



# **CMTS**

*U.S. Committee on the Marine Transportation System*

## **Research & Development Integrated Action Team**

**Dr. Sandra Knight, Co-Coordinator, NOAA**

**Great Lakes Maritime Research Institute  
University Affiliates Meeting  
September 25, 2009**

# Origins of the CMTS

**U.S. Ocean Action Plan, issued,  
December 17, 2004, “Supporting Marine  
Transportation.”**



## **Purpose of the CMTS**

**“To create a partnership of Federal agencies with responsibility for the Marine Transportation System (MTS) - waterways, ports and their intermodal connections – to ensure the development and implementation of national MTS policies consistent with national needs.” [CMTS Charter]**

# Membership

## Department Secretaries from:

- Transportation (Chair)
  - Commerce
  - Defense
  - Energy
  - Homeland Security
  - Treasury
  - State
  - Interior
  - Agriculture
  - Labor
  - Justice (Attorney General)
- Chairman, Joint Chiefs of Staff;
  - Administrator, EPA;
  - Chairman, FMC; and
  - Head of MTS-related Agencies as designated by the CMTS
  - Ex-Officios: OMB, CEQ, DHS, DPC, NEC



# Committee on the Marine Transportation System (CMTS)

Cabinet Secretaries of DOT (chair); DHS; DOC; DOD; etc.



## Coordinating Board (CB)

Members: All agencies and Departmental offices with MTS interest. Chair rotates yearly between: NOAA, USCG, USACE and MARAD

## Executive Secretariat

Director and dedicated staff to facilitate meetings, coordination, liaison and assistance CMTS, CB and IATs.



## Working Group

Interagency staff to assist and complement the Executive Secretariat by providing agency expertise to task teams.

Integrated Action Team

Integrated Action Team

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## **Research & Development Integrated Action Team**

- **Approved by Coordinating Board in April, 2009**
- **Goal 1: Develop a Research and Development Strategic Plan to support the MTS strategy**
- **Goal 2: Re-establish bi-annual forum for interagency R&D in the MTS**
- **Membership from USACE, USCG, EPA, Navy, NTSB, SLSDC, ORNL, Volpe Center, USMMA**

# R&D Integrated Action Team Research Themes and Priorities

**National Strategy  
for the  
Marine Transportation System:  
*A Framework for Action***



By the  
Committee on the Marine Transportation System  
July 2008

## Five Priorities:

- **Capacity**
- **Safety and Security**
- **Environmental Stewardship**
- **Resilience and Reliability**
- **Finance and Economics**

# Crosswalk of 34 Action Items

	MTS Priorities				
	Capacity	Safety & Security	Environmental Stewardship	Resilience and Reliability	Finance & Economics
Priority Areas	Maintaining the adequacy, reliability, accessibility, and economic prosperity of the MTS.	Promote safety and reduce risks to life, property, and the marine environment. Ensure the security of the MTS from attack and promote maritime security policy.	Promote the health of the Nation's ocean, coastal, and freshwater ecosystems that must co-exist in a way that supports transportation while protecting and sustaining human health and the environment.	Protecting MTS efficiency and resilience requires providing ports and infrastructure with layers of operational capability, increasing target hardness and improving the quality and capacity of the intermodal connectors that complete internal movement of the passengers and goods.	Promote a coordinated and detailed exploration of specific options for increasing the efficiency of the existing MTS system, developing better methods for prioritizing investments, and developing ways of attracting more private sector investments.
Impact	Impacts to any one of these attributes can result in diminished capacity of the system, a decline in cargo, or an increase in costs.	Develop a unified approach to planning for energy infrastructures and energy import terminals to mitigate risk to societal well-being.	An integrated and coordinated approach to environmental pollution reduction and mitigation is essential in the MTS. Coordinated action to improve the natural environment can	Continuity of operations and the resumption of shipping following a disruption are essential for business and the	Variable costs should generally be allocated directly to users who impose these costs. Fixed costs should be

**Propose economic incentives for private sector investment in MTS infrastructure and operational technologies to make the MTS more efficient for existing and future needs.**

CAPACITY	Action Items	MTS Priorities					Score
		Capacity	Safety & Security	Environmental Stewardship	Resilience and Reliability	Finance & Economics	
	Work collaboratively to address Federal regulatory, and institutional requirements to improve MTS performance;						
	Encourage the expansion of shipping highways including the establishment of a program to designate Marine Highways and the waterways to relieve congestion;						
	Propose economic incentives for private investment in MTS infrastructure and operational technologies to make the MTS more efficient for existing and future needs;	X			X	X	3
	Collaborate with State, local and private entities to ensure environmental and National Environmental Policy Act (NEPA) compliance, and to plan for land use in and near ports;						3
	Share best practices and create incentives to encourage private sector interests and local governments to pursue initiatives for increased efficiency and environment sustainability;						3
	Publish valid, reliable and timely data on the MTS including cargo movements, capacity, and productivity;	X			X	X	3
	Facilitate standardized terminologies, interpretations and flow-through models to foster increased productivity; and,	X			X		2
	Develop performance measures to assess the productivity of the MTS and the risk of potential infrastructure failures to the MTS.	X			X	X	3

## Greening of the MTS

# Action Items Crosswalk Hot Topics

## Capacity

### Greening the MTS

**NOAA Green Ship Initiative**

**Great Lakes Environmental  
Research Lab**

**First federal vessel to run  
completely on  
non-petroleum products.**



# Action Items Crosswalk

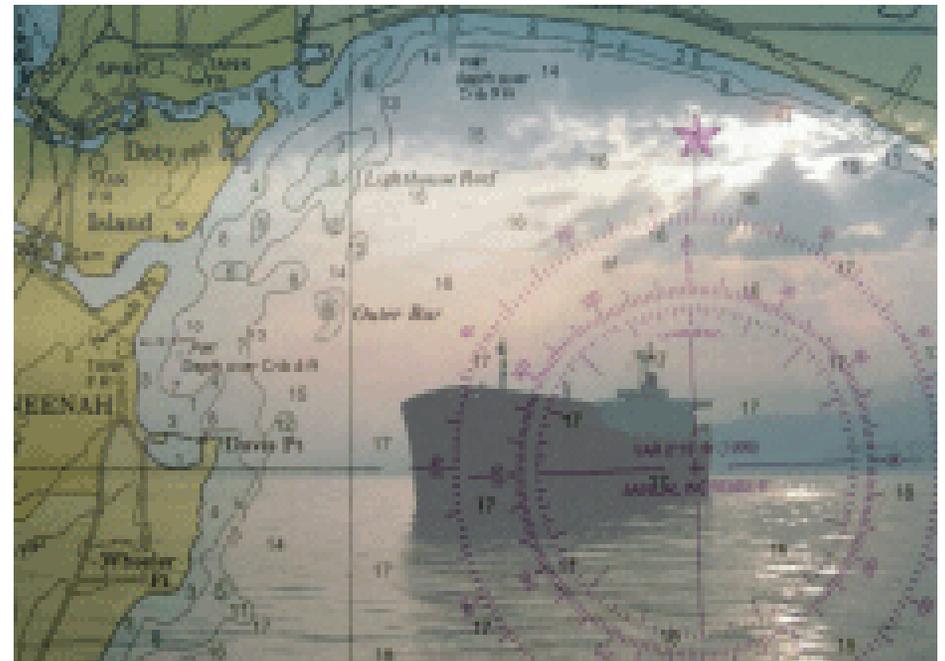
## Hot Topics

### Safety and Security

#### Under Keel Clearance

#### Electronic Navigation (with Navigation Technology IAT)

Test and evaluate  
components for the  
MTS through integrated  
multiagency and  
industry demonstration



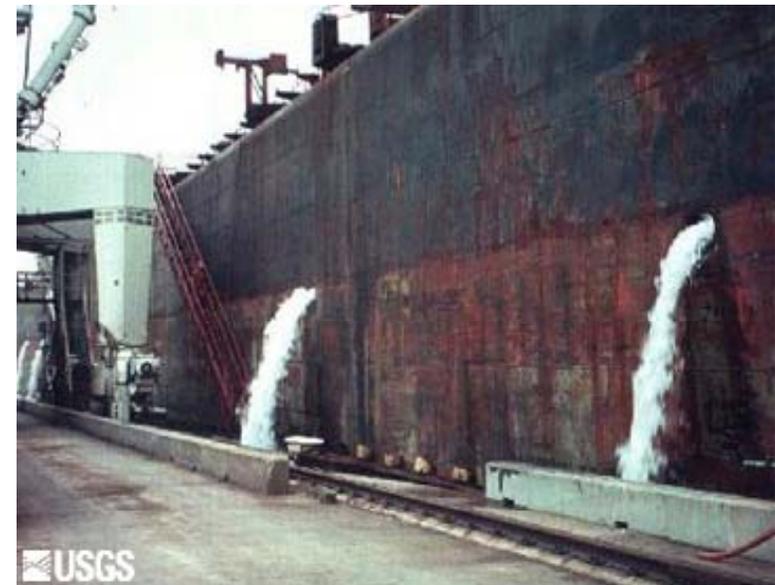
# Action Items Crosswalk Hot Topics

**Environmental Stewardship**

**Dredge Opportunities**

**Invasive Species and Ballast**

**Ballast Water Discharge Standard  
Notice of Proposed Rulemaking  
USCG-2001-10486**



# Ballast Water Discharge Standard

## BWDS NPRM establishes:

- **Phased Approach**
  - **IMO Standard initially**
  - **1000 times more stringent than IMO after 2016**
    - **Practicability Review will determine if 1000x standard can be met.**
    - **If Practicability Review determines 1000x cannot be met, then intermediary standards established.**
- **Type Approval Process**
- **Need for rigorous testing process**
- **Need for new methodology and approach**

**Unlocking an Ocean**

The Arctic ice cap is shrinking in summers and thinning, opening shipping lanes and access to valuable natural resources.

**SHIPPING**

Melting ice could soon open three polar passages historically clogged by ice, allowing shipping companies to get to Asia faster. It would also allow the U.S. to reach the Arctic more easily.

- Northwest Passage
- Northern Sea Route
- Arctic Bridge

**NATURAL RESOURCES**

Perhaps the biggest Arctic prize is oil and natural gas. The melting of the ice cap will allow energy companies to reach the Arctic more easily. The U.S. has the largest oil and gas reserves in the world.

Areas of known and prospective oil and gas reserves

# Are we ready for the Next generation of Challenges?

## DRIVERS: Climate Change, Energy Demands, Economy

## IMPACTS:

- Arctic Shipping
- Changes in migratory patterns of TES
- More severe and frequent storms/droughts
- Changing circulation patterns and new challenges for dredging
- Air emissions
- Infrastructure
- Capacity
- Greening the MTS
- Others?

**Northwest Passage**  
 The Northwest Passage is a sea route through the Arctic Ocean, along the northern coast of North America, between the Atlantic and Pacific Oceans. It is the only sea route that connects the two oceans without passing through the Panama Canal or the Suez Canal. The passage is currently blocked by ice, but it is expected to become navigable by 2040-2060.

**2010-2030**  
 Observed extent of sea ice, Sept. 2002

**2040-2060**  
 Projected extent of sea ice in September 2070-2090

**Northern Sea Route**  
 During the Soviet era, millions of tons of cargo passed along this route with the help of nuclear-powered icebreakers. Transport plunged after the Soviet Union collapsed. If ice pulls back from the coast as many scientists project, ships moving between northern Europe and Asia could cut transit time by 10 to 15 days.

**Arctic Bridge**  
 The Arctic Bridge is a proposed shipping route through the Arctic Ocean, connecting the Atlantic and Pacific Oceans. It is the only sea route that connects the two oceans without passing through the Panama Canal or the Suez Canal. The bridge is currently blocked by ice, but it is expected to become navigable by 2040-2060.



Sources: NOAA; U.S. Arctic Research Commission; Arctic Council; United Nations Environment Program; Arctic Climate Impact Assessment; International Atomic Energy Agency

Eria signs and David Constantine/The New York Times

# **CMTS R&D Integrated Action Team Call for Input**

- **What external trends will shape the long-term future of the MTS?**
- **What research and development challenges will the MTS face?**
- **What will the MTS need to know and do to prepare?**

# QUESTIONS?

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**BACK UP SLIDES**

# Crosswalk - Capacity

		Capacity	Safety & Security	Environmental Stewardship	Resilience and Reliability	Finance & Economics	
<b>CAPACITY</b>	Work collaboratively to address Federal statutory, regulatory, and institutional requirements in order to improve MTS performance;	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	5
	Encourage the expansion of shipping on the Marine Highways including the establishment of a pilot program to designate Marine Highway Corridors to use the waterways to relieve congestion on roadways;	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	5
	Propose economic incentives for private sector investment in MTS infrastructure and operational technologies to make the MTS more efficient for existing and future needs;	<b>X</b>			<b>X</b>	<b>X</b>	3
	Collaborate with State, local and private entities to ensure environmental and National Environmental Policy Act (NEPA) compliance, and to plan for land use in and near ports;	<b>X</b>		<b>X</b>	<b>X</b>		3
	Share best practices and create incentives to encourage private sector interests and local governments to pursue initiatives for increased efficiency and environmental sustainability;	<b>X</b>		<b>X</b>	<b>X</b>		3
	Publish valid, reliable and timely data on the MTS including cargo movements, capacity, and productivity;	<b>X</b>			<b>X</b>	<b>X</b>	3
	Facilitate standardized terminologies, interpretations and flow-through models to foster increased productivity; and,	<b>X</b>			<b>X</b>		2
	Develop performance measures to assess the productivity of the MTS and the risk of potential infrastructure failures to the MTS.	<b>X</b>			<b>X</b>	<b>X</b>	3

# Crosswalk – Safety & Security

		Capacity	Safety & Security	Environmental Stewardship	Resilience and Reliability	Finance & Economics	
<b>SAFETY and SECURITY</b>	Coordinate existing Federal navigation programs to ensure collaboration, reduce duplication and standardize terminology and presentation;	X	X		X		3
	Deliver timely, relevant, accurate navigation safety information to mariners, including real time information systems such as the Physical Oceanographic Real Time Systems (PORTS), e-navigation, under keel clearance, High Frequency Radar (HFR) air gap technology, Real Time Current Velocity systems at locks and those systems associated with development of the Integrated Ocean Observing System to improve navigation safety and efficiency and reduce the risk of accidents	X	X	X	X		4
	Encourage, coordinate, and support navigation technology research and development to enhance navigation safety	X	X		X		3
	Enhance and improve existing frameworks that plan for, operate, maintain, and mitigate risks to vessels and the environment, and respond to accidents and natural disasters;		X	X	X		3
	Ensure coordination between maritime transportation and maritime security policy-making bodies and programs;		X		X		2
	Consider ways in which security measures impacting the movement of trade by water can be streamlined, and where economies and coordination can be realized between safety and security imperatives; and,	X	X		X		3
	Work closely with State and local boating authorities and entities, recreational boating organizations, commercial shipping interests, and ports to reduce accidents resulting from competing uses of navigation channels and increase and manage safety of the MTS.	X	X				2

# Crosswalk – Environmental Stewardship

Capacity	Safety & Security	Environmental Stewardship	Resilience and Reliability	Finance & Economics
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Advocate transportation projects, technologies, and mitigation activities that improve air quality, reduce greenhouse gas emissions and reduce congestion in port areas and other MTS components;	X		X	X	X	4
Work collaboratively to foster the collection of data and information that will underpin environmental impact assessments and decision-making in MTS planning and development;	X		X	X	X	4
Support research and develop and implement practical strategies to control and mitigate effects on the marine environment from pollutants, invasive species, and anthropogenic sound, and to reduce negative interactions between ships and marine mammals;	X	X	X	X	X	5
Ensure environmentally appropriate dredged material management;	X		X	X	X	4
Promote coordinated regional and watershed efforts of States, Federal Agencies, and other partners to manage sediment, dredging and dredged material, point source discharges and storm water runoff, oil or hazardous material spills, harmful anti-fouling systems and sources of marine debris to restore habitat, reduce pollution and plan for conservation and mitigation;	X		X	X		3
Support harmonization of State, Federal and international environmental standards, policy, laws, and regulations through work with Federal interagency bodies, in the International Maritime Organization and other organizations, and implement international treaties such as those regarding prevention of maritime pollution at sea;	X		X	X		3
Support national and international solutions to environmental problems related to ship decommissioning and dismantling; and,			X			1
Encourage use of industrial land banks and formerly polluted industrial areas for MTS and intermodal transportation system facilities, and promote MTS development that avoids disproportionate impacts on minority and low-income communities.	X		X	X	X	4

# Crosswalk – Resilience and Reliability

		Capacity	Safety & Security	Environmental Stewardship	Resilience and Reliability	Finance & Economics	
<b>RESILIENCE and RELIABILITY</b>	Provide coordination, expertise, and resources to ensure continuity of operations, essential public services, and the resumption of commercial marine activities following a disruption;	X	X	X	X		4
	Develop reserve and surge capacity in the MTS and coordinate with industry on response and recovery operations;	X			X	X	3
	Develop a coordinated approach to emergency permitting for channel restoration following a large-scale sediment deposit in navigation channels from natural disasters such as hurricanes, that obstruct the channel and disrupt port activities;	X			X		2
	Work collaboratively to resolve cross-cutting jurisdictional issues surrounding abandoned and wrecked vessels and bridges; and,	X	X		X		3
	Develop and promote national and international strategies for addressing potential climate change impacts on ports, waterways, and other vulnerable elements of the MTS.	X	X	X	X	X	5
	Provide appropriate consultation and coordination with other policy facilitation structures, such as the Committee on Ocean Policy.	X			X		2

# Crosswalk – Finance and Economics

		Capacity	Safety & Security	Environmental Stewardship	Resilience and Reliability	Finance & Economics	
<b>FINANCE and ECONOMICS</b>	Study alternative approaches to financing construction, rehabilitation, and maintenance of infrastructure projects and environmental impact mitigation. This study will consider fees, taxes, and general revenue contributions for financing infrastructure projects, depending on the characteristics of the projects, and involve high-level discussions and collaboration with State, local, and tribal government and private entities, as appropriate, on funding strategies;	X		X	X	X	4
	Study approaches to prioritizing how Federal dollars should be allocated among competing priorities;					X	1
	Ensure that cost allocation takes into consideration environmental and human health costs, and that it does not create competitive disadvantages through unfair pricing;			X		X	2
	Study how best to coordinate the allocation of Federal funds for projects across Agencies; and,					X	1
	Coordinate a CMTS membership policy recommendation to the President for congestion prices, which should be charged when appropriate. The revenues collected from congestion pricing can offset fixed costs and thereby reduce economic distortions.	X				X	2
<b>TOTAL</b>		<b>28</b>	<b>13</b>	<b>18</b>	<b>28</b>	<b>17</b>	
		<b>Capacity</b>	<b>Safety &amp; Security</b>	<b>Environmental Stewardship</b>	<b>Resilience and Reliability</b>	<b>Finance &amp; Economics</b>	

# Ballast Water Discharge Standard Implementation Timeline

- 2009 Nov: Closure of Public Comment period
  - Review of comments
  - Revision to NPRM, PEIS, Economic Analysis
  - Publication of Final Rule
- Certification of Independent Labs
  - 12-24 month process for 3 existing labs
- Type Approval Testing
  - Land-based testing: 6-8 weeks
  - Shipboard testing: 12 months
  - Review of dossier / Other approvals: 2-6 months

# Ballast Water Ruling Public Meetings & Outreach

- 28 September                      Seattle, WA\*
- 30 September                      New Orleans, LA\*
- 02 October                          Chicago, IL\*
- 08 October                          Washington, DC\*
- 27 October                          Oakland, CA
- 29 October                          New York, NY

\* First round of meetings will be webcast.