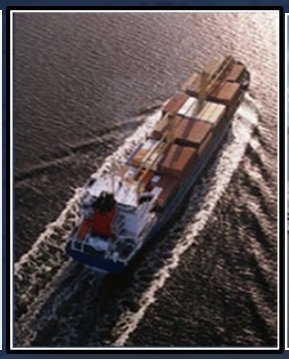
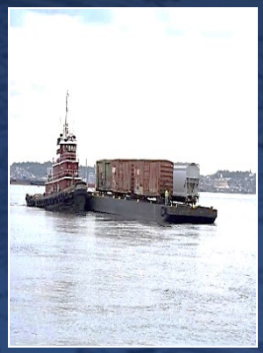




USDOT Infrastructure Grant Programs -
Overview of MARAD Opportunities

MARAMA Port Partnerships Webinar
September 15, 2021

Amanda Rutherford
Director of Mid Atlantic Gateway Office

MARAD
MARITIME ADMINISTRATION

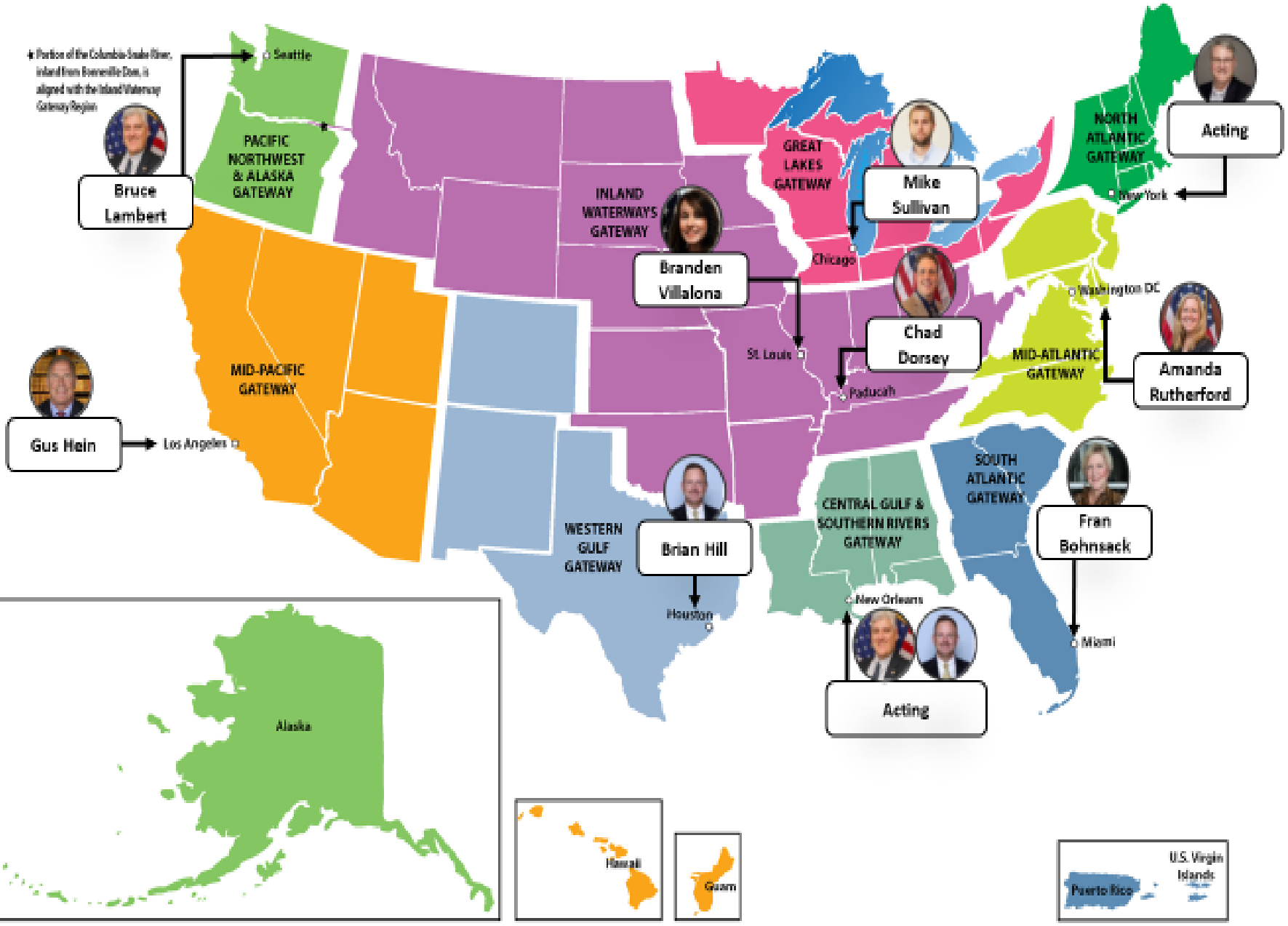
MISSION: In Peace and In War

Strengthen the U.S. maritime transportation system including infrastructure, industry and labor to meet the economic and security needs of the Nation.

STRATEGIC GOALS:

- **CARGO:** Develop domestic and international transportation opportunities to modernize and sustain a competitive commercial U.S.-flag fleet that ensures the Nation's economic and national security
- **READINESS:** Ensure the availability of a capable U.S. Merchant Marine fleet with modern U.S.-flag vessels, skilled labor and global logistics support to drive the Nation's economy and to meet national maritime transportation requirements in peacetime emergencies and armed conflicts
- **INFRASTRUCTURE:** Support the development of America's ports, shipyards and related intermodal infrastructure as key integrated components of an efficient, resilient and sustainable national transportation system and freight network
- **ADVOCACY:** Advance awareness of the necessity and importance of a strong U.S. Maritime Transportation System

MARITIME ADMINISTRATION GATEWAY OFFICES



META – A MARAD Coop Research Program

Maritime Environmental and Technical Assistance (META) Program

The META program promotes the research, demonstration, and development of emerging technologies, practices, and processes that improve maritime industrial environmental sustainability. (The focus and opportunities change annually.)

Official Website Link:
https://www.maritime.dot.gov/innovation/meta/maritime-environmental-and-technical-assistance-meta-program

RFIs/RFPs are typically posted on the www.grants.gov website and are generally open for a 30-day period.

- Control of Aquatic Invasive Species
- Ballast Water Treatment
- Hull Fouling
- Vessel and Port Air Emissions
- Biofuels
- Fuel Cells
- Liquefied Natural Gas (LNG)
- Emission Reduction Technology
- Multimodal Modeling
- Hybrid and Batteries
- Energy Efficiency Technologies
- Autonomous Systems for Environmental Application
- Alternate Fuel Spill Study

Focus of next slides

Maritime Environmental and Technical Assistance (META) Program

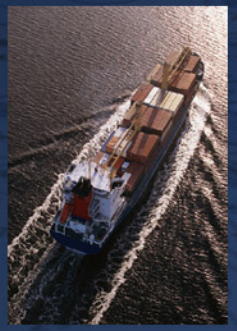
- **Scrubber Guide**. MARAD worked with the Ship Operator's Cooperative Program (SOCP) to update the Exhaust Gas Cleaning Systems Selection Guide (Guide). The Guide was developed to assist operators with determining what scrubbers are available, practical, and cost effective to meet existing North American Emission Control Area requirements. SOCP Products
- **Exhaust Gas Treatment System Demonstration**. MARAD partnered with the Interlake Steamship Company to support a closed-loop scrubber demonstration project on the MV Lee A. Tregurtha. The demonstration project included verification of post-installation emissions and lessons learned from installation and operation of the scrubber. The final report is available here.
- **Energy Efficiency White Paper**. MARAD partnered with the Ship Operators Cooperative Program to produce a paper for ship owners and operators on energy efficiency measures for marine vessels. The report discusses how the various technologies work, potential fuel savings, applicability to various vessel types, and lifecycle costs, providing a basis upon which owners and operators can evaluate potential investments in efficiency measures and technologies. The white paper is available here.
- **Black Carbon Emissions**. MARAD, in partnership with the International Council on Clean Transportation (ICCT), supported a black carbon (BC) emissions research study. The study, performed by the University of California, Riverside (UCR), was designed to measure BC emissions using multiple measurement techniques and to better understand how engine operating conditions and fuel choice affect BC emission factors. Emissions were measured in a lab setting with a test-bed engine, as well as in the field on two oceangoing vessels. Results showed a good correlation of emission factors among some sampling devices, and that distillate fuel produced lower BC emissions compared to heavy fuel oil and low sulfur residual blends. The final report is available here.

Maritime Environmental and Technical Assistance (META) Program

- **Lifecycle Analysis of the Use of Methanol for Marine Transportation**. MARAD partnered with the University of Delaware (UDEL) and the Rochester Institute of Technology (RIT) to complete life cycle emissions and energy analysis of methanol for marine transportation. Methanol life cycle emissions were compared to other marine fuels such as LNG, low sulfur conventional fuels, and heavy fuel oil blends. Using a total fuel cycle model provides users with a more complete quantitative analysis of upstream emissions, not just downstream at the point of combustion, and allows for more descriptive comparisons. The report can be found here.
- **Motor Demonstration Project** META partnered with the Massachusetts Maritime Academy (MMA) and E-circuit Motors (ECM) to demonstrate a new, light-weight motor in a field application aboard the Training Ship Kennedy. The demonstration project consisted of replacing an existing 3 HP motor on a ventilation fan with a motor from ECM. Several tests were run to determine overall efficiency of the new motor. Those tests included system and controller efficiency, verification of motor constants, gauss measurements to check for flux leakage, thermal tests, and measurement of additional windage/bearing losses. The report can be found here.

Maritime Environmental and Technical Assistance (META) Program

- **IMO 2020 Low Sulfur Fuel and Lubrication Concerns.** MARAD partnered with Oak Ridge National Laboratories to analyze anticipated issues associated with ship operations with the handling of very low sulfur heavy fuel oils, which will be required under the 2020 IMO sulfur cap ruling, which lowers the sulfur content in heavy fuel oils from 3.5 to 0.5%. Subject areas include impacts to fuel compatibility, lubrication, engine damage, microbial contamination, and fuel handling. The reduced fuel sulfur content greatly impacts engine lubrication. New formulations, and possibly protocols, are being developed to minimize deposit formation. The Final Report is here.
- **Blockchain Technology and Maritime Shipping Primer:** MARAD partnered with the University of Delaware and the Rochester Institute of Technology to develop a primer on the use of Blockchain technology for the maritime sector. The report explores the potential for blockchain in the maritime sector and sheds light on if and how blockchain might align with—or run counter to—goals and objectives of stakeholders in the maritime sector. The report also provides advice on how stakeholders can best evaluate, and where appropriate support, the use of blockchain to meet their goals and objectives. The challenges discussed here are specific to the maritime sector, but are relevant to any agency from the local, state, and federal level when considering blockchains for energy and transportation issues. The primer report can be found here. A separate report on use cases can be found here.



America's Marine Highway Grant Program

"Project Designation" requests are due:
Jan 31 and July 31 annually.

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Maritime Administration
1200 New Jersey Ave., SE | Washington, DC | 20590
www.dot.gov

MARAD

How is Freight Defined under this Program?

- Flexibly defined – must be unitized

So What Does it Take?

- Innovative Vessel Operators and Innovative Shippers
- Working Together to:
  - Enhance the Supply Chain
  - Maintain or improve freight service(s) to be consistent and reliable

MARAD

Starting with the money…

Before the applicant can submit an application to USDOT requesting funding, they must submit a business case for the project (real or conceptual) and the supporting benefit/cost analysis.

In order for S1 to designate the project, it must be also qualified by being located on a Designated Marine Highway.

If it's a private entity applying, they must have a public sponsor, like a tribe, Metropolitan Planning Organization, Rural Planning Organization, city, county, etc.

FY 2016 - $5 Million - Six Recipients

FY 2017 - $5 Million - Six Recipients

FY 2018 - $7 Million - Three Recipients

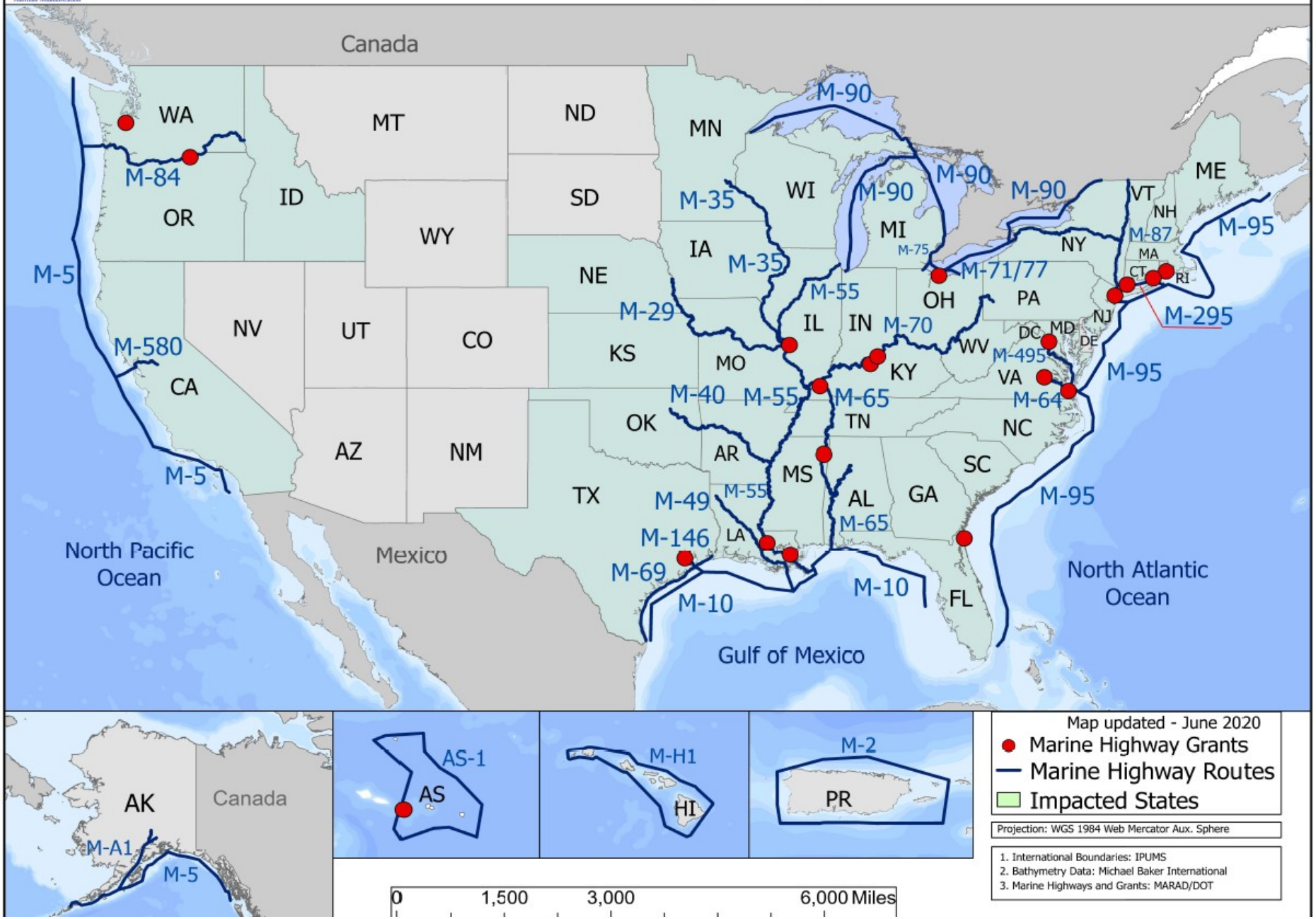
FY 2019 - $7 Million - Nine Recipients

FY 2020 - $9.775 Million - Eight Recipients

FY 2021 – over $13 Million – still open

America's Marine Highways
U.S. Department of Transportation

America's Marine Highway Grants



Three Step Process (different process than other USDOT grants)

1. Designation of a marine highway route is the first step to become apart of this program.

2. Project Designation - the project must be designated and a public entity must apply and receive Project Designation prior to any grant funding

3. Grant Funding - Is provided to successful applicants provided the application directly relates to a project that has been designated and is submitted by or with approval of the original Project Designation applicant

Grant Applicant Examples

MARAD

Full List of Marine Highway Project Grants Awarded:

https://cms.marad.dot.gov/sites/marad.dot.gov/files/2021-08/AMH%20Project%20Designations%20Aug%202021.pdf

Some Examples:

Texas - Houston Gateway and Gulf Container on Barge Central Node

Operational Plan Development for a business case to support shipping container movements

Virginia - Wallops Island M-95 Intermodal Barge Service

Design a new trestle and combination dock/ramp to support loading/unloading of barges and research vessels at the Mid-Atlantic Regional Spaceport (MARS)

Washington - Seattle-Bainbridge Island Ferry Service

Support the conversion of a ferry from diesel to hybrid

Michigan - Lake Erie Shuttle

Purchase and installation of a crawler crane and train operators

New York Harbor and Container and Trailer on Barge Service

Infrastructure to improve barge operations and the creation of a crane operator training center to boost safety and container throughput

Eligibility Requirements

- Eligible applicants include:
  - State governments or State Departments of Transportation
  - Metropolitan or Regional Planning Organizations
  - Port Authorities, Tribal governments
  - Private sector operators of marine highway services within the designated project
- Multiple project applicants can submit a joint application however, they must identify a lead grant applicant as the primary point of contact
- Joint applications must include a description of the roles and responsibilities and each awardee if there is more than a single award recipient
- All public and private entities are required by law to comply with all Federal requirements

America's Marine Highways
U.S. Department of Transportation

Eligibility Components

Eligible components of projects that an applicant may seek funds for include:

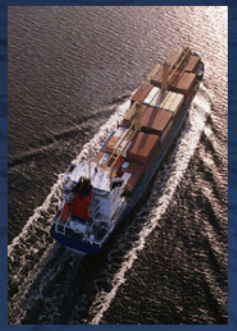
- Port and terminal infrastructure
- cargo, and/or vessel handling equipment
- new or used vessel purchase, lease, or modification
- demonstration projects of a limited duration
- planning, preparation and design efforts in support of marine highway projects

Evaluation Criteria

Specific criteria that **is** typically **identified in the NOFO and is of programmatic importance** to MARAD include:

- Whether the project offers a lower-reduction of external cost, as well as a public benefit
- Cost alternative to increasing land-based capacity
- Demonstration of the likelihood of financial viability
- The reviews will also assess:
  - project scope, impact
  - public-benefit, environmental effects
  - offsetting costs, and cost to the Government (if any)
  - the likelihood of long-term self-supporting operations
  - market/customer commitment
  - operational costs
  - **Project should address Climate Change and Environmental Justice Impacts**
  - **Advancing Racial Equity and Reducing Barriers to Opportunity**
- The relationship to its designated Marine Highway Route and Project Designation

- Compliance with the National Environmental Policy Act (NEPA) will be required from each project
- The Buy American Act requirements of 41 U.S.C. 8303 apply to funds made available under this NOFO
- Public Private Partnerships – MARAD will allow private entities to apply for AMH Grant funds directly. Refer NOFO for specific details
- Planning Studies are to the specifically included an eligible element of an application for grant funding
- MARAD reserves the right to revoke any grant award and reallocate grant funds
- Funds awarded expire five years after the signing of the grant award agreement, unless otherwise noted in said agreement



Port Infrastructure Development Grants

The 2021 opportunity has closed but look again in 2022!

Maritime Administration
1200 New Jersey Ave., SE | Washington, DC | 20590
www.dot.gov

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The Port Infrastructure Development Grant Program

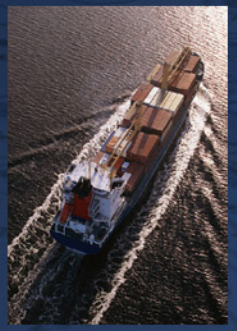
- Provides Federal grant funding assistance to support port and port related projects.
- $230 million authorized for FY21.
- Generally, grants may fund up to 80% of eligible project costs (20% local match required)
  - Except in rural areas *and for some projects*, the Secretary may increase the Federal share above 80%.
- Notice of Funding Opportunity publication: **March 29, 2021**
- Application deadline: **July 30, 2021**

Port Infrastructure Development Grants, cont.

MARAD

Eligible Projects

- Improve safety, efficiency, or reliability of the movement of goods within the boundary of a seaport, or outside the boundary of a seaport
  - Includes port infrastructure, infrastructure for intermodal connectors, and digital infrastructure
- Equipment used for the loading and unloading of cargo at a seaport
- Development phase activities (not more than 10% of awards)



Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grant Program

The 2021 opportunity has closed but look again in 2022!

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U.S. MARITIME ADMINISTRATION

Maritime Administration
1200 New Jersey Ave., SE | Washington, DC | 20590
www.dot.gov

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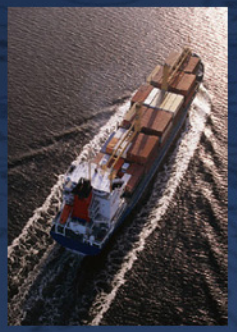
The RAISE Grant Program

- Provides Federal grant funding assistance to support the planning, construction, or reconstruction of infrastructure.
- $8.9 billion awarded since program grants began in 2009.
- Highway, transit, railroad, intermodal, and port projects are all eligible for assistance.
- Grants may fund ***up to*** 80% of project costs in an urban area and ***up to*** 100% of project costs in rural areas (with approval of the Secretary of Transportation).
- The maximum grant award is $25 million; the minimum grant award is $5 million (urban area) and $1 million (rural area).
- Not more than $100 million can be awarded to a single State.

RAISE Grant Details

MARAD

- **$1 billion available for FY21**
- **$30 million available for planning grants with $10 million of that amount designated for Areas of Persistent Poverty.**
- **Eligible Applicants**
  - State and/or local governments
  - Transit agencies
  - Port authorities
  - A collaboration of such entities
- **Eligible Projects**
  - Highway or bridge projects under Title 23 U.S.C.
  - Public transportation projects under Ch. 53, Title 49 U.S.C.
  - Passenger and freight rail transportation projects
  - Port infrastructure investments (incl. inland ports)



USDOT's Advanced Transportation and Congestion Management Technologies Deployment Program

The 2021 opportunity has closed but look again in 2022!

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Maritime Administration
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The Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Grant Program

- Provides Federal grant funding assistance to support intelligent transportation system (ITS) development
- **$4 million maximum grant award**
- Up to 50% Federal funding match
- Program eligibility may change from year to year to reflect Federal Highway Administration priorities

$60 million authorized each year (FY16 - FY20)

Eligible Applicants

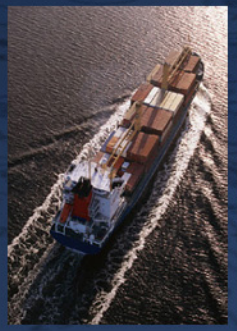
- State or local governments (including ports);
- Transit agencies;
- Metropolitan Planning Organizations (MPO) representing a population of more than 200,000;
- Multijurisdictional groups made up of the above eligible applicants: and
- Consortiums of research or academic institutions.

Website: https://www.fhwa.dot.gov/fastact/factsheets/advtranscongmgmtfs.cfm

MARAD

ATCMTD Use of Funds [23 USC 503(c)(4)(E)]

- Advanced traveler information systems;
- Advanced transportation management technologies;
- Infrastructure maintenance, monitoring, and condition assessment;
- Advanced public transportation systems;
- Transportation system performance data collection, analysis, and dissemination systems;
- Advanced safety systems, including V2V and V2I communications, technologies associated with autonomous vehicles, and other collision avoidance technologies;
- Integration of ITS with the Smart Grid and other energy distribution and charging systems;
- Electronic pricing and payment systems; or
- Advanced mobility and access technologies, such as dynamic ridesharing and information systems to support human services for elderly and disabled individuals.



USDOT's Infrastructure for Rebuilding America (INFRA) Grant Program

The 2021 opportunity has closed but look again in 2022!

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Maritime Administration
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www.dot.gov

INFRA Grants

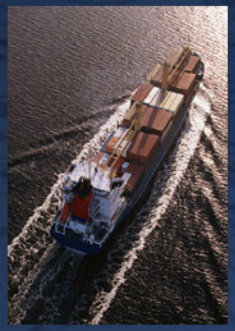
MARAD

Infrastructure for Rebuilding America (INFRA) Discretionary Grant Program

- 2021 approx. $889 million for infrastructure grants
- Supports national & regional economic vitality
- Addresses climate change & environmental justice
- Reduces barriers to opportunity and advances racial equity

Eligible Applicants:

- State(s)
- Metropolitan Planning Organizations with > 200k population
- Local Government(s)
- Political subdivisions or State and local governments
- Public Authorities (including Port Authorities) with a transportation function
- Federal Land Management Agencies applying jointly with States
- Tribal Governments/consortiums
- Multi-State or multijurisdictional group of public entities.



Other Opportunities from USDOT/MARAD

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Maritime Administration
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www.dot.gov

PUBLIC-PRIVATE PARTNERSHIPS (P3 OR PPP)

Public-private partnerships are long-term contractual agreements between a public agency and a private sector entity that allow for greater private sector participation in the delivery and financing of transportation projects.

The use of P3s marks a shift away from traditional ways of procuring and financing transportation projects. Unlike traditional procurement processes, in a P3, a private partner may participate in some combination of design, construction, financing, operations and maintenance, including collection of user fees.

P3s may be delivered more quickly than traditional procurement approaches, reduce the burden on public funding, and provide budget certainty for the public agency. They can also provide opportunities to optimize lifecycle costs and encourage innovation to achieve better quality of service. The Build America Bureau can connect project sponsors and private partners with in-house technical expertise to help explore if a P3 might be worth considering and to identify and share best practices in P3s nationwide.

TRANSPORTATION INFRASTRUCTURE FINANCE AND INNOVATION ACT PROGRAM (TIFIA)

TIFIA provides direct loans, loan guarantees, and standby lines of credit to projects of national or regional significance.

Eligible Applicants: • State and local governments • Transit Agencies • Railroad Companies • Special Authorities • Special Districts • Private Entities Eligible Projects: • Public or private highways and bridges • Intelligent Transportation System Projects • Intermodal Connectors • Transit Vehicles and Facilities • Intercity Buses and Facilities • Freight Transfer Facilities • Pedestrian and Bicycle Infrastructure Networks • Transit-Oriented Development • Rural Infrastructure Projects • Passenger Rail Vehicles and Facilities • Surface Transportation Elements of Port Projects

MARAD

RAILROAD REHABILITATION AND IMPROVEMENT FINANCING PROGRAM (RRIF) RRIF provides direct loans and loan guarantees to finance the development of railroad infrastructure.

Eligible Applicants: • State and local governments • Interstate compacts consented to by Congress under section 410(a) of the Amtrak Reform and Accountability Act of 1997 (49 U.S.C. 24101 note) • Government sponsored authorities & corporations • Railroads • Limited option freight shippers (solely for the purpose of constructing a rail connection between a plant or facility and a railroad) • Joint ventures that include at least one of the above

PRIVATE ACTIVITY BONDS (PAB) Private Activity Bonds provide private-sector developers of certain types of projects with access to tax-exempt financing, reducing the cost of capital and enhancing the investment prospects. The Department is responsible for allocating up to $15 billion in PAB authority for surface transportation projects that meet the eligibility criteria below:

Eligible Projects: • Any surface transportation project that receives Federal assistance under Title 23, United States Code • Any project for an international bridge or tunnel that an international entity authorized under Federal or State law, is responsible and receives Federal assistance under Title 23, United States Code • Any facility used for the transfer of freight from truck to rail or rail to truck (including any temporary storage facilities directly related to such transfers) which receives Federal assistance under Title 23 or Title 49

Port Conveyance – Got land?

MARAD

- The Port Conveyance Program is designed to temporarily transfer the use and management of excess Federal property to States and local governments for the purposes of port development, port expansion, and operation of port facilities.
- Since the program's inception, the Maritime Administration has conveyed nearly three thousand acres of property to State and local governments in support of port facilities.
- **Maritime/Spaceport Connection:**
  - Excess FAA land that could be used to store or meet the operation needs of space freight
  - Excess DOD land that could be used to store or meet the operation needs of space freight

Port Security & Capabilities

MARAD

- Emergency Preparedness and Response 2017
- SafeStor
- SafePort (DVD)
- Ship Orientation
- Ntl Response Pgm Standard Op Procedure
- EPR Activities and Capabilities List
- MARAD Vessel Distance and Transit Times GULF COAST
- MARAD Disaster Relief Information
- MARAD RRF Outport Locations
- MARAD Vessel Distance & Transit Times to Puerto Rico
- FEMA – RRF Ops Katrina and Rita Response
- MARAD Assistance to Shippers
- "The Maritime Difference"

"In peace and war"

Maritime Emergency Preparedness and Response

U.S. DOT Assistance Programs Hyperlinks

MARAD

- **Infrastructure For Rebuilding America (INFRA)**
  - https://www.transportation.gov/buildamerica/infragrants
- **Rebuilding American Infrastructure with Sustainability and Equity (RAISE)**
  - https://www.transportation.gov/RAISEgrants
- **Port Infrastructure Development Program (PIDP)**
  - https://www.maritime.dot.gov/PIDPgrants
- **Transportation Infrastructure Finance and Innovation Act (TIFIA)**
  - https://www.transportation.gov/buildamerica/programs-services/tifia
- **Railroad Rehabilitation & Improvement Financing (RRIF)**
  - https://www.transportation.gov/buildamerica/programs-services/rrif
- **Private Activity Bonds (PABs)**
  - https://www.transportation.gov/buildamerica/programs-services/pab
- **Port Conveyance Program**
  - https://www.maritime.dot.gov/ports/port-conveyance/port-conveyance
- **America's Marine Highway (AMH)**
  - https://www.maritime.dot.gov/grants/marine-highways/marine-highway
- **Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD)**
  - https://www.fhwa.dot.gov/fastact/factsheets/advtranscongmgmtfs.cfm