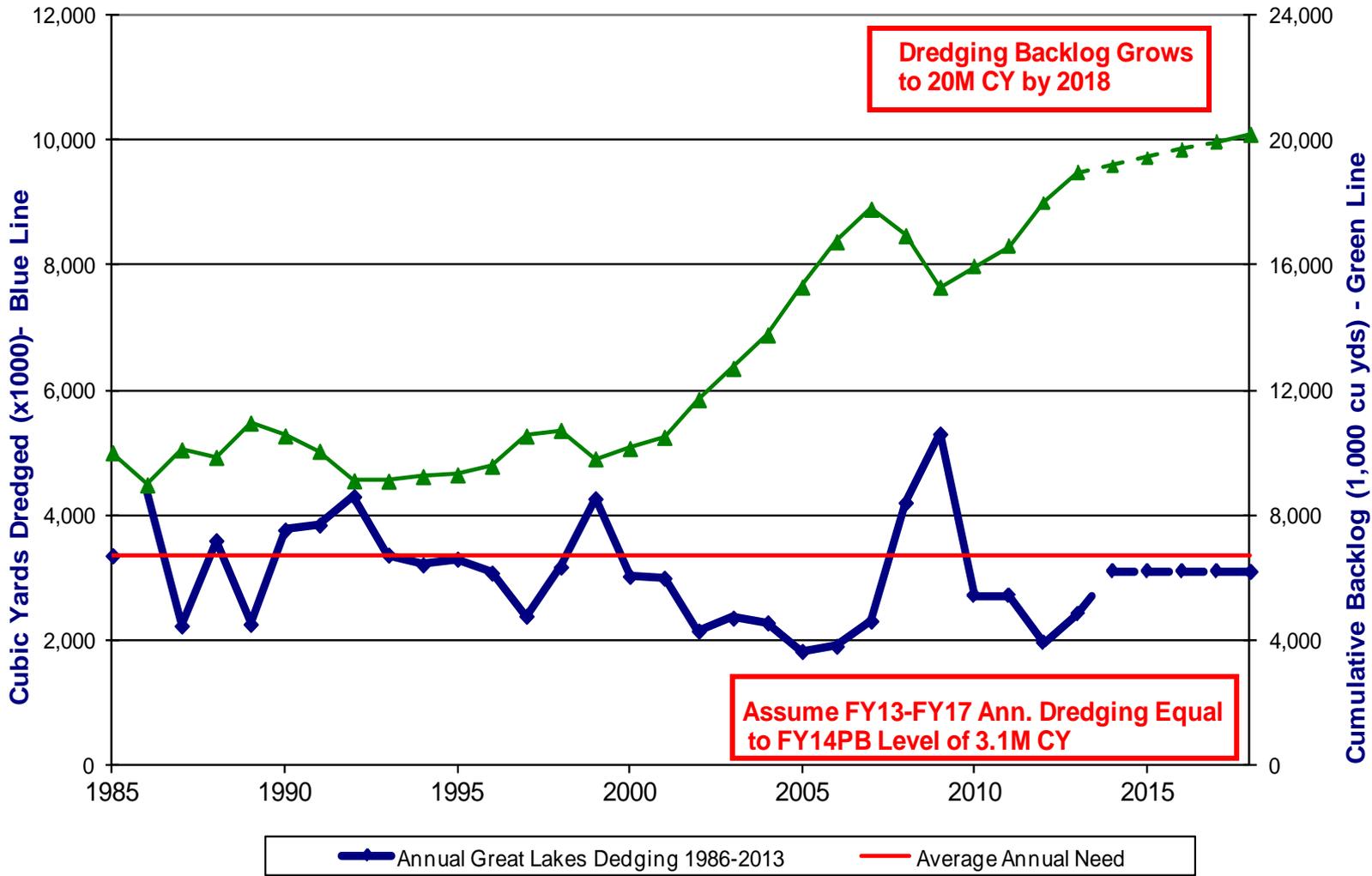
Hurricane Sandy Funded Projects



Dredging Funding Trends 2007 - 2014

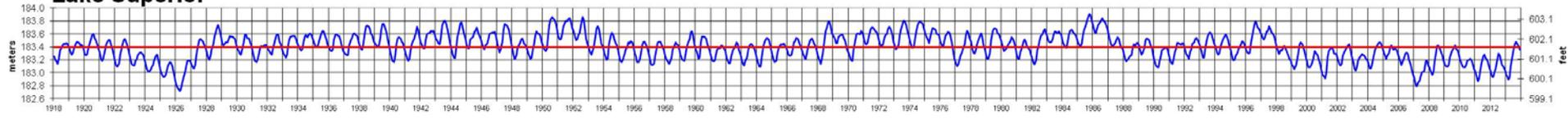


Backlog Growth Under Constrained Dredging Funding 2013-2018

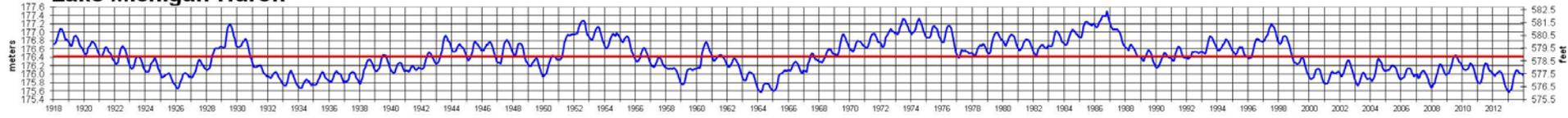


Period of record of Great Lakes water levels (1918-2013)

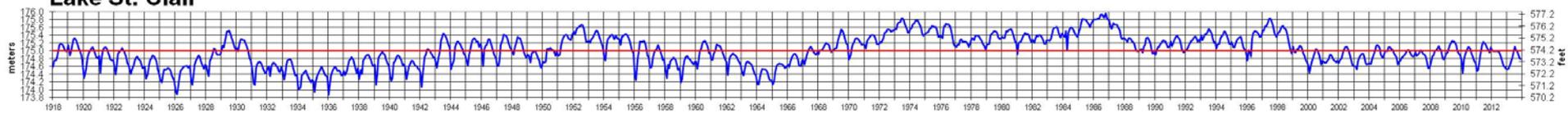
Lake Superior



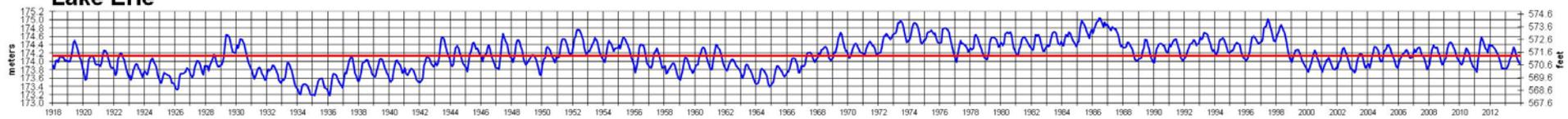
Lake Michigan-Huron



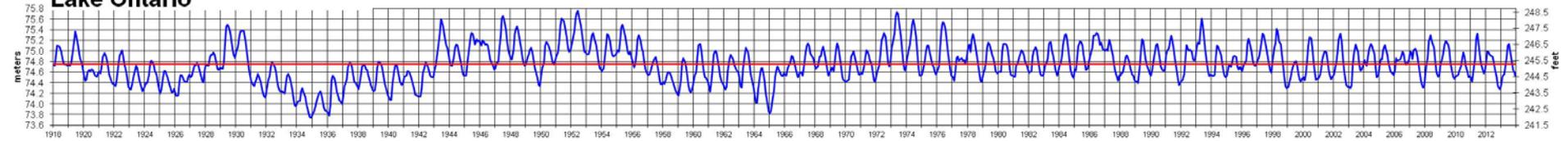
Lake St. Clair



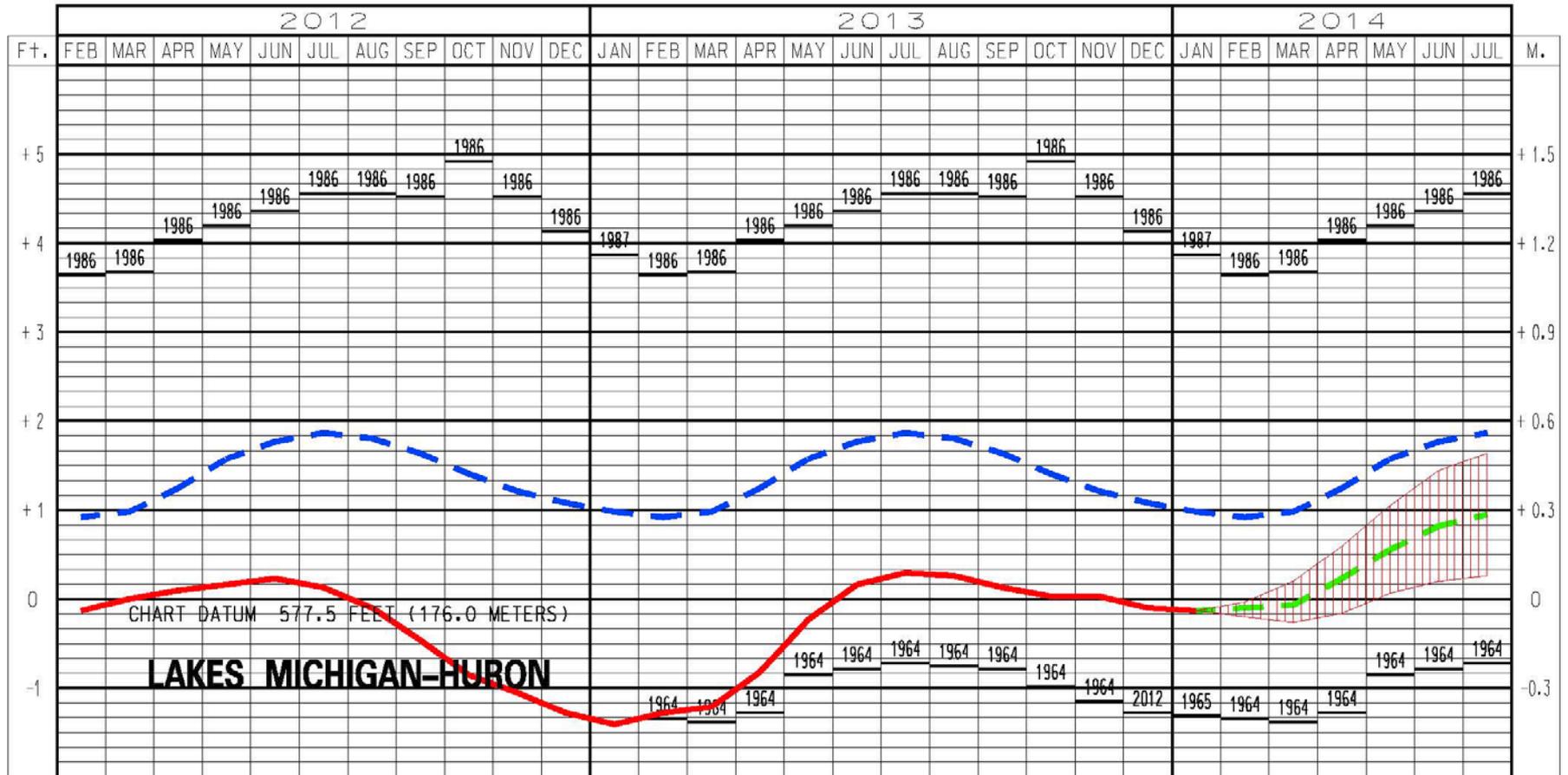
Lake Erie



Lake Ontario



LAKES MICHIGAN-HURON WATER LEVELS - FEBRUARY 2014

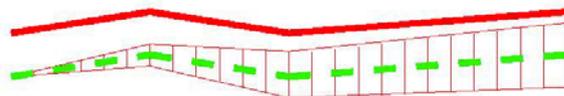


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LAKE LEVELS

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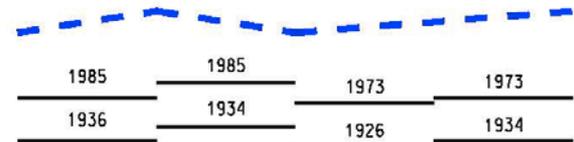
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AVERAGE **

MAXIMUM **

MINIMUM **



** Average, Maximum and Minimum for period 1918-2012

Soo Locks Reliability



The Soo Locks

A Lynch Pin of the Great Lakes Navigation System

- 70% of the commercial commodities transiting the Soo Locks are limited by size to the Poe Lock
 - Security concerns - foreign crews in vessels are capable of seriously damaging or destroying locks
 - There is currently no redundancy for the Poe Lock

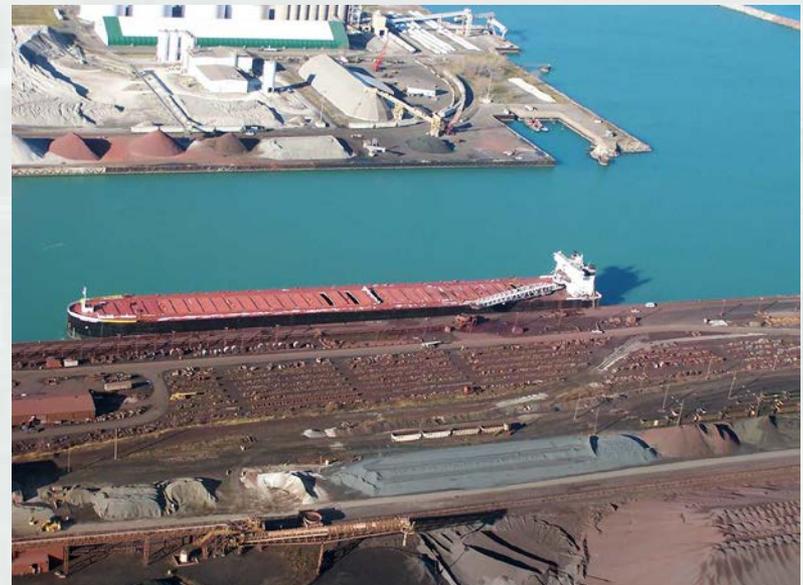
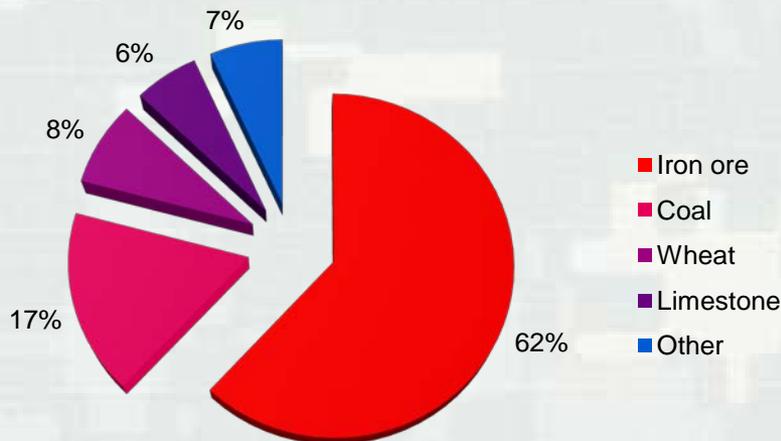
- The economic impact of a 30-day unscheduled closure of the Soo Locks = \$160M
- Two major efforts are underway to improve reliability of the Soo Locks
 1. Maintain existing infrastructure through Asset Renewal Plan
 2. New replacement lock with the same dimensions as the Poe Lock- BCR sensitivity analysis underway



Soo Locks – Iron Ore Impact Assessment

- Iron ore is by far the number one commodity transiting the Soo Locks
- 97% of iron ore mined in U.S. comes from Mesabi Range in MN or Marquette Range in MI.
- Integrated steel mills are located on the lower lakes Great Lakes; do not have the infrastructure to accept iron ore by any means but ship.
- Most of this iron ore passes through the Soo Locks.

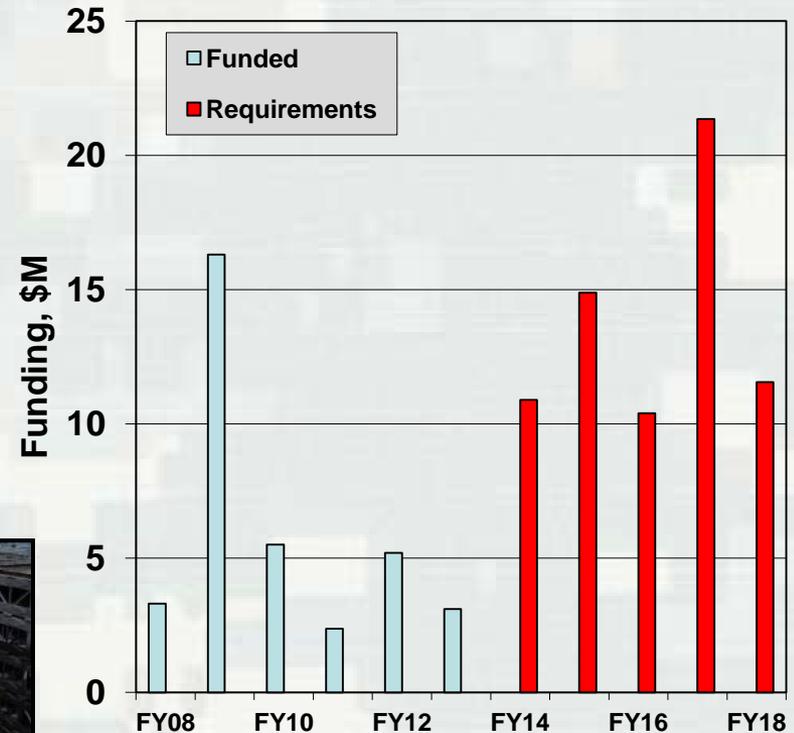
Soo Locks 2011 Tonnage



Soo Locks Asset Renewal Long-Term Plan

Asset Renewal Plan will maximize reliability and reduce risk through 2035

- \$35.9M funded to date through FY13
 - New hydraulics, stop logs, utilities
 - Crib Dam construction
 - Compressed Air System
 - Mac Lock modernization design
- Remaining funding required \$69 million over 5 years
 - Poe and Davis Pump Well Valves
 - Poe Electrical Rehabilitation
 - MacArthur Interlocks and Controls Upgrade



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New Replacement Lock



- WRDA 2007: Construction at 100% federal expense
- Inconsistent with Administration policy due to BCR of 0.73
- Currently conducting a partial benefits reanalysis to determine if some benefit categories were not captured or if insufficient information was used. If there is a large enough increase in benefits, a BCR revisit may be in order.



Benefits Analysis Status

- Evaluate potential benefits that might impact the BCR
- Involvement includes District staff, Inland Navigation Planning Center of Expertise, Lake Carriers' Association, shippers, system users
- Survey of top shippers/operators that move coal and iron ore through the locks. Focusing on alternate modes of transportation if the Poe goes down. What is feasible, what is the additional cost.
- Incorporate updated probabilities of failure combined with costs to the users to determine possible impacts on project benefits.
- Review to be completed by the end of FY14



Extension of Shipping Season

- Soo Locks operating season: March 25 – Jan 15
- USACE is working with four partners on LCA's request for shipping season extension: USCG, MDNR, MDEQ, and USFWS
- Have coordinated with partners and are working through their concerns to develop a new Memorandum of Agreement to establish process for considering requests for season extension.
- Concerns range from operational (USACE and USCG) to environmental effects of ice (MDNR, MDEQ, USFWS).
- Meeting with partners this month to finalize comments.



Conditions at End of 2013 Season

- Conditions at the end of the 2013 shipping season were very trying for USACE, USCG, and shipping companies.
- USCG convoys through connecting channels, extended times for lockages, many ships beset in ice at locations throughout the system.
- Each lockage took approx 4 hours more than normal due to ice collar forming on the locks and the need to lock through ice prior to ship locking through.
- The USCG reports that the trip from Duluth, MN to Indiana ports, which normally takes a freighter three days has been taking seven days due to the heavy ice.
- Due to the unusually high number of vessels beset in the lower St. Marys River this year, we expect a high volume of strike removal will be necessary at the start of the season.





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Northbound shipping at Southern split with cutter leading



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Identifying Needs of Harbor Fact Sheets

- Identifying the Economic and Social Impacts Related to Maintaining the Authorized Project
- Identifying Other Critical Factors (Subsistence Harbor, Infrastructure Protected by Harbor)
- We will continue to refine the information with your help!



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Cleveland Harbor, OH

Harbor Features

- Located on Lake Erie in the city of Cleveland, Cuyahoga County, Ohio
- Authorization: River & Harbor Acts of 1875, 1886, 1888, 1896, 1899, 1902, 1907, 1910, 1916, 1917, 1935, 1937, 1945, 1946, 1958, 1960, 1962, Water Resources Development Acts of 1976 and 1986, Supplemental Appropriations Act of 1987 and the Energy & Water Appropriations Act of 1988
- Deep draft commercial harbor
- Authorized depths are 25-29 feet in the outer harbor and 18-27 feet in the river
- Five year average (2006-2010) tonnage of 11.1M tons of material shipped and received
- Ranked 6th among the Great Lakes Harbors based on five year average (2006-2010) tonnage
- 50th leading U.S. port in 2011
- Over 5.5 miles of breakwater structures
- 5.8 miles of Federal channel on the Cuyahoga River and 1 mile of Federal channel on the Old River
- Confined disposal facilities (CDFs) are located to the east of the harbor entrance
- Major stakeholders include Cleveland-Cuyahoga County Port Authority, Burke Lakefront Airport, ArcelorMittal, U.S. Coast Guard, Lake Carriers' Association, and Cargill

Project Requirements

- A minimum of 225,000 cubic yards (CY) of material must be dredged each year. Dredging was last completed in 2012 and is scheduled for 2013.
- Maintenance dredging is required in 2014.
- The sediment backlog within the Cuyahoga River channel was approximately 600,000 CY in 2012.



- Severely deteriorated sections of the east and west breakwaters, arrowheads and finger pier must be repaired. Additional damage/deterioration was observed following Superstorm Sandy.
- The existing CDF's will reach capacity by current hydraulic placement methods in 2014. An interim DMMP is being prepared to address the short-term (through 2018) capacity needs until a new long-term plan is in place. Continuation of critical fill management planning, design and maintenance activities is required to ensure the continued availability of CDF capacity for annual dredging quantities.
- Results of sediment sampling conducted in 2012 will be also evaluated to determine the suitability of placing sediment in the open lake instead of a CDF.

Communication

- Great Lakes Brochure
- Web Site:
www.lre.usace.army.mil/greatlakes/navigation
 - ▶ Fact Sheets will be updated after FY15 President's Budget is released
 - ▶ Presentations
- Mailing Lists – send information to [glnavigation @usace.army.mil](mailto:glnavigation@usace.army.mil)



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U.S. Army Corps of Engineers Fiscal Year (FY) 2012, 2013 and 2014
Cleveland Harbor, Ohio - Project Requirements and President's Budget (\$1,000)

Work Package	GLRI Funds	FY12 Requirement	FY12 Appropriation	FY13 Requirement	FY13 Allocation	FY14 Requirement	FY14 President's Budget
Maintenance Dredging - Primary		2,850	2,587	2,585	2,160	4,775	4,775
DMM/PCDF Beneficial Use Activities	50	200	190	259	259		
Dredged Material Management Operations CDF 10B Excavation							
E&D, New CDF/Additional Interim Measures		600	570				
E&D Long Term Management Plan				494	494	400	400
Fill Management Activities, Interim CDF (Dike 12, Phase 2)							
Fill Management Activities, Phase 1		4,000	3,694				
Fill Management Activities, Phase 2		4,000		3,760	2,671		
E&D Interim CDF (Dike 9, Phase 2)							
E&D, Wharf and Utility Repair						300	
Interim CDF Maintenance (Grading)		350	258	300	300	365	365
Snagging & Clearing Floating Plant (F/P)		60	57	65			
Critical Maintenance of Coastal Navigation Structures and Obstruction Removal						1,040	1,040
Structure Repair - E & W Arrowhead Breakwaters (F/P)		970	970	1,055	850		
Structure Repair - E & W Arrowhead Breakwaters (Stons)		450		450		450	
Structure Repair - Dike 10B (F/P)				330			
Construction, West Pierhead Repair			288	60	60		
Construction, East Breakwater Repair (Sta 84-94)		2,900	24				
Const, East Breakwater Repair (Sta 96-100, 89-91)				2,375	1,168	2300	
Construction, Finow Pier Repair, Phase 1				3,100			
Construction, Finow Pier Repair, Phase 2				3,100			
Construction, Wharf and Utility Repair (1&3)		300		3,900			
Construction, Wharf and Utility Repair (2)		300		3,200			
E&D, East Breakwater West End Section Repair		150		250			
E&D, Finow Pier Repair				225			
Project Condition Surveys		515	505	505	505	515	515
Regional Economic Data Collection		250	237	250	250	250	250
Sediment Sampling and Analysis				500			
TOTALS	50	17,595	9,380	26,763	8,717	10,395	7,345

Congressional Interests

- Representative Marcia Fudge D-OH-11
- Senator Rob Portman R-OH
- Senator Sherrod Brown D-OH



Key Great Lakes Contacts

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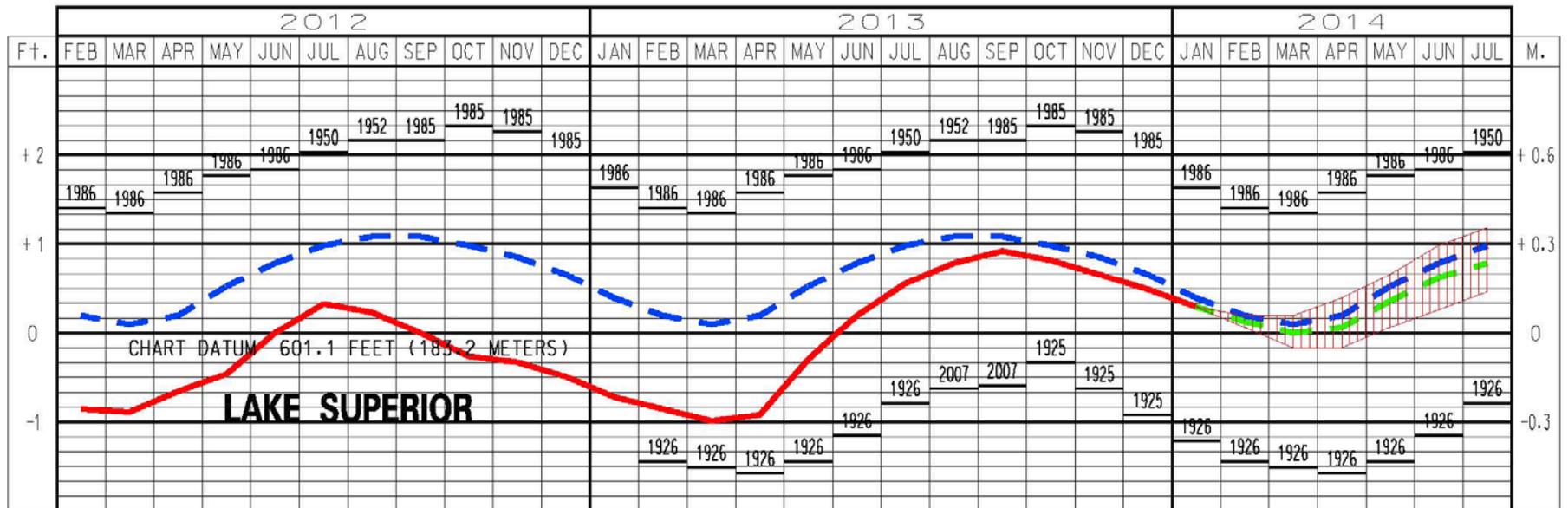
www.lre.usace.army.mil/greatlakes/navigation



Questions?



LAKE SUPERIOR WATER LEVELS – FEBRUARY 2014

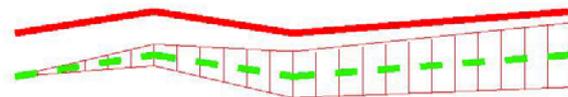


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LAKE LEVELS

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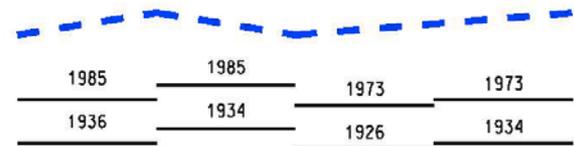
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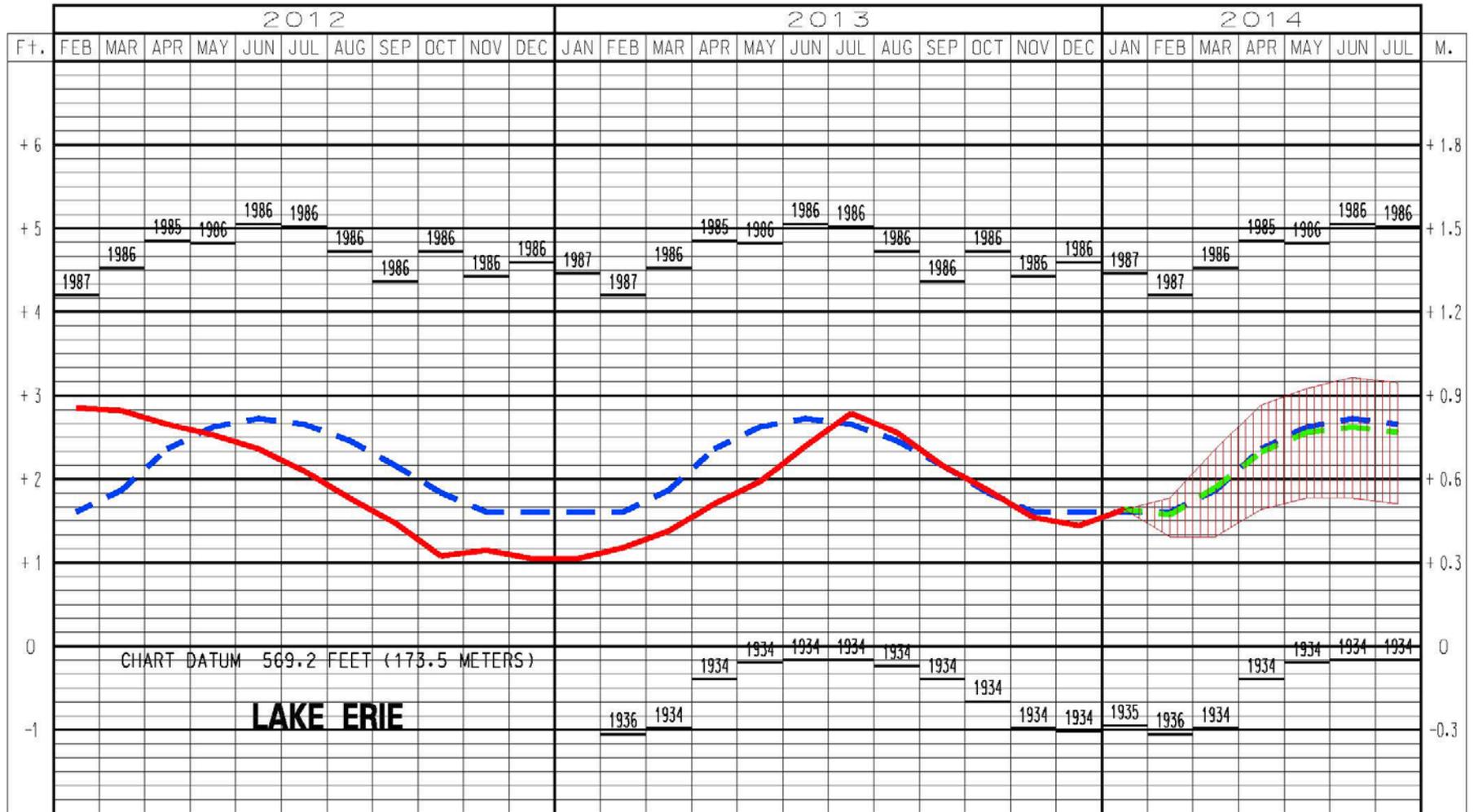
MAXIMUM **

MINIMUM **



** Average, Maximum and Minimum for period 1918-2012

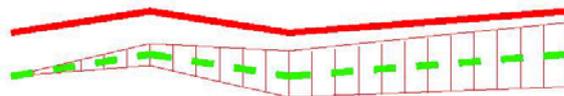
LAKE ERIE WATER LEVELS - FEBRUARY 2014



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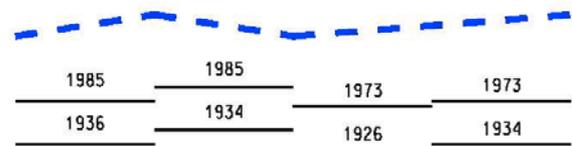
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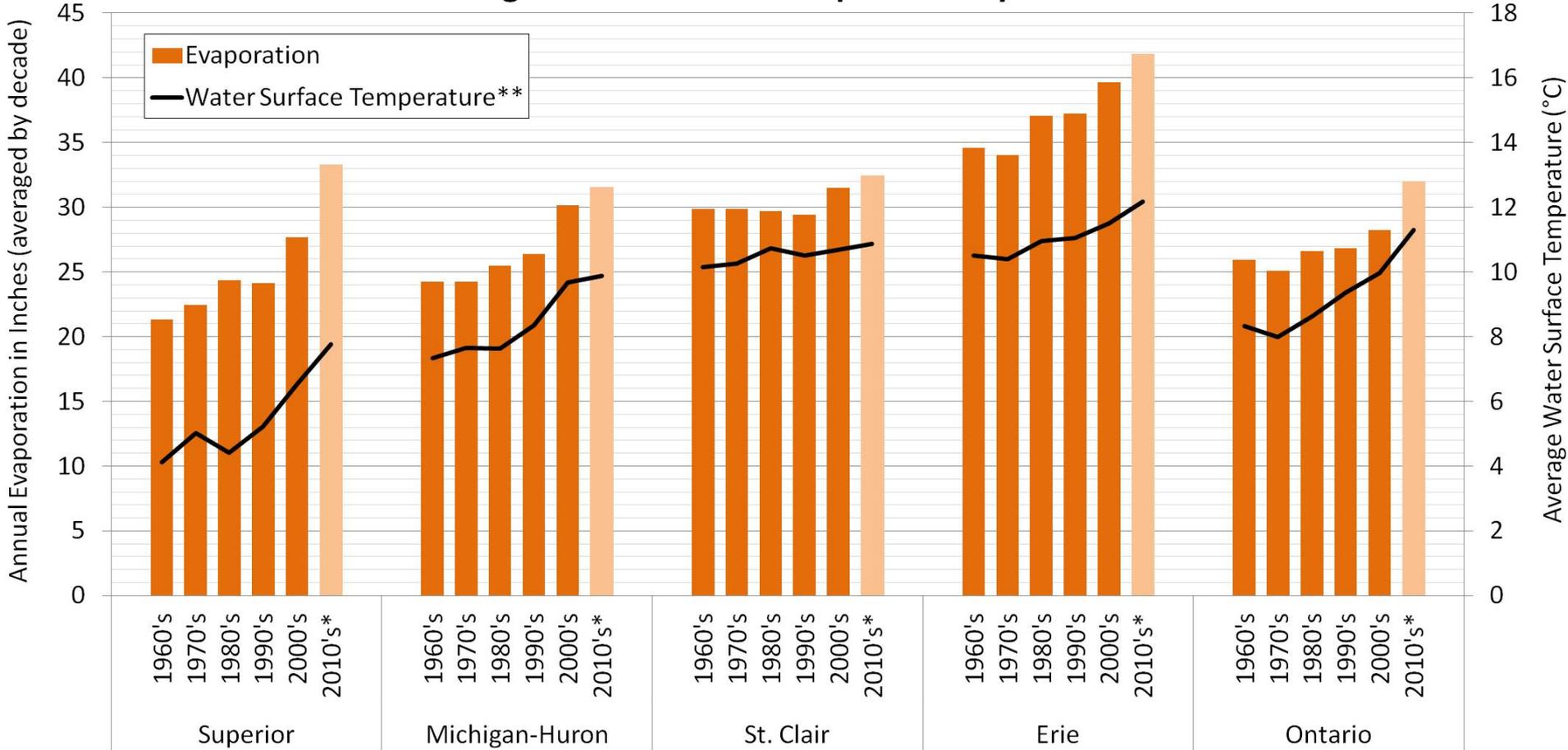
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Changes in Great Lakes Evaporation by Decade



Notes:

* Data used to estimate the 2010's decade is provisional data from 2010 - 2012.

** Water temperature data is a combination of modeled and observed water surface temperatures.



Regional Condition Assessment

A Great Lakes regional team was established in 2008 to conduct Asset Management-based condition assessments of all Great Lakes commercial navigation structures; the Team works with USACE Engineering Research and Development Center and collaborates with the National Coastal Asset Management Board.

- Assessments completed to date
- Conditions assessment by segments: 45% of structures are rated C or worse
 - 22 miles (21%) rated C – Probably inadequate
 - 22 miles (21%) rated D - Inadequate
 - 3 miles (3%) rated F – Failed
- Cost to conduct major repair of structures: \$15 – 20M per mile

