

# Environment

## Background

Twenty-four conference participants attended the Environmental Issue Session. Prior to the conference, they received a read-ahead paper describing the environmental issues within the Marine Transportation System (MTS) that were expressed by Regional Listening Session attendees. The paper noted that marine commerce impacts the marine environment and coastal ecosystems. These ecosystems often support other important economic activities such as fishing and tourism and other recreational and aesthetic uses. The environmental issues from the Regional Listening Sessions were summarized into three broad categories: Ship Operations and Vessel Movements, Managing Dredge Materials, and Port Development and Terminal Operations which were roughly defined as follows:

**Ship Operations and Vessel Movements.** Bigger ships, increased congestion, and projected increases in maritime trade are increasing risks of accidents resulting in environmental harm. In addition, day-to-day ship operations and disposal of vessel wastes continue to be a source of marine pollution. Introductions of invasive species from vessels, especially through ballast water exchange, are threatening coastal ecosystems in many ports and harbors. Anti-fouling paints containing TBT's have been determined to harm marine species.

**Port Development and Terminal Operations.** Port operations and development can conflict with other land use and habitat conservation objectives in the nation's increasingly congested coastal zone. The two primary concerns are reducing pollution from port and terminal operations, such as air, run-off and non-point marine pollution, and land use issues, such as habitat reduction due to increased development of port-related facilities.

**Dredging.** Dredging ports and harbors presents several environmental concerns. Environmental concerns are most acute where sediments are contaminated with hazardous materials, raising concerns about reintroduction of pollutants into the water column and proper disposal of the contaminated dredged materials. Even when sediment contamination is not an issue, dredging can impact marine ecosystems. In recent years, the beneficial use of dredge material has been proposed as one way to mitigate such impacts.

Several examples of current practices aimed at addressing environmental issues also were presented in the Environment issue paper. Based on this background, environment session participants were asked to consider the following questions:

- ◆ What are the most critical environmental issues facing the Marine Transportation System and the protection of natural resources in the coastal zone?

- ◆ What are the proper roles and responsibilities of the interested parties in meeting these challenges? Can specific areas of expertise be identified in governmental and non-governmental sectors to assist all parties?
- ◆ What opportunities are there to cooperatively address these challenges? What mechanisms can be put in place to organize such efforts?
- ◆ What actions can be taken in the immediate future to reduce the stresses on coastal and river environments caused by the Marine Transportation System? What long-term actions might be taken?
- ◆ What processes might be implemented to balance the needs and interests of commercial traffic, recreational waterway users, and the need to adequately protect natural resources?

### **Outcomes**

The environmental issue session participants reviewed the draft MTS 2020 vision document as it related to the environment. The group reached consensus on several attributes that the MTS must have if environmental concerns are to be adequately addressed. Those attributes include:

**Environment.** All maritime interests, as users and stewards of the nation's waterways, will implement sustainable practices that protect, enhance, and aid in the restoration of marine resources while meeting the nation's transportation needs. Environmental protection will be consistently incorporated into all aspects of maritime activities and decision making.

To achieve this vision efforts should be taken to ensure that the MTS is:

- ◆ Guided by policies that ensure environmental concerns are fully integrated throughout the planning process to support development without forsaking environmental goals.
- ◆ Designed and operated to preserve and enhance the natural resources of the nation while ensuring large volumes and varieties of cargo and passengers can be efficiently transported over the waterways without degrading the environment.
- ◆ Guided by environmental policies that avoid costly inefficiencies because of fragmented approaches, inconsistent standards, and redundant regulations.
- ◆ Staffed with a workforce trained to understand and deal with environmental concerns and hazards.
- ◆ Supported by pollution response that is rapid, effective, and supported by optimal technology for monitoring and responding to environmental incidents.

- ◆ Overseen by uniform compliance/enforcement of all air and water standards at local, state, and federal levels.
- ◆ Managed by a comprehensive process including planning and permitting for dredging and disposal of dredged material that protects the environment while allowing for efficient, effective, and timely channel development and maintenance.
- ◆ Fully supported through the development of partnerships with all stakeholders including public education and outreach programs.

The environmental issue group made several findings and developed a total of 12 goals along with several action items and recommendations to achieve the goals. The primary goals and action items on the three primary issue areas are as follows:

### **Ship Operations and Vessel Movements**

- ◆ The impacts of marine discharges from ships must be reduced.
- ◆ The leading concern is reducing or eliminating the continued introduction of aquatic nuisance or invasive species.
- ◆ International agreements, such as the MARPOL annexes, and federal laws must be fully implemented. This includes supporting international efforts to phase out the use of vessel paints and coatings containing TBT's.
- ◆ There is also the need to develop and implement ship and shore-based technologies and infrastructure to reduce marine discharges affecting water and air quality.
- ◆ Standards and practices must be developed where needed.
- ◆ The risk of marine accidents must be reduced.
- ◆ This can be done, in part, through the implementation of new technologies that will provide more accurate navigation information to mariners. These technologies include full-bottom surveys, digital nautical charting, real-time oceanographic and meteorological data, automated information systems, and vessel traffic systems based on risk analysis.
- ◆ Much work has been done to improve safety and reduce risk of maritime accidents and spills, but there is a lack of science-based processes to adequately evaluate the various risks of vessel operations. Risk-based priorities, using sound data and stakeholder involvement, should be developed to ensure advanced technologies are employed effectively and efficiently.

### **Managing Dredge Materials**

- ◆ Dredging, especially dredging in areas where sediments are contaminated, is an ongoing environmental concern.
- ◆ Dredging must be addressed as part of a long-term port management process that is consistent with ongoing efforts, such as the National Dredging Team.
- ◆ While there is a continuing need to dredge channels in support of maritime commerce, there also is a need to view dredge materials as a resource to be managed, not just waste to be disposed.
- ◆ All interests and groups should be involved in management planning. This will encourage consensus among all interests and reduce delays for specific projects.
- ◆ New technologies should be utilized to reduce the expense and environmental impacts associated with dredging. Accurate hydrographic surveying and real-time technologies could be used to more accurately quantify materials to be dredged.

### **Port Development and Terminal Operations**

Projected increases in trade will result in the need for expanded shore-side port development. This will place increased pressure on our nation's already congested coastal zone.

- ◆ Watershed management and smart growth principles should be incorporated into port planning processes.
- ◆ Port planning also needs to be better integrated into the national transportation infrastructure.
- ◆ Early state, local, and stakeholder involvement is critical to the planning process.
- ◆ Federal planning requirements need to be better coordinated under the Clean Water Act, Coastal Zone Management Act, TEA-21, the Ports and Waterways Safety Act, and defense requirements.
- ◆ This requires an assessment of existing authorities and a review for overlaps and gaps.

Ports, individually and through the American Association of Port Authorities, have taken steps to improve environmental management of port facilities, but the competitive nature of ports makes it difficult to develop a uniform code of practice.

- ◆ Port interests need to continue take a more-active role in reducing pollution from terminal operations.
- ◆ The industry should consider implementing a self-certification program based on similar mechanisms developed by other industries.

- ◆ Standards and best practices need to be developed to establish maximum allowable air, water, vessel and point-source contamination from cargo transfer and storage operations.

### **Conclusion**

Environmental protection issues should be consistently incorporated into marine transportation decision-making processes from the beginning. Stakeholders, including those who rely on healthy coastal ecosystems for other purposes, must be at the table from the beginning. Such an approach will improve coordination and promote consensus. Finally, the process must focus on long-term planning on a broad scale instead of a project-by-project approach. Coastal communities should incorporate regional, intermodal, watershed or ecosystem approaches into port and waterway development planning processes.

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<p><b>ISSUE</b>—a description of the issue area of discussion starting with the issue title.</p>	<p><b>ISSUE: LACK OF SCIENTIFIC PROCESS TO EVALUATE RISKS ASSOCIATED WITH VESSEL OPERATIONS</b></p>
<p><b>GOAL</b>—provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.</p>	<p><b>GOAL 1: DEVELOP A BASIS TO SET PRIORITIES, BASED ON RISKS, FOR DEALING WITH IMPACTS OF VESSEL OPERATIONS AND SHIP MOVEMENT, WHICH RECOGNIZES REGIONAL DIFFERENCES; AND WHICH WOULD BE REEVALUATED PERIODICALLY.</b></p>

	RECOMMENDED ACTIONS	Recommended Lead	Time Frame
A	Establish process, analytic framework, collect data.	USCG	S
B	Effective involvement of stakeholders in process.	USCG	S
C	Inventory existing efforts.	USCG	S
D	Evaluate current level of activity and cost/potential for improvement, and “urgency”.	USCG	S

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<p><b>ISSUE</b>—a description of the issue area of discussion starting with the issue title.</p>	<p><b>ISSUE: ACCIDENT/SPILL PREVENTION</b></p>
<p><b>GOAL</b>—provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.</p>	<p><b>GOAL 2: ACCURATE NAVIGATION INFORMATION FOR THE MARINER</b></p>

	RECOMMENDED ACTIONS	Recommended Lead	Time Frame
<b>A</b>	Accurate reliable chart data - better interagency cooperation - review options for public and private involvement.	NOAA / USCG	
<b>B</b>	Physical Oceanographic Real Time Systems (PORTS).	NOAA / USCG	
<b>C</b>	Vessel Traffic System/Waterways Management - risk based analysis by port to determine appropriate level ( <i>Ports Waterways Safety Assessment</i> ).	USCG	
<b>D</b>	Public Education (especially with the recreational boater and small vessel spills)– (Energy Policy); relative significance of spill sources; understanding risks of our chosen lifestyle.		
<b>E</b>	Adequate commitment of resources and the will to promote uniform application of safety standards.		
<b>F</b>	Cargo, etc. vessel operator and owner review liability regimes to promote optimal environmental considerations - (consideration of joint/several liability, capping, ...).		

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<p><b>ISSUE</b>—a description of the issue area of discussion starting with the issue title.</p>	<p><b>ISSUE: PREVENTING/CONTROLLING DISCHARGES FROM VESSELS – BOTH RECREATIONAL AND COMMERCIAL</b></p>
<p><b>GOAL</b>—provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.</p>	<p><b>GOAL 3: FULL IMPLEMENTATION OF MARPOL ANNEXES</b></p> <p><b>NOTE: WHERE THERE ARE MULTIPLE LEADS – THE LEADERSHIP COUNCIL SHOULD DESIGNATE THE LEAD</b></p>

	RECOMMENDED ACTIONS	Recommended Lead	Time Frame
<b>A</b>	Adequate reception facilities for garbage, bilge, ballast, sewage.	USCG	
<b>B</b>	Enforcement of existing standards and identifying or establishing uniform technical standards.	USCG / EPA	
<b>C</b>	R&D to assist in identifying or establishing uniform technical standards where needed.	USCG / EPA / NAVY	
<b>D</b>	New technology on new ships and shoreside facilities.		

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<b>ISSUE</b> —a description of the issue area of discussion starting with the issue title.	<b>ISSUE: INVASIVE SPECIES</b>
<b>GOAL</b> —provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.	<b>GOAL 4: LIMIT NEW INTRODUCTIONS THROUGH MTS (FROM BALLAST WATER AND ANY OTHER SOURCE)</b>

	<b>RECOMMENDED ACTIONS</b>	<b>Recommended Lead</b>	<b>Time Frame</b>
<b>A</b>	Ballast water exchange when safe and practical—interim solution for further reductions.	DOT / USCG	S
<b>B</b>	Develop and implement cost effective treatment systems.	DOT, DOD	M
<b>C</b>	Work with Naval Architects in design of new ships and international authorities.	USCG, DOT	S
<b>D</b>	Examine scientific issues for successful establishment to occur (but not at the expense of implementing actions A-C).	NOAA, USGS	S

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<p><b>ISSUE</b>—a description of the issue area of discussion starting with the issue title.</p>	<p><b>ISSUE: HULL COATING</b></p>
<p><b>GOAL</b>—provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.</p>	<p><b>GOAL 5: LOW COST NON-PERSISTENT ALTERNATIVES WHICH AVOID NONTARGET SPECIES EFFECTS</b></p>

	<b>RECOMMENDED ACTIONS</b>	<b>Recommended Lead</b>	<b>Time Frame</b>
<b>A</b>	Develop new, and test existing, products.	MARAD, DOD (ONR)	M
<b>B</b>	Integration of Environmental fate in development of new products.	EPA, DOD (Chem Manufact. Companies)	M

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<b>ISSUE</b> —a description of the issue area of discussion starting with the issue title.	<b>ISSUE: ENVIRONMENTAL IMPACTS OF RECREATIONAL BOATING</b>
<b>GOAL</b> —provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.	<b>GOAL 6: ELIMINATE HARMFUL DISCHARGES (HUMAN WASTE, AIR, OIL, NOISE, OTHER DEBRIS)</b>

	<b>RECOMMENDED ACTIONS</b>	<b>Recommended Lead</b>	<b>Time Frame</b>
<b>A</b>	Establish process to involve marine recreational interests.	Stakeholders	
<b>B</b>	Education program and outreach mandated to all operators of recreational boats about impacts.	USCG	M
<b>C</b>	<u>Air, Noise and Oil</u> : Improved technologies to reduce or eliminate harmful discharges – establish stringent emission standards.	EPA	2-5 M
<b>D</b>	Develop phase-out of harmful emissions (non-compliant vessels).	EPA	L
<b>E</b>	<u>Human Waste</u> : Establish and enforce additional zero-discharge areas where needed.	EPA, USCG, States	L
<b>F</b>	Review Marine Board findings.	Stakeholders	

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<p><b>ISSUE</b>—a description of the issue area of discussion starting with the issue title.</p>	<p><b>ISSUE: RESTORATION FROM PAST POLLUTION</b></p>
<p><b>GOAL</b>—provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.</p>	<p><b>GOAL 7: RECOGNITION OF ISSUE</b></p>

	<b>RECOMMENDED ACTIONS</b>	<b>Recommended Lead</b>	<b>Time Frame</b>
<b>A</b>	Discussion and understanding of collective responsibility to address continuing negative impacts from historic sources of pollution.		

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<p><b>ISSUE</b>—a description of the issue area of discussion starting with the issue title.</p>	<p><b>ISSUE: BUILDING AND MAINTAINING SAFE CHANNELS FOR APPROPRIATE MARITIME COMMERCE</b></p>
<p><b>GOAL</b>—provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.</p>	<p><b>GOAL 8: ADDRESS “DREDGING” AS “SEDIMENT MANAGEMENT”, AND MOVE FROM PROJECT-TO-PROJECT PERMITTING TO LONG-TERM PLANNING THAT INCORPORATES ENVIRONMENTAL VISION.</b></p> <p><b>(NOTE: THIS IS SEEN AS A LARGE ISSUE THAT NEEDS A SWEEPING NAT’L POLICY CHANGE)</b></p>

	RECOMMENDED ACTIONS	Recommended Lead	Time Frame
<b>A</b>	Look on dredging as a management process, as opposed to a strictly regulatory process. Build upon the work from the National Dredging Team. Need to view this as a “broader” issue, beyond the scope of its current and traditional approach, including holistic and watershed aspects.	Sect. of the Army	S
<b>B</b>	Bring all the interests and groups to the table early to develop long-term sediment management plans that treat dredge material as a resource. It is a collaborative process that takes time to build effective teams. (Often, time seems to be shortened when significantly motivated by an external event).	Sect. of the Army	S
<b>C</b>	Need to be outcome driven. Leaders, with a vision and a willingness to solve or resolve issues, make a difference.	Sect. of the Army	S
<b>D</b>	Encourage greater private sector participation by investigating removing the barriers that prevent their entry.		M

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<p><b>ISSUE</b>—a description of the issue area of discussion starting with the issue title.</p>	<p><b>ISSUE: SAFER MOVEMENTS WITHIN EXISTING CHANNELS (FROM THE DISCUSSION ON DREDGING)</b></p>
<p><b>GOAL</b>—provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.</p>	<p><b>GOAL 9: EXPEDITING THE USE OF NEW TECHNIQUES TO MEET MTS NEEDS.</b></p>

	<b>RECOMMENDED ACTIONS</b>	<b>Recommended Lead</b>	<b>Time Frame</b>
<b>A</b>	Certain technologies, including precise depth and positioning technologies, can be used to reduce the need for dredging or reduce the quantities of sediment that need to be removed.	NOAA / AOCE / DOT	M
<b>B</b>	Better use of the array of technologies that enable greater opportunities for safer movement of vessels within existing channel conditions. (i.e.: vessel squat, vessel locations, etc).	NOAA / AOCE / DOT	S

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<p><b>ISSUE</b>—a description of the issue area of discussion starting with the issue title.</p>	<p><b>ISSUE: REINVENT OUR PROCESS FOR PLANNING MARINE INFRASTRUCTURE AS PART OF THE US TRANSPORTATION SYSTEM, USING A PROCESS BASED ON WATERSHED MANAGEMENT AND SMART GROWTH.</b></p>
<p><b>GOAL</b>—provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.</p>	<p><b>GOAL 10: SMART GROWTH FOR PORTS - INTEGRATE EXISTING FEDERAL REQUIREMENTS FOR LOCAL AND REGIONAL PLANNING (I.E.: CZMA, T-21 PORTS AND WATERWAY SAFETY ACT, DEFENSE NEEDS).</b></p>

	RECOMMENDED ACTIONS	Recommended Lead	Time Frame
<b>A</b>	Establish a planning team to identify existing federal programs.	The MTS Council	
<b>B</b>	Review for overlaps and gaps.	The MTS Council	
<b>C</b>	Ensure stakeholder involvement.	The MTS Council	
<b>D</b>	Make all MTS planning consistent with environmental vision.	The MTS Council	

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<p><b>ISSUE</b>—a description of the issue area of discussion starting with the issue title.</p>	<p><b>ISSUE: CARGO SOURCE CONTAMINATION DURING TRANSFER AND HANDLING</b></p>
<p><b>GOAL</b>—provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.</p>	<p><b>GOAL 11: ELIMINATE THESE SOURCES (FROM THE MULTITUDE OF MODAL SOURCES)</b></p>

	<b>RECOMMENDED ACTIONS</b>	<b>Recommended Lead</b>	<b>Time Frame</b>
<b>A</b>	Determine standards for maximum allowable air, water, vessel, and point source contamination.	USCG / DOT	
<b>B</b>	Establish best management guidelines for cargo handling - transfer and storage operations.		
<b>C</b>	Develop a vehicle for port terminal operators to verify compliance with guidelines.		

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<p><b>ISSUE</b>—a description of the issue area of discussion starting with the issue title.</p>	<p><b>ISSUE: COMPETITIVE NATURE OF PORTS MAKES IT DIFFICULT TO DEVELOP A CODE OF PRACTICE FOR ENVIRONMENTAL MANAGEMENT.</b></p>
<p><b>GOAL</b>—provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.</p>	<p><b>GOAL 12: DEVELOP AND IMPLEMENT AN INDUSTRY SELF CERTIFICATION PROGRAM</b></p>

	<b>RECOMMENDED ACTIONS</b>	<b>Recommended Lead</b>	<b>Time Frame</b>
A	Benchmark on some of the other associations that have created an industry self policing mechanism.	MARAD / EPA / AAPA	

