

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: Replacement of the M/V Tustumena Vessel Serving Rural Southwest Alaska
(Descriptive title of this project)

Project Executive Summary:

The M/V Tustumena is 58 years old with an initial service life of 30; while it meets Class requirements for service the USCG has imposed service restrictions for vessel safety. The Tustumena Replacement Vessel (TRV) has been under design for many years. Rural Ferry funding will enable the construction of the TRV as steps are taken to finalize the propulsion system and potential for conversion to diesel-hybrid. This project will result in increased vehicle and passenger capacity over the existing vessel and increase reliability while reducing required service disruptions for maintenance. The need for extensive rehabilitation of machinery and structure on an ongoing basis has resulted in unreliable, interrupted service for dependent communities. Increased capacity is necessary because the current summer season vehicle capacity is insufficient for the ridership demand to the extent that personal vehicles and freight are left unserved. The replacement vessel will reduce greenhouse gas emissions due to Tier IV/III and battery integration, which is also expected to reduce particulate and pollutant matter.

Communities served by the Tustumena are all small and rural, and the majority considered disadvantaged. The Alaska Marine Highway System (AMHS) provides affordable public transportation options for people who might not otherwise be able to travel. The vessel route SW to Dutch Harbor is the longest in the nation. The only alternative transportation is for freight to be shipped by barge or for air transportation, which is highly weather dependent and extremely expensive. The TRV is a lifeline for many communities, ensuring the ability to access goods and services at affordable rates, and delivering necessary construction materials and freights for infrastructure improvements; and supporting local economies and businesses, especially tourism and fisheries.

The federal funding request for \$68.5m is for a portion of the total cost; project is ready to construct within 1 year

Project Statement of Work (one sentence summarizing request):

This Alaska Marine Highway System project enables long-awaited construction of the Tustumena Replacement Vessel (TRV), allowing the sixty-year-old M/V Tustumena to retire, which will provide continued and enhanced service to many disadvantaged communities of Southwest Alaska; as part of this project, design updates to the new vessel's diesel-hybrid propulsion system, with batteries, will provide a safer, more efficient, and environmentally friendly platform for public transportation.

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 TRV's improved engine technology is expected to reduce CO2 emissions by 20% and particulates by 95%, outside of other design efficiency measures. Land use plans in coastal communities include density in relation to ferry terminals. DOT&PF uses EPA's EJSCREEN in projects; the project is consistent with the region's Climate Action Plans and will be reflected in the State's equitable development planning. Ferry service planning accounts for climate and resilience adaptation and mitigation.

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):

This project benefits a number of historically disadvantaged communities by strengthening the system they rely on for transportation. The Tustumena covers a route nearly 1,000 miles long serving 13 communities. These communities rely completely upon the Alaska Marine Highway System - specifically the Tustumena - to deliver heavy freight and goods. No other provider regularly serves these communities. These communities are in Areas of Persistent Poverty (Kenai), federally recognized Tribal land (Ouzinkie, Chignik, Sand Point, False Pass, Akutan, Seldovia), Opportunity Zones (Aleutians East Borough 2013000100 and Aleutians West Census Area 2016000100). Kodiak and Unalaska have the means to receive goods by air or by barge, but would still suffer from higher costs and reduced transportation options in the absence of AMHS service.

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:

This project promotes racial equity and removes barriers to opportunity. The AMHS is at the heart of Alaska’s equitable approach to ensuring the benefits of affordable transportation. This publicly subsidized system ensures that coastal communities (the majority of which are considered disadvantaged) have high costs and limited service mitigated. Coastal communities’ land use policies and housing take into account distance from the ferry terminal and dock access. The State’s sustainable transportation program and future transportation equity plan take into account the AMHS. This project is essential to continued service to communities that would otherwise be further disadvantaged; the projects proactively advance racial equity and address a barrier to opportunity if they were to otherwise fail. Because the alternative to the projects is no or reduced ferry service, all project costs are considered investments in addressing racial equity or removing barriers to opportunity.

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 implement equity-focused policies and labor standards related to all phases of contracting and construction and requires payment of Davis-Bacon wages when applicable. For communities with few opportunities, AMHS provides good career jobs. AMHS employees are represented by three unions. Ninety-five percent of AMHS employees are residents of 44 communities. Contractors are required to seek out minority and local hires and fully utilize any training programs in the area.

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, social services, and each other combating social isolation and allowing for sharing of subsistence resources and cultural events. The TRV is designed to be more efficient and with lower carbon emissions. Resilience to climate change in the transportation network is particularly important in Alaska. Small communities face the growing threat of an abundance of climate-related disasters such as floods, landslides, avalanches, and forest fires. In an emergency, the only practical resources for large scale evacuation and rapid provision of relief supplies and equipment are the AMHS ferries. Since the Exxon Valdez oil spill in Prince William Sound in 1989, 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):

Many of the datasets in various Justice40 screening tools are not complete for Alaska and the data that is used is not always applicable to Alaska. Ouzinkie, Chignik, Sand Point, False Pass, Akutan, Seldovia are federally recognized Alaska Native Villages (Tribal lands) 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 Homer and Seldovia in the 99th percentile for Expected Population Loss Rate. 5 of the census tracts, covering 8 communities have energy burdens above the 80th percentile. Every community on the route is listed as a Medically

Underserved area by the EJScreen tool. This project supports the region's Climate Action Plan, and will be highlighted within the State's future equitable development plan.

Justice40 Population Impacted

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

Actual or Estimated Annual Ridership Count

Akutan	176
Cold Bay	117
Seldovia	6,356
Chignik	137
False Pass	42
Port Lions	860
Sand Point	235

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
Engineering and Yard Services	1	19,200,000	3,200,000	9,600,000	0	32,000,000

Description	QTY	Federal Amount Requested	Federal Match Amount	Other Federal Funds	Other	Total Cost
Hull Structure	1	24,840,000	4,140,000	12,420,000	0	41,400,000

X

Description	QTY	Federal Amount Requested	Federal Match Amount	Other Federal Funds	Other	Total Cost
Propulsion	1	12,300,000	2,050,000	6,150,000	0	20,500,000

X

Description	QTY	Federal Amount Requested	Federal Match Amount	Other Federal Funds	Other	Total Cost
Electric Plant	1	19,260,000	3,210,000	9,630,000	0	32,100,000

X

Description	QTY	Federal Amount Requested	Federal Match Amount	Other Federal Funds	Other	Total Cost
Command and Surveillance	1	5,580,000	930,000	2,790,000	0	9,300,000

X

Description	QTY	Federal Amount Requested	Federal Match Amount	Other Federal Funds	Other	Total Cost
Machinery General	1	35,160,000	5,860,000	17,580,000	0	58,600,000

X

Description	QTY	Federal Amount Requested	Federal Match Amount	Other Federal Funds	Other	Total Cost
Outfit and Furnishings	1	17,220,000	2,870,000	8,610,000	0	28,700,000

X

Description	QTY	Federal Amount Requested	Federal Match Amount	Other Federal Funds	Other	Total Cost
Integration	1	6,000,000	1,000,000	3,000,000	0	10,000,000

X

Description	QTY	Federal Amount Requested	Federal Match Amount	Other Federal Funds	Other	Total Cost
Post Construction Support	1	6,840,000	1,140,000	3,420,000	0	11,400,000

X

Description	QTY	Federal Amount Requested	Federal Match Amount	Other Federal Funds	Other	Total Cost
Program contingency	1	14,640,000	2,440,000	7,320,000	0	24,400,000

X

Description	QTY	Federal Amount Requested	Federal Match Amount	Other Federal Funds	Other	Total Cost
ICAP	1	7,020,000	1,170,000	3,510,000	0	11,700,000

X

Description	QTY	Federal Amount Requested	Federal Match Amount	Other Federal Funds	Other	Total Cost
Loose Outfitting and Equipage	1	2,940,000	490,000	1,470,000	0	4,900,000

X

Description	QTY	Federal Amount Requested	Federal Match Amount	Other Federal Funds	Other	Total Cost
Construction Support	1	14,640,000	2,440,000	7,320,000	0	24,400,000

X

Description	QTY	Federal Amount Requested	Federal Match Amount	Other Federal Funds	Other	Total Cost
Additional contingency	1	9,282,000	1,547,000	4,641,000		15,470,000

X

Total:		194,922,000	32,487,000	97,461,000	0	324,870,000
--------	--	-------------	------------	------------	---	-------------

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 non-federal matching funds. These funds are currently available and have been appropriated to the project. DOT&PF is committed to this match due to the disadvantaged status of AMHS-served communities, as described below.

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. The M/V Tustumena is a critical link in Alaska's transportation system. The Tustumena ties together ports, towns, and cities from Southcentral to Southwestern Alaska, and her service affects the lives and livelihoods of many Alaskans. After nearly sixty years of reliable service, Tustumena is due for retirement.

The TRV is designed to interface with the formidable array of docks and tidal ranges in the region it will serve and will be the only vessel capable of serving all 22 ports of call between Homer and Unalaska. The TRV is a critical infrastructure component for rural, disadvantaged communities in Alaska that are not connected to the road system.

The budget reflects total project costs. The total construction cost is \$324,870,000 which doesn't include the \$13 million for the design already encumbered between 2013 and 2022. The total project cost for this period totals \$85,610,480, which is the project construction cost for FY23 and FY24. The FY23 Federal funding request is \$68,488,384, which is 26.4 percent of the total eligible project cost, and the State of Alaska commits to a 20 percent match of \$17,122,096. Remaining project costs are \$239,259,521.

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 "IJA 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:

This project funding request is scaled to reflect the first two years of a five-year project. The total project construction costs for the TRV are \$325 million; \$13 million has already been encumbered for design completed thus far. The grant request for Rural Ferry Program is already scaled to request \$85,610,480 for FY23 and FY24 construction costs to be a cost-efficient but critical investment by the FTA in Alaska's ferry system.

Other scaling options are possible. For instance, construction costs for FY23 are \$14,189,480. If the project were funded for FY23 alone, the Rural Ferry amount would be \$11,351,584 and the State-funded match would be \$2,837,896.

Project Timeline (Please be as specific as possible)

Timeline Item Description

Timeline Item Date

Functional Design Start	06/01/2022
GMP Development Start	07/01/2022
GMP Review Start	01/01/2023
GMP Review Finish	03/01/2023
Engineering and Yard Service	04/01/2023
Functional Design Finish	06/01/2023
Hull Structure Start	10/01/2023
Propulsion Start	07/01/2024
Electric Plant Start	07/01/2024
Machinery General Start	10/01/2024
Command and Surveillance Start	04/01/2025
Integration Start	04/01/2025
Engineering and Yard Service Finish	12/01/2026
Hull Structure Finish	12/01/2026
Propulsion Finish	12/01/2026
Electric Plant Finish	12/01/2026
Machinery General Finish	12/01/2026
Command and Surveillance Finish	12/01/2026
Integration Finish	12/01/2026
Vessel Construction Finish	12/01/2026

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

Tustumena is a 58-year-old vessel, and as such has served far beyond the typical 30-year useful lifetime of an oceangoing vessel. AMHS has worked diligently to keep the vessel operational as its structure, machinery, and outfitting have aged, up to and including a multimillion-dollar refurbishment of the vessel's vehicle elevator and extensive steel replacement ongoing. Nevertheless, structural and mechanical issues in this period of the vessel's life are widespread. These issues affect the vessel's capabilities as well as its reliability; due to structural issues, Tustumena's service has been limited to fifteen-foot seas, and the vessel's planned maintenance periods frequently reveal structural and mechanical issues that require longer stays in the shipyard and higher costs.

AMHS vessels are surveyed annually; based on the latest (2020) survey, approximately \$29M of repairs and upgrades considered high urgency are recommended by the surveyors (Glostén 2020). 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. Tustumena has numerous regulatory issues that, while permissible at the time of its construction, are now only allowed to remain unaddressed by USCG because they are grandfathered in given the vessel's compliance with the regulatory regime in place at the time of its construction. Any conversion or retrofit could trigger an MCON determination, substantially increasing the cost to keep Tustumena in service. It is also quite possible that given Tustumena's advanced age and the heavy ocean conditions through which the vessel frequently sails, the USCG would simply be unwilling to extend a Certificate of Inspection (COI) enabling the vessel to sail beyond around the year 2026.

Tustumena's challenging area of operation increases wear on both structure, machinery, and equipment. The vessel frequently sees heavy wind and waves while operating in the Gulf of Alaska. Wave-induced vessel motions present acute risks to improperly secured machinery and to structures of insufficient strength. Such risks are mitigated by installing properly secured, class-approved, marine-grade machinery on board and ensuring that structural installations meet class and USCG requirements. Of more significant concern than such acute risks are structural fatigue issues, which emerge over time as wave action causes the vessel's structure to bend and flex. It is challenging to keep pace with the scope of the affected structure as the vessel ages beyond a typical marine vessel lifetime. When Tustumena was constructed, asbestos was in common use on newly built vessels; it is present on Tustumena. Encountering unanticipated pockets of asbestos-containing materials during shipyard periods presents a health and safety risk to shipyard workers. In addition, it leads to costly and time-intensive abatement processes that prolong the shipyard period and create ripple effects on vessel availability throughout the AMHS system.

Tustumena's most recent Fleet Condition Survey occurred in 2020. The survey found numerous issues urgently requiring costly repair. Tustumena was given six urgent recommendations with an estimated cost above one million dollars each, some well above that number. Each time Tustumena enters a maintenance or overhaul period, there is a high risk of delays, change orders, and increased work scope due to the discovery of additional issues during planned maintenance. This, in turn, reduces the level of service Tustumena can provide to the communities it serves.

This is a one-time need that the State would otherwise be unable to address because of its significant scale, and for which FTA funds will substantially improve the success of.

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)):

The TRV will install properly secured, class-approved, marine-grade machinery on board, ensuring that structural installations meet class and USCG requirements. This project will replace one vessel that has asbestos with one built to new standards. The replacement will remove USCG restrictions. TRV will operate more cleanly and efficiently due to many design factors. Despite the larger size, its optimized hullform and updated propulsion system enable it to operate while consuming less than half the fuel. The current propulsion system has no future upgrade path to emerging technologies so replacement is a critical step forward. The TRV will be able to interface with dock facilities in all AMHS communities, improving access to service. This project will result in fewer maintenance and rehabilitation delays, increased service, and ensure this vital lifeline is preserved. In 2020, 7,181 passengers traveled via the vessel, compared to 4,941 vehicles, or 145% more riders than vehicles.

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 (SWAMC) 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. SWAMC advocates that the Tustumena is a critical link in Alaska’s transportation system and for economic development, sustainability, and resiliency. The Tustumena ties together ports, towns, and cities from Southcentral to Southwestern Alaska, and her service affects the lives and livelihoods of many Alaskans. The Tustumena replacement vessel will offer more passenger and vehicle capacity than its predecessor and will be faster and more efficient.

Kodiak Island Borough Comprehensive Plan stressing the need for ensuring continued and improved ferry service. Aleutians East Borough state in their letter that the AMHS is vitality important to the continued well-being of the communities of the Aleutians East Borough. Unalaska’s Comprehensive Plan considers ferries as critical to residents, businesses, and visitors. They too stress the need for continued and reliable service.

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.

Consistent with DOT&PF Strategic Planning and AMHS Prioritization

STIP. This project is in the STIP. AMHS Tustumena Replacement Vessel is Need ID 30189.

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. The M/V Tustumena is a critical link in Alaska's transportation system. The Tustumena ties together ports, towns, and cities from Southcentral to Southwestern Alaska, and her service affects the lives and livelihoods of many Alaskans. After nearly sixty years of reliable service, Tustumena is due for retirement.

The TRV is designed to interface with the formidable array of docks and tidal ranges in the region it will serve and will be the only vessel capable of serving all 22 ports of call between Homer and Unalaska. The TRV is a critical infrastructure component for rural, disadvantaged communities in Alaska that are not connected to the road system.

The total project cost is \$325 million, which doesn't include the \$13 million for the design already encumbered between 2013 and 2022. Through the Rural Ferry grant program, for FY23, the State is requesting \$68,488,384 which is 26.4 percent of the total eligible project cost. This request is scaled to meet the needs for construction over the next two years, which will enable efficient and effective implementation and planning.

The State of Alaska is committed to contributing twenty percent (\$17,122,096) of the total eligible project cost towards this critical State need. This is equivalent to 20% percent of the Rural Ferry Program grant request.

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

DDOT&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 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. The Design Basis linked above details the numerous drawings, studies, and calculations performed to develop a vessel appropriately sized, powered, and arranged for the mission requirements and applicable regulatory regimes. The Technical Specifications and General Arrangement drawing constitute sufficient detail to receive shipyard bids to perform the role of Construction Manager / General Contractor in accordance with all regulatory, performance, and contract requirements.

Contract drawings developed or under development for this project are included in the Appendix. These drawings, together with the recently released Technical Specifications, will constitute a completed contract design package for the project. Following selection of a shipyard contractor, the project team will work to develop a detail design package that includes all module divisions, structural A&D drawings, shop drawings, and other detailed construction plans required to commence the build.

Project tasks and milestones are included in the Appendix, through delivery of TRV.

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). Collectively, AMHS and Glosten have extensive experience in designing, managing construction of, and safely operating marine vessels to USCG, ABS, and IMO standard and regulations. The design process is carried out and approved by Professional Engineers licensed in the States of Washington and Alaska. Glosten maintains an ISO 9001 quality certification. USCG and ABS review was previously completed in 2016 for major arrangement and safety drawings including the General Arrangement, Emergency Evacuation Plan, and Fire Zone Diagram. Following a more recent design refresh performed to update the design to comply with new regulatory requirements, these documents were updated and will be resubmitted.

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'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.

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 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.

The project team, which consists of project partners AMHS, Glosten, Inc., and a to-be-determined shipyard contractor, is highly

capable of successfully overseeing the design, construction, and delivery of a new RO-RO ferry. Vessel designer Glosten is a full-service consulting firm of naval architects and marine, electrical, ocean, and production engineers. Over the company's sixty years, Glosten's designs have included many passenger/vehicle ferries, research vessels, tugs, barges, dredges, and special-purpose platforms. Glosten has been working with AMHS for more than three decades and began collaborating with AMHS on the TRV design in 2013.