



# *Navigation Overview for Pacific Northwest Waterways Association*

---



Jim Walker, PE

Navigation Program Manager

3 Mar 2008



# Outline

---

- **Navigation Overview**
- **Budget Overview**
- **Trust funds**
- **Navigation Future Trends**



# Corps Navigation Mission

**Provide safe, reliable, efficient, effective and environmentally sustainable waterborne transportation systems for movement of commerce, national security needs, and recreation.**





# Navigation Program

---

- **Almost 1100 Congressionally authorized and constructed navigation projects**
- **27 inland navigation systems**
- **240 Navigation locks**
- **Aging infrastructure**
- **Funding**
  - **Annual Operation and Maintenance**
  - **Non-routine Maintenance**



# Navigation Program

---

- **Reliable Inland River Systems**
- **Channel Availability**
  - **Depth and Width**
- **Lock Availability**
  - **Scheduled and Unscheduled Lock Closures**



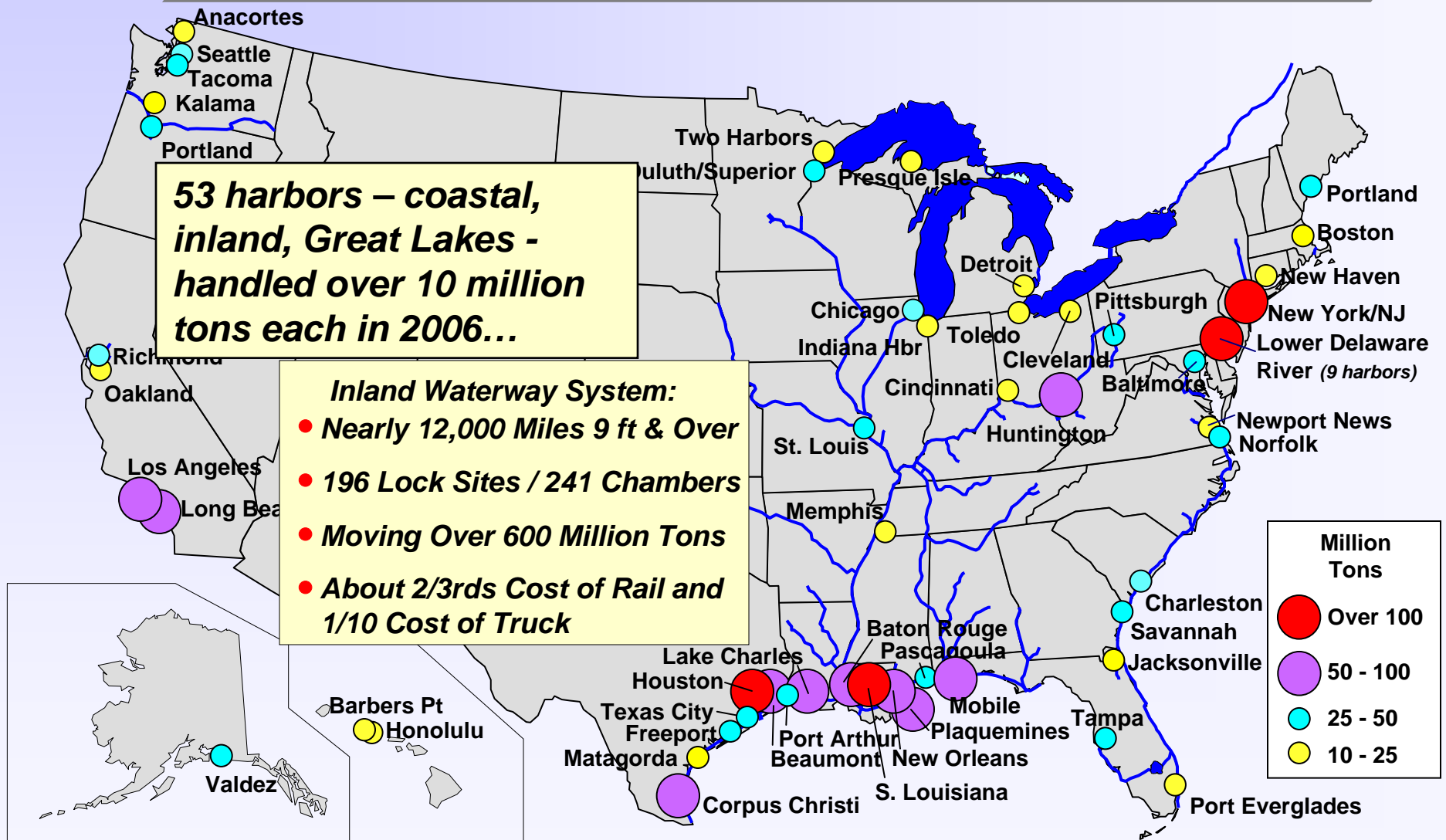
## **U. S. Marine Transportation System**

---

- **A network of waterways, ports, and equipment for the movement of freight, military, and passengers.**
- **A vital public-private partnership that makes up an essential component of the nation's transportation network.**
- **It links water and surface transportation (rail and highway) and enables America to connect globally.**



# U.S. Ports: Vital to Trade ...and to Our National Economy





# Coastal MTS

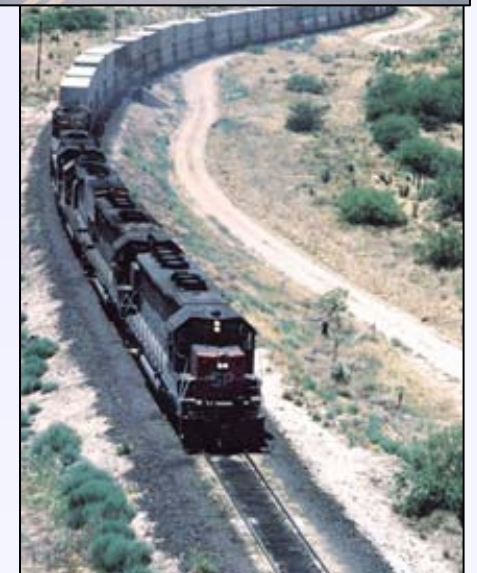
- **Value of all foreign trade represents nearly 30% of nation's GDP**
- **Overseas waterborne trade**
  - 95% of overseas trade by volume
  - 75% of overseas trade by value
  - 16 million jobs
- **About \$2.3 trillion in economic activity**
- **Many coastal ports nearing capacity**
- **Cargo volumes projected to double by 2025**
- **Already a generation behind in channel design – but West Coast in better shape**
- **Capacity constraints increase transportation costs, pollution, congestion**





# Inland MTS

- **Delivering product to/from US interior to the coast**
  - Road
  - Rail
  - Inland waterways
- **Waterways is the only transportation system with significant capacity remaining.**
- **Most energy efficient of the 3 systems**
- **Inland infrastructure aging and in need of reinvestment**
- **More than half of the inland navigation locks have exceeded their 50 year service life.**





# Navigation Funding

- **The Corps spends about \$2B annually on this marine transportation system**

<b>Account</b>	<b>FY08</b>		<b>FY09</b>	
▪ <b>GI</b>	<b>\$ 19M</b>	<b>1%</b>	<b>\$ 20M</b>	<b>1%</b>
▪ <b>CG</b>	<b>\$ 572M</b>	<b>28%</b>	<b>\$ 495M</b>	<b>26%</b>
▪ <b>O&amp;M</b>	<b>\$1383M</b>	<b>69%</b>	<b>\$1346M</b>	<b>71%</b>
▪ <b>MR&amp;T</b>	<b><u>\$ 35M</u></b>	<b>2%</b>	<b><u>\$ 39M</u></b>	<b>2%</b>
▪ <b>FY08</b>	<b>\$2.009B</b>		<b>\$1.900B</b>	



# Navigation Funding

---

## FY08 Presidents Budget O&M Account

	<b>FY08</b>	<b>FY09</b>	<b>FY09</b>
<b>Coastal</b>	<b>\$779M</b>	<b>\$760M</b>	<b>56%</b>
<b>Inland</b>	<b><u>\$604M</u></b>	<b><u>\$586M</u></b>	<b>44%</b>
<b>TOTAL:</b>	<b>\$1.383B</b>	<b>\$1.346B</b>	



# Navigation Trust Funds

---

- **Coastal Navigation**
  - Harbor Maintenance Tax (HMT)
  - Reimburses 100% of Coastal Navigation O&M
  
- **Inland Waterways**
  - Inland Waterways Trust Fund (IWTF)
  - Funds 50% of Inland Navigation Construction projects



## HMT Background

---

- **Established in WRDA 1986**
- **Ad valorem tax of .125% on cargo value**
- **Reimburses Treasury for 100% of harbor O&M since 1990**
- **Also support St. Lawrence Seaway operations, Customs data collection**
- **Not “off budget” like Highway Trust Fund so transfers fall under agency budget ceilings**



# HMT

Current Status: thru 30 Sep 07

---

▪ Starting 06 Balance:	\$ 3.305 B
▪ FY07 Revenues and Interest:	+\$ 1.416 B
▪ FY07 Outlays:	- <u>\$ 0.910 B</u>
▪ End Sep 07 Balance:	\$ 3.811 B
▪ FY08 Revenues and Interest:	+\$ 1.416 B
▪ Projected Outlays FY 08:	- <u>\$ 0.820 B</u>
▪ Projected Sep 08 Balance:	\$ 4.407 B



## HMT issue

---

- Coastal navigation has a backlog of well justified but unaccomplished maintenance dredging
- Lack of dredging results in less than full economic benefits, i.e. light loading
- So why can't you spend more?
- HMTF is currently 'on budget', meaning any increase in authorized expenditures must be offset with decreases in other Corps civil works areas to stay within a budget amount.



## **Channel Reliability - Coastal**

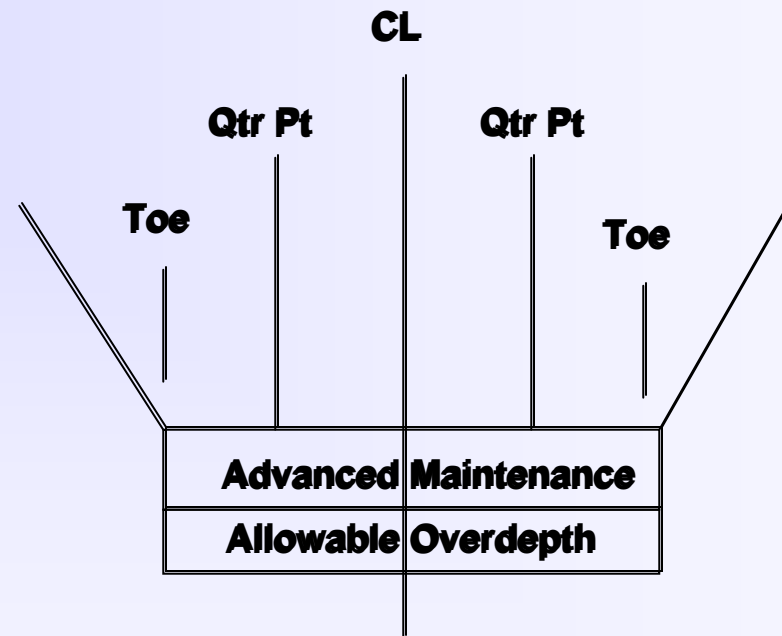
---

- **Initial effort: Projects with greater than 10M tons per year**
- **Establish Performance Standard**
- **Determine channel availability trend**
  - **FY 2005, 2006, 2007**
  - **Five Year Development Plans**
  - **FY 2009 Improvement Increment**



# Channel Availability - Coastal

- **Channel Cross Section**
- **Depth at Centerline (CL)**
- **Depth at Channel Toe**
- **Depth at Quarter Points**





## **Channel Availability - Coastal**

---

- **Level of Service Standard**
  - Full project depth
  - Half project width, 95% of the time
- **Channel availability trend**
  - FY 2005: 38%
  - FY 2006: 35%
  - FY 2007: 31%
  - FY 2009 – 2013: get to 95%
  - FY 2009 Improvement Increment



# Inland Waterways Trust Fund

## Legislative Background

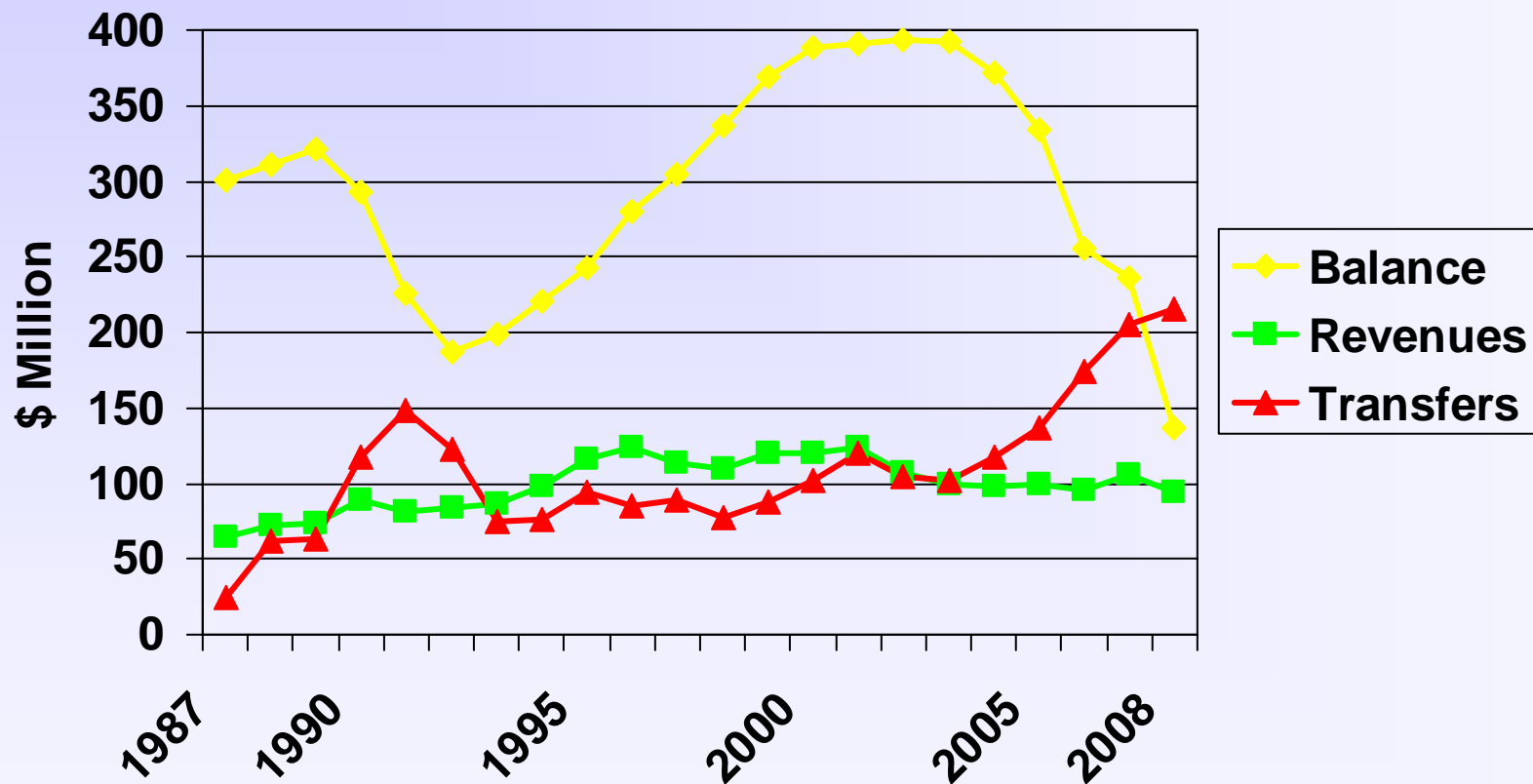


- **Inland Waterways Revenue Act of 1978**
  - Created fuel tax at 4 cents per gallon
  - Designated 26 shallow draft waterways on which the tax would apply
- **Water Resources Development Act of 1986**
  - Established Users Board
  - Authorized expenditures from fund for 8 lock & dam projects
  - **Precedent for 50/50 cost-sharing**
  - Increase tax to 20 cents by 1995
  - Added Tenn-Tom, making 27 “fuel-taxed” waterways
- **WRDAs 88, 90, 92, 96, 99, 2000, E&W Approp 03**
  - Criteria for “major rehab” and “modernization”
  - Added 8 new locks, 9 major rehabs, 1 protective coastal barrier
  - PED for 1200-ft chambers at 5 Upper Miss and 2 Illinois locks



# Inland Waterways Trust Fund

## 1987 - 2006



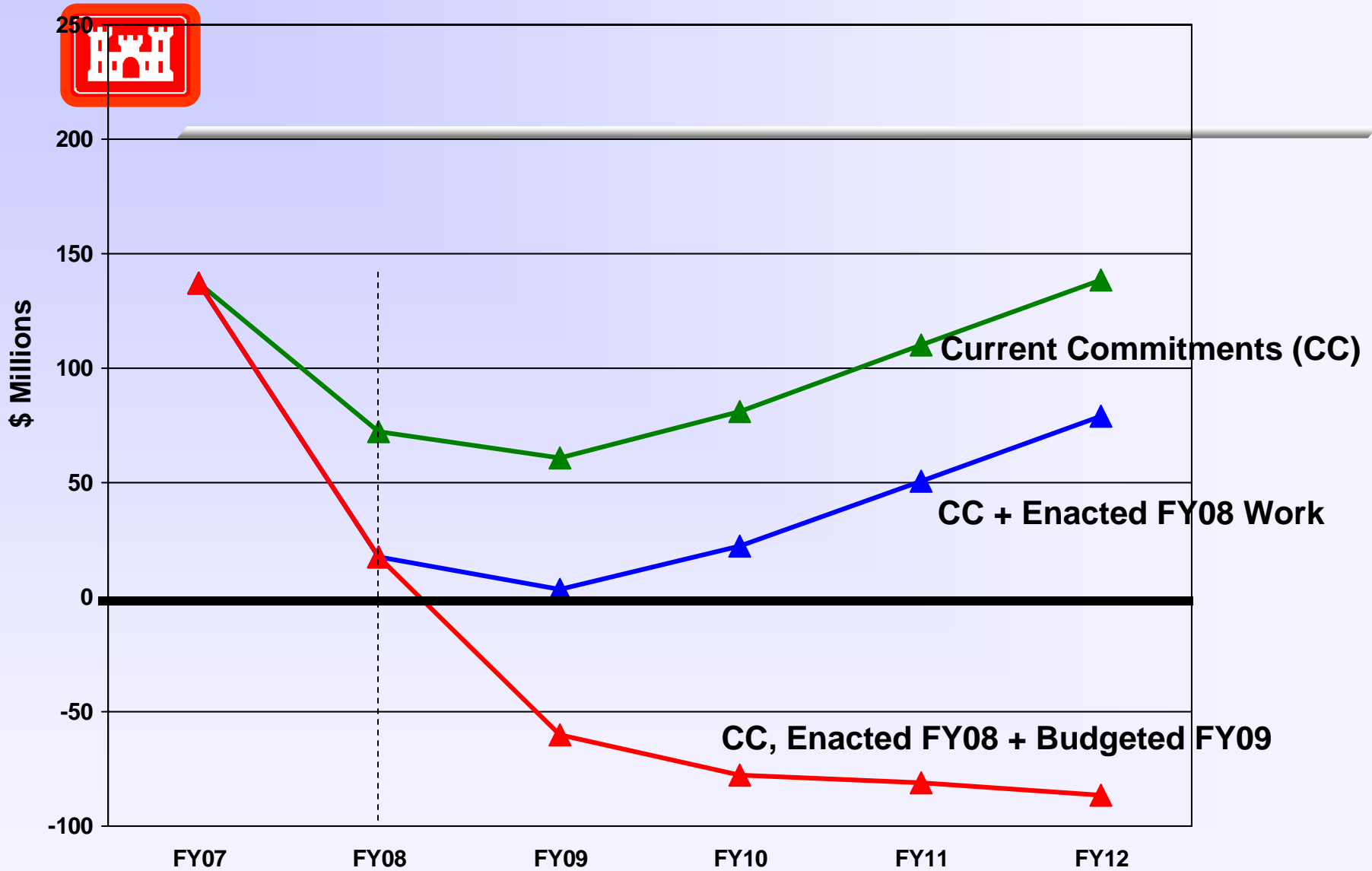


## Inland Waterways Trust Fund

---

▪ Starting FY08 Balance:	\$ 137.2 M
▪ Revenues:	\$ <u>90.0 M</u>
▪ Sub-Total:	\$ 227.2 M
▪ Outlays:	\$ <u>213.4 M</u>
▪ Startinig FY09 Balance:	\$ 13.8 M
▪ Revenues:	\$ <u>90.0M</u>
▪ Sub-Total:	\$ 103.8M
▪ Projected Outlays FY 09:	\$ 167M ?

# IWTF Balances with Current Fuel Tax Revenues



Points indicate balance at the end of the FY



# IWTF Options

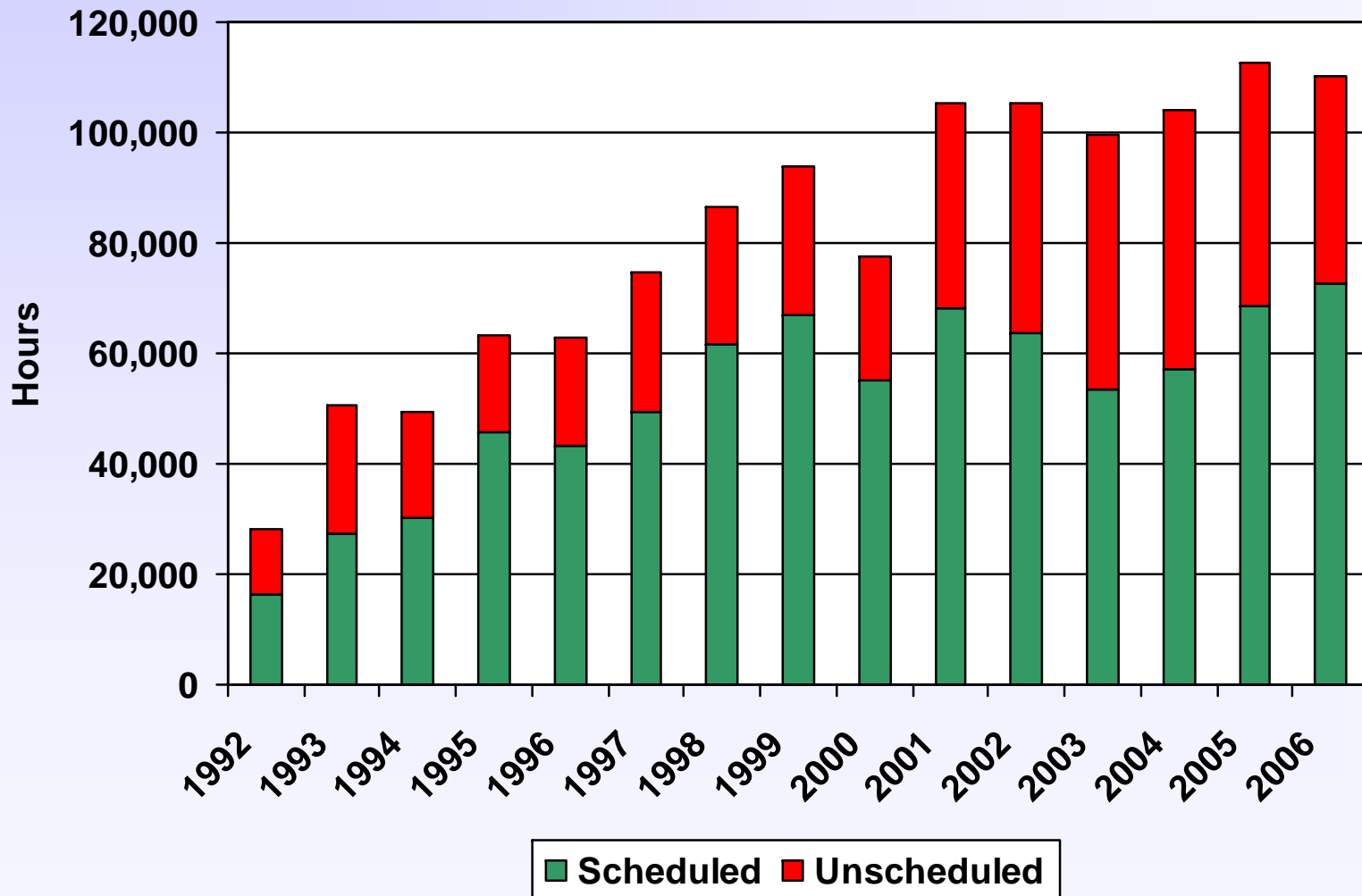
---

- **Expenditures are exceeding income**
- **Raise Revenues and/or Reduce Services**
- **Within Current Authority**
  - **Prioritize funds for high return and nearly completed projects**
  - **Spread available funds across ongoing projects**
- **Legislative Options**
  - **Increase revenues**
  - **Administration proposes User Fee**
  - **Raise Tax**



# Reliability – Navigation Locks

Navigation Lock Unavailability, 1992-2006  
Total Hours Scheduled vs. Unscheduled without Ice





# Trust Fund Summary

---

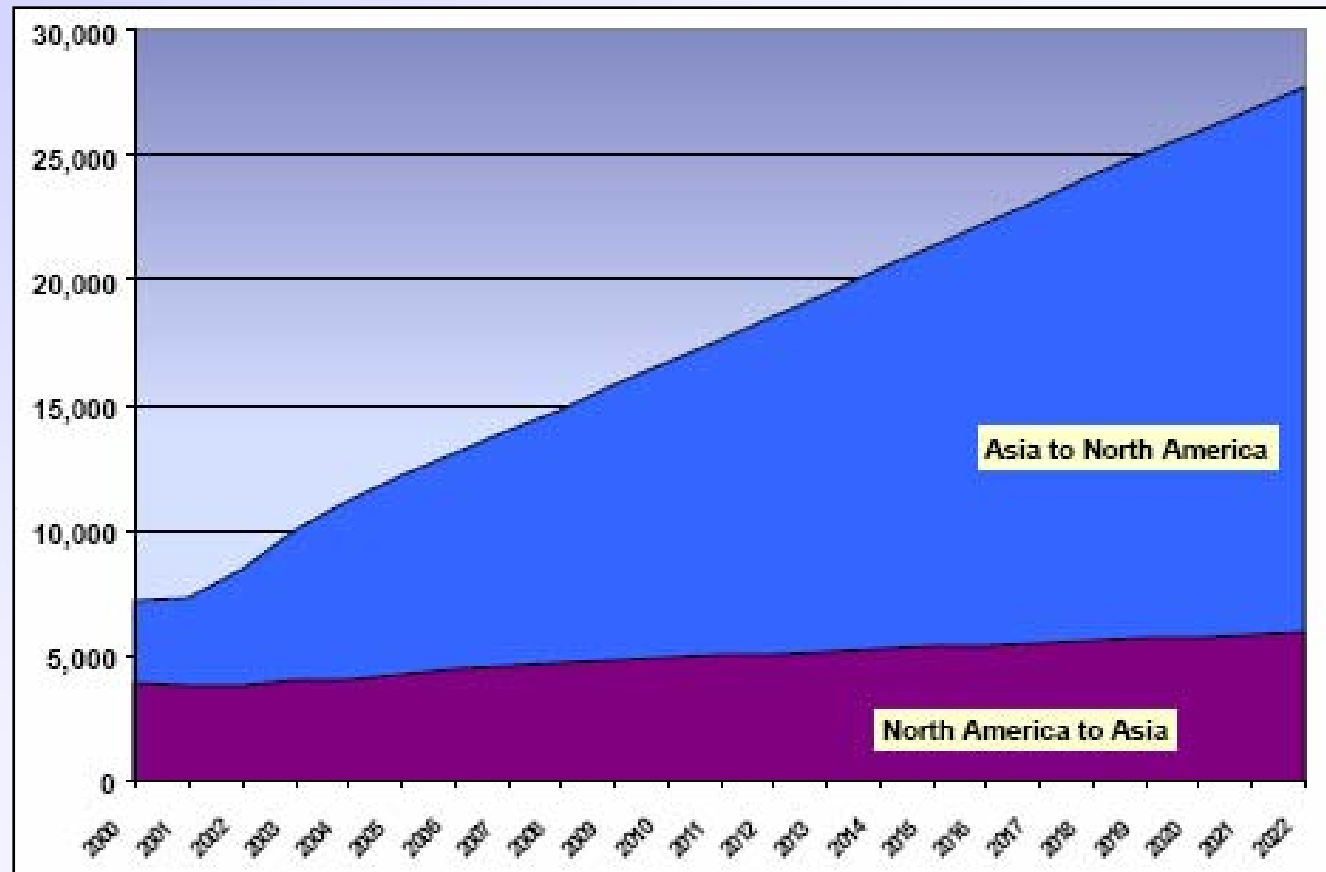
- **Marine Transportation System receives funding from 2 Funds with differing tax bases and coverages**
- **Both trust funds need to be addressed**
  - **HMT income exceeds expenditures**
  - **IWTF is going broke**



# Navigation Future Trends

## North American Container Trade w/Asia

- Asia-North America eastbound flows likely passed 6 million TEU in '06
- Driven by People's Republic of China to U.S. West Coast
- May reach 28 million TEU by 2022
- Huge challenge to U.S. ports to handle this volume

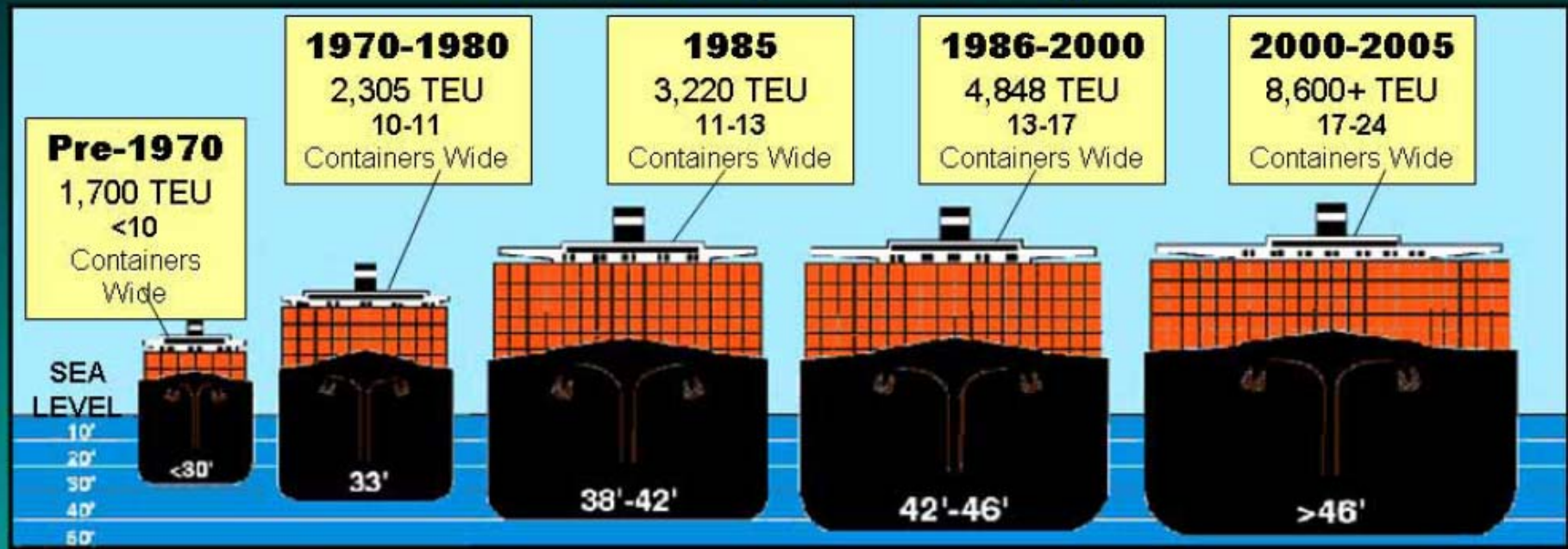


Thousands of TEU's

Source: Global Insight, Jun 04.

# Today's Mega Ships - Measuring Up

## How Wide, How Deep?





## Harbors w/45' Capability

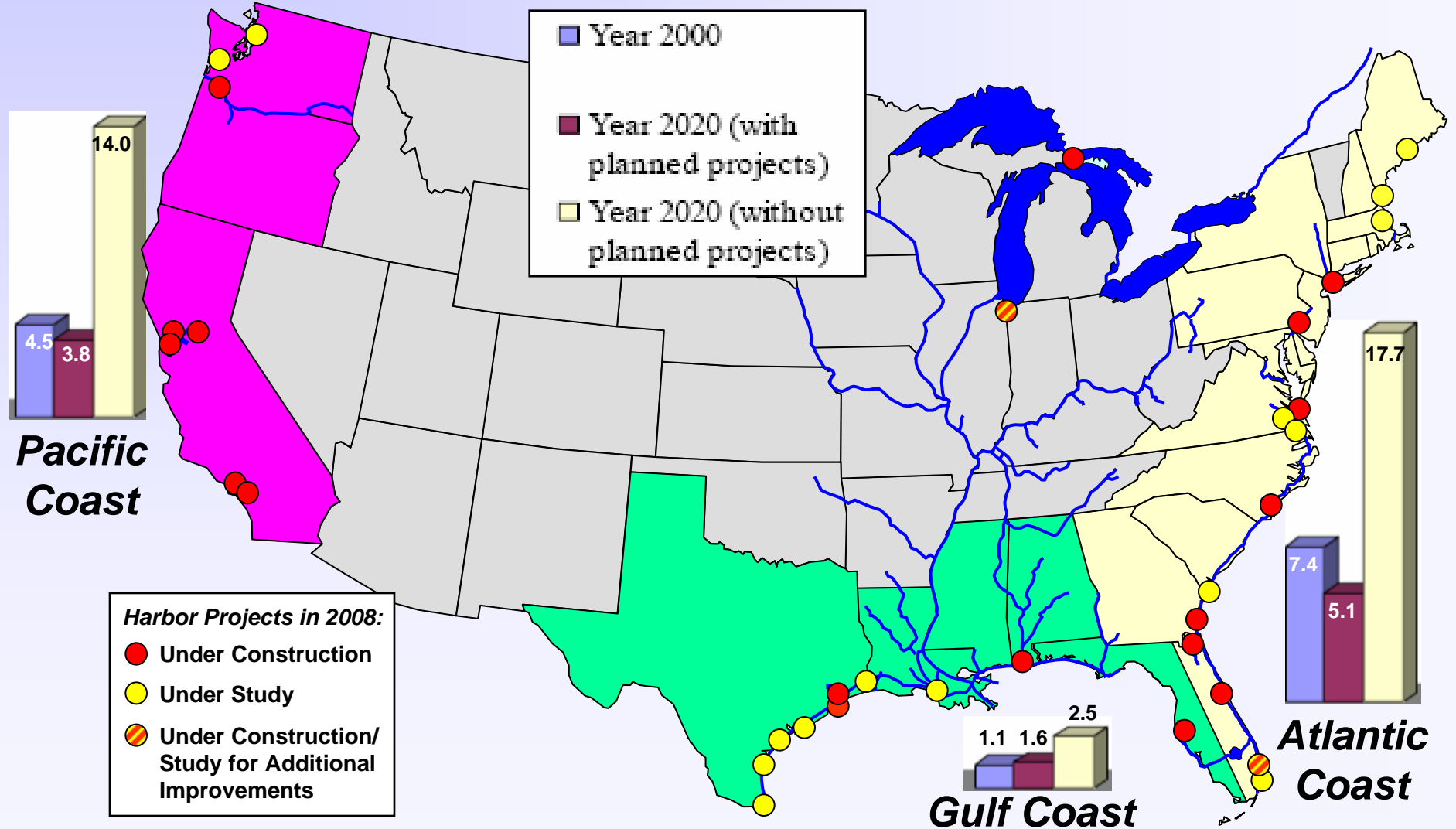
---

- **NY/NJ (50-foot underway)**
- **Baltimore (50-foot available)**
- **Hampton Roads (50-foot available)**
- **Charleston**
- **New Orleans**
- **Houston**
- **Corpus Christi**
- **LA/LB (>50-foot available)**
- **Oakland (50-foot underway)**
- **Seattle/Tacoma (natural depth, berths to 50 feet)**



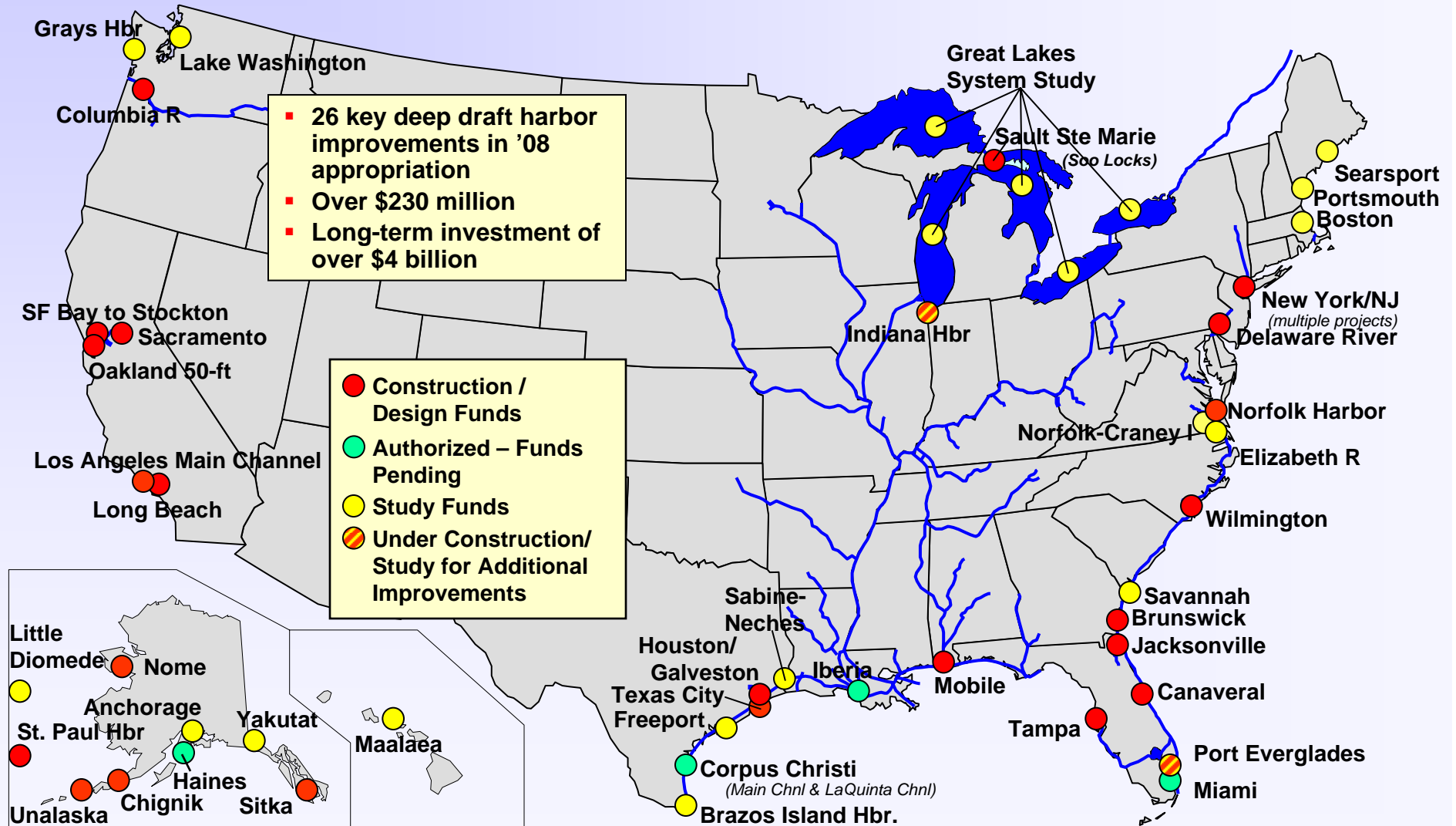
# Depth-Constrained Containership Calls in 2020, with and without Planned Harbor Projects

(in thousands of ship calls)





# Meeting the Challenge: Key Harbor Improvement Projects Funded in 08





# Future Budget Development

---

- **Incremental improvements**
- **Consistent format between Navigation, Hydropower and Flood Risk Management programs**
- **Use a matrix approach with likelihood of failure and consequences of failure**
- **Improve lock condition assessment**
- **Tonnage, to be replaced by economic impact in the future**



## Other Navigation Topics

---

- **WRDA 2007 – eliminated the restrictions on use of the Corps Hopper Dredges Essayons and Yaquina**
- **Dredging costs are increasing – fuel cost, steel, materials, labor**
- **Flat budgets and increasing costs means less dredging and less channel availability**



# Final Thoughts

---

- **Maintain a Marine Transportation System (MTS) view**
- **Navigation Channel AND associated Port Developments**
- **Environmental considerations - Dredging windows, mitigation, etc are consuming huge amounts of funding**
- **Your efforts are the key to maintaining the US as a top tier MTS**



# Conclusion

---

## The Bottom Lines

- **Investing in the Navigation system is investing in economic development**
- **America's Infrastructure must become a National priority**