

Water Levels and Maintaining Access to the Great Lakes and Connecting Channels

Great Lakes Commission Annual Meeting

March 6, 2013

Washington, D.C.

Fred L. Shusterich

President

Midwest Energy Resources Company



Midwest Energy Resources

A DTE Energy Company

Member, GLMTF

GREAT LAKES MARITIME TASK FORCE



**Promoting Shipping On America's Fourth
Sea Coast Since 1992**

GREAT LAKES NAVIGATION SYSTEM

**LOWER
BUDGETS**

**NO
EARMARKS**

**FAILING
INFRASTRUCTURE**

**MORE
SEDIMENTATION**

**LOWER WATER
LEVELS**



In the Fall of 1991,
the *Andrea Gail* left Gloucester, Mass.
and headed for the fishing grounds
of the North Atlantic.

Two weeks later, an event
took place that had never occurred
in recorded history.

A WOLFGANG PETERSEN FILM

THE PERFECT STORM

WARNER BROS. PRESENTS
A BALTIMORE SPRING CREEK PICTURES / RADIANT PRODUCTIONS FILM A WOLFGANG PETERSEN FILM "THE PERFECT STORM" DEANE LANE WILLIAM FICHTNER
KAREN ALLEN BOB GUNTON MARY ELIZABETH MASTRANTONIO JOHN C. REILLY JAMES BOKER RICHARD FRANCIS-BRUCE, A.C.E. WILLIAM SANDELL JOHN SEALE, A.C.S., A.S.C.
BARRY LEVINSON DUNCAN HENDERSON SEBASTIAN JUNGER BILL WITILLIFF BO GOLLINUS PAULA WEDSTEIN WOLFGANG PETERSEN GAIL KATZ WOLFGANG PETERSEN

HITS JUNE 30TH

www.perfectstorm.net





LIVE

8:35 APT

MARKETS
WU-NOW



INDUSTRIALS

GENERAL ELECTRIC (GE)

21.14 ▼ 0.07

DOW

▼ 22.55

FOX
BUSINESS

0.08

UNITED THERAPEUTICS (UTHR)

107.51.03

S&P

▲ 0.21

OPEC: US OIL PRODUCTION TO GROW 490,000 B/D IN 2013

NAS

▲ 8.01

Water Levels on Great Lakes

- All the Great Lakes are below their long term averages. Lake Michigan-Huron set new monthly record low levels in December and January and an all-time low in January.
- Levels on Lakes Superior and Michigan-Huron have been below average for over 14 years, the longest stretch in their recorded histories.
- Lake Erie has dropped two feet in the past year and had no seasonal rise in 2012 - first time the lake had no seasonal rise.
- The most probable forecast shows Lake Michigan-Huron setting new record lows again in February and March, and remaining near record low levels from April – July and most likely well beyond that.
- Lakes Superior and Michigan-Huron are expected to be 12 and 18 inches below chart datum, respectively, at the open of the 2013 navigation season in March.



Feb 1, 2013 Lake Levels

	Superior	Mich-Huron	St. Clair	Erie
LTA – Feb 13	-11	-29	-11	-6
Max – Feb 13	-26	-61	-51	-37
Max Year	1986	1986	1986	1987
Low – 13	+9 1926	-1 1964	+24 1926	+26 1936
Change Mar 13	-2	-1	+2	+1

Great Lakes Economy

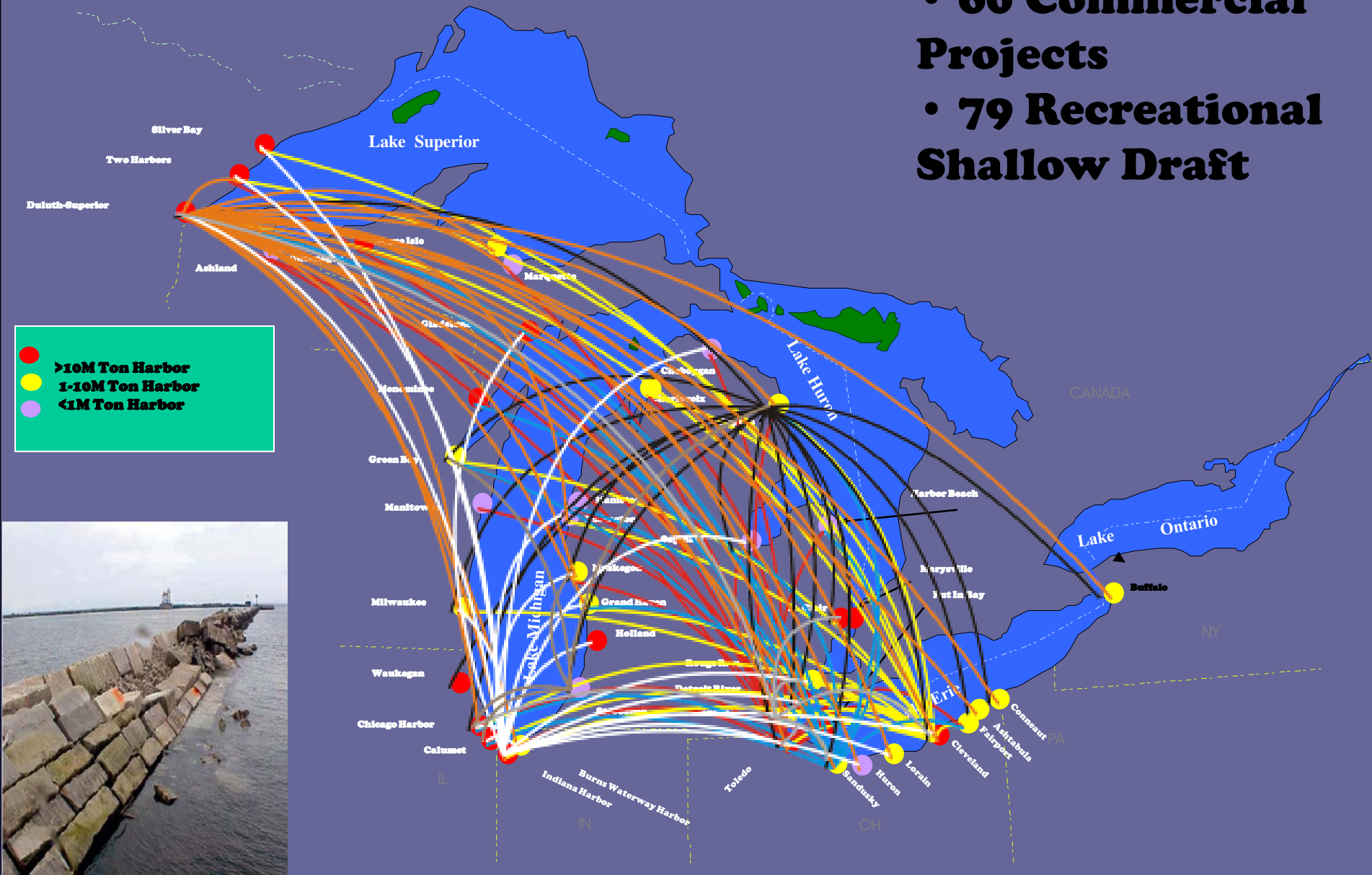
- **50% of U.S. Steelmaking Capacity**
- **70% of U.S. Auto Manufacturing**
- **55% of All Manufacturing**
- **Great Lakes Shipping is Integral to the U.S. and Canadian Economies. It Creates**
 - **227,000 Jobs**
 - **\$ 33.5 Billion in business revenue**
 - **\$14.1 Billion in annual personal income**
 - **\$6.4 Billion in local purchases**
 - **\$4.6 Billion in tax revenue**
 - **\$3.6 Billion in Transportation Rate Savings**

GREAT LAKES TRADE

- **U.S.- Flag Trade – 115 Million Tons**
 - Mostly U.S.-to-U.S., primarily within the upper four Lakes.
 - Iron ore, coal and limestone primary cargos.
- **Canadian-Flag – 65 Million Tons**
 - Trade between Duluth/Superior and Sept Iles.
 - Inbound ore from the Gulf of St. Lawrence, grain backhaul.
 - 82% of “Cross-Lake (U.S./Canada) trade.”
 - 52% of their total is to or from the U.S.
- **Oceangoing or “Salty” – 17 Million Tons**
 - Importing specialty and finished steel products, grain back overseas.
 - Canadian-owned , but flagged foreign with international crews.

Great Lakes Navigation System

- 60 Commercial Projects
- 79 Recreational Shallow Draft

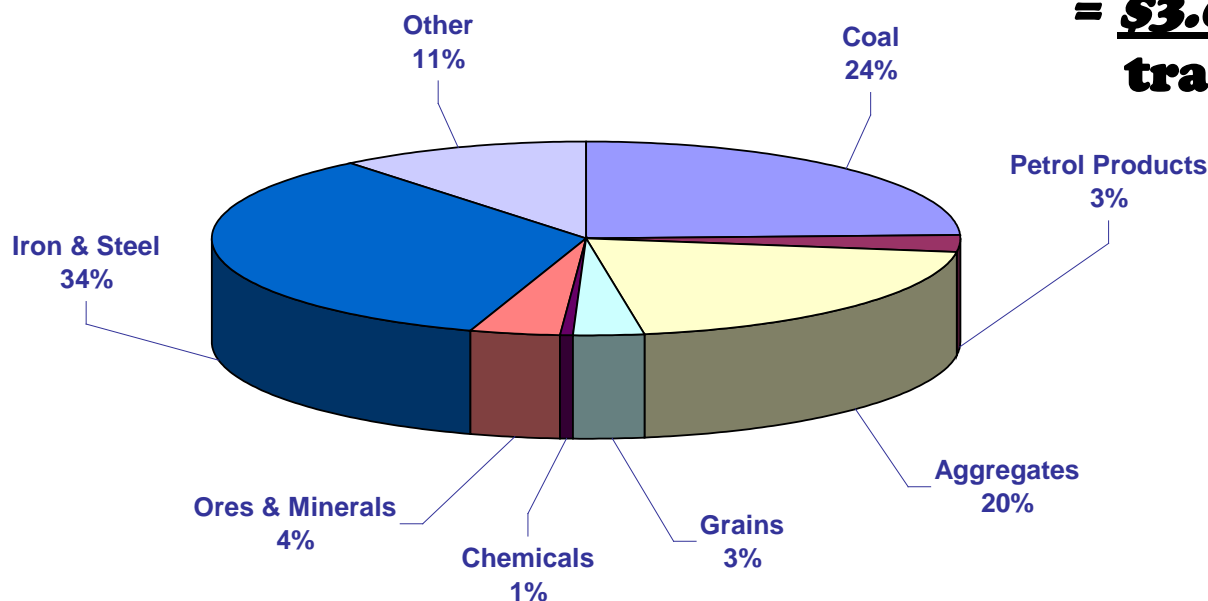


Great Lakes Navigation

A Great Investment

**\$90 Mil for O&M
(\$40Mil dredging)**

**= \$3.6+ Bil in lower
transport costs**



The Great Lakes Navigation System's Transportation Rate Savings: **\$3.6 Billion/Year**

Commodity Group	(Oct 08) \$FY08 SPT	CY 2006 Tonnage	Rate Savings Benefit*
Wheat	\$24.02	1,636,000	\$39,298,492
Maize	\$32.17	1,875,000	\$60,326,942
Soybeans	\$30.60	1,161,000	\$35,531,916
Other grains and seeds	\$39.48	2,066,000	\$81,570,722
Limestone	\$21.78	30,908,000	\$673,091,214
Other Minerals	\$26.78	7,239,000	\$193,848,497
Ores (including iron ore)	\$12.89	58,848,000	\$758,635,652
Coal	\$18.05	44,896,000	\$810,365,445
Petroleum Products	\$27.43	5,067,000	\$139,012,440
Cement	\$46.00	7,151,000	\$328,946,909
Miscellaneous	\$42.73	12,166,000	\$519,808,956
	Total	173,013,000	\$3,640,437,183

* CY 2006 Great Lakes Waterborne Commerce; Oct 08 price level

LAND-BASED MODES OF TRANSPORTATION DON'T STACK UP TO SHIPS !

70,000
Net Tons

1

Vessel

47

Barges

700

Railroad Cars

2,800

25-Ton Trucks

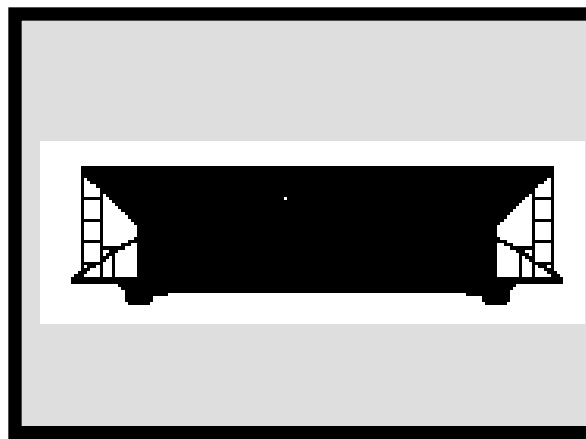


HP Per Ton

.2 - .3
Vessel



1
Railroad Cars

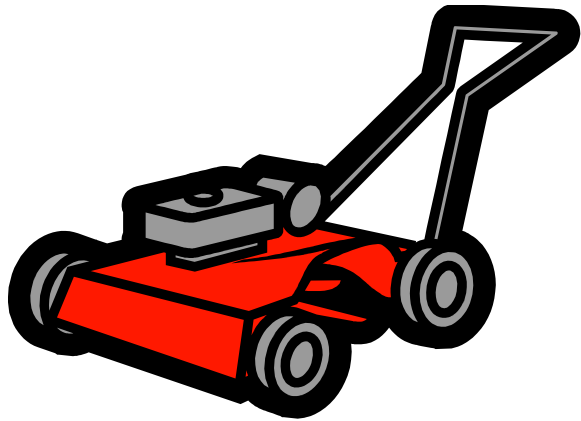


12 - 20
Trucks



Vessel HP/ton equivalent

A lawnmower could move a truck



One Ton of Cargo Equals....

- ④ Takes 1.5 tons of iron ore to make a ton of steel.
(Also 400 pounds of fluxstone, a type of limestone.)
In total, takes 2.2 tons of Lake-delivered product to make a ton of steel.
- ④ One mile of 4-lane highway needs 85,000 tons of aggregate as its base.
- ④ A 70,000-ton cargo of low-sulfur coal keeps the power on in Greater Detroit for a day.

Every Inch Counts!

When inadequate dredging forces the 56 lakers enrolled in LCA to reduce draft by 1 inch, the fleet forfeits more than **8,000 tons of cargo each trip.**






8,000 Tons is Enough...

Iron ore to produce the steel to build **6,000 cars** (10 days of work for a major auto plant)

Coal to provide **3 hours of electricity** for Greater Detroit

Limestone to build **24 homes.**







IMPACT OF DREDGING ON VESSEL CARRYING CAPACITY (net tons)

Great Lakes Bulk Carriers	Vessel Length (feet)	Per-Trip Carrying Capacity	Capacity Per Inch Of Draft*
	1,000	69,664	267
	806	34,720	146
	767	28,336	127
	635	22,064	107
	501	13,776	71

*Capacity per inch of draft reflects the incremental tonnage carried at normal loaded draft.

Impact of Dredging Crisis on Per-Trip Carrying Capacity

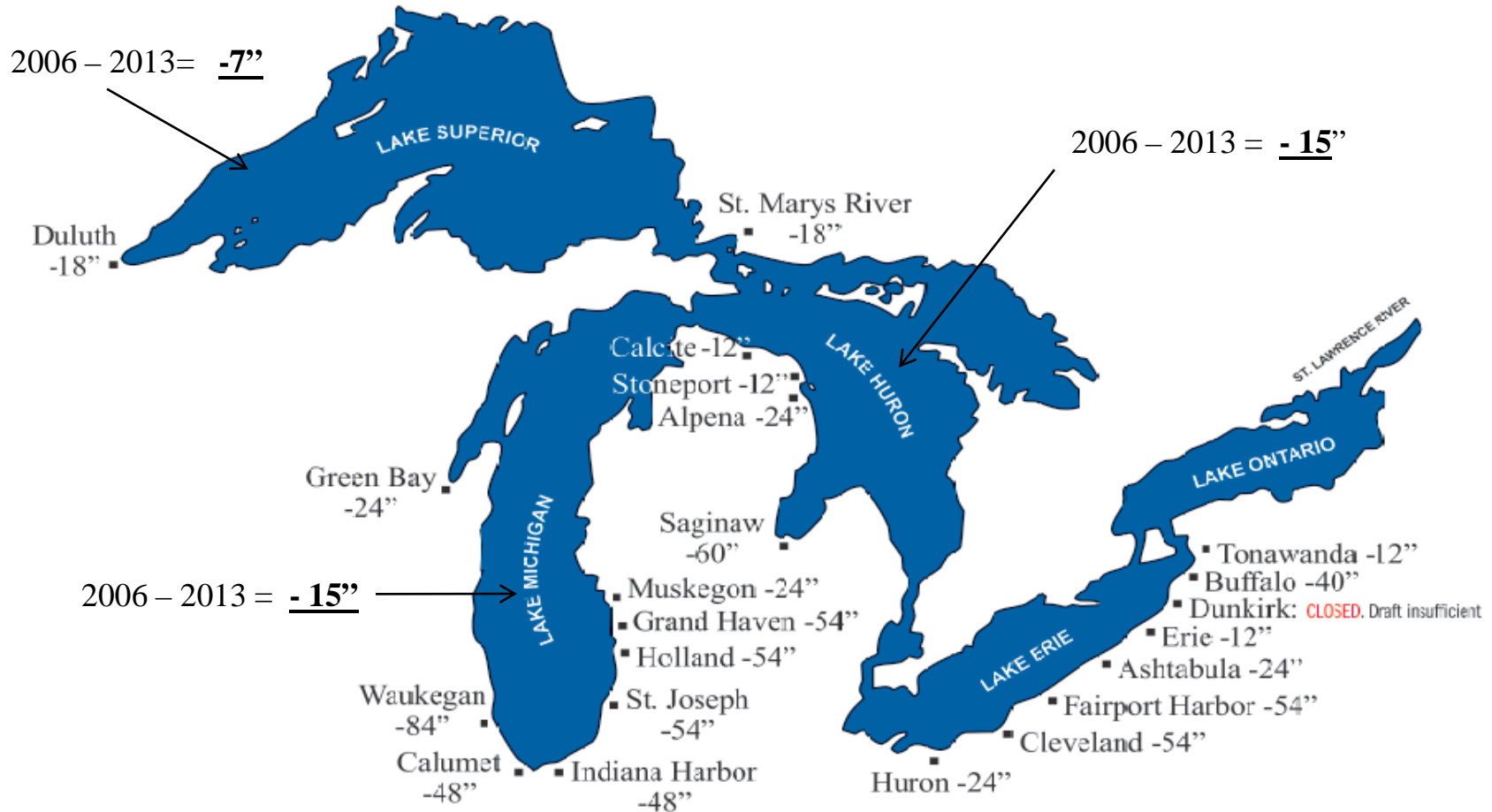
Major Great Lakes Vessel Classes

Major Great Lakes Vessel Classes	Vessel Length (feet)	Per-Trip Carrying Capacity (net tons)	Capacity Per Foot Of Draft (net tons)
	1,000	69,664	3,204
	806	34,720	1,752
	767	28,336	1,524
	730	27,558	1,380
	635	22,064	1,284
	501	13,776	852

Inadequate Dredging System-Wide

2006 Marad Study

Lost Inches, Lost Efficiencies



Dredging Crisis Hampering Coal Trade

- **U.S.-flag Lakers have carried as much as 71,369 tons of coal in one trip.**
- **Top cargo in 2012 was 67,530 tons.**
- **By end of the 2012 most cargos were less than 62,000 tons.**
- **Lack of dredging costing 14% of per-trip carrying capacity.**

DEFINITIONS

- **CG**

Construction & General

- **O&M**

Operations & Maintenance

- **Inland Trust Fund**

Fuel Tax Funds CG on Inland Rivers

- **Harbor Maintenance Trust Fund**

Cargo Value Taxed to Maintain Coastal Ports O&M

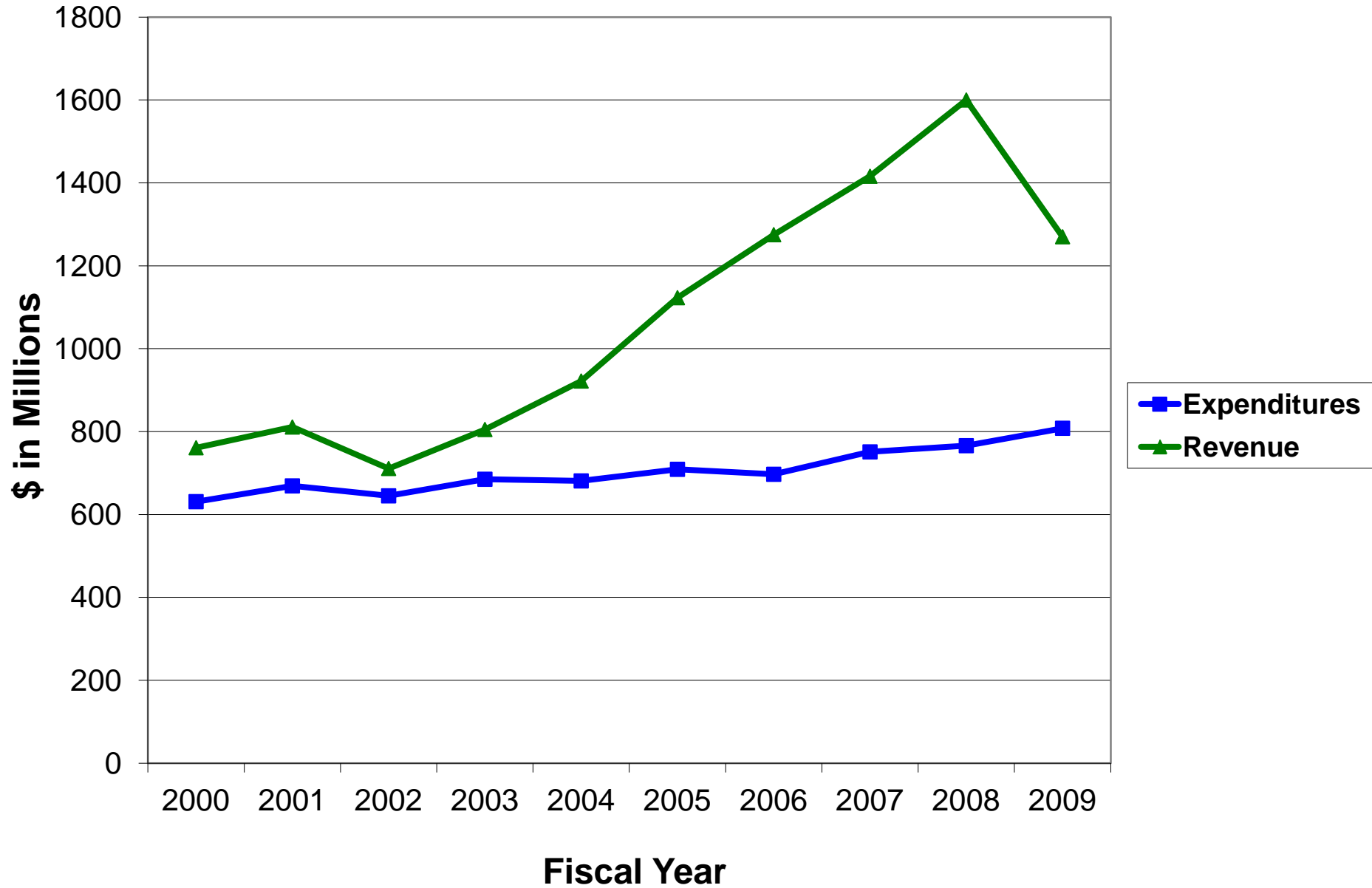
- **LRD**

Lakes River Division Created by WRDA 95 and established in 97

SOURCES OF FUNDS

- Taxpayers – General Treasury
 - Rivers 50% of CG and 100% of O&M
 - Coastal – 75% of CG
- Inland Waterways Trust Fund
 - Pays 50% of Construction on Inland Rivers
- Harbor Maintenance Trust Fund
 - Pays 100% of Operations & Maintenance at Coastal Ports (*Great Lakes, East, West, Gulf*)

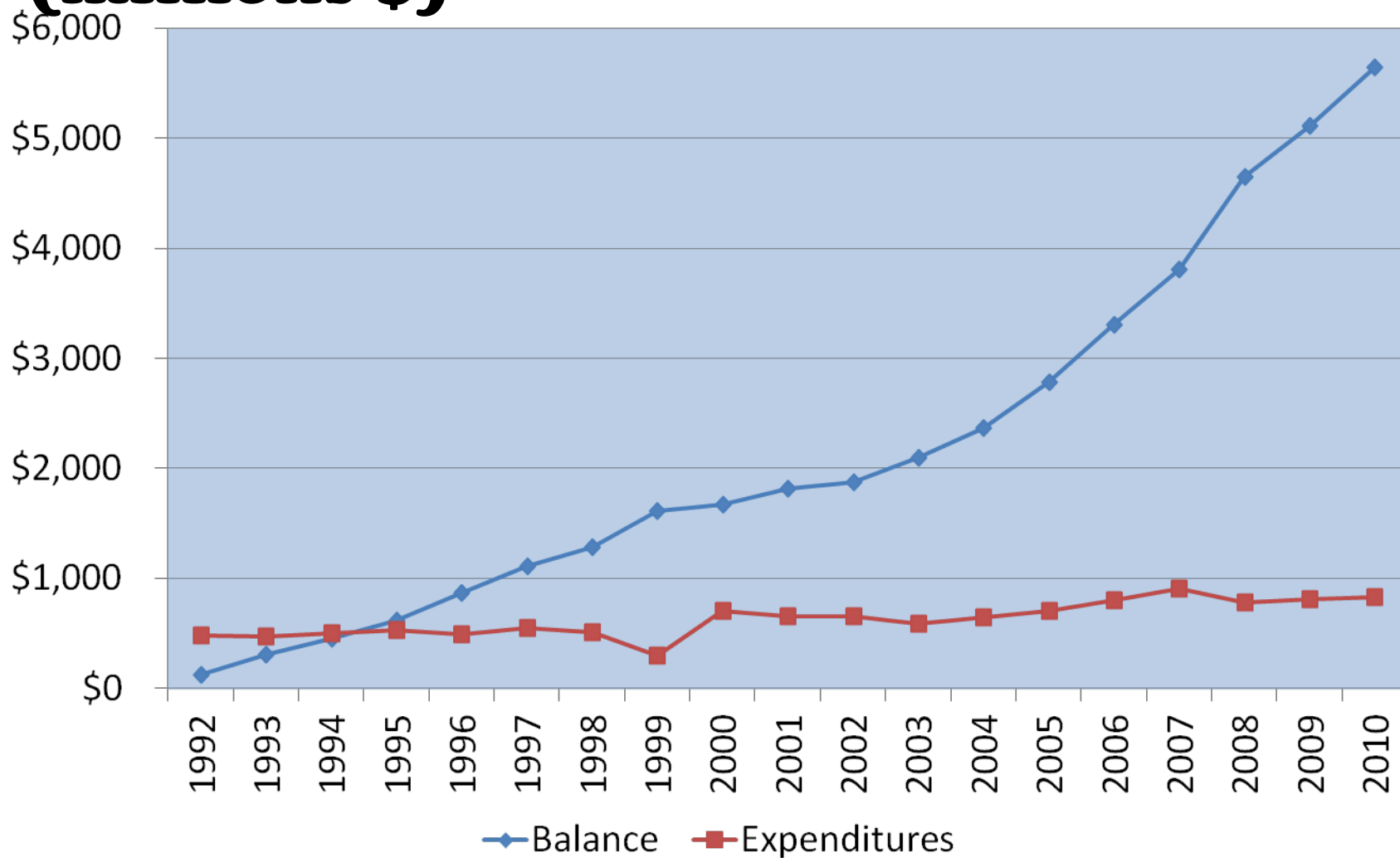
Harbor Maintenance Trust Fund



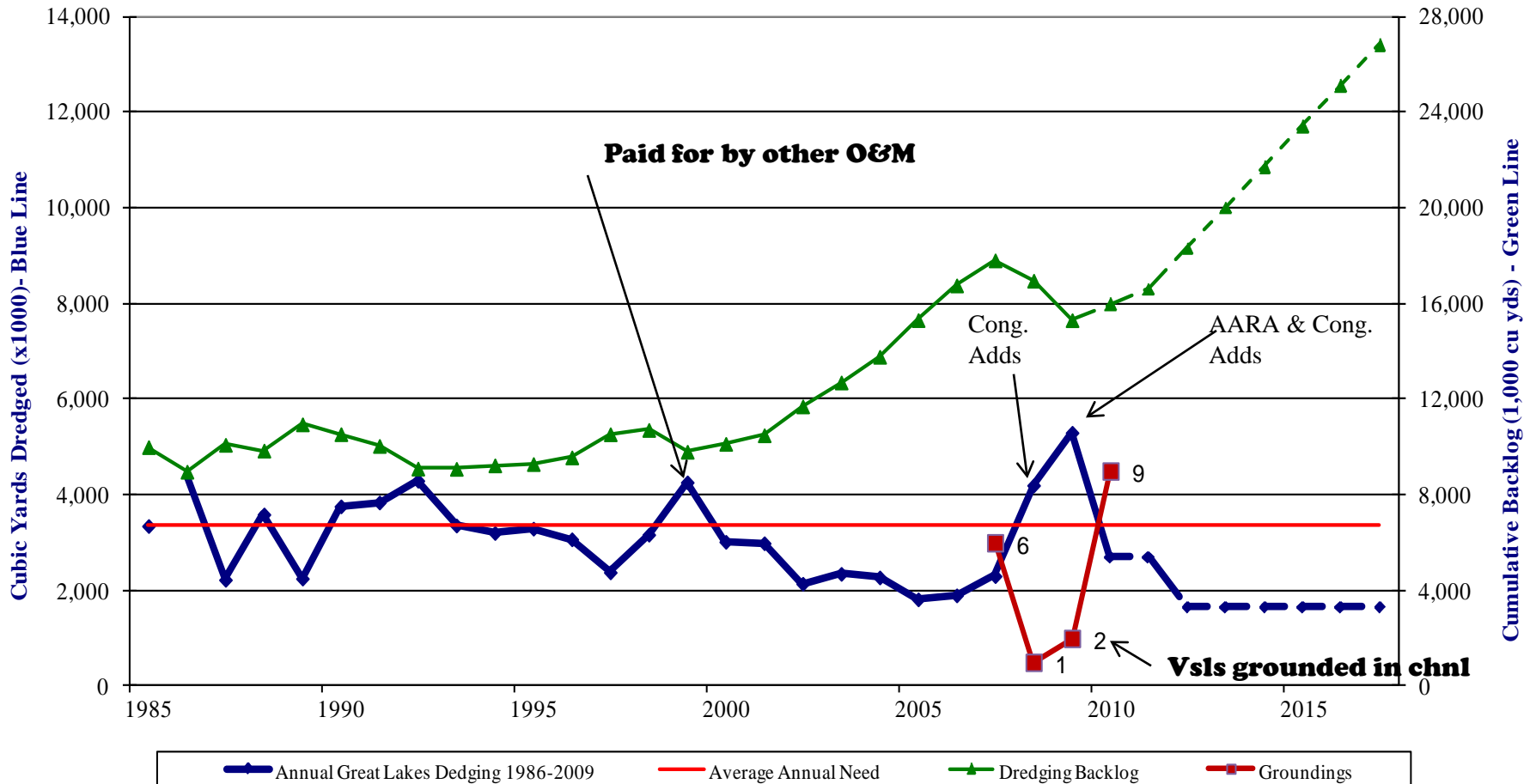
HMTF Expenditures and Balance FY 1992 – FY 2010

TRUST GAP

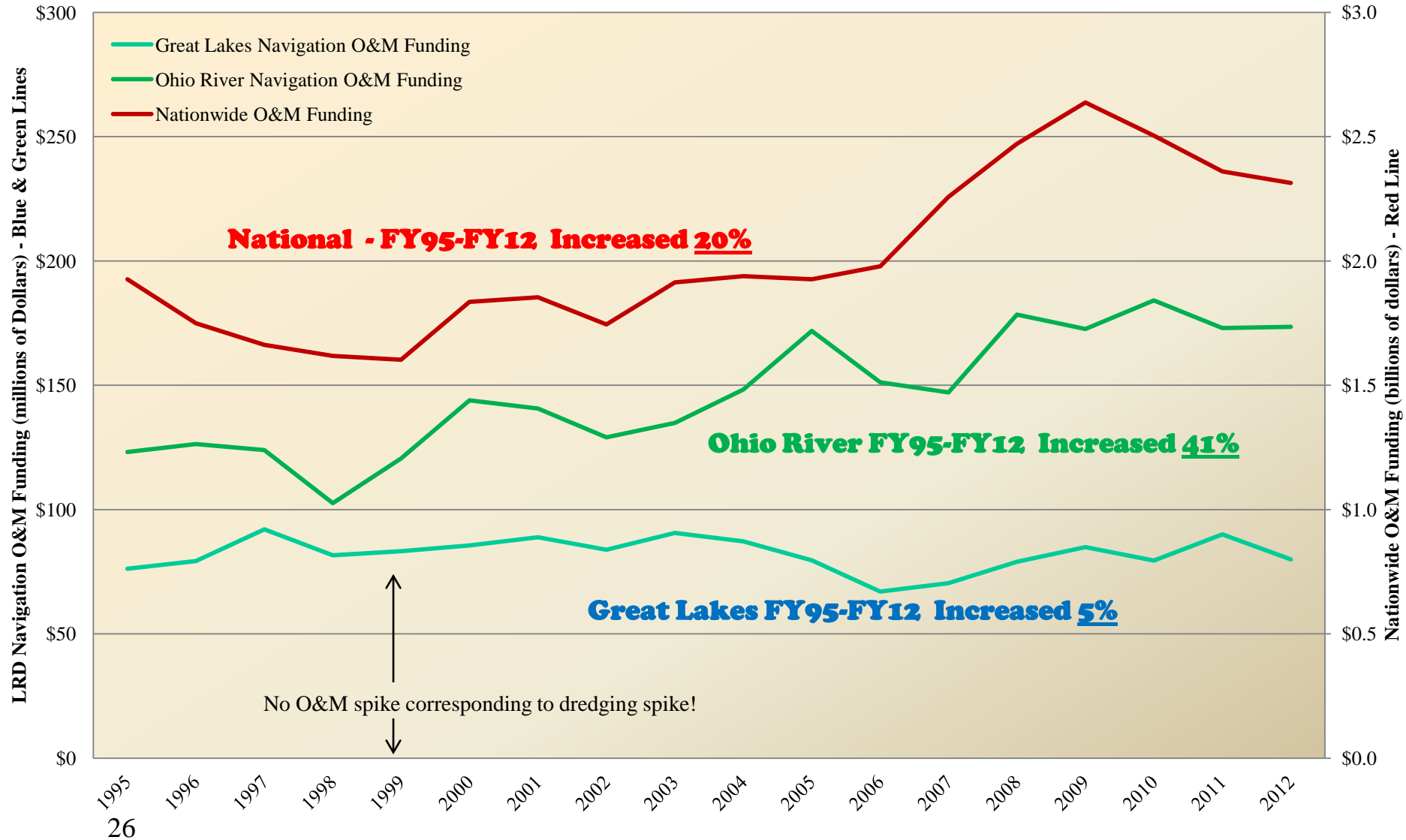
(millions \$)



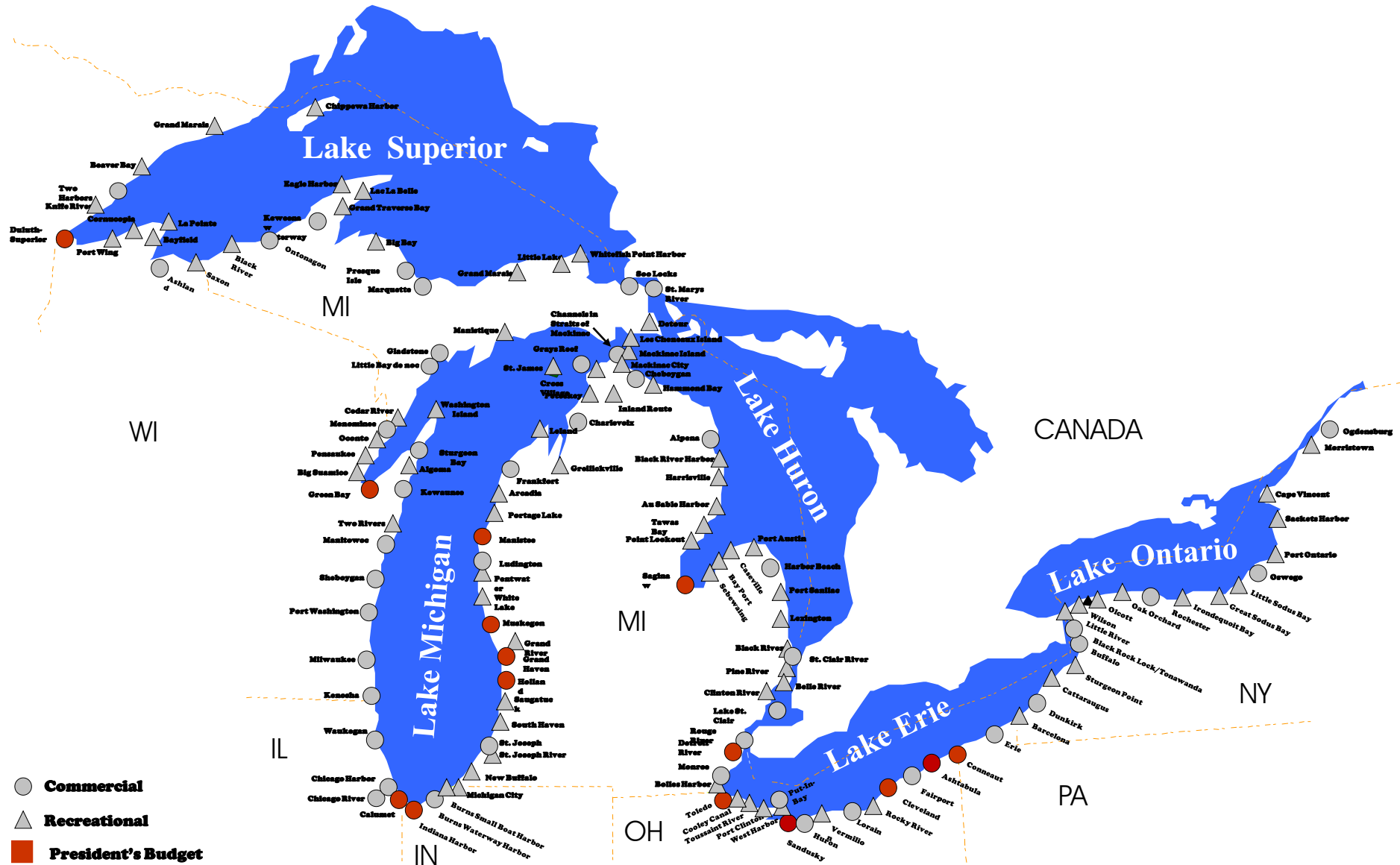
Great Lakes Backlog Growth Under Constrained Dredging Funding 2012-2017



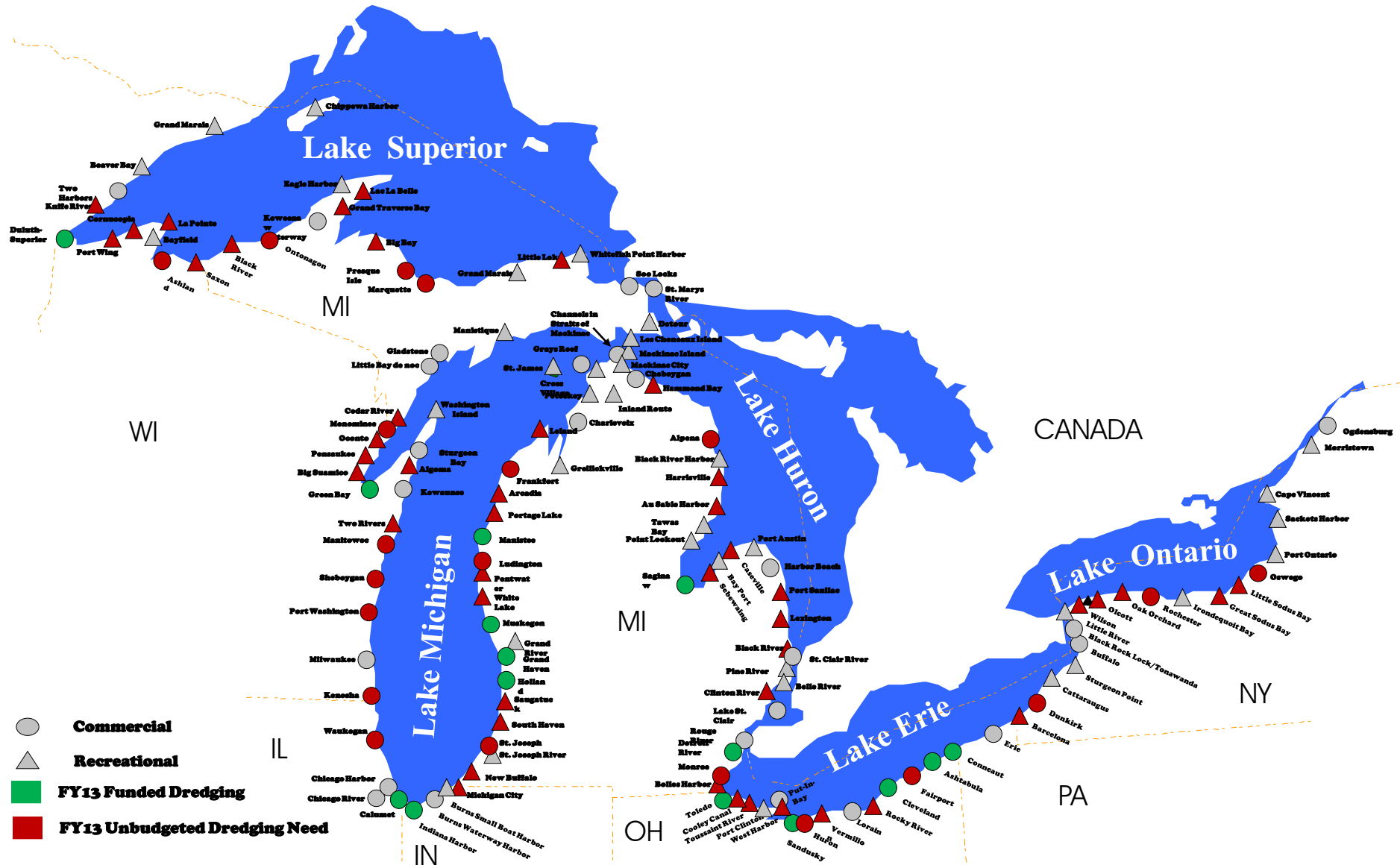
O&M Funding in the President's Budget 1995 - 2012



FY13 President's Budget Dredging Projects



FY13 Dredging Requirements



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**

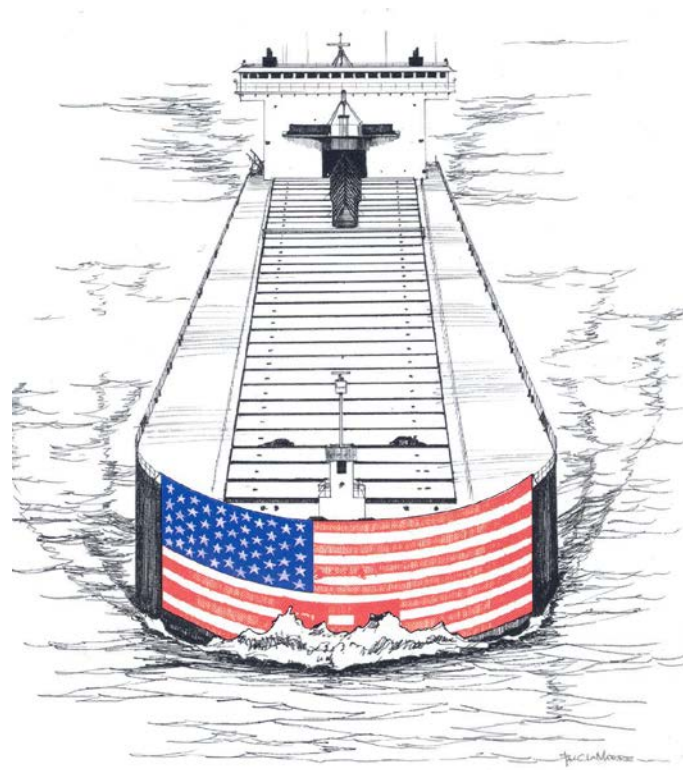


Navigation Structures

**Most navigation structures are
more than 70 years old and in need
of repair and rehabilitation
400 year recapitalization rate**

Realities

- **Inadequate Funding for Decades**
- **Declining Corps Budgets**
- **Unique “System”**
 - **Domestic but Coastal**
 - **Dry-Bulk**
 - **Manufacturing Focused**
- **Congressional Adds More Difficult**
- **Vulnerable to System Failure**
- **Project not System funded**
 - **System BCR of 40:1**
 - **\$3.6 billion for \$90 million**



QUESTIONS