



Navigation Overview for 2007 Operations Project Managers Course



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16 April 2007



Corps Navigation Mission

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





Outline

- **Marine Transportation System**
- **Navigation Funding**
- **Performance Measures**
- **Future Trends**



Roles and Responsibilities

- **Chief of Engineers, LTG Van Antwerp**
- **Deputy for Civil Works, MG Riley**
- **Assistant Secretary of the Army for Civil Works, ASA(CW) Woodley**
- **Office of Management and Budget, OMB**
 - **Performance Assessment Rating Tool, PART**
- **Committee on Marine Transportation Systems, CMTS**

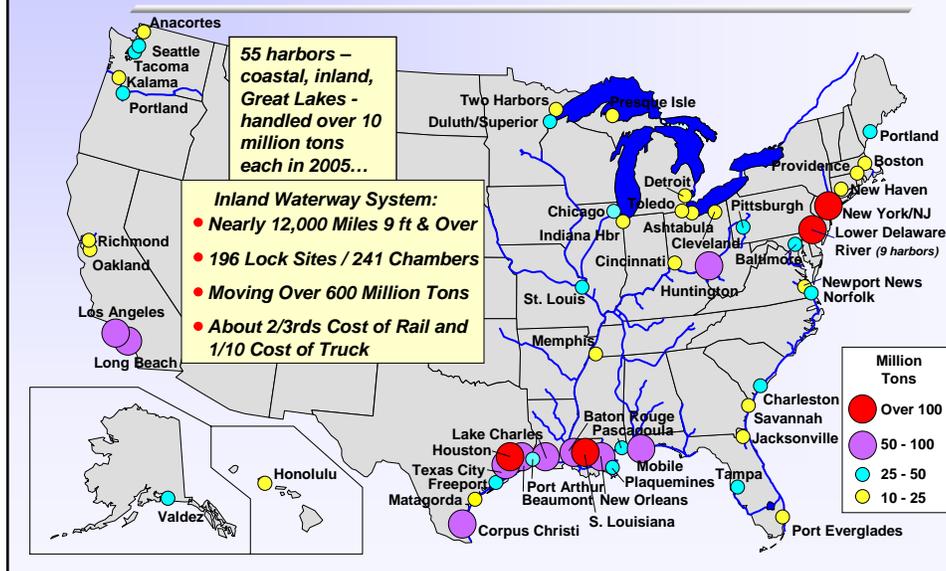


U. S. Marine Transportation System

- 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. Harbors and Waterways 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



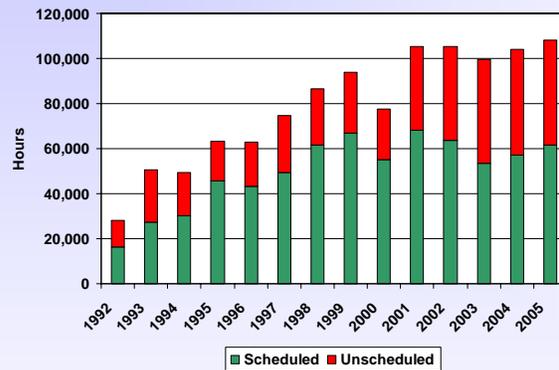
Inland MTS

- 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 Condition



Inland Navigation: Aging infrastructure results in increasing down time for scheduled and unscheduled repairs.

Coastal Navigation: Constrained funding results in decreased channel availability



Performance Assessment Rating Tool (PART)

- Cornerstone of Presidents Management Agenda
- Program managed by OMB
- Navigation rated on Inland and Coastal
 - Inland rated as 'Not Performing'
 - Coastal rated as 'Moderately Effective'
 - OMB: Need standard risk and reliability criteria
- Re-PART in FY08 as 1 or 2 programs



Navigation Funding

- **FY08 Presidents Budget for Civil Works was \$4.6B**
- **Navigation is the biggest Civil Works mission**

▪ GI	\$ 19M	1%
▪ CG	\$ 572M	28%
▪ O&M	\$1383M	69%
▪ MR&T	<u>\$ 35M</u>	2%
▪ FY08	\$2.009B	



Performance Based Budgets

- **Navigation**
 - Channels
 - Locks
 - Jetties, Breakwaters, Training Works
 - Disposal Sites, DMMPs
- **Performance Measures**
 - Channel Availability
 - Lock Availability
 - Others TBD



Lock Availability

- **Lock Available**
 - Scheduled Closures
 - Unscheduled Closures
- **Data available - Lock Performance Monitoring System (LPMS)**
- **Data is available and needs to be reviewed**



Prioritized Lock Maintenance

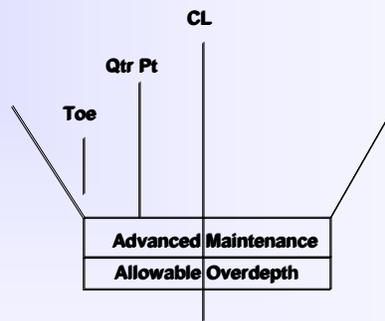
- **FY09 budget will be the first year to use a Corps-wide consistent approach to prioritize non-routine maintenance**
- **143 point scale including Mission Criticality, Safety, Traffic (tons and lockages), Nav and Env benefit,**
- **Presently subjective, but will transition to objective with FEM deployment and data**



Channel Availability

- Existing Channel Condition Reports:

- Depth at Centerline (CL)
- Depth at Channel Toe
- Depth at Quarter Points



Channel Availability

- Channel Availability is presently being developed for coastal navigation projects with over 10M tons of cargo per year
- Data available from existing reports
- Answers: What does current funding provide?
- Data will be used for CMTS, FYDP, FY09 budget and PART.



Navigation Trust Funds

- **Inland Waterways Trust Fund (IWTF)**
 - Funds 50% of inland navigation construction projects
- **Harbor Maintenance Trust Fund (HMTF)**
 - Funds 100% of coastal navigation maintenance



Inland Waterways Trust Fund

- 27 specific river systems
- \$0.20/gal on fuel used on these systems
- Income \$100M per year
- O&M appropriation \$100M
- Currently \$4B authorized and underway
- At current funding this will take 20 years to complete



Harbor Maintenance Trust Fund

- **Ad valorem tax on goods**
- **Enormous increases in imports**
- **FY06 income \$1.3B, expenditures \$800M**
- **Balance 30 Sep 2006: \$3.3B surplus**



Nav Trust Fund Summary

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



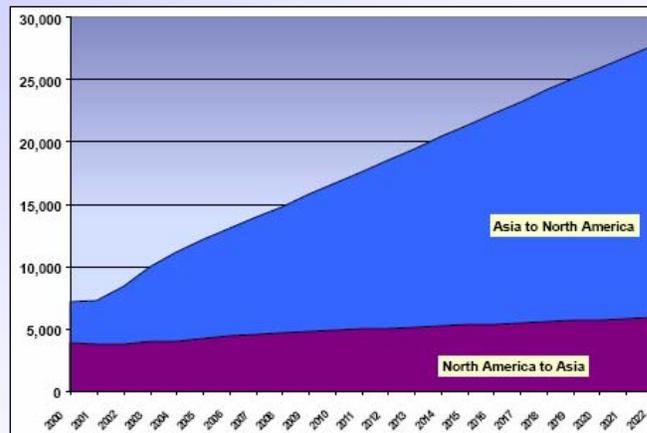
Navigation Future Trends

- Containerized Cargo
- Fiscal Management
- Asset Management/FEM
- Environmental Windows



Navigation Future Trends North American Container Trade w/Asia

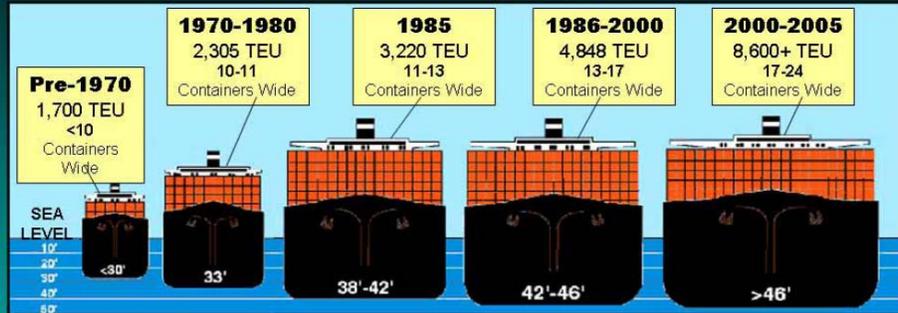
- Asia-North America eastbound flows likely passed 6 million TEU in '06
- Driven by People's Republic of China to U.S. West Coast
- May reach 28 million TEU by 2022
- Huge challenge to U.S. ports to handle this volume



Thousands of TEU's

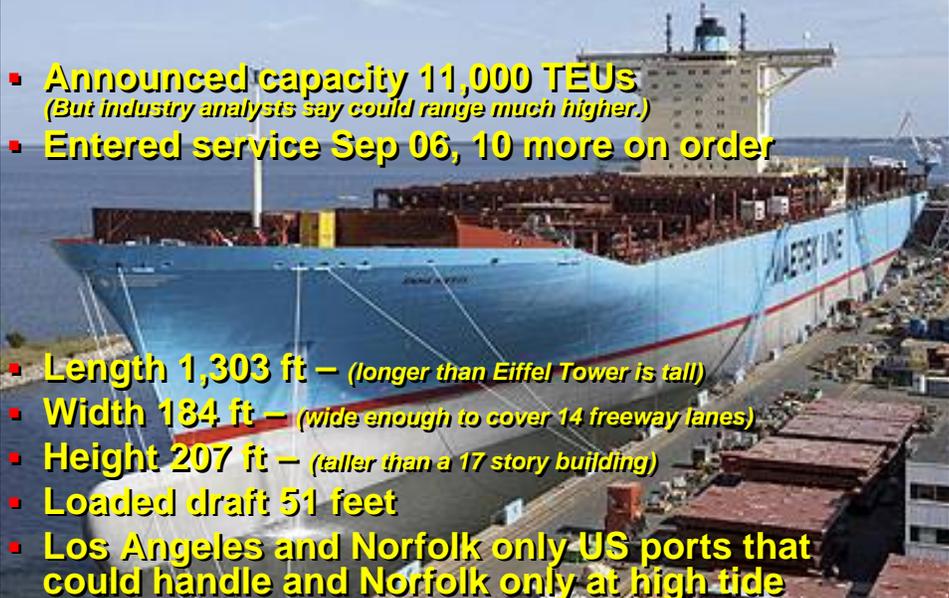
Source: Global Insight, Jun 04.

Today's Mega Ships - Measuring Up How Wide, How Deep?



Tran Systems
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Deep Draft Challenges: Mega-ships "EMMA MAERSK" - 11,000+ TEUs

- **Announced capacity 11,000 TEUs**
(But industry analysts say could range much higher.)
 - **Entered service Sep 06, 10 more on order**
- 
- **Length 1,303 ft** – *(longer than Eiffel Tower is tall)*
 - **Width 184 ft** – *(wide enough to cover 14 freeway lanes)*
 - **Height 207 ft** – *(taller than a 17 story building)*
 - **Loaded draft 51 feet**
 - **Los Angeles and Norfolk only US ports that could handle and Norfolk only at high tide**



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)



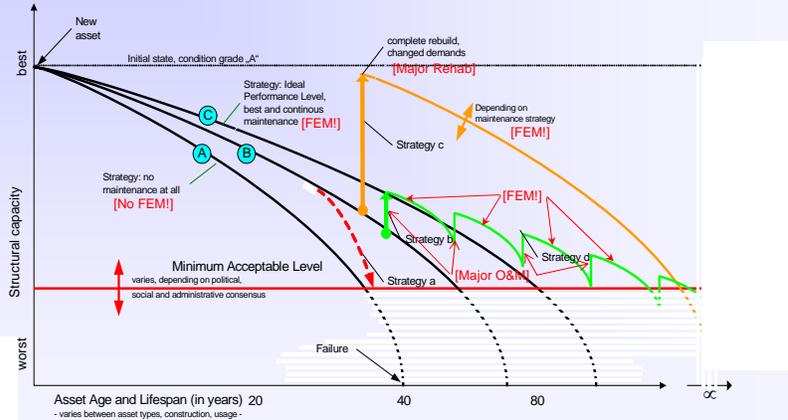
Fiscal Management

- **Continuing Contracts**
- **Reprogramming**
- **Five Year Development Plans (FYDP)**
 - Nav locks – stop the trend of increased unscheduled lock closures and return to under 20,000 hours per year
 - Channels – High performing locks have half channel width available 95% of year

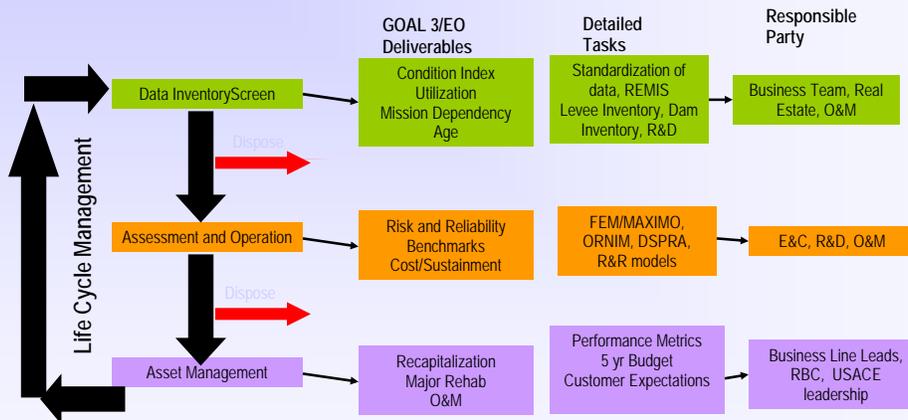


U.S. Army Corps of Engineers

FEM and Asset Management

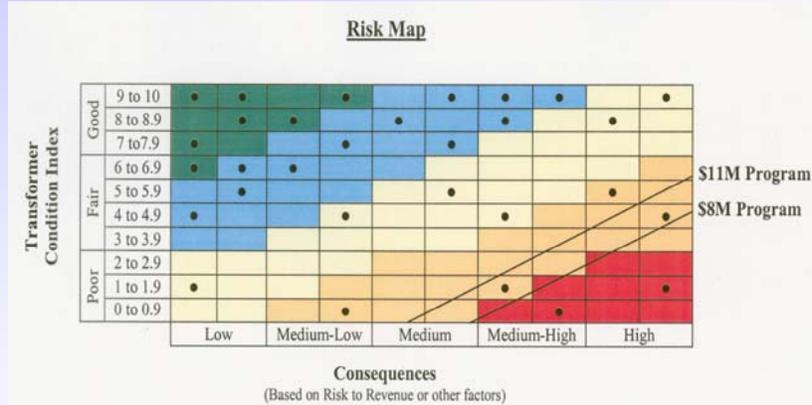


How does it work?





Risk Map Example



Sustainable Infrastructure - Navigation

FUNCTION	AIS		QUANTITY
		CW Bus Line	8
Budget Dev	P2	Systems	50
Fiscal Execution	CEFMS	Projects	1200
Asset Mgmt	REMIS	Constructed Level Assets	2000
Maint Mgmt	FEM	Components	30000

- GOALS**
- The Right Business Practice: Life Cycle Mgmt (LCM) - Corps Strategic Goal 3c
 - The Right size inventory: Mission critical asset focus - Executive Order 13327
 - The Right Performance: Common reliability standards - BPI-PART
 - The Right Investments: Informed risk-based budget decisions- Five Year Development Plans (FYDP)
- STATUS: OMB Assessment: STATUS: YELLOW; PROGRESS: GREEN**



Seasonal Restrictions/ Environmental Windows

- **Restriction on Dredging or Placement Due to an Environmental Concern**
 - Endangered Species
 - Fish Spawning
 - Sea Turtles
 - Turtle Nesting
 - Migratory Birds
 - Aquatic vegetation
 - About 85% of Corps dredging projects have seasonal restrictions.
 - Significantly increase cost of dredging



Summary

- **The Marine Transportation System is a vital part of our Nation's Infrastructure and critical to America's continued growth and prosperity**
- **We are developing the tools to demonstrate the condition of the navigation program**
 - Performance Based Budget
 - Asset Management
- **We need to educate the American public on the importance of its infrastructure and present fragile condition**



How Can I Help?

- **Understand the components of a well informed decision – technical, economic and political**
- **Maintain dialogue with stakeholders**
- **Opportunities:**
 - Navigation Gateway
 - LPMS Steering Committee
 - FEM Deployment Leaders
 - Developmental Assignment at HQ
- **Remember the Mission!**