

Maritime Administration (MARAD)

Marine Board Meeting May 16, 2019



Environment



Security



Safety



Office of Safety, MAR-430





MARAD Update

- Department of Transportation (DOT) Activities
 - DOT Research, Development & Technology (RD&T)
 - FAST Act Requirements
 - Annual Modal Research Plans (drafts due to OST-R May 1st)
 - Annual Modal Project Spend Plans (drafts due to OST-R September 30th)
 - Modal Spend Plan Execution and Progress reviewed quarterly
 - DOT Research, Development & Technology Investment Topical Areas
 - Safety
 - » Automation, Systemic Safety Approach, Human Factors
 - Infrastructure
 - » Environmental Stewardship, Economic Competitiveness
 - Innovation
 - » Emerging/Enabling, Mobility Innovation, Cybersecurity
 - Accountability
 - » Technology Transfer, Evaluation/Performance Measurement, Data

DOT Topical Research Working Groups – Modal/OST Office Leads and Chairs

Safety	Infrastructure	Innovation	Accountability
Automation: Enable the safe integration of Automated Vehicles and Unmanned Aircraft Systems into the transportation system. <i>[Lead Agency: ITS-JPO; Chair: Kevin Dopart]</i>	State of Good Repair: Maintain transportation assets in a state of good repair, ensure resilience to natural and man-made threats, and optimize material cost and durability. <i>[Lead Agency: FHWA; Chair: Cheryl Richter]</i>	Emerging/Enabling Technologies: Advance the development of emerging/enabling practices and technologies. <i>[Lead Agency: ITS-JPO; Chair: Jonathan Walker]</i>	Technology Transfer/Deployment: Facilitate the deployment and adoption of DOT research products into the transportation system. <i>[Lead Agency: OST-R; Chair: Santiago Navarro]</i>
Systemic Safety Approach: Use systemic, performance-based approaches to ensuring transportation system safety. <i>[Lead Agency: FAA; Chair: TBD]</i>	Environmental Stewardship: Preserve the environment, ensure the safety and cost-effectiveness of alternative transportation energy sources, and ensure the safe transportation of hazardous materials. <i>[Lead Agency: PHMSA; Chair: Sherry Borener]</i>	Mobility Innovation: Use innovative business models, partnerships, and private-sector solutions to expand mobility options for travelers, including underserved communities such as people with disabilities and rural residents. <i>[Lead Agency: FTA; Chair: Gwo-Wei Torng]</i>	Evaluation/Performance Measurement: Monitor and evaluate the contribution of research, development and technology activities toward the achievement of DOT strategic goals and objectives. <i>[Lead Agency: OST-R; Chair: Santiago Navarro]</i>
Human Factors: Ensure the integration of human factors into the design of the transportation system. <i>[Lead Agency: FRA; Chair: Starr Kidda]</i>	Economic Competitiveness: Stimulate economic growth, productivity, and competitiveness through transportation infrastructure investments. <i>[Lead Agency: OST-P Chair: Reed Garfield]</i>	Cybersecurity: Develop approaches for maintaining the cybersecurity of the transportation system. <i>[Lead Agency: ITS-JPO; Chair: Kevin Gay]</i>	Data: Ensure access to high-quality data to support data-driven technologies, operations, and decision making. <i>[Lead Agency: ITS-JPO Chair: Ariel Gold]</i>



MARAD Update

- Department of Transportation (DOT) Activities

DOT RD&T continued

- DOT Office of the Secretary – Research (OST-R) Priority Projects
 - ❖ Tools to Augment Transportation Infrastructure Resilience and Disaster Recovery
 - ❖ Research on the Effectiveness of Innovative Public Private Partnerships
 - ❖ Improving the Assessment of Port Performance
 - ❖ Transportation Ecosystem Cyber Test Sandbox
 - ❖ Regional and Multi-State Engagement on Transportation Research
 - ❖ DOT-Wide Coordinated Geographic Information System (GIS) Response Process
 - ❖ Development of Enhanced Demand Forecast Capability for St. Lawrence Seaway
 - ❖ Blockchain for Federal Transportation Funding



MARAD Update

- Maritime Administration Activities
 - Small Shipyard Grant Program
 - \$19,600,000 for capital and related improvements
 - Applications are under review with expected awards by Mid August 2019
 - Expecting 10-20 grants awarded with an average amount of \$1 million
 - Marine Highway Grants
 - Harbor Harvest Long Island Sound Service (\$1,812,285 award)
 - Farm-to-Harbor-to-Market for Connecticut and New York supporting 3000 farms
 - New Orleans Shuttle on the M-55 (\$3,155,622 award)
 - Supporting Ports of Baton Rouge and New Orleans Container on Barge Service
 - James River Expansion Project on the M-64 (\$1,822,093 award)
 - Supporting construction of 3rd Barge to service M-64 Corridor for container transport

MARAD Update

- Maritime Administration Activities (continued)
 - National Security Multi-Mission Vessel (NSMV)
 - Funding secured FY 2018 and FY 2019 for two vessels
 - FY 2020 request for a third





MARAD Update

- Maritime Administration Activities (continued)
 - National Security Multi-Mission Vessel (NSMV)
 - Purpose
 - Recapitalization of the Training Ship Fleet
 - National Security Multi-Mission Vessel (NSMV)
 - Principle Dimensions
 - Length 159.85 m (524'- 5")
 - Beam 27.0 m (88'- 7")
 - Depth 16.8 m (55'- 1.5")
 - Design Draft 6.5 m (21'- 4")
 - Accommodation
 - Training Ship Mode – 600 cadets, 100 officers, faculty, staff & crew
 - Surge Capacity for Humanitarian Assistance/Disaster Response missions
 - Food Storage for 60 days
 - Fresh Water Storage for 14 days
 - Propulsion, Speed & Consumption
 - Diesel Electric – 4 main engines divided between 2 engine rooms
 - Installed Power – 15,700 kW main engines
 - Full Speed – 18 knots with 15% sea margin – 4 engines
 - Cruising Speed – 12 knots with 2 main engines in one engine room



MARAD Update

- Maritime Administration Activities (continued)
 - National Security Multi-Mission Vessel (NSMV)

Milestone

Date Complete

- | | |
|---------------------------|------------------|
| • VCM Contract Award | 3rd Qtr FY 2019 |
| • VCM's Shipyard RFP | 3rd Qtr FY 2019 |
| • VCM's Shipyard Contract | anticipated 2019 |
| • Keel Laid | anticipated 2020 |
| • Delivery 1st Vessel | anticipated 2022 |
| • Delivery 2nd Vessel | anticipated 2023 |
| • Delivery 3rd Vessel* | anticipated 2024 |

❖ Vessel Construction Manager (VCM)



MARAD Update

- Maritime Administration Activities (continued)
 - MARAD Research Activities
 - FY 2020-2021 MARAD AMRP drafted and submitted for OST
 - Maritime Environmental and Technical Assistance (META) Program
 - Air emissions testing on a LNG cargo ferry measuring criteria pollutant and methane emissions
 - Great Lakes/Fresh Water laboratory-based testing to accelerate technology development
 - West Coast/Fresh/Brackish Water land-based & shipboard testing of ballast water treatment systems
 - In-water cleaning of ship biofouling to identify emerging in-water biofouling cleaning systems
 - Ports and Intermodal Collaboration with DOT Intelligent Transportation System – Joint Program Office (ITS-JPO)
 - ITS MARAD Truck Staging study – Spring 2019 completion
 - Port Autonomous/Connected Drayage Truck Development and Testing Project - FY 2019 \$300k, with FHWA, MARAD and FMCSA
 - ITS Module for a Port Planning & Investment Toolkit to support ITS T2 in port environments, with MARAD, ITS-JPO and American Association of Port Authorities- Spring 2019 completion
 - MARAD Request for Information (RFI) to solicit views on issues related to opportunities, challenges and impacts of automated transportation in port environments to inform potential research



MARAD Update

- Industry Activities
 - ASTM International F25 Committee Activities
 - Held December 2018 Workshop on Maritime Autonomy, Automation and Cyber Security
 - Standards Development – Guide for incorporating Cyber Elements into Safety Management Systems
 - Transportation Research Board (TRB)
 - Marine Safety and Human Factors Committee (AW040) Meeting, June 25th in Houston, TX
 - Automatic Identification System (AIS) Weather Demonstration
 - Satellite Weather Forecasting Technology
 - AIS Vessel Track Safety Analytics
 - Mixed Use Waterways with Commercial and Recreational Vessels
 - Sociotechnical approach to Safety Management System under the ISM Code
 - Effective Safety Managements Systems (SMS)
 - Opportunities for Establishment of Close Calls Reporting Systems
 - Committee on the Marine Transportation System (CMTS)
 - Maritime Innovative Science and Technology (MIST) Integrated Action Team (IAT)
 - Sixth Biennial Marine Transportation System Research and Technology Conference
 - Focus: Emerging Trends and Technologies in Automation and Autonomy
 - June 15-18, 2020 at National Academy of Science (NAS) in Washington, DC
 - Heavy Weather Working Group Activities



Thank You!

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