

FY 2022 Passenger Ferry Grant Program, Electric and Low-Emitting Ferry Pilot, and Ferry Service for Rural Communities

Applicant and Proposal Profile

Is this a resubmission due to an invalid/error message from FTA? Yes No

Is this application for:

(If applying to two programs, please select both boxes)

- Passenger Ferry Grant Program (FTA-2022-006-TPM-FERRY)
- Electric or Low-Emitting Ferry Pilot Program (FTA-2022-007-TPM-FERRYPILOT)
- Ferry Service for Rural Communities Program (FTA-2022-008-TPM-FERRYRURAL)

If applying to more than one Ferry program, applicants should enter information for the applicable programs on this form but **Must** submit the application package including the Supplemental Form and attachments, to **Each** respective Opportunity ID on Grants.Gov. That is, complete one form, but submit it to each program in Grants.gov.

Section I. Applicant Information

Organization Legal Name:

FTA Recipient ID Number :

Organization Chief Executive Officer:
(Name and Direct Phone Number)

- Applicant Type:
- Designated or Eligible Direct Recipient of 5307 Urbanized Area Formula Funding
 - State or Territory
 - Local Governmental Authority
 - A Federally-Recognized Indian Tribe

- Project Location:
- Large Urbanized Area (200,000+ people)
 - Small Urbanized Area (50,000-199,999 people)
 - Rural (less than 50,000 people)

Description of services provided and areas served:

The Alaska Marine Highway System (AMHS) serves 35 Alaska ports by transporting passengers and vehicles between coastal communities. This service helps meet the social, educational, health and economic needs of Alaskans. AMHS provides year-round scheduled ferry service throughout Southeast and Southwest Alaska, extending south to Prince Rupert, British Columbia and Bellingham, Washington. The system connects communities with each other, regional centers, and the continental road system. It is an integral part of Alaska’s highway system, reaching many communities that would otherwise be cut off from the rest of the state and nation. AMHS also provides a coastal transportation alternative between Anchorage and the “Lower 48” states versus driving the Alaska Highway.

AMHS is designed to provide basic transportation services to communities; transportation that allows community access to health services, commodities, legal services, government services, and social services; transportation that meets the social needs of isolated communities; and transportation that provides a base for economic development. AMHS service is divided into two major systems: the Southeast System (from Bellingham north to Yakutat) and the Southwest System (from Cordova west to Unalaska). The Alaska Marine Highway fleet consists of 9 vessels; six operate in the Southeast System and three operate in the Southwest System. All 9 vessels are designed to carry passengers and vehicles ranging in size from motorcycles to large freight container vans. Trips on AMHS can last

several hours or several days, so passenger services are an important aspect of the state’s transportation service. Most vessels provide food service, shower facilities, observation lounges, and recliner lounges. The larger vessels provide additional amenities, including play areas for children. Four vessels have stateroom accommodations for overnight travel.

One regular use of AMHS is the year-round transportation of container vans. These vans transport time-sensitive cargo such as fresh vegetables, meat, and dairy products from Bellingham and regional Alaska centers to communities served by the system. Local restaurants, grocery stores, individuals, and food distribution businesses have established delivery schedules with AMHS to ensure regular and continuous delivery of perishable goods. Shipping perishable supplies on AMHS is more cost-effective than air freight, and in many cases ensures delivery to communities on a more frequent basis than commercial barge and freight lines. Vans are also used to move fresh Alaska fish and seafood to markets, and to transport U.S. mail and household goods.

The Southwest system serves Prince William Sound, the Kenai Peninsula, Kodiak Island, and the Aleutians. The MV Tustumena provides regular service between Kodiak, Port Lions, Seldovia and Homer. The Southwest routes connect to the continental road system at Valdez, Whittier, and Homer, Alaska. The MV Kennicott provides regular cross gulf sailings. These sailings connect Southeast Alaska with the Southcentral and Southwest regions of the state. The Southeast route is divided into two subsystems: the “mainline” routes which typically take more than one day for the ship to travel and shorter routes where vessels depart their home port in the morning, travel to destination ports and then return to their home port on the same day. The mainline routes carry a high percentage of tourists and vehicles in the summer, and provide service between Bellingham, WA or Prince Rupert, BC, and Skagway or Haines, Alaska. Along the way, the ships stop in Ketchikan, Wrangell, Petersburg, Sitka, Juneau, and Haines. Although Kake and Hoonah are smaller communities, they are also served by certain mainline sailings. The day boat routes connect the smaller communities to regional hub communities for commerce, government, health services, and connections to other transportation systems.

Section II. Project Information

About the Project

Project Title: Anticipating Future Service and Replacement Needs: Planning for Functional Design of New Alaska Mainliner
(Descriptive title of this project)

Project Executive Summary:

Alaska’s aging fleet of mainline vessels – three that serve the major arterial routes of the Alaska Marine Highway System (AMHS) – are in need of replacement after 59 years of service, 29 beyond their projected service life of 30 years. Two mainliners have already been retired in the last five years. This planning effort would anticipate moving from current diesel systems to a diesel-electric hybrid. Upon construction, the outcome of the replacement would mean increased vehicle, freight, and passenger capacity over existing vessels, as well as increased reliability and reduced required service disruptions for planned maintenance. Current maintenance needs are impacting service and ridership, and the new vessel will remove the need for extensive rehabilitation of machinery and structures that have to occur on an ongoing basis, which interrupts service to communities. The new vessel, as well, would result in reduced greenhouse gas emissions, particulates, and pollutant matter.

The planning process would result in a fully functional design that responds to optimal route configurations based on the needs of rural and disadvantaged communities as well as ridership demand. That process would determine vessel size and which of the current mainliners would be targeted for replacement. Design is a critical component of a robust planning process that responds to local and environmental needs, as well as to equity considerations.

AMHS will incorporate DOT’s Historically Disadvantaged Community tool in project planning. Disadvantaged communities that rely heavily on ferry service for food and economic security will benefit from upgraded ferry service capacity and lower emissions resulting from new hybrid-electric vessels using well-established existing terminal sites.

Project Statement of Work (one sentence summarizing request):

This planning grant will support the early steps of the process to replace the current aging mainliner vessels to provide continued and enhanced service to the communities of Southeast Alaska, developing the functional design for a new vessel that will offer a safer, more efficient, and environmentally friendly platform for public transportation and the transportation of freight between small and rural communities.

Will you need a Buy America waiver? Yes No

Propulsion Type:

- Battery electric
- CNG
- Diesel
- Diesel-electric hybrid
- Electricity (including electricity from solar energy)
- Fuels (except alcohol) derived from biological materials
- Gasoline
- Hydrogen
- Liquefied petroleum gas
- Methanol, denatured ethanol, and other alcohols
- Natural Gas
- A mixture containing at least 85% of methanol, denatured ethanol, and other alcohols by volume with gasoline or other fuels
- Any other fuel that is not substantially petroleum and that would yield substantial energy security and environmental benefits

If other fuel, specify:

Other

If Other, specify:

- Project Type:
- Facility Rehabilitation
 - Facility Replacement
 - New Facility (expansion)
 - New Vessel (expansion)

Number of vessels for service expansion:

- Vessel Rehabilitation

Number of vessels to be rehabilitated:

- Vessel Replacement

Number of vessels to be replaced:

- Related Equipment
- Operating (Rural Program Only)
- Planning (Rural Program Only)
- Other

If Other, specify:

Climate Change

Please describe the significant community benefits relating to the environment (see NOFO section E.2):

The project reduces climate change impacts by planning for low-emission ferries that continue the decades-long critical food and freight delivery and human services travel for passengers to rural communities through the AMHS. Climate action plans exist in some communities served by the AMHS and marine transportation operations and improvements are included in those plans. The State of Alaska is developing a Sustainable Transportation Program and to ensure indefinite service delivery.

Environmental Justice Populations

Is there an environmental justice population(s) located within the service area? Yes No

Describe the environmental justice population(s) and the anticipated benefits resulting from the project for those population(s) (see NOFO Section E.2):

Of the ten communities served on this route, three have Disadvantaged Community status and the rest face environmental and social impacts from climate change and high economic burdens associated with their remote, rural status. Kake, Klukwan, and Saxman are federally recognized Alaska Native Villages and therefore have Disadvantaged Community Status. (Klukwan residents access AMHS in Haines and Saxman residents access AMHS in Ketchikan.) Klukwan, Haines, and Skagway face expected population loss rates at the 99th, 85th, and 96th percentile respectively. Klukwan's energy burden is in the 99th percentile. Ketchikan residents are in the 99th percentile for diesel particulate matter exposure. Ketchikan and Sitka are above the 90th and 80th percentile respectively for proximity to risk management plan facilities. One of Juneau's census tracts is at the 92nd percentile for low life expectancy.

Racial Equity/Barriers to Opportunity

Does the project address racial equity or barriers to opportunity (see NOFO Section E.2)? Yes No

If yes, please describe:

The communities served by this project all face low transportation access and high transportation cost barriers. Of the 10 communities served by mainliners, only two are accessible by road and those two are still very remote. The cost of transportation for both freight and people is high. As a public transportation system, the AMHS provides affordable options for people who might not otherwise be able to travel at all. In rural Alaska towns, a ferry is a slower but more affordable way to the city than small plane for student groups, medical patients, or individuals looking to travel for work or for pleasure. In winter severe weather makes air transportation risky and unreliable. Lack of ferry service leads to a host of logistical problems, ranging from broken vehicles to stranded fishing gear and construction equipment. Locals may spend up to four times as much to barge freight if ferries are not available. These projects reduce these barriers by ensuring regular ferry service.

Creating Good-Paying Jobs

Applicants for facility projects, please describe how the project will support creating good paying jobs (see NOFO section E.2):

DOT&PF contracts include implementing equity-focused policies for all contracting and construction, requires use of Davis-Bacon wages when applicable. For smaller communities AMHS provides good career jobs with benefits. AMHS employees are represented by three unions. Ninety-five percent of AMHS employees are residents of 44 communities. Under the training and promotions sections of contracts, contractors are required to seek out minority and local hires and fully utilize training programs.

Justice40

Does the project support the Justice40 Initiative? Yes No

Describe how the project supports the Justice40 Initiative and the benefits provided (see NOFO Section E.2):

The project will support the Justice40 Initiative by strengthening the resiliency of a vital transportation system in the face of extreme impacts from climate change and by connecting disadvantaged rural communities to commerce, health and social services, and providing an economical way to bring food and other goods and services in. Transportation planning in Alaska must account for communities that are very remote. Harsh weather means they are often not accessible by air during the winter, so the marine highway plays an important part in connecting residents to basic services that are often a short drive away in other parts of the U.S. Resilience to climate change in the transportation network is particularly important in Alaska, where climate change puts much of the state at increased risk for natural disasters. Since the Exxon Valdez oil spill in Prince William Sound in 1989, the AMHS has been integrated into the state's emergency response system.

Describe the methodology used to determine the project meets the Justice40 Initiative (see NOFO Section E.2):

The project broadly applies data-based tools to include disadvantaged communities. On the mainliner routes, Kake, Klukwan (served by the port at Haines), and Saxman (served by the port at Ketchikan) are federally recognized Alaska Native Villages and thus have Disadvantaged Community status. Alaska's climate change impacts are drastic, having warmed more than twice as rapidly as the rest of the country. Some environmental datasets did not include Alaska, but the Climate and Economic Justice Screening Tool lists the 3 Southeast communities above the 85th percentile for Expected Population Loss Rate. The EJSCREEN tool

lists 7 of the communities as medically underserved. Juneau’s hospital serves the entire region and many patients arrive in Juneau by ferry.

Justice40 Population Impacted

Justice40 Disadvantaged Community Served as Identified in the NOFO Section E.2

Actual or Estimated Annual Ridership Count

Ketchikan (Saxman)	27,968
Kake	1,308
Haines (Klukwan)	9,562

What is the percentage of Disadvantaged Communities within the project area? %

Was this estimate generated using the Justice40 online mapping tool? Yes No

Project Budget

Description	QTY	Federal Amount Requested	Federal Match Amount	Other Federal Funds	Other	Total Cost
Planning Costs	1	7,680,000	1,920,000	0	0	9,600,000 <input checked="" type="checkbox"/>

Description	QTY	Federal Amount Requested	Federal Match Amount	Other Federal Funds	Other	Total Cost
Contingency - 5%	1	384,000	96,000	0	0	480,000 <input checked="" type="checkbox"/>

Description	QTY	Federal Amount Requested	Federal Match Amount	Other Federal Funds	Other	Total Cost
ICAP - 6.87%	1	527,616	131,904	0	0	659,520 <input checked="" type="checkbox"/>

Total:

Operating Support (Rural Program Only)

Rural Ferry Program applicants requesting operating assistance should complete the following based on the applicant's fiscal year.

	A. Total Operating Cost**	B. Operating Support Provided by the State	C. Fares and Other System Generated Revenues	D. Other Funding Sources*	
2017	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
2018	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
2019	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
<i>Anticipated*</i>					Amount Eligible to Apply
2023	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2024	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

*do not include funds anticipated through this application

** Column B+C+D=A for 2017-2019

2017-2019 Average Operating Support Provided by the State or locality:

75 Percent (minimum that must be provided) of 2017-2019 Average Operating Support Provided by the State or locality:

Matching Funds Information

Matching Funds Amount:

Source of Matching Funds:

The State of Alaska DOT&PF is the source of matching funds, which are currently appropriated for these purposes.

The State of Alaska is committed to the match because the need in these communities is so great.

Disadvantaged Community Status:

The communities of Sand Point, False Pass, Akutan, Chenega, Tatitlek, Seldovia, Saxman, Ouzinkie, Chignik, Kake, and Metlakatla are all federally recognized Alaska Native Villages and therefore have Disadvantaged Community Status.

Environmental Factors:

Environmental data is from the EJScreen Tool and the Climate and Economic Justice Screening Tool. Many communities on AMHS routes face environmental and climate change challenges. Expected population loss rate is high for the following communities: Sand Point, Cold Bay, False Pass, and Akutan are at the 83rd percentile. Klukwan is at the 99th percentile. Homer is at the 81st percentile. Seldovia is at the 98th percentile. Ouzinkie is at the 89th percentile. Chignik is at the 99th percentile. Yakutat is at the 92nd percentile. Diesel particulate matter exposure is high in Ketchikan and Kodiak, where one census tract in each community is at the 99th percentile. Five communities have high proximity to Risk Management Plan (RMP) facilities: Unalaska at the 92nd percentile, Cordova at the 87th percentile, Ketchikan at the 91st percentile in one census tract and 98th in another, Kodiak in three census tracts (81st percentile, 98th percentile, 99th percentile), and Sitka at the 81st percentile in one census tract.

Health Factors:

Twenty-five communities are in Medically Underserved Areas according to the EJScreen tool: Ketchikan, Saxman, Wrangell, Kake, Juneau, Haines, Klukwan, Skagway, Cordova, Valdez, Whittier, Chenega, Tatitlek, Yakutat, Kodiak, Homer, Seldovia, Ouzinkie, Chignik, Sand Point, King Cove, False Pass, Akutan, and Unalaska. EJScreen lists four communities in food deserts: Wrangell, Kake, Klukwan, and Chignik. Other health data came from the Climate and Economic Justice Screening Tool. Four communities on AMHS routes have high

rates of asthma among adults, with Klukwan at the 91st percentile, Ouzinkie at the 85th percentile, Chignik at the 93rd, and Metlakatla at the 93rd percentile. Two communities have high rates of both diagnosed diabetes and coronary heart disease among adults: Klukwan is in the 92nd percentile for diabetes and the 96th for heart disease and Metlakatla is in the 94th percentile for diabetes and the 83rd percentile for heart disease. One census tract in Juneau is in the 92nd percentile for low life expectancy.

Socioeconomic Factors:

Socioeconomic data is from the Climate and Economic Justice Screening Tool. Klukwan is in the 90th percentile for low median household income as a percent of area median income, Chignik is in the 88th percentile for the same metric and one census tract in Ketchikan is in the 80th percentile. Four census tracts along AMHS routes are at the 80th percentile or above for linguistic isolation: one census tract in Ketchikan is at the 80th percentile, two census tracts in Kodiak are in the 80th percentile and one census tract in Kodiak is in the 85th percentile. Four communities have very high unemployment rates: One census tract in Ketchikan is at the 85th percentile, Ouzinkie is at the 93rd percentile, Chignik is in the 95th percentile, and Metlakatla is in the 97th percentile.

Supporting Documentation of Local Match:

The Alaska Department of Transportation and Public Facilities (DOT&PF) is the State Transportation Agency that plans, designs, constructs, maintains, and operates transportation infrastructure in the State of Alaska. DOT&PF has a proven track record of utilizing FHWA formula funds, through surface transportation grants, and constructing maritime infrastructure in support of the operations of AMHS, which is a division of DOT&PF.

DOT&PF is committed to the long-term sustainability of the AMHS. Mainliner ferries are a critical link in Alaska's transportation system. The AMHS ties together ports, towns, and cities from the Lower 48 and Canada to Southeast Alaska, connecting the region to the road system and the rest of the continent. After nearly sixty years of reliable service, the mainliner ferries are reaching the end of their useful life.

While the total construction project cost is estimated to be \$325 million, the cost basis of which is the current replacement estimates for the Tustumena, this federal funding request for a planning grant is for design only. Through the Rural Ferry grant program, the State is requesting \$8,591,616 for design.

The State of Alaska is committed to contributing twenty percent (\$2,147,904) of the total eligible project cost towards this critical State need. DOT&PF undertakes this project as a sponsor and experienced project manager building a sustainable Alaska Marine Highway System.

DOT&PF has included its match commitment and local letters of support in Appendix C. All project documents are located at <https://dot.alaska.gov/amhob/strategy.shtml> under Item 1.4 "IIJA Funding and Discretionary Grants." Appendix A provides maps and routes for the AMHS, and Appendix B is a Technical Volume providing any condition reports or implementation plans.

Project Scalability

Is Project Scope scalable? Yes No

If Yes, specify minimum Federal Funds necessary:

Provide explanation of scalability with specific references to the budget line items above:

Project Timeline (Please be as specific as possible)

Timeline Item Description	Timeline Item Date
Design and Specification Development	01/01/2023
60% Milestone	03/22/2023
80% Milestone	06/14/2023
100% Milestone	09/06/2023

Congressional Districts (Project Location)

Congressional District

AK-001

Section III. Evaluation Criteria

***** Address each of the evaluation criteria as described in the Notice of Funding Opportunity. *****

Demonstration of Need

The AMHS has three mainline ferries - the Columbia (1973), Matanuska (1963), and Tustumena (1964) - that are approaching retirement, having served far beyond the typical 30-year useful lifetime of an oceangoing vessel. Two mainliners have already been retired from service. AMHS has worked diligently to keep the vessels operational as its structure, machinery, and outfitting have aged, up to and including a multimillion-dollar refurbishment of each vessel and extensive steel replacement ongoing. Nevertheless, structural and mechanical issues in this period of the vessels' life are widespread.

This project will improve the reliability of the entire AMHS service because it will drastically reduce risk. The operational risk is generally higher for older vessels in the fleet; most of the recommendations from recent fleet condition surveys for older vessels are in the high category for both urgency and investment. Maintenance issues affect the vessels' capabilities as well as reliability; due to structural issues, each vessel's service has been limited. The vessels' planned maintenance periods frequently reveal structural and mechanical issues that require longer stays in the shipyard and higher costs than expected, leaving communities stranded without reliable ways of travel or freight transport. In general, operating vessels far into the retirement or extended life period poses unquantifiable cost risks that may prevent other, less urgent needs from being addressed. This may include deferring maintenance on the younger vessels in the fleet. Doing so risks incurring higher state and federal overhaul costs further along in those vessels' lives to mitigate problems that could have been reduced or eliminated with earlier preventative maintenance.

Vessels are surveyed annually. As maintenance issues become insurmountable, a vessel is typically retired or undergoes a refit to extend its service life. Future modifications and retrofits may be considered a major conversion (MCON) as defined in Title 46, US Code 2101(14a). Under an MCON ruling, a vessel is subject to complying with all applicable new vessel regulations deemed necessary by USCG. AMHS vessels face numerous regulatory issues that, while permissible at the time of their construction, are now only allowed by USCG because they are grandfathered in given the vessel's compliance with regulations in place at the time of

construction. Any conversion or retrofit that “substantially prolongs the life of the vessel” could trigger an MCON determination, substantially increasing the cost to keep them in service. It is also quite possible that given their advanced age and the heavy ocean conditions through which the vessels frequently sail, the USCG would simply be unwilling to extend a Certificate of Inspection (COI) enabling the vessels to continue sailing.

Each time a vessel enters a maintenance or overhaul period, whether drydocked for intensive capital expenditures or tied up pier-side for smaller scopes of work, there is a high risk of delays, change orders, and increased work scope due to the discovery of additional structural or mechanical issues during planned maintenance. Delays due to discovery work can keep an AMHS mainliner in the shipyard or tied up at the pier for longer than expected, especially if the discovered issues are severe enough to trigger a USCG no-sail order until they are remediated. This, in turn, reduces the level of service each can provide to the communities they serve.

Demonstration of Benefits

Note: If applying to more than one program, be sure to select "yes" and provide a response to the applicable questions below.

Is this an application to the Passenger Ferry or Rural Program? Yes No

Please describe the benefits of the proposed project per the statutory requirements of the Ferry or Rural Programs (see NOFO Section E(1)(b)(ii)):

New vessels will include USCG-approved safety equipment to ensure code compliance. The Mainliner will operate more cleanly and efficiently than current vessels due to new design. Despite a larger vessel size, optimized hull and propulsion systems will burn less than half the fuel of current vessels. Planning efforts will ensure a new vessel will interface with docks at all communities along routes, improving access. Underserved communities relying on mainline vessels to access essential goods and services, that have no other readily available provider, face reduced access to and delayed availability of medicine, household goods, and more when service is delayed. This project results in fewer delays, increased service, and improves this vital lifeline. The majority of passengers on two of the three mainline vessels are walk-on. The three main arterial routes have unique features, one route being mainly incoming or outgoing residents with corresponding vehicles that utilize the system.

Is this an application to the Low-Emitting Program? Yes No

Please describe the benefits of the proposed project per the statutory requirements of the Low-Emitting Program (see NOFO Section E(1)(b)(ii)):

Planning and Local / Regional Prioritization

This project is supported by regional Comprehensive Economic Development Strategies (CEDS) and local Comprehensive Plans. Numerous support letters have been provided by impacted communities. This project is included in Alaska’s STIP and is consistent with other State plans.

Consistent with Regional and Community Plans:

The Southwest Alaska Municipal Conference’s CEDS states the region’s growing concern is the sustainability of reliable ferry service. Continual repairs required for the Tustumena and AMHS budget shortfalls have resulted in service disruptions. The Strategy update supports continued service to Kodiak and communities west to Unalaska. Unalaska’s Comprehensive Plan considers ferries as critical to residents, businesses and visitors.

The Kenai Peninsula Economic Development District’s CEDS highlights disruptions to marine travel as being a key challenge for the region. Budget reductions to the AMHS have threatened ferry service which provides critical passenger connections and transports

goods to and from the Kenai Peninsula.

The Southeast Conference's CEDS stresses that a strong ferry system is essential to regional economic development, quality of life and community wellbeing. The priority transportation objective is to minimize impact of budget cuts to AMHS and develop sustainable operational model. Elements of this objective include: Design a new strategic operating plan for AMHS, Lower State's general fund subsidy percentage, Fleet Renewal Plan, and AMHS Value Outreach. Skagway, the northern terminus of Southeast Alaska's part of the AMHS, advocates for consistent ferry service. Their Comprehensive Plan notes that the ease and cost of resident travel are negatively affected when ferry service is down, especially in the winter.

Consistent with DOT&PF Strategic Planning and AMHS Prioritization:
This project is in the STIP. A replacement mainliner is supported by Need ID 33976.

Sustainable Transportation Program. DOT&PF's draft Long Range Term Plan "Alaska Moves 2050" drives strategic goals for the DOT&PF family of plans. Focus areas impacting AMHS are identified to make progress toward the long-term strategies, including Sustainability. DOT&PF Strategic Themes (and the respective AMHS Focus areas) include: Safety (Vessel Repair); State of Good Repair (Preservation and Maintenance of Terminals and Vessels); Economic Vitality (New Service Vessels, New Terminals); Resiliency (Fleet Modernization, Vessel Replacement, Terminal Upgrades); Sustainability (Vessel Hybrid Conversion, terminal Electronification, Electric Shuttle Ferry Construction, Energy Efficient Operations Strategies); Mobility/Access (Increased Service, ADA accessibility). Developing sustainable transportation infrastructure involves a multi-modal lifecycle approach that considers environmental quality, economic development, and social equity.

Ferry-related Focus Areas. Sustainable Transportation Research: FHWA Low-No Emission Ferry Research, Renewable Diesel Research, and Automation through Digitization; AMHS Fleet Modernization: Tustumena Replacement Vessel Construction, Low-No Emission Shuttle Ferry Construction, Shoreside Charging, Ferry Retrofits; Statewide Equipment Fleet Modernization: Statewide Fleetwide Modernization and Rolling Stock Electrification.

Modernization Topics. Low-Cost Transportation: Alternative Energy Corridors, EV Infrastructure, Port Parking Community, EV Infrastructure; Energy Efficiency: DOT&PF Facilities Energy Efficiency Upgrades, LED Streetlight Conversions; Healthy Environment: Tracking Transportation Emissions, Cruise Line and Port Facilities Electrification; Equitable Transportation: Promoting equity within and between successive generations.

Sustainable Transportation Program Goal. Help communities thrive through transportation investments that promote independence, efficiency, low-cost transportation, and a healthy environment.

Local Financial Commitment

The Alaska Department of Transportation and Public Facilities (DOT&PF) is the State Transportation Agency that plans, designs, constructs, maintains, and operates transportation infrastructure in the State of Alaska. DOT&PF has a proven track record of utilizing FHWA formula funds, through surface transportation grants, and constructing maritime infrastructure in support of the operations of AMHS, which is a division of DOT&PF.

DOT&PF is committed to the long-term sustainability of the AMHS. Unique in the nation, Alaska's ferry system is a critical link in Alaska's transportation landscape. The mainline ferries, especially, tie together ports, towns, and cities from Southcentral to Southwestern Alaska, and their service affects the lives and livelihoods of many Alaskans. After decades of reliable service, DOT&PF acknowledges the need to plan for the future and ensure that future vessels are up to the job. The mainline vessels are a critical infrastructure component for rural, disadvantaged communities in Alaska that are not connected to the road system.

The total planning project cost is \$10,739,520. Through the Rural Ferry grant program, the State is requesting \$8,591,616 which is 80 percent of the total eligible project cost. This request is specific to a planning grant.

The State of Alaska commits to providing the non-federal match of \$2,147,904, or 20 percent of the total eligible project cost towards this critical State need. The Alaska State Legislature has already appropriated these funds, for FY23.

DOT&PF undertakes this project as a sponsor and experienced project manager building a sustainable Alaska Marine Highway System.

DOT&PF has included its match commitment and local letters of support in Appendix C. All project documents are located at <https://dot.alaska.gov/amhob/strategy.shtml> under Item 1.4 "IIJA Funding and Discretionary Grants." Appendix A provides maps and routes for the AMHS, and Appendix B is a Technical Volume providing any condition reports or implementation plans.

Project Implementation Strategy

Can this project be obligated within 12 months? Yes No

The planning process will be carried out and approved by licensed Professional Engineers that maintain an ISO 9001 quality certification.

Design will begin in January 2023 and expected to be complete in March 2023. It is expected that the design and technical specifications will be at 60% as a milestone at that point.

After review and evaluation, effort will continue until June 2023, at which point it is expected to be at 80% as a milestone.

After continued review, effort will continue through September 2023, when it reaches 100%.

Because this is a marine vessel construction project, no SEPA or NEPA approval process is required; the relevant approval bodies for the project instead consist of the US Coast Guard (USCG), the American Bureau of Shipping (ABS), and the International Maritime Organization (IMO). Design will account for these variables.

AMHS will base its design requirements on a similar implementation of the design for the replacement of the Tustumena (TRV), one of Alaska's mainline vessels. The following describes the development of that similarly situated vessel. The diesel-electric propulsion system on the TRV will utilize an integrated approach with propulsion and ship service loads fed from the same power source. This will increase overall system fuel efficiency as well as reduce operating hours and maintenance costs for installed but otherwise unused standby machinery. The TRV diesel-electric system is readily adaptable to fuel cell technologies and other emerging technologies for shipboard power generation. The diesel generators on the TRV will be high-efficiency electronically fuel-injected engines, which are more fuel-efficient than the old mechanically injected diesel engines on the Tustumena. Fuel efficiency improvements should be on the order of ten percent.

TRV will utilize an innovative steerable electric podded propulsion system. This combines the drive motor, propeller, and steering into a single unit, eliminating the need for a separate propeller, rudder, steering gear, propulsion shafting, and associated machinery. The steerability improves the vessel's maneuverability while docking in adverse weather conditions, improving vessel operability. In addition, with two steerable propulsion units, the ship will be able to return to port under its own power in the unlikely event of a complete failure of the other unit.

The project will utilize an innovative contracting methodology known as Construction Management / General Contractor (CM/GC). Under this system, the owner's naval architect and construction contractors (construction integration managers, shipyard, and key vendors) jointly develop the Concept and Basic Design. A construction contract is negotiated and awarded to the shipyard based on mutual understanding of the owner's intentions.

Allowing the designer and integrator/shipyard/vendors to work together can help ensure that the design is readily constructible by the shipyard and avoids the lengthy design transfer process.

Collectively, AMHS and its contractor base have extensive experience in designing, managing construction of, and safely operating marine vessels to USCG, ABS, and IMO standard and regulations.

Technical, Legal, and Financial Capacity

DOT&PF owns, operates and/or maintains ferry terminals in 35 Alaskan communities. AMHS has operated since 1968. DOT&PF has a

dedicated marine design group and environmental staff who have delivered dozens of terminal improvement projects, including up to six per year. DOT&PF has maintained a marine engineering team since Statehood in 1959 – primarily dedicated to supporting the AMHS ferry system. They have directly designed or managed consultant designs and conducted numerous refurbishments, replacements, repairs, and maintenance on nearly every ferry terminal facility in the State and many other ports, harbors, and seaplane facilities. Most of these projects utilized federal aid through FHWA. They have successfully delivered many federal aid marine projects supporting AMHS over the years, including 86 projects totaling over \$308,000,000 since 2002 alone. DOT&PF has designed all of the existing ferry terminal facilities. We have standard mooring dolphin and other marine facility designs on file. The marine engineering team also inspects every ferry terminal and associated transfer bridge structure in the State. They are highly experienced and intimately familiar with this particular project’s local conditions and needs. DOT&PF’s project development staff comprises 75 persons, including materials and geotechnical engineers, environmental and right of way professionals who can navigate and achieve the required support products according to all Federal regulations and requirements. DOT&PF and its marine design group are knowledgeable about federal requirements, including Build America stipulations. The terminal design is based on a standard DOT&PF design modified to meet site geology and terminal configurations.

Alaska DOT&PF was granted primacy over its NEPA Assignment Program through an MOU with FHWA signed Nov. 3, 2017 to assume responsibilities under NEPA and all or part of FHWA's responsibilities for environmental review, consultation, or other actions required under any Federal environmental law with respect to one or more Federal Highway projects within Alaska. The assigned responsibilities are subject to the same procedural and substantive requirements as applied to FHWA.

Alaska DOT&PF’s Equal Employment Opportunity Plan (2022) includes a review of personnel designations, employment practices information, employment practices assessment, monitoring and reporting systems, and additional resources. DOT&PF participates in the federal Disadvantaged Business Enterprise (DBE) program and meets the federal requirements. DOT&PF has a vibrant Disadvantaged Business Enterprise Program and a DBE Utilization Goal of 8.63 percent for federally funded projects. According to a 2019 study, M/W/DBE firms were awarded contracts totaling \$418.8 million, 17.68 percent of construction dollars. MBEs were awarded \$298.8 million in contracts, 12.61 percent of construction dollars.

DOT&PF has authority under 23 U.S.C. 140 to implement and conduct a compliance program that addresses Equal Employment Opportunity (EEO) and Affirmative Action (AA) for employment on federally assisted construction contracts. DOT&PF maintains a Civil Rights Office committed to ensuring equal opportunity for all businesses and personnel on DOT&PF projects. The bidding and contract documents include specific provisions to implement equity-focused policies related to all phases of contracting and construction. The contract provisions address nondiscrimination, equal employment opportunity, reasonable accommodations for employees with disabilities, and non-segregation of facilities.

DOT&PF provides reasonable accommodations to applicants and employees who need them because of a disability or practice or observe their religion absent undue hardships. DOT&PF has created a Diversity, Equity, and Inclusion (DEI) Team whose members work with the different department training systems.