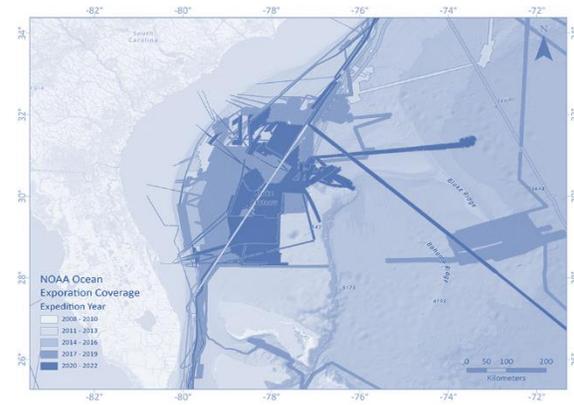


National Strategy for the Marine Transportation System: *Cultivating a Resilient and Sustainable Blue Economy* 2023 - 2028

U.S. Committee on the
Marine Transportation System



**National Strategy for the
Marine Transportation System:
*Cultivating a Resilient and
Sustainable Blue Economy***
2023-2028



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THE SECRETARY OF TRANSPORTATION
WASHINGTON, DC 20590

March 3, 2023

As Chair of the U.S. Committee on the Marine Transportation System (CMTS), I am pleased to approve for implementation the National Strategy on the Marine Transportation System: Cultivating a Resilient and Sustainable Blue Economy (2023-2028).

Our nation's maritime ports move more international cargo than any other mode of transportation, making the marine transportation system (MTS) a critical part ensuring our economic and military strength. Our efforts to modernize and prevent disruptions to our waterways, ports, and intermodal connectors require alignment across federal, state, tribal, and local government, as well as global cooperation.

In the years ahead, we must address the role of the MTS in climate change and coastal resilience. We must ensure the MTS can recruit and retain a strong and diverse workforce and provide a workplace that is safe and secure. And we must continue to invest, in MTS people, processes, and infrastructure, which are so critical to America's supply chains. The CMTS is the forum to bring together MTS agencies in a unity of effort to address these many challenges.

The 2023 National Strategy includes 25 actions under the following five priority areas:

- Strengthen Unity of Effort in the MTS
- Advance the Health, Welfare, Diversity, and Growth of the MTS Workforce
- Enhance the Safety and Security of the MTS
- Strive for a Sustainable MTS
- Support Optimal Performance of the MTS Supply Chain

The CMTS Coordinating Board is directed to implement the 2023-2028 National Strategy, align work plans with this policy framework, and, on a yearly basis, report its activities and accomplishments to further advance the marine transportation system.

Sincerely,

A handwritten signature in blue ink, appearing to read "Pete Buttigieg", is written over a light blue circular background.

Pete Buttigieg

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PREFACE

Established in 2005, the U.S. Committee on the Marine Transportation System (CMTS) is a highly productive and effective interagency maritime policy coordinating committee designed to address a range of issues including navigation safety, U.S. Arctic marine transportation, data management and system performance, resilience, and enhancement of the health, welfare and diversity of the MTS workforce, among many issues.

In July 2008, the first interagency strategy on the MTS was approved by the cabinet-level U.S. CMTS led by then-Secretary of Transportation Norman Mineta. The *National Strategy for the MTS: A Framework for Action (2008 Strategy)* (<https://rosap.ntl.bts.gov/view/dot/38099>) presented 36 actions for completion, the outcomes of which were reported in the appendix of the 2017 Strategy. In October 2017, the CMTS approved the *National Strategy for the Marine Transportation System: Channeling the Maritime Advantage (2017-2022)* (<https://rosap.ntl.bts.gov/view/dot/60705>).

The 2017 Strategy identified five priority areas that provided the foundation for subsequent CMTS priority work plans and identified new and emerging issues: Optimize System Performance, Enhance Maritime Safety, Support Maritime Security, Advance Environmental Stewardship, and Facilitate Infrastructure Investment.

The CMTS has completed several major projects and reports through extensive interagency collaboration and stakeholder outreach. The following is a snapshot of the activities accomplished between 2017 and 2022 by priority area:

Optimize System Performance

- The CMTS Maritime Resilience Integrated Action Team published the report, *A Resilient Path Forward for the Marine Transportation System: Recommendation for Response and Recovery Operations from the 2017-2019 Hurricane Seasons* (December 2020) and an addendum on the 2020 hurricane season (November 2021) which is available at <https://rosap.ntl.bts.gov/view/dot/60699>.
- The Coordinating Board established the Supply Chain and Infrastructure Integrated Action Team (Supply Chain IAT) by combining the Infrastructure Investment IAT with the Supply Chain Working Group to better address the congestion challenges of the MTS under pandemic and beyond. <https://www.cmts.gov/topic-supply/>.
- In collaboration with members of the CMTS Military to Mariner (M2M) Task Force, the CMTS hosted two public webinars in March 2018 to advance the transition of service members into the merchant marine: one with the U.S. Coast Guard (USCG) National Maritime Center on the Medical Certification process that is part of the merchant mariner credential, and the second with the Department of Labor's Veterans' Employment and Training Service, on veteran employment resources available to the maritime industry.
- The CMTS Military to Mariner Task Force developed and transmitted to the White House Office of Trade and Manufacturing Policy, a status report on Military to Mariner efforts in accordance with EO #13860 which indicated that the Federal agencies were fully committed to implement the EO. (May 2019). <https://rosap.ntl.bts.gov/view/dot/62481>.

- On March 15-17, 2021, the Transportation Research Board (TRB), with support from the CMTS, hosted the sixth biennial MTS Science and Technology conference at the National Academy of Sciences in Washington, D.C. The 2021 conference, “*Advancing the Marine Transportation System through Autonomation and Autonomous Technologies*” drew 107 participants from academia, industry, non-profits, and various levels of government (Federal, state, regional, and ports). A summary of recommendations from the 2021 conference is available at <https://rosap.ntl.bts.gov/view/dot/60540>.
- The CMTS Supply Chain and Infrastructure IAT co-led two public infrastructure-related panel discussions with the American Association of Port Authorities in conjunction with National Infrastructure Week. (May 2021 and 2022). May 2022 panel may be viewed at <https://youtu.be/LzgFJpwWn3K>.
- The CMTS Executive Secretariat provided interagency support and review to the DOT / Maritime Administration maritime strategy, *Goals and Objectives for a Stronger Maritime Nation: Report to Congress* (February 2020). https://www.maritime.dot.gov/sites/marad.dot.gov/files/2020-07/Final_2_25_Stronger%20Maritime%20Nation%20Report_.pdf.
- On February 23, 2022, the CMTS Supply Chain and Infrastructure IAT held a Federal interagency tabletop exercise (TTX). This TTX was held to promote understanding of marketplace or human prompted situations which may impact the maritime supply chain by requiring a coordinated response from multiple federal authorities on a relatively short time scale.
- With approval by the Secretary of Transportation, the CMTS transmitted to Congress, *An Assessment of the Marine Transportation System* (March 2022) which provides a foundation of information about the many aspects of the MTS, including details about infrastructure; safety; security; environment; and 5 focus areas regarding U.S. Arctic, MTS resilience, energy development, conditions and performance measures, and impacts to the MTS from the COVID-19 pandemic. <https://rosap.ntl.bts.gov/view/dot/61440>.

Enhance Maritime Safety and Security

- The CMTS Coordinating Board established the CMTS COVID-19 Working Group co-led by the USCG and Maritime Administration (MARAD) and which included 17 federal agency members. The Working Group published a number of documents to support the MTS under COVID: Catalog of COVID-19 Federal Guidance and References for the U.S. Maritime Industry, Catalog of COVID-19 Best Management Practices for the U.S. Maritime Industry; and Catalog of Mental Health Resources for U.S. Merchant Mariners and Critical Workforce in the Marine Transportation System (June 2021/update-June 2022). Additionally, two white papers were published: *Priority COVID-19 Vaccination of U.S. Merchant Mariners* and *Priority COVID-19 Vaccination of U.S. Port Workers* (<https://www.cmts.gov/topic-covid/>).
- The Executive Secretariat held an interagency workshop on diversity to share best practices. Subsequently, the Coordinating Board established the CMTS Diversity, Equity and Inclusion (DEI) Task Team, and approved the *Resolution to Advance Diversity, Equity, Inclusion, and Representation in Federal Maritime Agencies and the Marine Transportation System*. (April and July 2021). <https://rosap.ntl.bts.gov/view/dot/60706>.

- In November 2018, the CMTS Arctic Maritime Transportation System Integrated Action Team issued the report, *A Ten-Year Projection of Vessel Activity in the U.S. Arctic Region, 2020—2030*, which provides a detailed account of past, present, and future vessel activity patterns in the northern U.S. Arctic and surrounding waters around the Bering Strait. <https://rosap.ntl.bts.gov/view/dot/60574>.
- The ad hoc CMTS Extreme Weather Task Force transmitted the *Maritime Transportation Extreme Weather: Report to Congress* which fulfilled an action under the National Defense Authorization Act of 2017, directing the Secretary of Transportation to establish “a task force to analyze the impact of extreme weather events, such as in the maritime environment.” <https://rosap.ntl.bts.gov/view/dot/60730>.
- The Future of Navigation Integrated Action Team published the *U.S. Navigation Information Strategic Action Plan* to advance navigation safety in U.S. waters. (March 2021). <https://rosap.ntl.bts.gov/view/dot/61405>.
- The Executive Secretariat published a Federal Maritime Security Directory to better understand the breadth of MTS-related security organizations in the Federal government. (May 2021). <https://rosap.ntl.bts.gov/view/dot/60729>.

Advance Energy Innovation and Development

- The Coordinating Board established the Offshore Energy Facilitation Task Team to support interagency development of national guidance related to underwater unexploded ordnances. (Fall 2021).
- The Maritime Innovative Science and Technology Integrated Action Team hosted two federal roundtables on *Agency Activities and Interests Relevant in the Application, Enabling and Fostering of Autonomous and Automated Maritime Technologies* to ensure that federal partners were aware of other USG activities related to autonomous technologies. (November 2020 and January 2021).
- The Maritime Data Integrated Action Team hosted interagency webinars on: *Development of Spatial Data Infrastructures for Marine Data Management* (October 2019); *The Science of Climate Change: Why it Matters to the Marine Transportation System* (May 2020); *The Blue Economy: Maritime Sector* (July 2020) and *Supporting the Blue Economy: Innovation and Sustainability* (July 2020).
- The Arctic Maritime Transportation System IAT published the *U.S. Arctic Marine Transportation System Infrastructure Risk Resource Compendium* in response to Government Accountability Office (GAO) Report #GAO-20-460. (March 2021). <https://rosap.ntl.bts.gov/view/dot/62311>.
- CMTS hosted a member webinar: *EPA’s Ports Initiative & Partnership with Port Everglades to Refine Emission Inventory Methods and Analyze Reduction Strategies* (July 2018).
- CMTS hosted a member workshop on *Environmental Justice in the Maritime Transportation System* (October 2021).

Facilitate Infrastructure Investment

- In May 2018, the CMTS served as an official maritime partner of National Infrastructure Week. Infrastructure Week is a collaborative effort by businesses, civic groups, organizations, and other infrastructure stakeholders to bring awareness to the importance

of infrastructure in our Nation. MTS fact sheets were published and made available on the CMTS website.

- In a collaboration between the Maritime Resilience IAT and the (then-called) Infrastructure Investment IAT, the CMTS organized a public panel in 2018 on the topic of maritime infrastructure resilience in the face of the dramatic 2017 hurricane season.
- The CMTS hosted an Industry Outreach Workshop on maritime infrastructure priorities in June 2018. Senior leadership from eleven Federal agencies shared their vision of maritime infrastructure from Administration priorities to ongoing Agency actions. Over 100 stakeholders attended the Workshop virtually and in person, representing industry, trade associations, academia, non-governmental organizations, and Federal partners.
- The Supply Chain and Infrastructure IAT released the 4th and 5th Editions of the *Federal Funding Handbook for the Marine Transportation System* (November 2019 and March 2022). <https://rosap.ntl.bts.gov/view/dot/61471>.
- The Supply Chain and Infrastructure IAT released the report, *An Economic Analysis of Spending in Marine Transportation System Infrastructure* (April 2020) in collaboration with INFORUM at the University of Maryland. <https://rosap.ntl.bts.gov/view/dot/62486>.
- The Arctic MTS IAT published the *2021 U.S. Arctic Infrastructure Table Update*, which reflects the most current MTS components in the U.S. Arctic, in response to a GAO request and delivered it to the GAO (April 2021). <https://rosap.ntl.bts.gov/view/dot/62484>.

The CMTS Executive Secretariat extends its gratitude to its federal partners and members of the CMTS and the U.S. maritime stakeholders and the public for their exceptional support and commitment to the MTS.

Lastly, to the extent possible, this Strategy is intended to be complementary to other maritime transportation and freight-related documents from Federal agency partners. The 2023-2028 Strategy supersedes the 2017-2022 Strategy.

EXECUTIVE SUMMARY

The 2023-2028 *National Strategy for the Marine Transportation System: Cultivating a Resilient and Sustainable Blue Economy* (2023 Strategy) was developed by CMTS members through continued collaboration and multiple reviews. Members established 25 action items under five strategic priority areas.

- **Priority Area 1: Strengthen Unity of Effort in the MTS** by comprehensively engaging member agencies and stakeholders to support and enhance the MTS.
- **Priority Area 2: Advance the Health, Welfare, Diversity and Growth of the MTS Workforce** by advancing the recruitment, retention, diversification, health and wellbeing of the existing and future workforce to ensure support of current and future requirements of the MTS supply chain.
- **Priority Area 3: Enhance the Safety and Security of the MTS** by promoting a MTS free from vessel collisions, allisions, and groundings; personal injury and death; and damage to property and environment as congestion and vessel size within the MTS increase, supporting interagency initiatives for a more secure MTS.
- **Priority Area 4: Strive for a Sustainable Marine Transportation System** by supporting the sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem - also referred to as the “*blue economy*,” including support for environmental justice and impacts to underrepresented communities.

- **Priority Area 5: Support Optimal Performance of the MTS Supply Chain** by measuring the reliability of operational elements of the MTS to inform and support strategies for targeted improvements as trade and supply chain competition increases.

The Strategy will be implemented across Federal agencies and within the CMTS partnership, as appropriate. The CMTS will implement the 2023-2028 Strategy by aligning it with current and future annual work plans. The CMTS will also provide an annual report on the activities performed under a yearly work plan and the 2023-2028 Strategy.

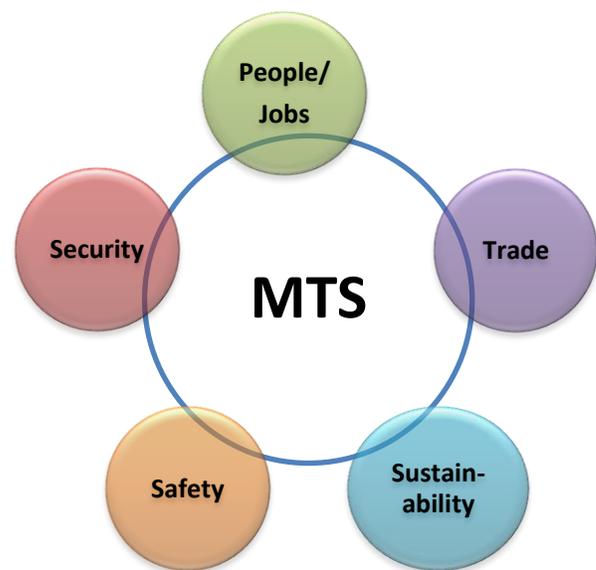


Figure 1. How the MTS serves the Nation

SECTION 1: INTRODUCTION

The U.S. Marine Transportation System (MTS)

From our nation's inception, America's abundance of navigable rivers, lakes, and coastal waterways have made the United States a maritime nation. To this day, these natural resources remain a key driver to its continued economic success. The MTS is the waterborne component of the U.S. multimodal freight system, connecting to a vast network of land-based highways, railways, and pipelines. The MTS is composed of an array of interdependent physical parts, including waterways, coastal and inland ports and terminals, vessels, and intermodal connectors, as well as the companies, organizations, and workers that use, operate, and maintain the system. It has over 25,000 miles of navigable waterways and over 8,000 facilities and is the primary mode by which goods enter and leave the United States.

As stated in the U.S. DOT - Bureau of Transportation Statistics report *2022 Port Performance Freight Statistics Program: Supply-Chain Feature*, "Waterborne vessels are the leading transportation mode for international freight, moving 40 percent of U.S. international freight value in 2020—more than \$1.5 trillion—and 70 percent of freight by weight— almost 1.5 trillion short

tons. Waterborne vessels continued to move the majority of international freight during the first 10 months of 2021."

The MTS is also essential to U.S. strategic requirements. The military depends on the MTS to deliver a decisive force whenever and wherever it is needed. Nearly 90% of the military's supplies and equipment moves overseas via the MTS on military sealift vessels or on U.S.-owned, U.S.-flagged and U.S.-crewed commercial sealift ships. The capability of the MTS to support contingency operations as well as humanitarian assistance and disaster relief efforts provides a key strategic advantage for our Nation.

Vision for the MTS

"The United States marine transportation system will be a safe, secure, sustainable, and globally integrated network that, in harmony with the environment, ensures a free-flowing, seamless, and reliable movement of people and commerce along its waterways, sea lanes, and intermodal connections."

The MTS is a complex and decentralized system, consisting of Federal, State, local, Tribal, and privately-held components. Within the Federal Government alone, over 30 agencies, bureaus, White House offices, and Federal interagency organizations ranging from the U.S. Coast Guard and the U.S. Army Corps of Engineers to the Arctic Executive Steering Committee, and National Maritime Intelligence-Integration Office, are involved or have interest in some aspect of the MTS. Federal agencies are working closely with each other, through the CMTS, and other partners to collaborate to enhance the MTS and all play a role in the updated actions presented in the 2023-2028 MTS Strategy.

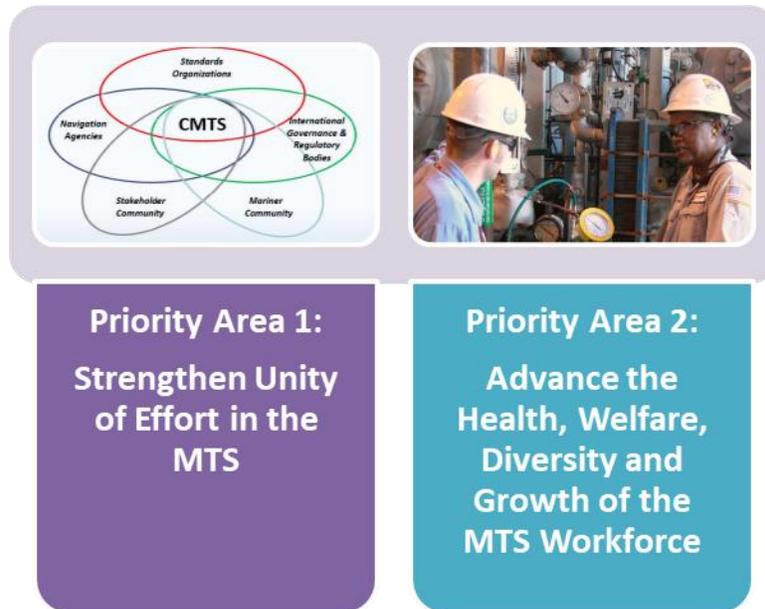
The U.S. Committee of the Marine Transportation System (CMTS) and the National Strategy

The President's U.S. Ocean Action Plan of 2004 called for the elevation of the Interagency Committee on the Marine Transportation System to a cabinet-level committee, and the Administration established the CMTS by charter in July 2005 with the Secretary of Transportation as the standing chair. The Coast Guard and Maritime Transportation Act of 2012 (Pub. L. 112-213) officially authorized the CMTS, giving the interagency partnership new authority, new responsibilities, and new opportunities (Refer to APPENDIX 1 for graphic on roles and authorities of Federal agencies and the MTS).

The activities of the CMTS have been guided by the 34 actions laid out in the 2008 Strategy and the 14 actions laid out in the 2017 Strategy. The 25 actions in the 2023 Strategy will now guide the activities over the next five years. Unanticipated and emerging issues will also be considered as they arise and included in yearly CMTS work plans as required. When an issue does not fall neatly within the purview of a single agency's authority, or when efficiencies can be gained by leveraging expertise from multiple agencies around a common goal, the CMTS can be a valuable tool for engagement.

SECTION 2: STRATEGIC PRIORITY AREAS

In developing the new strategy, representatives from CMTS member agencies, as approved by the Coordinating Board on December 13, 2022, and by the Secretary of Transportation in January 2023, identified and assessed priority areas for consideration, building upon the 2017-2022 Strategy and current CMTS initiatives. In total, the CMTS reaffirmed or established actions under the following five priority areas:



MTS Priority Area 1: STRENGTHEN UNITY OF EFFORT IN THE MTS

In the 1999 Assessment of the U.S. Marine Transportation System Report to Congress (<https://rosap.ntl.bts.gov/view/dot/4377>), the then-Federal MTS Task Force reported that a recurring theme was the need for comprehensive coordination, leadership, and cooperation among Federal, regional, State, tribal and local agencies, as well as private sector stakeholders. Since its establishment in 2005, the CMTS has fully implemented a federal partnership amongst MTS-related agencies. Never has there been more cooperation and collaboration. During the recent pandemic, for example, the agencies successfully banded together to share critical information to state and local government organizations as well as non-federal stakeholders. As growth of the MTS continues and improvements are made or challenges encountered, Federal agencies will continue to look at ways to use resources more efficiently, effectively, and cohesively with each other and with stakeholders through communication and collaboration. The CMTS will gather under the interagency maritime transportation partnership to further address the many issues that support or challenge the MTS.

Action Items:

1. Share achievements and MTS resources of member agencies and pursue opportunities to educate on the value of the MTS.
2. Ensure that, as appropriate, MTS stakeholders, Tribal organizations, and Congress are included in outreach and information initiatives.
3. Provide a forum for member agencies to collaborate on and support respective engagement with international bodies.
4. Increase existing interagency discussion to support the enhancement of the MTS as an integrated system.
5. Support the advancement of environmental justice in and around areas of persistent poverty and historically disadvantaged communities.

As illustrated in Figure 3, ensuring MTS stakeholder community and partner engagement is incorporated into the National Strategy will place a higher focus on interagency communication and resource sharing on the MTS.

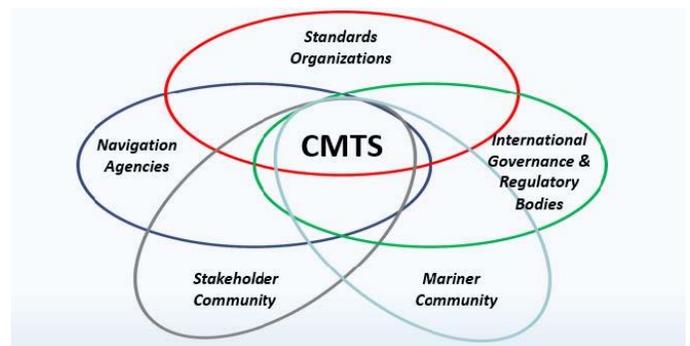


Figure 2. Example: Relationship between the eNavigation Bodies

MTS Priority Area 2: ADVANCE THE HEALTH, WELFARE, DIVERSITY, AND GROWTH OF THE MTS WORKFORCE

In July 2021, the CMTS Coordinating Board approved a *Resolution to Advance Diversity, Equity, Inclusion, and Representation in Federal Maritime Agencies and the Marine Transportation System*. While the resolution is specific to the MTS workforce, its language and sentiment mirror Executive Order (EO) 13985, *Diversity, Equity, Inclusion and Accessibility in Federal Workforce* signed by President Biden in January 2021. Advancement of the recruitment, retention, and diversification of the existing and future workforce within the MTS is critical to ensure a well-functioning domestic and international freight and logistics supply chain. The CMTS will continue to demonstrate superior awareness in promoting diversity, equity, justice, and inclusion within the MTS workforce. MTS will encourage career advancement and professional development in MTS fields. It will also support Federal outreach, recruitment, and retention processes by engaging under-represented communities in career opportunities of the MTS. Developed in concert with the Administration, this Strategy brings attention to the vital importance of the U.S. merchant marine for national security, safety, and prosperity, and aims to facilitate the transition of active-duty service members into the U.S. maritime industry. To promote a positive work climate, CMTS will sponsor an interagency forum for discussions and initiatives related to the health and well-being of the MTS workforce.

Action Items:

6. Encourage career advancement and professional development in MTS fields to fill workforce gaps in knowledge and technological advancements.
7. Support the development and implementation of effective maritime recruitment and retention processes.
8. Support maritime career transition initiatives like the Military to Mariner Program.
9. Provide an interagency forum for discussions and initiatives related to health and welfare of the MTS workforce including mariner mental health, sexual assault, sexual harassment, and living conditions aboard vessels.
10. Develop strategies to support diversity, equity, and inclusion in the MTS workforce.

There is a mutually dependent relationship between the advancement of the health, welfare, diversity and growth of the MTS workforce. Increased engagement of maritime stakeholders and underrepresented groups will enhance recruitment and advancement in the maritime workforce. Ensuring that MTS users have adequate access to information and resources related to health and well-being will aid in retention and

overall workforce performance. Actions to support this priority area should be proactive, interdisciplinary, and complementary to existing Federal agency and interagency efforts.

Despite the transition to an ever more digital, automated MTS, the human component remains just as critical as ever. As technology advances, the MTS requires a workforce that can manage the increasing complexity in operations and security (e.g. cyber-assisted automation), as well as changing environments such as in the U.S. Arctic. Raising or expanding the skill level of the workforce requires significant amounts of training to transfer technology and MTS-relevant research outcomes to human operation.

MTS Priority Area 3: ENHANCE THE SAFETY AND SECURITY OF THE MTS

Promoting MTS safety for cargo, passengers, and information are a priority for the CMTS, and supports the overall safety-focused transportation goals held by CMTS member agencies. With assistance from the CMTS compendium of Federal agency authorities in the MTS (APPENDIX 1), Federal agencies will identify common priorities from their respective strategic plans and work collaboratively to coordinate resources to meet the safety requirements of the MTS.

The U.S. has a vital national interest in maritime security. The security of infrastructure and operations of the MTS should consider the possible threats, vulnerabilities, and existing protective measures including in the U.S. Arctic. The U.S. must take full advantage of strengthened alliances and other international cooperative arrangements, innovations in the use of law enforcement personnel and military forces, advances in technology, and intelligence coordination, analysis, and dissemination.

Action Items:

11. Jointly deliver timely, relevant, accurate and user-accessible navigation safety information to waterway users; support the harmonized presentation of best available information in support of MTS operations.
 - Real-time Navigation Data
 - Real-time Weather Data
 - Hydrographic data/system support data/support of S100 alignment Data regarding pipeline/network infrastructure
12. Regularly assess and report the requirements to enhance or sustain safety of the MTS, particularly in the U.S. Arctic.
13. Support efforts to maintain alignment with national and international efforts towards navigation safety and security.

14. Support an MTS nexus to ongoing federal activities regarding policies and standards intended to advance inland and coastal maritime safety including cybersecurity of information systems (IT) and operation and control systems (OT).
15. In accordance with E.O. 13905, promote the responsible use of positioning, navigation, and timing (PNT) information in the MTS. This includes identification of vulnerabilities, assessment of threats, and evaluation of complementary PNT services that could be adopted as mitigations by owners and operators of critical maritime infrastructure to ensure resiliency to any disruption or manipulation of the Global Positioning System (GPS).

A safe and efficient MTS is a critical component of the national security and economy of the United States. Building, operating and maintaining an MTS free from collisions, allisions, and groundings will help prevent injury, death, loss and damage to property and the environment as congestion and vessel size within the MTS increases. Further collaborative effort will support the resilience and recovery capabilities of the MTS and make the system more reliable and better able to recover from disasters while improving the safety and efficiency of MTS operations.

The CMTS will support the myriad of maritime security interests in the federal government and ensure that the security recommendations of the MTS are taken into account. (View the CMTS Federal Maritime Security Directory at <https://rosap.ntl.bts.gov/view/dot/64496>) Developing an MTS-related data “most wanted list” will further assist agencies to work together to develop and support strategies to harmonize delivery of navigation safety information to waterway users.

MTS Priority Area 4: STRIVE FOR A SUSTAINABLE MARINE TRANSPORTATION SYSTEM

The CMTS supports Administration initiatives towards national climate goals, energy transition and the nexus of requirements in the MTS for climate change mitigation and adaptation. These initiatives include international collaboration in the United Nations (UN) Decade of Ocean Science for Sustainable Development (2021-2030) and IMO initiatives on greenhouse gas standards, and development of clean energy, and new technologies to reduce impacts of pollution from propulsion systems. The CMTS will support MTS operations and sustainable growth in the blue economy while protecting and sustaining human health and the environment. A proactive nexus will continue between White House and member agency initiatives related to the U.S. Arctic like the execution of National Strategy for the Arctic Region and Tribal engagement.

Action Items:

16. Support Federal effort towards national climate goals through research and development on climate change and its impact on the transportation and supply chain.
17. Support a sustainable MTS under the UN's Decade of Ocean Science for Sustainable Development (2021-2030) initiative.
18. Promote interagency collaboration encouraging the development of alternative fuels for propulsion purposes.
19. Provide an MTS nexus between White House and member agency initiatives related to the U.S. Arctic.
20. Support Federal efforts towards national climate and environmental justice goals and technological advancement in clean energy like decarbonization and offshore energy sources.
21. Support port operations efforts toward climate change mitigation and adaptation.



Figure 3. Resilience Cycle

MTS' support of the research and development of new technologies will reduce pollution in the air and water to effectively meet Federal and State requirements. It will also ensure efficient energy production and consumption in a growing, competitive blue economy. MTS action items targeting environmental stewardship will increase the understanding of climate change and its impact on changing sea level, precipitation, storm intensity, and temperatures. With potential stress and

disruption of the MTS performance, interagency collaborations will strive to better quantify these hazards and understand how they will influence other operation continuity, including, but not limited to, port and waterway continuity and other critical aspects of the MTS. Management of future disturbances will also require an increase in understanding vulnerabilities, including accurate prediction of future conditions and mitigation measures. Port and waterway resilience to disruptive events will require prompt coordination and communication of data and services among waterway authorities to ensure prompt re-opening of waterways and shore facilities. Other MTS activities, such as channel deepening and infrastructure construction, also must deal with land-based environmental issues and minimizing negative environmental and health impacts on local communities. Future environmental challenges resulting from economic growth and expansion will require the MTS to develop interdisciplinary teams to work efficiently, minimize cost, and deliver the best possible, crosscutting solutions that enhance MTS resilience.

MTS Priority Area 5: SUPPORT OPTIMAL PERFORMANCE OF THE MTS SUPPLY CHAIN

The MTS is a series of integrated components that drive a system of actions that support our international and domestic supply chain. Broad recognition of the maritime transportation as a system is vital to ensuring it will respond to current and emerging operational requirements and recover from unexpected disruptions. By understanding MTS components and how it all operates within the context of freight flow dynamics across modes, Federal partners can better support strategic and marketplace requirements toward the establishment of a more innovative and integrated national freight system.

Action Items:

22. Engage and support Federal partners, as appropriate, including White House, DOT, and interagency supporting groups on supply chains under the Infrastructure Investment and Jobs Act and existing foundational work performed by CMTS member agencies.
23. Share interagency MTS expertise in support of the reduction of system congestion and supply chain bottlenecks and provide opportunities to educate and inform on new and emerging issues in a way that ensures safety, security, and sustainability of MTS.
24. Increase data access, availability of data services, linkages and integration of authoritative data from agencies and organizations with mission areas related to the maritime industry and the broader intermodal freight flow network.
25. Support collaborative, innovative new and emerging technologies and processes, including advancements in automation, information systems (IT) and operational control systems (OT) for a more efficient MTS.
26. Continue analytical assessments and understanding of MTS resilience and recovery capabilities in a changing climate, and encourage incorporation into waterway and port design principles to support an efficient and effective maritime transportation supply chain.

Accurately understanding freight flow and system performance of the MTS is critical for an improved ability to identify vulnerabilities, increase resilience, predict impacts from disruptions and evolutions within the MTS or from other freight modes, assess regulatory and policy decisions, increase safety, reliability and efficiency, and lower transportation costs. A shared understanding of system performance ultimately reduces uncertainty and increases communication between stakeholders, which should lead to a more efficient freight transportation system that is better integrated across modes. A concerted R&D effort amongst MTS partners to increase the collective understanding of

freight flows across all modes will significantly enhance the ability of predictive models and tools to capture the interconnectedness of the national and global supply chains. This will reevaluate the true role of the MTS within this complex, dynamic freight network so that decision makers can predict second order dependencies and disruption impacts. From the national, regional, and international perspective, better understanding and quantification of intermodal connections and MTS capacity for freight movement could assist overall supply chain investment optimization to relieve system bottlenecks and minimize the impact of disruptions. The improved knowledge through direct measures of these elements or heuristic approaches could increase MTS resilience as well as assist the prioritization of Federal MTS investments. In addition to increasing the resilience of the MTS, there is also the opportunity to plan for or design resilience across different transport modes using the same models used to reveal dependencies and choke points.

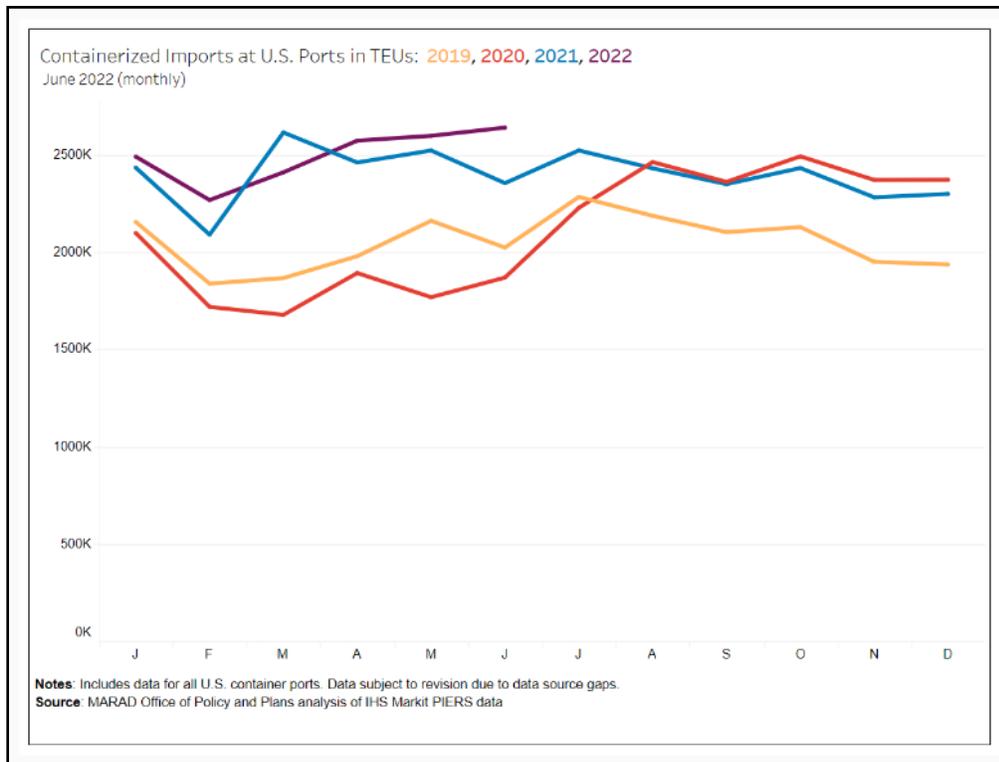


Figure 4. Supply Chain Indicators, July 2022 (Bureau of Transportation Statistics, <https://www.bts.gov/freight-indicators>)

SECTION 3: IMPLEMENTATION

This report provides twenty-six action items under the following five strategic priority areas:

- **Priority Area 1: Strengthen Unity of Effort in the MTS**
- **Priority Area 2: Advance the Health, Welfare, Diversity and Growth of the MTS Workforce**
- **Priority Area 3: Enhance the Safety and Security of the MTS**
- **Priority Area 4: Strive for a Sustainable Marine Transportation System**
- **Priority Area 5: Support Optimal Performance of the MTS Supply Chain**

In order to accomplish the 26 actions outlined in this 2023 Strategy, the CMTS will continue to engage the member agencies and build upon the current strong interagency partnership. Within six months of the approval of this Strategy by the CMTS principals, the CMTS will incorporate the current work plan into the 2023 priority areas. On an annual basis, the work plan and milestones for implementation will be updated to include the work anticipated during that year and will indicate the progress made towards accomplishing the measures of success.

Pursuant to funding, resources and Administration policy, the agencies will continue to cooperate and agree on work plans and milestones that can be accomplished during the given time frame. Since most of the actions outlined in the strategy are related to agency strategic plans and Administration priorities, many of the actions are already being undertaken or are planned to be undertaken, at an agency level. However, cross-agency coordination within the CMTS supports these actions to make them apply more comprehensively to the MTS. Though time and capabilities to implement the actions will vary, the CMTS member agencies are committed to working together to cultivate a resilient and sustainable **blue economy**.

APPENDIX 1: LIST OF ACRONYMS

BTS	Bureau of Transportation Statistics (DOT)
CMTS	U.S. Committee on the Marine Transportation System
DEI	Diversity, Equity, and Inclusion
DOT	U.S. Department of Transportation
EO	Executive Order
EPA	U.S. Environmental Protection Agency
GAO	Government Accountability Office
IAT	Integrated Action Team (CMTS)
IMO	International Maritime Organization
MARAD	Maritime Administration
M2M	Military to Mariner
MTS	Marine Transportation System
OMB	Office of Management and Budget
PNT	Position, Navigation, and Timing
R&D	Research and Development
TRB	Transportation Research Board
TTX	Tabletop Exercise
UN	United Nations
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USG	U.S. Government

APPENDIX 2. U.S. Committee on the MTS

Secretary of Transportation	Pete Buttigieg
Secretary of Agriculture	Tom Vilsack
Secretary of Commerce	Gina Raimondo
Secretary of Defense	Lloyd J. Austin, III
Secretary of Energy	Jennifer Granholm
Secretary of Homeland Security.....	Alejandro Mayorkas
Secretary of the Interior	Deb Haaland
Attorney General	Merrick Garland
Secretary of Labor	Marty Walsh
Secretary of State	Antony Blinken
Secretary of the Treasury	Janet Yellen
Centers for Disease Control.....	Rochelle Walensky
Chairman of the Joint Chiefs of Staff	Mark A. Milley
Administrator of the Environmental Protection Agency	Michael S. Regan
Chairman of the Federal Maritime Commission	Daniel Maffei
CMTS Executive Director.....	Helen A. Brohl

Ex Officio:

Director, Office of Management and Budget	Shalanda Young
Chairman, Council of Environmental Quality	Brenda Mallory
Director, Domestic Policy Council	Susan Rice
Director, National Economic Council	Brian Deese
National Security Advisor	Jake Sullivan
National Maritime Intelligence-Integration Office	RADM Michael Studeman
Ocean Policy Committee	Deerin Babb Brott