



# Alaska Marine Highway System

Department of Transportation and Public Facilities

**2045 LONG-RANGE PLAN**

**PHASE I INTERIM DRAFT-AUGUST 2023**

# AMHS Draft LRP Executive Summary

Updated June 29, 2023

The Alaska Marine Highway System (AMHS) Long-Range Plan (LRP) is a guidebook for investment through the next twenty years, setting a vision for service in 2045 and identifying incremental investments in the short-, medium-, and long-term to achieve that vision. The ferry service provided by AMHS is a lifeline to many otherwise isolated coastal communities – reliant on ferry service for transportation of people, goods, and services. In addition to providing important transportation connections for Alaskan residents, good health of the ferry system promotes local and interstate economic opportunity.

The development and vision for these investments is informed by the priorities and needs of the Alaskans that use and depend on the marine highway system for connections to goods and services, such as medical, social, cultural, and recreation. This LRP will outline foundational service for Alaskan communities and guide investments in infrastructure, workforce, and its supportive framework to provide safe and reliable service. The LRP will identify the long-term vision and provide incremental investment, policy, and tools needed to realize that vision. Phase 1 of the LRP will focus on the next three years, while the final document will encompass an over twenty-year planning horizon from 2023 to 2045, as shown in Figure ES-1 below.

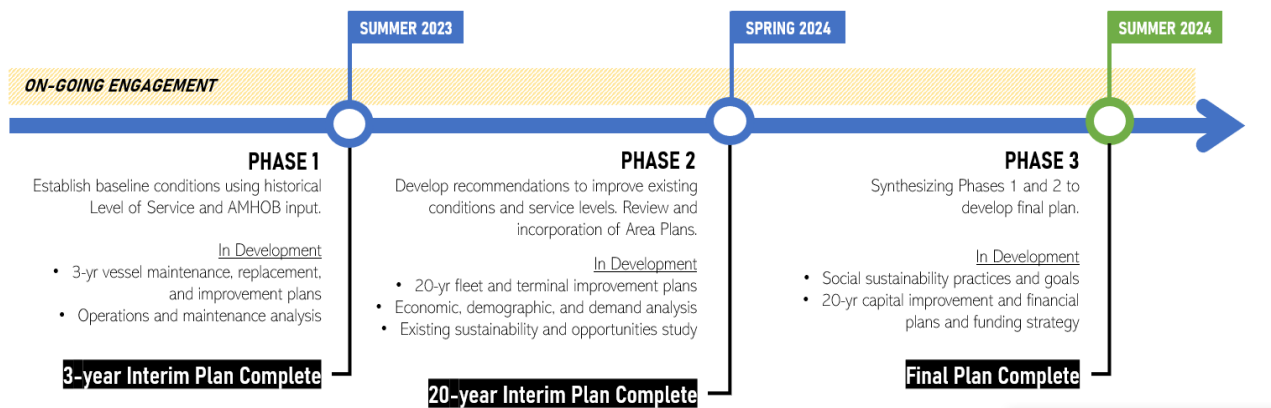


Figure ES-1: Long-Range Plan Phases

This LRP is informed and strengthened through the partnership with the Alaska Marine Highway Operations Board (AMHOB), as well as, internal AMHS and DOT&PF staff, AMHS customers, Ferry Focus Groups, the communities AMHS serves, partner agencies and organizations, tribal governments, the general public, and other stakeholders. Phase 1 has included engagement with AMHOB, Ferry Focus Groups, and the general public, around vision, mission, metrics, service levels and infrastructure investment. Engagement with these stakeholders will continue through the final LRP to provide opportunities for comment and interactive involvement in the planning process. The LRP will include all elements as outlined in Alaska Statute (AS) 19.65.011.



## Context

AMHS service levels have been declining for several years due to many factors and further stressed through global conditions such as the COVID-19 pandemic and a worldwide maritime shortage. Service improvements, as well as the investments made to the infrastructure and workforce, are essential to providing safe, reliable, and stabilized service, rather than simply growth. The system is currently planning operations at a minimum service schedule built around current limited crew and vessel availability.

Many investments are needed to maintain the status quo of the current, historically-lower service levels being provided by AMHS. Through investments in vessels, terminal infrastructure, internal support systems, and continued improvements in recruitment and retention of workforce, the system can begin to increase system reliability and begin to recover to better meet community service demands. How the system improves depends on the terminals, vessels, and crew available to support service. The final LRP, expected by the end of Summer 2024, will outline service levels into the future with the investments needed to get achieve this goal, continually informed through community and stakeholder engagement.

## Goals and Priorities for AMHS

In addition to the work AMHS has undertaken to-date, AMHOB has worked to identify six main priorities for AMHS, each of which contributes to a system that is first and foremost safe, as well as reliable and resilient. These priorities include:

- **Fleet Modernization**—evaluation of existing fleet mix and looking forward to growing the fleet with efficiencies and utilizing funding resources
- **Service Level Improvement**—foundational planning of service based on community characteristics and understanding the impact of service on that community
- **Leverage Sales and Marketing**—to help the system track and plan for future investments, understand the impacts of system fare policy and service, and maximize system capacity
- **Employee Support and Retention**—increase the resiliency and reliability of the system through a focus on workforce planning and support
- **Vessel Maintenance and Replacement Plan**—support the safety and reliability of the system fleet through strategic maintenance planning and a fleet and service plan that can support scheduled maintenance
- **Funding**—exploring strategies to increase system financial resiliency

In addition to this robust discussion by AMHOB, AMHS staff will be working on an internal priority identification with a lens from operations and management to prepare a comprehensive list of priorities and strategies. This work is ongoing and will be strengthened in Phase 2 of the LRP effort, which will structure these focused elements into a framework of **goals/priorities** that will guide AMHS planning and investment, **strategies** that will include implementable actions in the short, medium and long-term, and **metrics** for accountability.



## LRP Phase 1 Needs Assessment

With goals and priorities identified in mind, the following preliminary needs assessment has been identified as part of the Phase 1 LRP assessment shown below as categorized by the four essential pillars of safe, reliable, and resilient ferry service: workforce, fleet, shoreside facilities, and budget.

	Initiative included in LRP PH 1
<b>Workforce</b>	
<ul style="list-style-type: none"><li>Targeted and increased recruitment efforts should be continued to increase the number of new hires.</li></ul>	✓
<ul style="list-style-type: none"><li>Issues experienced by current employees should be evaluated and systemically resolved to mitigate the number of separations.</li></ul>	✓
<b>Fleet</b>	
<ul style="list-style-type: none"><li>Vessel retirement and replacement schedule</li></ul>	✓
<ul style="list-style-type: none"><li>Fleet-wide maintenance strategy to address equipment reliability and longevity.</li></ul>	✓
<ul style="list-style-type: none"><li>Asset management system to track the lifecycle of each vessel component and facilitate proactive maintenance planning.</li></ul>	✓
<ul style="list-style-type: none"><li>Root causes of deficiencies program in vessel design and systems.</li></ul>	✓
<ul style="list-style-type: none"><li>Fleetwide environmental sustainability program that promotes energy-saving measures in operations.</li></ul>	
<ul style="list-style-type: none"><li>Comprehensive risk management framework to identify and mitigate potential hazards and vulnerabilities.</li></ul>	
<b>Shoreside Facilities</b>	
<ul style="list-style-type: none"><li>Integrated terminal capital program planning within AMHS.</li></ul>	
<ul style="list-style-type: none"><li>Comprehensive shore facility asset management plan for the shoreside facilities owned by the State of Alaska. The current system of inspection and repairs is adequate for short-term maintenance but a plan with a longer forecasting timeframe would help establish future maintenance budgets to support long-range budget forecasting.</li></ul>	
<ul style="list-style-type: none"><li>Shore facility resiliency plan to address specific risks presented by sea level rise (where impacted) and storm surge and mitigation at each terminal.</li></ul>	
<b>Budget and Funding</b>	
<ul style="list-style-type: none"><li>Integrated long-range infrastructure capital program plan</li></ul>	
<ul style="list-style-type: none"><li>Maximize utilization of discretionary grants and IJJA funding</li></ul>	

The list above is preliminary as identified in previous work to date. Additional initiatives and needs may arise through the next phases of planning and will be addressed through recommendations in the final LRP.



## Phase 1 Long Range Plan—Three Year Outlook to 2026

### Investment Overview

This Phase 1 LRP identifies key infrastructure project initiatives, organizational supporting software and management tools, and a continued emphasis on workforce safety, recruitment and retention. All of these proposed investments will serve to stabilize the service provided to 35 coastal Alaskan communities over its 3,500 miles of routes from Bellingham, WA, to north Valdez, AK, and west to Dutch Harbor, AK.

Phase 1 investments look at the calendar years 2024, 2025 and 2026. Capital investments include 7 vessel projects (3 new designs and 3 new vessel constructions projects and one vessel modification) and 17 terminal designs, projects or modifications to support continued operations. Operational investments include a focus on tools to aid the system in safety, reliability and resiliency through support software, personnel, and infrastructure to aid in the planning of staffing, maintenance, training, and documentation of safety protocols.

### Operational Initiatives

Key initiatives included in the recommended funding include:

- Yearly crew safety conference
- Enhanced public engagement as a continuous, customer feedback loop
- Increase level and breadth of recruitment
- Updating AMOS (software) and adding new modules to assist with project planning, compliance, and crew dispatch.

### Service

Service is estimated at current, stabilization levels over the next three-years until fleet and workforce is stable and growing to support added service. Future service for the 20-year plan will be developed in coordination with AMHOB and the community through the on-going working sessions around community characteristics and identifying thresholds for minimum service and how to use community characteristics to distribute service and make short and long-term investment decisions in fleet and shoreside facility projects.

### Fleet

Fleet service assignments will remain in the same locations as recent 2022-2023 year service, with no big changes anticipated in the next three years. The fleet remains small, with just 9 vessels—8 in operation serving 35 ports of call and 1 vessel to be in layup for maintenance. This leaves no reserve vessels on standby for emergency or unplanned maintenance issues which will continue to create reliability issues in the system until the fleet size is increased. Specific fleet investments through 2026 include:

- *M/V LeConte* becomes a backup vessel after crew quarters are added to the *M/V Tazlina*
- Tustumena Replacement Vessel Design/Build



- Mainliner Replacement Vessel Design/Build
- No-Low Emission Vessel Design/Build

## **Budget**

Please refer to the LRP Phase 1 Budget section for detail on the proposed budget to the DOT Commissioner.

## **Next Steps—LRP Phase 2 and 3—Outlook to 2045**

Phase 2 work is underway, through engagement within AMHS, DOT&PF, and with AMHOB partners to further refine and define future service through 2045 and the investments in people, fleet, and terminal infrastructure to support a safe, reliable, and resilient marine transportation network and vital link to coastal Alaskan communities.

DRAFT



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# ACRONYMS

ABS	American Bureau of Shipping
ACF	Alaska Class Ferry
AMHOB	Alaska Marine Highway Operations Board
AMHS	Alaska Marine Highway System
AMOS	Asset Management Operating System
BC	British Columbia
CIP	Capital Improvement Project
COI	Certificate of Inspection
COLA	Cost-of-Living Differential
CPI	Consumer Price Index
CPI-U	Consumer Price Index for all Urban Consumers
CPP	Controllable Pitch Propeller
CTC	Charting the Course
CY	Calendar Year
DOLWD	Alaska Department of Labor and Workforce Development
DOT&PF	Alaska Department of Transportation and Public Facilities
FCS	Fleet Condition Survey
FFG	Ferry Focus Groups
FY	Financial Year
HB 63	House Bill 63
IBU	Inlandboatmen's Union
IJA	Infrastructure Investment and Jobs Act
ISM	International Safety Management
ISO	International Standards Organization
LOS	Level of Service
LRP	Long Range Plan
L RTP	Long Range Transportation Plan
MEBA	Marine Engineer's Beneficial Association
MMP	International Organization of Masters, Mates, and Pilots
MRV	Mainliner Replacement Vessel
PE	Professional Engineer
Ro-Ro	Roll on, Roll Off
SEC	Southeast Conference
SEEMP	Ship Energy Efficiency Management Plan
SOLAS	International Convention for Safety of Life at Sea
SMS	Safety Management System
STIP	Statewide Transportation Improvement Program
SWAMC	Southwest Alaska Municipal Conference
TRV	Tustumena Replacement Vessel
USCG	United States Coast Guard
WA	Washington



# 1. INTRODUCTION

## 1.1 Alaska Marine Highway System

The Alaska Marine Highway System (AMHS) is a state-owned ferry system that operates a fleet of vessels serving 3,500 miles of routes that provide essential transportation to Alaska’s remote coastal communities. AMHS is the only marine route recognized as a National Scenic Byway and All-American Road and is vital for communities of all socioeconomic statuses. AMHS commenced operations in 1963 and it currently operates nine vessels serving 33 Alaskan communities and two communities outside of Alaska. The system stretches from Metlakatla, north to Prince William Sound and the Kenai Peninsula, and east to the Aleutian chain. AMHS also provides service to 2 additional ports at Prince Rupert, British Columbia (BC), and Bellingham, Washington (WA). Only five of the communities served by AMHS are connected to Alaska’s road system and AMHS provides a critical transportation link for Alaska residents and businesses, as well as visitors to the state.<sup>1</sup>



Figure 1: AMHS Port Communities

<sup>1</sup> Economic Impacts of Alaska Marine Highway System, McDowell Group Inc.  
[https://issuu.com/alaskamarinehighwaysystem/docs/econ\\_15?e=32410890/67331148](https://issuu.com/alaskamarinehighwaysystem/docs/econ_15?e=32410890/67331148)



### 1.1.1 Existing Mission

The Mission of AMHS is to provide safe, reliable, and efficient transportation of people, goods and vehicles among Alaska communities, Canada and the ‘Lower 48’, while providing opportunities to develop and maintain a reasonable standard of living and high quality of life, including social, education and health needs.

Under the Alaska Department of Transportation and Public Facilities' (DOT&PF) Strategic Plan, the intended impact of AMHS is threefold:

- Serve every Alaskan every day.
- Provide a safe and efficient transportation system for Alaska to thrive.
- Provide Alaskans with access to goods, services, economic opportunities, each other, and the world.

### 1.1.2 Existing Vision

AMHS, as an agency acting under the umbrella of DOT&PF, works toward the vision of “moving beyond Alaska’s challenges while meeting Alaskans’ distinct transportation needs through trust, teamwork, and results.”<sup>2</sup>

The vision is supported by four core values:

- **Integrity**—doing the right thing even when no one is watching. Doing what you say you are going to do
- **Excellence**—commitment to continually improve
- **Respect**—positive regard for customers, stakeholders, investors, and colleagues
- **Safety**—commitment to safeguarding transportation systems and users while promoting a safety culture in the workplace

### 1.1.3 AMHS Operating Principles

AMHS aims to provide the “preeminent marine travel experience that exceeds the expectations of the communities and users we serve, while connecting with other intermodal components of State, federal and international transportation systems.”<sup>3</sup>

AMHS provides accessible transportation to the residents of Alaska's coastal communities that may not have road or air access to the rest of the state. It serves as a lifeline for these communities, connecting them to essential services, supplies, and economic opportunities.

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<sup>2</sup> [https://dot.alaska.gov/comm/strategic\\_plan.shtml](https://dot.alaska.gov/comm/strategic_plan.shtml). Accessed 06/21/23

<sup>3</sup> AMHS Governance Study: Phase 1 Final Report, <https://www.amhsreform.com/sites/amhsreform.com/files/AMHS%20Reform%20Final%20Report.pdf>



Safety is a paramount principle in operating AMHS. The safety of the crew and passengers takes priority over the schedule and cost. AMHS strives to maintain a reliable and consistent ferry service schedule and works to minimize delays and cancellations whenever possible with the goal of providing dependable transportation for passengers and cargo.

AMHS recognizes the importance of sustainable practices in its operations and has been working with Green Marine<sup>4</sup> since 2018 to reduce their environmental footprint. This includes efforts to minimize environmental impact, such as reducing emissions, managing waste responsibly, and promoting energy-efficient practices.

AMHS focuses on providing quality customer service to its passengers. This involves courteous and helpful staff, clear communication, and efficient handling of passenger needs, inquiries, and concerns.

AMHS works collaboratively with various stakeholders, including local communities, government agencies, and businesses, to understand and address the marine transportation needs of Alaska that would otherwise be unmet.

## 1.2 Alaska Marine Highway Operations Board

House Bill 63 (HB 63) was signed into law on August 16, 2021, repealing the Marine Transportation Advisory Board and establishing the Alaska Marine Highway Operations Board (AMHOB). AMHOB advises DOT&PF/AMHS on numerous initiatives. AMHOB is composed of an AMHS Deputy Commissioner and eight public members. One seat is from a recognized union representing AMHS employees; one represents Alaska Native organizations; two are appointed by the Governor; two by the Speaker of the House, and two by the Senate President. The seats are staggered but established in statute. The members of the board, except for the Deputy Commissioner assigned to AMHS, serve staggered three-year terms. More information about this board can be found at the DOT&PF's AMHOB website<sup>5</sup>.

According to HB 63, in consultation with AMHOB, DOT&PF will prepare a comprehensive long-range plan that will consist of priorities and goals with a proposed strategic maintenance and vessel replacement plan.

AMHOB is responsible for providing advice and recommendations to the Commissioner of Transportation and Public Facilities concerning the operation and management of AMHS. This includes advice and recommendations regarding business to enhance revenue and reduce costs, personnel management, projects to be entered into the Statewide Transportation Improvement Program (STIP), commercial service options, ship and terminal maintenance, construction, repair, fleet strategy, reliability, and regulatory compliance, and other service objectives. If the board

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<sup>4</sup> State Ferry Operator Becomes First Green Marine's Participant in Alaska, <https://green-marine.org/stayinformed/news/state-ferry-operator-becomes-first-green-marines-participant-in-alaska/>

<sup>5</sup> <https://dot.alaska.gov/amhob/>



determines that AMHS has deviated from a plan, policy, or procedure described in the short-term plan or comprehensive long-range plan, the board may prepare a report recommending corrective action. They may also recommend performance measures.

## 1.3 Purpose of the Long-Range Plan

The AMHS Long-Range Plan (LRP) is developed by AMHS, a division of the Alaska State DOT&PF, in consultation with AMHOB, and the communities it serves, with the purpose to guide capital and operating investments to incrementally achieve the 2045 vision for the system. The LRP serves as a guide for AMHS, identifying goals and priorities and outlining investments to make those goals a reality. This plan will guide investments in fleet, terminals, and operational elements vital to the AMHS success such as its workforce, management infrastructure and operational tools.

The requirements of the Long-Range Plan are set forth in Alaska Statute (AS) 19.65.011.

***Sec. 19.65.011. Short-term and comprehensive long-range plans.** The Department of Transportation and Public Facilities, in consultation with the Alaska Marine Highway Operations Board, shall prepare a short-term plan and a comprehensive long-range plan for the development and improvement of the Alaska marine highway system and shall, in consultation with the Alaska Marine Highway Operations Board, revise and update the short-term plan annually and the comprehensive long-range plan at least every five years. The short-term plan must describe the means by which effective and efficient progress toward priorities and goals defined in the comprehensive long-range plan will be attained, must include recommendations for the state operating and capital budgets, and must include a description of skills or competency gaps in the membership of the Alaska Marine Highway Operations Board. The comprehensive long-range plan must include priorities and goals for the Alaska marine highway system and a proposed strategic maintenance and vessel replacement plan and may recommend performance measures, including output, efficiency, and effectiveness measures. The department shall submit both the short-term and the comprehensive long-range plans and revisions and updates of the plans to the legislature and the governor and make the plans available to the public.*

Through robust public and stakeholder engagement, the LRP, when finalized, will set out a mission, vision, and goals for AMHS. The recommendations in the LRP are intended to guide the operations and investments of AMHS for the next twenty years, with regular updates occurring at least every five years.

### 1.3.1 Organization of the Long-Range Plan

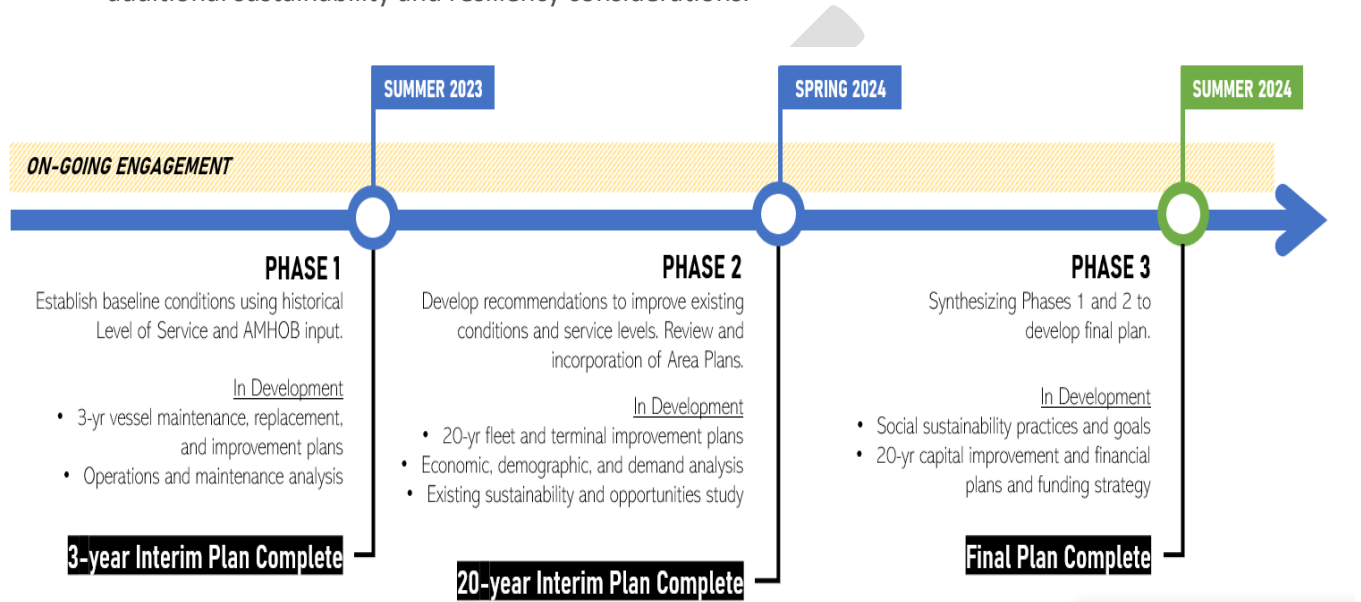
The AMHS LRP will be developed and rolled out in the following phases (Figure 2).

Phase 1 of the LRP will result in a Three-Year Interim LRP provided to the Legislature in August 2023 and will provide recommendations for a three-year Capital and Operational Budget through financial year (FY) 2026.



Phase 2 of the LRP effort will switch from short-term to long-term assessment, and will forecast out 20+ years, with operational and capital budget recommendations to support the future fleet and service envisioned in 2045. This Phase of the work will show the incremental steps to achieve that 2045 vision with short-, medium- and long-term strategies and investments for AMHS.

Phase 3 of the LRP effort will conclude in Summer of 2024 with the development of the Final LRP, encompassing elements from the Three-Year and 20-Year Interim Plans, as well as additional sustainability and resiliency considerations.



**Figure 2: Long-Range Plan Phases**





# 2. Current State of AMHS

## 2.1 AMHS Organization and System Overview

AMHS helps to meet the social, educational, health, and economic needs of Alaskans by connecting communities to each other, regional centers, and the continental road system. Without AMHS, many communities would be cut off from the rest of the state and the nation.

AMHS provides year-round ferry service throughout Southwest and Southeast Alaska, extending south to Prince Rupert, BC, and Bellingham, WA. The system is divided into two major systems: the Southwest System and the Southeast System. The Southwest system covers the area from Cordova west to Unalaska. The Southeast System includes the communities between Bellingham, WA, north to Yakutat. Additionally, there is also a Cross Gulf service that connects the two systems.

AMHS operates nine vessels, including four mainline vessels that provide overnight accommodations and serve the longer routes with multi-day trips, four dayboat vessels with no overnight accommodations that connect smaller communities to each other on trips that take less than a day, and one shuttle vessel that operates on a short 45-minute route.

Operationally, AMHS is divided into three divisions:

- Business Enterprise & Development – includes financial services, accounting, scheduling, marketing, reservations, and terminal managers.
- Operations – includes the environmental program, passenger services, port captains, safety, dispatch, training, information technology, and the vessel masters.
- Marine Transportation Services – includes vessel construction managers, port engineers, facilities managers, maintenance, and stock - parts and service.

Section 19.65.050 of the Alaska Budget and Funding legislation outlines the purpose and intent of AMHS. These findings provide a framework to guide the agency's direction. The legislative findings outline the following:

- AMHS is an essential part of the state transportation system, and it warrants continued and predictable state support.
- Many communities' economies are dependent on a steady and stable marine highway system service level.
- The state's tourism industry is greatly enhanced by a dependable marine highway transportation network.
- Efficient and prudent management of the system will benefit the state's economy and foster economic development.





- It is the purpose of AS 19.65.050 - 19.65.100 to enable AMHS to manage and operate in a manner that will enhance performance and accountability by allowing the system to account for and spend its generated revenue.
- Provide the management tools necessary to efficiently operate AMHS.
- Within constitutional constraints, provide for a predictable funding base for system operations.
- Provide for predictability and stability in the service level furnished to communities served by the system.

## 2.1.1 Technical, Legal, and Financial Capacity

### 2.1.1.1 Technical

AMHS currently operates nine vessels of varying sizes that are specifically designed for coastal transportation in Alaska. The technical capacity of AMHS includes safe and efficient operations, vessel maintenance and repair capabilities to keep the fleet in operational condition.

### 2.1.1.2 Legal

AMHS operates within the legal framework established by the State of Alaska and relevant U.S. codes and regulations. It complies with relevant maritime laws, safety regulations, and environmental standards. AMHS is subject to oversight and regulation by government agencies responsible for transportation and maritime affairs. All vessels except the *M/V Lituva* are classed by the American Bureau of Shipping (ABS) and are regularly inspected by ABS and the United States Coast Guard (USCG).

The USCG issues a Certificate of Inspection (COI) for each vessel every year. The COI includes the minimum crew requirements for specific licensed and unlicensed positions onboard, the maximum number of passengers the vessel can carry, the maximum number of people allowed onboard, the geographical boundaries the vessel is approved to operate in, the types and quantities for the lifesaving equipment that must be onboard, and the type and quantity of fire extinguishers that must be on board. The USCG crewing requirement is the minimum crew required for safe vessel operations.

### 2.1.1.3 Financial Capacity

AMHS receives funding from the State of Alaska and revenue from passenger operations. Budget is determined through state annual legislative processes. It also receives federal funding for both capital and operating costs. The financial capacity of AMHS influences its ability to maintain and upgrade vessels, provide services, and cover operational expenses.



## 2.2 Existing Service

Operations within Alaska are broken down into two major service regions: Southeast (Figure 6) and Southwest (Figure 4). A Cross Gulf route (Figure 5) connects the two service regions. These service regions can be broken down further into ten service areas: Aleutian Chain, Kodiak Island, Prince William Sound, Cross Gulf, North Lynn Canal, Northern Inside Passage, Southern Inside Passage, Metlakatla, Prince Rupert, and Bellingham. The AMHS fleet currently consists of nine vessels; discussed in more detail in Section 2.3.1.

### 2.2.1 Historical Service Levels

AMHS service levels have fluctuated year-on-year, especially in recent years. This is due to various factors such as funding, crew and vessel availability, the COVID-19 pandemic, and demand. Figure 3 shows the number of operating weeks and port calls for each fiscal year between 2009 and 2022. A single vessel's operating week is calculated by dividing the annual number of operating days of that vessel by seven. The total annual operating weeks is the summation of each vessel's operating weeks.

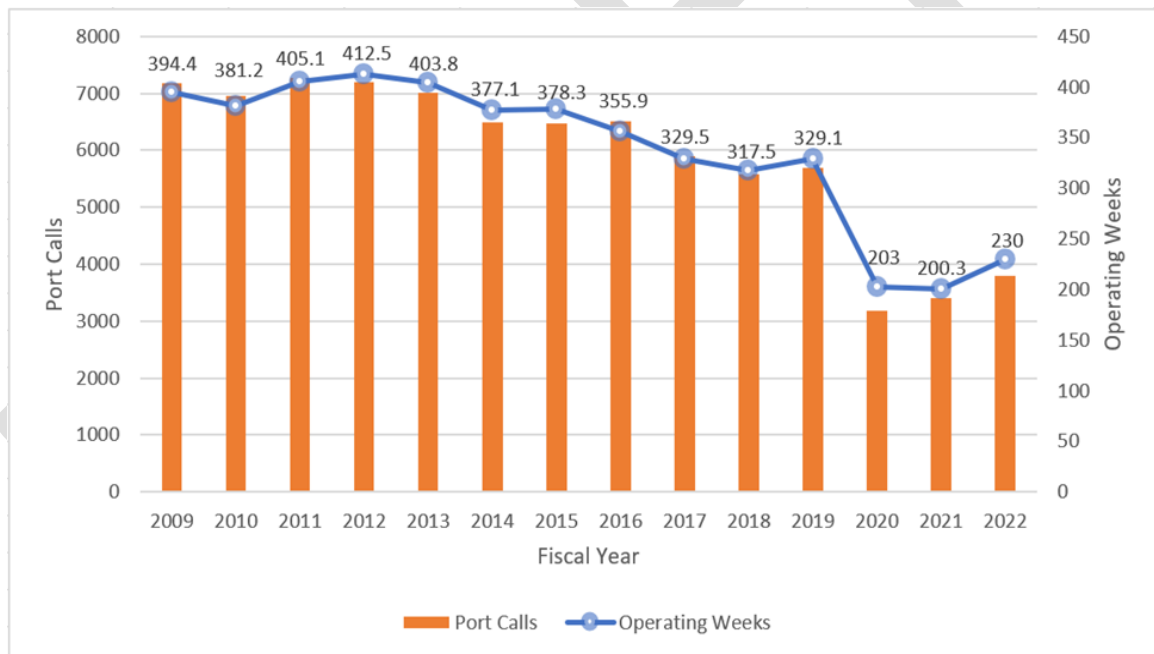


Figure 3: Operating Weeks & Port Calls FY2009-2022

Service reduction began in 2014 due to State budget constraints and therefore reduced funding levels. This pattern continued through the next five years. The operating budgets remained reduced, and a lack of capital investment led to reduced vessels to provide service. Also, a union strike took place in 2019 which affected the amount of service. In 2020 and 2021 service levels continued to decline as the COVID-19 pandemic required reduced or suspended service to prevent the spread of the virus. For those routes that continued service, ridership numbers were lower. As



the pandemic progressed schedules were adjusted in response to changing travel demand and restrictions.

## 2.2.2 Southwest Alaska Routes

The Southwest Alaska routes include the Aleutian Chain, Kenai Peninsula and Prince William Sound. The mainliner, *M/V Tustumena* provides service from Homer to Kodiak and the Aleutian Chain. Service is provided year-round to Homer, Seldovia, Kodiak, Ouzinkie, and Port Lions. However, weather restrictions prevent ferry service in the winter to the chain communities of Old Harbor, Chignik, Sand Point, King Cove, Cold Bay, False Pass, Akutan, and Dutch Harbor.

The dayboat, *M/V Aurora* currently provides service between Whittier, Valdez, Cordova, Chenega Bay, and Tatitlek. Service is provided to these communities year-round.

Figure 4 shows the Southwest Alaska routes. The red line illustrates the route of the *M/V Tustumena*. The green line illustrates the route of the *M/V Aurora*.



Figure 4: Southwest Alaska Ports

Table 1 lists the number of times typical Southeast Alaska sailings were run by the system from 2010 to 2020.



**Table 1: Typical Annual Southwest Sailings**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<i>Sailings between Prince William Sound Communities</i>	1035	853	882	830	816	652	290	93	97	85	1
<i>Sailings between Prince William Sound and Kodiak Island</i>	29	51	2	0	0	0	0	0	0	0	7
<i>Sailings between Kodiak Island Communities</i>	315	291	233	155	268	235	85	76	140	105	45
<i>Sailings between Homer and Dutch Harbor with Connections to Kodiak Island and the Aleutian Chain</i>	1	0	2	2	2	0	0	0	0	3	8
<i>Sailings between Kodiak and Dutch Harbor with Connections to Kodiak Island and the Aleutian Chain</i>	0	0	0	1	0	0	0	0	0	9	0
<i>Sailings between Seldovia and Dutch Harbor with Connections to Kodiak Island and the Aleutian Chain</i>	21	24	22	2	20	20	0	0	0	0	0

### 2.2.3 Cross Gulf Service

The Cross Gulf Service connects the Southwest routes to the Southeast routes with sailings from Bellingham, WA, to Homer, with additional stops along the Alaska Coast. The mainliner *M/V Kennicott* typically provides year-round service on this route. Figure 5 shows the Cross Gulf route.





**Figure 5: Cross Gulf Ports**

Table 2 lists the number of times typical Cross Gulf sailings were run by the system from 2010 to 2020.

**Table 2: Typical Annual Cross Gulf Sailings**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<i>Sailings to Bellingham with Connections to SE and SW</i>	0	20	22	18	28	30	2	21	24	25	0
<i>Sailings to Prince Rupert with Connections to SE and SW</i>	24	4	14	8	0	0	0	1	0	0	0
<i>Sailings between Juneau and Homer with Connections in SE and SW</i>	0	0	0	3	3	0	6	0	2	0	0
<i>Sailings between Ketchikan and Homer with Connections in SE and SW</i>	0	0	0	7	0	0	0	0	0	1	0
<i>Sailings between Juneau and Kodiak with Connections in SE and SW</i>	0	0	0	3	3	5	4	0	0	0	0
<i>Sailings between Juneau and Seldovia with Connections in SE and SW</i>	0	0	0	1	2	1	1	0	0	0	0



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<i>Sailings between Juneau and Whittier with Connection in Yakutat</i>	3	3	0	1	0	0	0	0	0	0	0
<i>Sailings between Ketchikan and Whittier with Connections to Juneau and Yakutat</i>	2	1	1	0	0	0	0	0	0	0	0
<i>Sailings between Juneau and Whittier</i>	2	1	0	0	0	0	0	0	0	0	0

### 2.2.4 Southeast Alaska

The Southeast system connects communities from Bellingham, WA, and Prince Rupert, BC, through the inside passage to Skagway. Most communities receive year-round service with mainliners serving larger communities and day boats and shuttle boats connecting the smaller communities. The larger communities served by the mainliners, *M/V Columbia* and *M/V Matanuska* include Bellingham, Prince Rupert, Ketchikan, Wrangell, Petersburg, Juneau, Haines, Skagway, and Sitka. The smaller communities currently served by the dayboats, *M/V Hubbard* and *M/V LeConte* include Angoon, Gustavus, Hoonah, Haines, Skagway, and Juneau. The shuttle boat, *M/V Lituya* provides service between Ketchikan and Metlakatla. Figure 6 shows Southeast Alaska routes.

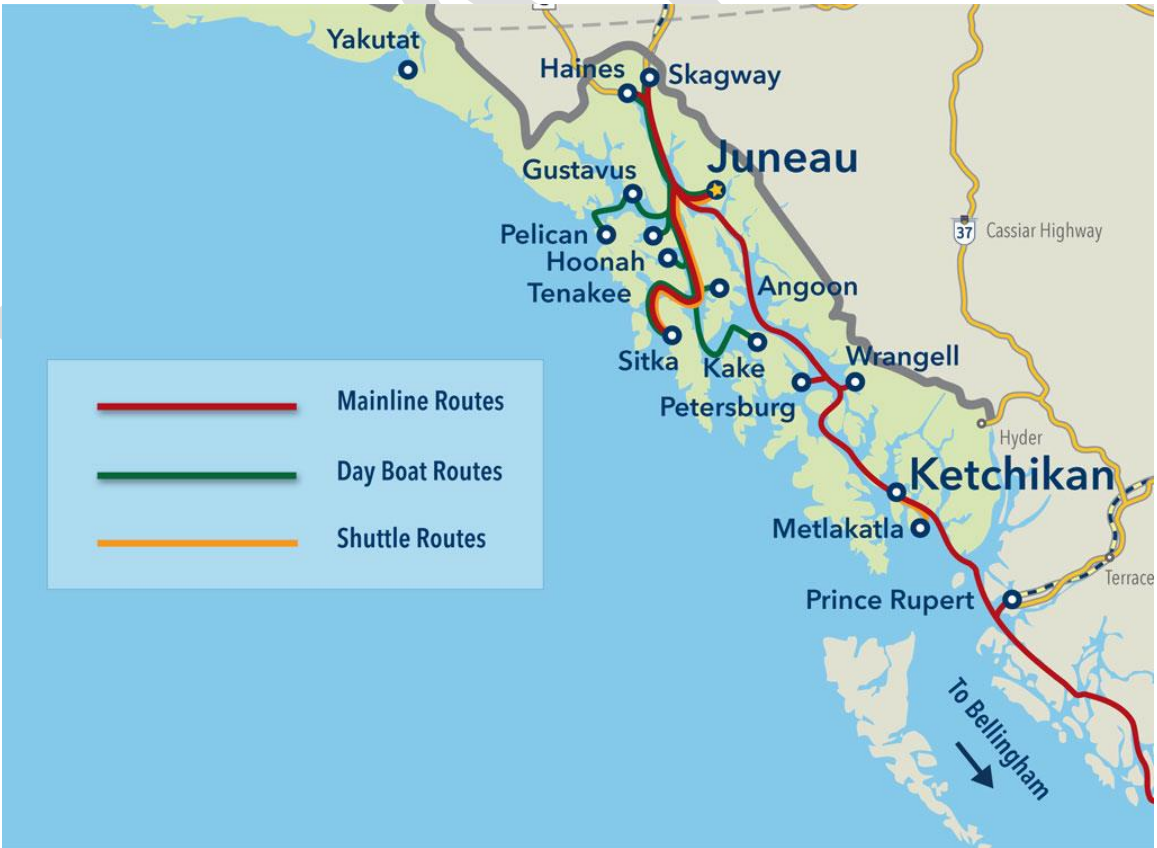


Figure 6: Southeast Ports



Table 3 lists the number of times that typical Southeast Alaska routes were run between 2010 and 2020.

**Table 3: Typical Annual Southeast Sailings**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<i>Sailings between Ketchikan and Metlakatla</i>	841	1036	1030	1006	1036	977	970	1032	957	723	266
<i>Sailings between Ketchikan, Haines and Skagway with Connections to SE</i>	5	10	4	31	33	31	19	0	0	0	0
<i>Sailings between Juneau and Ketchikan with Connections to SE</i>	11	4	18	33	32	27	15	0	1	0	0
<i>Sailings between Juneau, Haines, and Skagway</i>	571	622	445	480	416	394	68	0	0	104	47
<i>Sailings between Juneau and Angoon with Connections to SE</i>	204	224	122	163	187	155	46	0	1	4	30
<i>Sailings between Juneau and Gustavus with Connections to SE</i>	0	90	124	120	126	142	20	0	0	0	0
<i>Sailings between Juneau and Hoonah with Connections in SE</i>	148	65	96	166	112	76	24	1	0	0	10
<i>Sailings between Juneau and Kake with Connections to SE</i>	29	4	0	0	2	0	10	1	0	0	2
<i>Sailings between Juneau and Pelican with Connections to SE</i>	36	34	36	36	33	28	6	2	0	0	12
<i>Sailings between Juneau and Petersburg with Connections to SE</i>	70	74	28	28	22	20	0	0	0	0	0
<i>Sailings between Juneau and Sitka with Connections to SE</i>	258	238	260	282	158	168	0	4	2	0	2
<i>Sailings between Juneau and Tenakee Springs with Connections to SE</i>	98	74	86	2	24	18	0	0	0	0	0
<i>Sailings to Bellingham with Connections to SE</i>	120	115	107	104	105	106	41	6	6	7	5
<i>Sailings to/from Prince Rupert with Connections to SE</i>	313	303	257	199	196	154	61	46	33	20	0

## 2.3 Pillars of Service

Operating a ferry service in a unique maritime environment to a diverse set of terminals requires a reliable fleet of vessels, a skilled workforce to operate and manage the dynamic operating environment, and terminal facilities to bring that service to coastal communities. Support for these essential services is provided by strong budgetary and funding strategies. These four pillars of service of AMHS, Fleet, Shore Facilities, Workforce, and Budget and Funding Framework, are outlined in more detail in the sections below.

### 2.3.1 Fleet

The fleet currently consists of nine vessels, four mainline, four dayboats, and one shuttle vessel. Table 4 contains a summary of current fleet characteristics by vessel. Additional details for each vessel are provided in the sections below.



**Table 4: Fleet Summary**

	Mainline Ferries				Day Boat & Shuttle Ferries				
	<u>Columbia</u>	<u>Kennicott</u>	<u>Matanuska</u>	<u>Tustumena</u>	<u>Aurora</u>	<u>Hubbard</u>	<u>LeConte</u>	<u>Lituya</u>	<u>Tazlina</u>
Year Built	1974	1998	1963	1964	1977	2019	1974	2004	2019
Length (feet)	418	382	408	296	235	280	235	181	280
Beam (feet)	85	85	74	59	57	67	57	50	67
Displacement (long tons)	7684	7504	5569	3081	2132	3016	2132	647	3016
Service Speed (knots)	17.3	16.75	16.5	13.3	14.5	16.5	14.5	11.5	16.5
Normal Crew Capacity	63	55	48	38	24	24	24	5	14
Passengers	499	450	450	160	250	280	225	125	280
Vehicles (linear feet)	2660	1560 SE 1340 SW	1675	680	660	850	660	300	850
Quantity of 20-foot vehicles	133	78 SE 67 SW	83	34	33	40	33	15	40
Commercial Vans	16	17	10	6					
Staterooms (4 berth)	45	48	5	6	7	4	8	2	4
Staterooms (3 berth)	-	-	21	-	-	-	-	-	-
Staterooms (2 berth)	56	56	79	17	-	-	-	-	-
ADA Staterooms (4 berth)	-	3	-	-	-	-	-	-	-
ADA Staterooms (2 berth)	3	2	1	1	-	-	-	-	-
Total Passenger Staterooms	104	109	106	24	-	-	-	-	-
Total Passenger Berths	298	320	243	60	-	-	-	-	-

### 2.3.1.1 M/V Columbia

The *M/V Columbia* is a mainline vessel that was built in 1974 and is 49 years old. She is the largest vessel in the fleet at 418 feet, 85 feet wide and has a displacement of 7,684 long tons. She is also the fastest vessel with a service speed of 17.3 knots. She was designed to carry 499 passengers and has a vehicle capacity of 2,660 linear feet which is equal to approximately 133 twenty-foot vehicles. She has port and starboard Ro-Ro doors and a stern Ro-Ro door. Additionally, she has two vehicle elevators that are capable of hoisting 19-foot vehicles to the upper deck vehicle storage area. She is equipped with 104 staterooms for passengers and crew. She is operated by a crew of 63 and has crew staterooms. She has crew staterooms that allow her to operate on routes longer than 12 hours. She services the Southeast route from Bellingham, WA to Skagway, AK. Due to her age, she needs her centralized fire detection and alarm system and her controllable pitch propeller (CPP) system replaced.





### 2.3.1.2 M/V Kennicott

The *M/V Kennicott* is a mainline vessel that was built in 1998 and is 25 years old. She is 382 feet long, 85 feet wide, and has a displacement of 7,504 long tons. Her service speed is 16.75 knots. She can be transformed into a command center for emergency teams responding to incidents such as an oil spill. She has a vehicle elevator that is capable of loading and unloading without a ramp regardless of tide levels. She is one of two vessels in the fleet that is a certified ocean class ferry in the fleet. She is also one of two SOLAS (International Convention for Safety of Life at Sea) approved vessels in the fleet. She provides the Cross Gulf service that links South Central and Southeast Alaska and is the only vessel that services Yakutat. Given her SOLAS approval, she can also provide service to Prince Rupert, BC. She was designed to carry 499 passengers and has a vehicle capacity of 1,560 linear feet (78 twenty-foot vehicles) when operating in Southeast Alaska and 1,340 linear feet (67 twenty-foot vehicles) when operating in Southwest Alaska. Southwest Alaska has less capacity due to having to use the elevator in Yakutat, Kodiak, and Whittier. She is equipped with 109 passenger staterooms and 320 total berths. She has port and starboard roll on, roll off (Ro-Ro) doors, an elevator that is capable of loading and unloading vehicles without a ramp, and a vehicle turntable. She is operated by a crew of 55 and has crew staterooms. She currently doesn't require any work to maintain her SOLAS certification, but she does require maintenance to be completed on her vehicle lift system, accommodation ladders, and exhaust system.

### 2.3.1.3 M/V Matanuska

The *M/V Matanuska* is a mainline vessel that was built in 1963 and is 60 years old. She is 408 feet long, 74 feet wide and has a displacement of 5,569 long tons. Her service speed is 16.5 knots. She is the only remaining vessel of the three sister ships that were the original AMHS fleet. She is one of two International Convention for Safety of Life at Sea (SOLAS) approved vessels in the fleet. She is designed to carry 450 passengers and has a vehicle capacity of 1,675 linear feet which accommodates approximately 83 twenty-foot vehicles. She has port and starboard Ro-Ro doors and one stern Ro-Ro door. She is equipped with 106 passenger staterooms and 243 total berths. She is operated by a crew of 48 and has crew staterooms which allow her to operate on routes longer than 12 hours. She normally operates the Southeast route between Bellingham and Skagway with a monthly trip between Prince Rupert and Skagway. Given her SOLAS classification, the Matanuska could continue to provide service to Prince Rupert, BC. However, she would require significant work to maintain her SOLAS approval, including refurbishing the entire Cabin Deck stateroom area to remove dead-end corridors; converting the Chief Mate stateroom into a SOLAS-compliant Safety Center; and completing Phase 2 and 3 of the main vertical zone insulation upgrades. In addition to the work required to maintain SOLAS approval, the steel in some of her tanks and voids is severely corroded and needs to be replaced.

### 2.3.1.4 M/V Tustumena

The *M/V Tustumena* is a mainline vessel that was built in 1964 and is 59 years old. She is 296 feet long, 59 feet wide and has a displacement of 3,081 long tons. Her service speed is 13.3 knots. She



is the smallest AMHS vessel with passenger cabins and is one of only two certified ocean-class ferries in the fleet. She was designed to carry 160 passengers and has a vehicle capacity of 680 linear feet, which is equal to approximately 34 twenty-foot vehicles. She has port and starboard Ro-Ro doors, an elevator that is capable of loading and unloading vehicles without a ramp, and a vehicle turntable. She is equipped with 24 passenger staterooms and 60 total berths. She is operated by a crew of 38 and has crew staterooms. She operates the Southwest route and, in the summer, connects the communities along the Aleutian chain to Kodiak and Homer. In the winter she provides service to Homer, Kodiak, Ouzinkie, and Port Lions. The other communities along the Aleutian chain are not serviced in the winter due to weather restrictions. Due to her age and the environment in which she operates, she requires significant steel refurbishment and various upgrades to her steering and control systems to add modern equipment.

#### **2.3.1.5 M/V Aurora**

The *M/V Aurora* is a day boat that was built in 1977 and is 46 years old. She is 235 feet long, 57 feet wide and has a displacement of 2,132 long tons. Her service speed is 14.5 knots. She is the sister ship of the *M/V LeConte* and like the *M/V LeConte* her small size enables her to provide service to the smaller communities. She was designed to carry 225 passengers and has a vehicle capacity of 660 linear feet, which is approximately 33 twenty-foot vehicles. She has port and starboard Ro-Ro doors and a stern Ro-Ro door that includes a vehicle ramp. She is operated by a crew of 24 and she has crew staterooms. She currently services the Prince William Sound communities. She needs an expensive repower and is currently planned to be replaced by the *M/V Hubbard* once terminal modifications have been made to three of the Prince William Sound communities to allow them to be used by the Alaska Class Ferry (ACF) vessels. The terminal modifications are planned to be completed in 2026 with the *M/V Hubbard* taking over for the *M/V Aurora* in 2027.

#### **2.3.1.6 M/V Hubbard**

The *M/V Hubbard* is an ACF vessel that was built in 2019 and entered service in May 2023. She is the newest vessel of the fleet and the sister ship of the *M/V Tazlina*. She is 280 feet long, 67 feet wide, and has a displacement of 3,016 long tons. She has a bow door and ramp, a starboard forward Ro-Ro door, a port aft Ro-Ro door, and a stern Ro-Ro door. The *M/V Hubbard* recently had crew quarters added which allows her to operate on routes over 12 hours, but she does not have any passenger staterooms. She was designed to carry 280 passengers and has a vehicle capacity of 850 linear feet, which is approximately 40 twenty-foot vehicles. She is operated by a crew of 24 and she is currently serving the North Lynn Canal communities. She needs additional vehicle tie-downs added to her vehicle deck for securing vehicles and containers.

#### **2.3.1.7 M/V LeConte**

The *M/V LeConte* is a day boat that was built in 1974 and is 49 years old. She is 235 feet long, 57 feet wide, and has a displacement of 2,132 long tons. Her service speed is 14.5 knots. Given her



small size, she is able to provide service to the smaller communities on AMHS routes. She was designed to carry 225 passengers and has a vehicle capacity of 660 linear feet, which is approximately 33 twenty-foot vehicles. She has port and starboard Ro-Ro doors and a stern Ro-Ro door that includes a vehicle ramp. She is operated by a crew of 24 and she has crew staterooms. She currently services the Northern Inside Passage communities. Similar to the *M/V Columbia*, she needs her centralized fire detection and alarm system replaced and upgrades made to her ventilation system to improve the air flow in the crew quarters on the Gallery Deck.

### 2.3.1.8 M/V Lituya

The *M/V Lituya* was built in 2004 and is 19 years old. She is the smallest vessel in the fleet at 181 feet long, 50 feet wide, and she has a displacement of 647 long tons. She exclusively provides shuttle service between Ketchikan and Metlakatla. She is the only ferry dedicated to a single route and the only vessel in the fleet with an open car deck. She was designed to carry 125 passengers and has a vehicle capacity of 300 linear feet, which is approximately 15 twenty-foot vehicles. She can load vehicles from the starboard side or the stern. She does not have any passenger or crew staterooms and is operated by a crew of seven. In summer of 2022, she had her exterior coating system replaced. She currently needs steel work completed on her bridge deck.

### 2.3.1.9 M/V Tazlina

The *M/V Tazlina* is an ACF vessel that was built in 2019 and is the only AMHS vessel wholly constructed in Alaska. She is 280 feet long, 67 feet wide, and has a displacement of 3,016 long tons. She was designed to carry 280 passengers and has a vehicle capacity of 850 linear feet, which is approximately 40 twenty-foot vehicles. She has a bow door and ramp, a starboard forward Ro-Ro door, a port aft Ro-Ro door, and a stern Ro-Ro door. She does not currently have any passenger or crew staterooms which limits her operation to routes less than 12 hours. She is operated by a crew of 16. The *M/V Tazlina* needs modifications completed to her hawsepipes, isolation mounts added to her generator sets, and crew quarters added to allow her to operate on routes longer 12 hours. After her crew quarters are added and terminal modifications are completed in Prince William Sound, she will take over for the *M/V Hubbard* servicing the North Lynn Canal area. After the crew quarters are added, she will be operated by a crew of 24.

### 2.3.1.10 Fleet Age

The prime life of a ferry is normally around 30 years. Figure 7 shows the ages of each vessel compared to their prime life. As vessels age, they require more maintenance which increases costs and requires more time out of service. Older vessels are more prone to mechanical failures due to aging systems and components that can result in unexpected breakdowns, propulsion problems or other mechanical malfunctions, leading to delays or cancellations, as AMHS has experienced. Additionally, older vessels often have less fuel-efficient engines that can result in higher fuel consumption, increased operating costs, and a larger environmental impact. Maritime regulations continue to evolve and have become more stringent and retrofitting the vessel to comply with the



latest standards. This can be costly and challenging. Furthermore, operating an older ferry fleet can impact the reputation of the ferry company. Passengers may perceive older vessels as less safe or less reliable, leading to a decline in customer trust. AMHS does mitigate the risks of operating older vessels through regular inspections and maintenance programs. Given the age of the vessels in the fleet, AMHS needs to create a vessel retirement and replacement schedule.

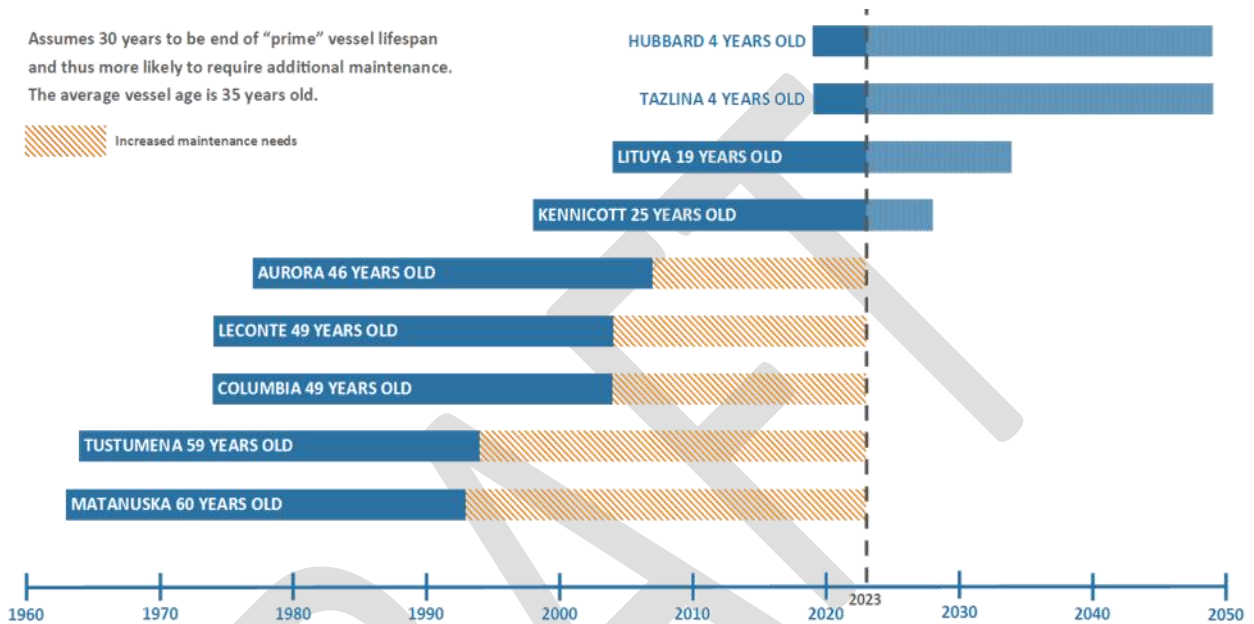


Figure 7: Age of Fleet

### 2.3.1.11 Fleet Maintenance

Each vessel within the fleet is unique and has different maintenance needs. The condition of the fleet is determined by the annual Fleet Condition Survey (FCS). The FCS describes each vessel's condition and creates a database of each vessel's maintenance needs. The FCS contains a matrix summarizing work items for each vessel, including an estimated cost and a priority for each item. Priority levels are based on urgency and type:

- Priority 1 – Immediate
- Priority 2 – Problematic
- Priority 3 – Preventative
- Priority 4 – Lifecycle
- Priority 5 – Upgrades (Recommended)

Figure 8 shows the distribution of priority items identified in the 2022 FCS and the costs associated with them. The work identified in the 2022 FCS, much of which was considered a high priority, had



a rough order of magnitude estimate of \$224 million<sup>7</sup>. There were 467 defects identified fleetwide, an increase of 106 defects over 2020. Thirteen percent of the defects were deemed mission critical (Priority 1). Figure 9 shows the number of defects found on each vessel for each category.

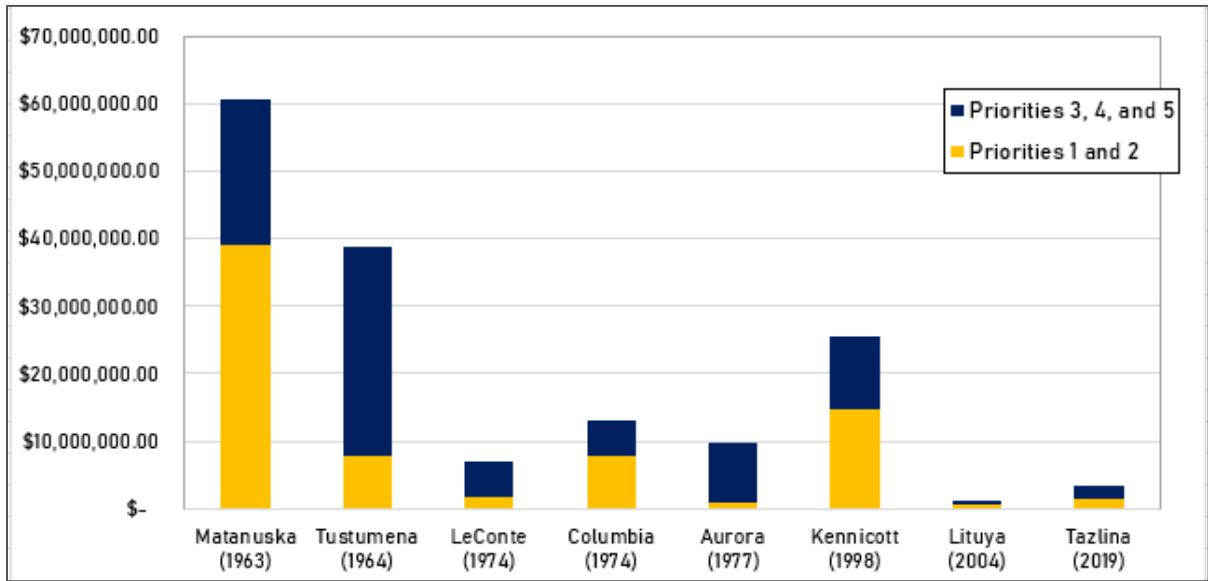


Figure 8: Distribution of Priority Items

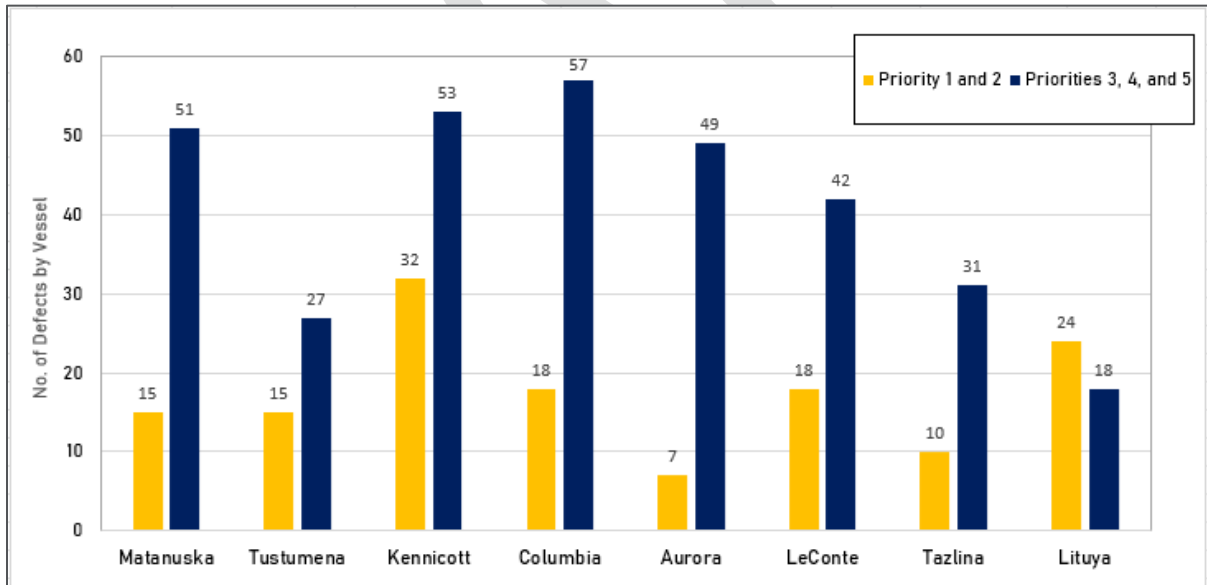


Figure 9: 2022 FCS Identified Defects

Other than the FCS, AMHS doesn't have a fleet-wide maintenance strategy to address equipment reliability or an asset management system to track the lifecycle of each vessel component to facilitate proactive maintenance planning. Furthermore, AMHS does not have a root cause analysis

<sup>7</sup> The 2022 FCS did not include any work on the *MV Hubbard* since the vessel had not been in service, work is needed on the vessel.



program to identify if there are issues with vessel design and systems after an incident or a comprehensive risk management framework to identify and mitigate potential hazards and vulnerabilities.

### 2.3.2 Shore Facilities

AMHS vessels call on a total of 35 different terminals, including two ports outside the state, in the three operating areas, 17 in the Southeast, 7 in Southcentral, and 11 in Southwest. The terminals are owned by either DOT&PF, cities, boroughs, private entities, or foreign entities. DOT&PF maintains most of the ferry facilities served by AMHS and has a dedicated marine design group, environmental staff, and a marine engineering department who directly design and/or manage design efforts for refurbishments, replacements, repairs, and maintenance on the terminals.

As AMHS has grown, shore facilities have been developed based on the characteristics of the vessels serving each port. As a result, there is limited flexibility within the system for vessels to serve different routes for either regular or emergency operations. Developing a common set of design standards to allow more flexibility is one of the long-range goals for AMHS.

The terminals in each operating area have been designed to work with the primary vessel serving each community. The vessel loading systems generally fall into one or more of the following categories:

- **Load via ship's vehicle elevator:** All the terminals in the Southwest area are served by a vessel which loads and unloads vehicles using an elevator that can accommodate wharfs with a large range of elevations and tides. The wharves themselves are fixed structures and can accommodate other vessels.
- **Ro-Ro via stern doors:** These facilities have a floating structure that supports the lower end of a transfer bridge and a hydraulically operating apron. The upper end of the gangway is supported by a fixed wharf or pier at approximately the same elevation as the local road system.
- **Ro-Ro via side doors:** These facilities operate using a similar system to the stern door loading except that vessel access is through side doors (port or starboard) located towards the bow of the ferry.

A summary of each terminals' ownership, vessel compatibility, and the quantity of each loading system is provided in Table 5 below:



Table 5: Terminal/Vessel Compatibility

Terminal	Owner	Vessels										Loading		
		Columbia	Matanuska	Aurora	Leconte	Tustumena	Lituya	Tazlina	Hubbard	Kennicott	Elevator	Ro-Ro Stern	Ro-Ro Side	
<b>Southeast Facilities</b>														
Angoon	AK DOT&PF	-	-	+	+	-	+	+	+	-		1		
Auke Bay (Juneau)	AK DOT&PF	+	+	+	+	+	+	+	+	+		1	2	
Bellingham, WA	Port of Bellingham	+	+	+	+	-	+	+	+	+		1		
Gustavus	AK DOT&PF	+	+	+	+	-	+	+	+	+			1	
Haines	AK DOT&PF	+	+	+	+	-	+	+	+	+		1	1	
Hoonah	AK DOT&PF	-	+	+	+	-	+	+	+	-			1	
Kake	AK DOT&PF	-	+	+	+	-	+	+	+	-			1	
Ketchikan	AK DOT&PF	+	+	+	+	+	+	+	+	+		2	1	
Annette Bay (Metlakatla)	AK DOT&PF	+	+	+	+	+	+	+	+	+			1	
Pelican	AK DOT&PF	-	-	+	+	-	+	+	+	-		1		
Petersburg	AK DOT&PF	+	+	+	+	-	+	+	+	+			1	
Prince Rupert, BC	City of Prince Rupert	-	+	+	+	-	+	+	+	+		1		
Sitka	AK DOT&PF	+	+	+	+	-	+	+	+	+			1	
Skagway	AK DOT&PF	+	+	+	+	-	+	+	+	+			1	
Tenakee	AK DOT&PF	-	-	+	+	-	-	+	+	-			1	
Wrangell	AK DOT&PF	+	+	+	+	-	+	+	+	+			1	
Yakutat	AK DOT&PF	-	-	-	-	+	-	-	-	+			1	
<b>Southcentral Facilities</b>														
Chenega	North Pacific Rim Housing Authority	-	-	+	+	+	-	-	-	+		1	1	
Cordova	AK DOT&PF	-	-	+	+	-	-	+	+	+		1	1	
Homer	City of Homer	-	-	-	-	+	-	-	-	+		1	2	
Seldovia	City of Seldovia	-	-	-	-	+	-	-	-	+			1	
Tatitlek	North Pacific Rim Housing Authority	-	-	+	+	+	-	+	+	+		1		
Valdez	AK DOT&PF	-	-	+	+	+	+	+	+	+			1	
Whittier	AK DOT&PF	-	-	+	+	+	+	+	+	+		1		
<b>Southwest Facilities</b>														
Akutan	Aleutians Borough East	-	-	-	-	+	-	-	-	+	X			
Chignik	Trident Seafoods	-	-	-	-	+	-	-	-	-	X			
Cold Bay	Aleutians Borough East	-	-	-	-	+	-	-	-	+	X			
False Pass	Village of False Pass	-	-	-	-	+	-	-	-	-	X			
King Cove	Aleutians Borough East	-	-	-	-	+	-	-	-	+	X			
Kodiak	City of Kodiak	-	-	-	-	+	-	-	-	+	X			
Old Harbor	City of Old Harbor	-	-	-	-	+	-	-	-	+	X			
Ouzinkie	City of Ouzinkie	-	-	-	-	+	-	-	-	+	X			
Port Lions	City of Port Lions	-	-	-	-	+	-	-	-	+	X			
Sand Point	City of Sand Point	-	-	-	-	+	-	-	-	+	X			
Unalaska (Dutch Harbor)	City of Unalaska	-	-	-	-	+	-	-	-	+	X			





### 2.3.2.1 Facility Maintenance

Surveys of the above-water components of each facility are completed biennially and underwater inspections are performed over a five-year cycle. The most recent shore facilities condition report was completed in 2022. The Shore Facilities report rates various components' in-place condition as compared to its as-built condition. Descriptions of condition ratings are located below in Table 6.

**Table 6: Shore Facility Inspection Condition Ratings**

<b>Condition Rating</b>	<b>Description</b>
<b>0</b> <i>Failed</i>	Out of service, beyond corrective action.
<b>1</b> <i>Imminent Failure</i>	Major deterioration or corrosion in deck, superstructure, or substructure, or obvious vertical or horizontal movement affecting structural stability. Facility is closed to traffic, but corrective action may put back in light service.
<b>2</b> <i>Critical</i>	Advanced deterioration of the deck, superstructure, or substructure. May have cracks in steel or concrete, or erosion may have removed substructure support. It may be necessary to close the facility until correction action is taken.
<b>3</b> <i>Serious</i>	Corrosion, deterioration, cracking, and chipping, erosion of piers or abutments have seriously affected deck, superstructure, or substructure. Local failures are possible.
<b>4</b> <i>Poor</i>	Advanced corrosion, deterioration, cracking or chipping. Also significant erosion of piers or abutments.
<b>5</b> <i>Fair</i>	All primary structural elements are sound but may have minor section loss, cracking, spalling or corrosion.
<b>6</b> <i>Satisfactory</i>	Structural elements show some minor deterioration.
<b>7</b> <i>Good</i>	Some minor problems.
<b>8</b> <i>Very Good</i>	No problems.
<b>9</b> <i>Excellent</i>	New, no problems.

Figure 10 and Figure 11 show the location and overall ratings of terminals in Southeast and Southwest regions, respectively.





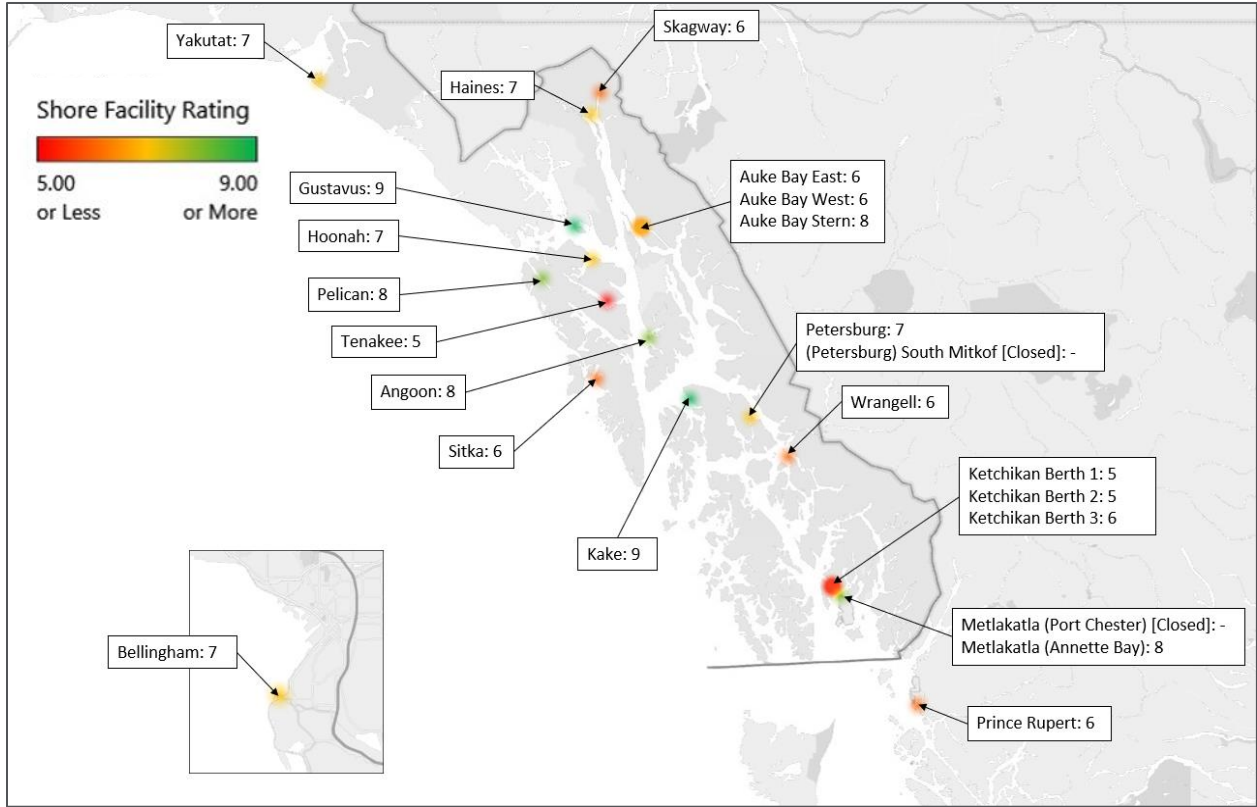


Figure 10: 2022 Southeast Terminal Inspections and Ratings

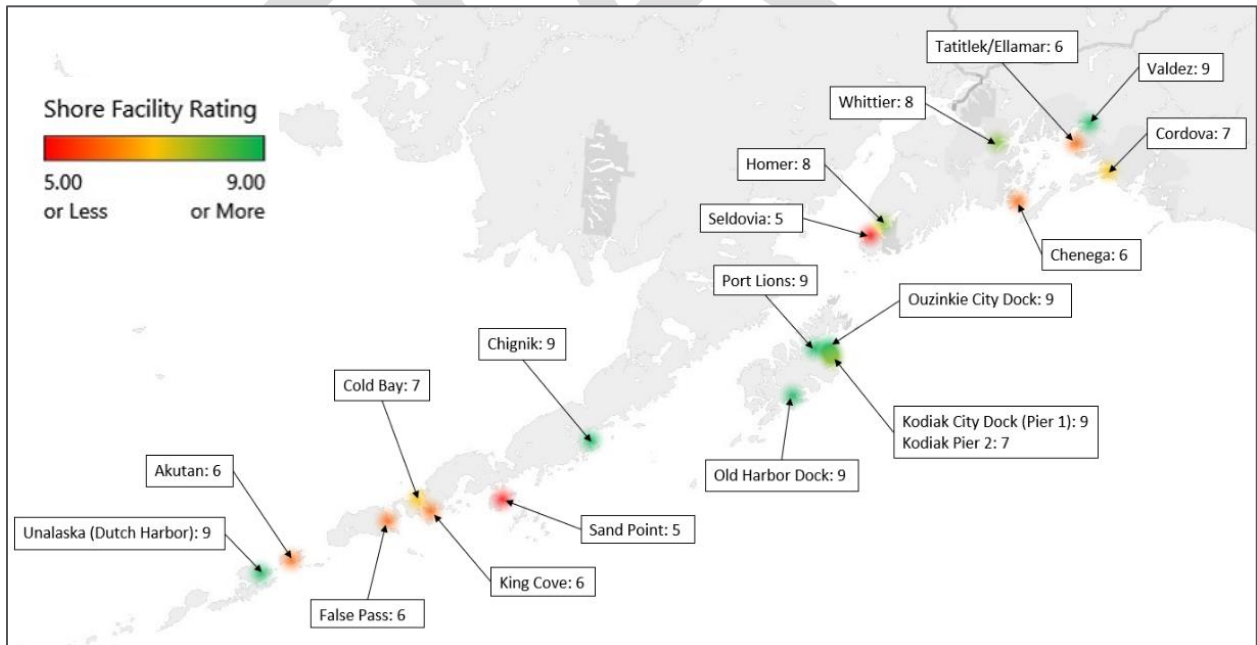


Figure 11: 2022 Southwest and Southcentral Terminal Inspections and Ratings



### 2.3.3 Workforce

AMHS is nothing without the people working daily to keep vessels running, providing passengers with services, booking reservations, maintaining schedules, and keeping AMHS in regulatory compliance. DOT&PF is fortunate to have a committed staff who want to make a difference and create a functioning and thriving system. AMHS staff can be grouped into three categories: vessel personnel, terminal staff, and management/administrative staff. The vessel personnel must meet specific requirements established by the USCG for physical fitness, training, and experience. The training requirements include the Standards of Training, Certification and Watchkeeping for Seafarers (STCW). Vessel personnel work in three different departments onboard (Deck, Engine, and Stewards) and are represented by three different collective bargaining units (InlandBoatmens Union [IBU], Marine Engineers Beneficial Union [MEBA], and International Organization of Masters, Mates, and Pilots Union [MMP]).

Unfortunately, due to current staffing shortages in both the maritime industry and within AMHS, staff are largely overworked, and vessels are often in layup status due to crewing shortages. The shortage of qualified crew members threatens the ability of AMHS to fully utilize its fleet. Being short-staffed results in vessels that are sailed with a crew operating on extensive holdovers and significant overtime status, leading to low morale. Since 2019, AMHS has lost more staff annually than recruitment efforts can replace. For every person hired, 1.8 people separated from AMHS. Figure 12 shows the total number of employees hired and separated from AMHS between 2019 and 2021. "Total Hired" includes employees from the steward, engine, deck, terminals, and shoreside departments. "Total Separated" accounts for retirements, resignations, and terminations.



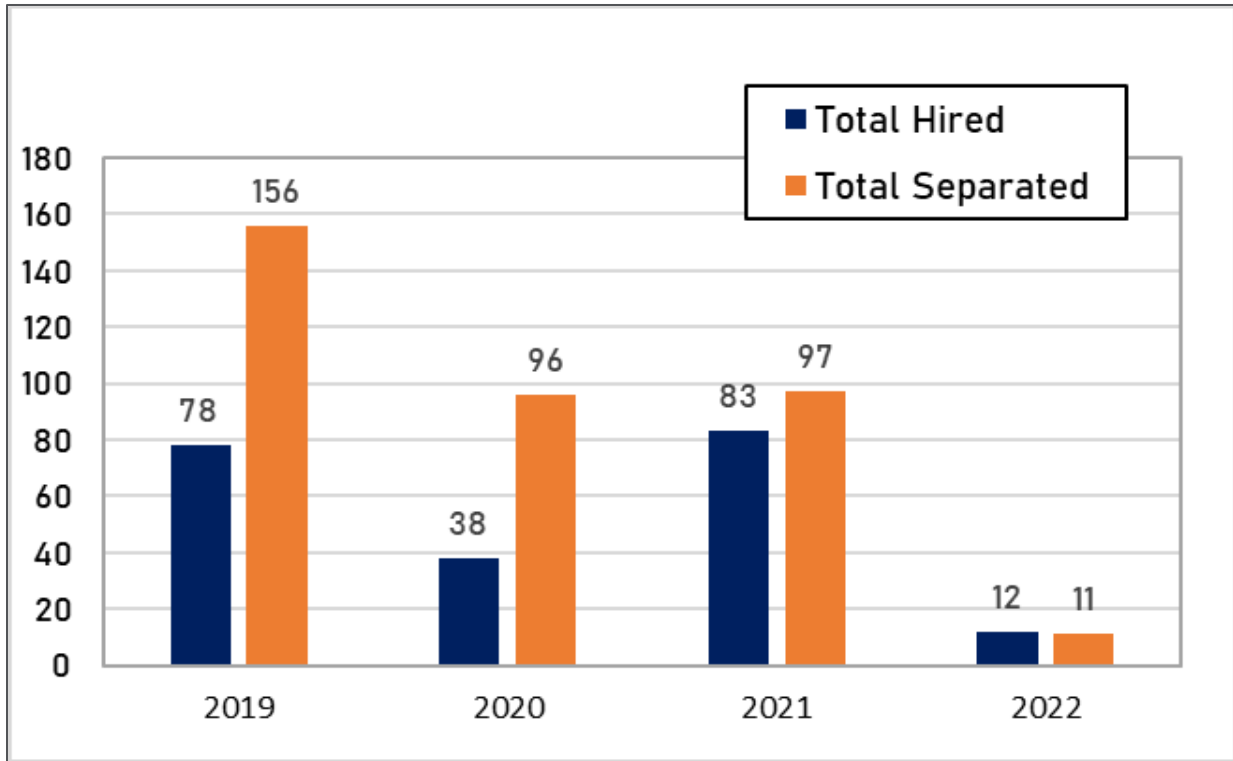
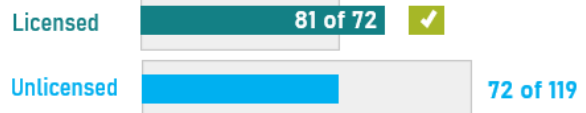


Figure 12: Employees Hired and Separated 2019 to 2022

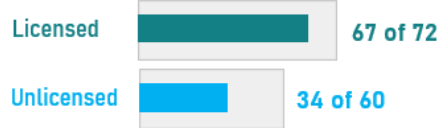
Currently, the fleet is experiencing a crew shortage across all departments, deck, engine, and passenger services. Figure 13 shows fleetwide staffing levels in winter 2023. When shortages occur in any individual department, vessels are at risk of being taken out of service.

One issue currently affecting AMHS crew retention is the process through which new crew are hired. All new hires, regardless of their intended eventual departments, must enter AMHS through the Steward Department. This path can often demotivate employees to stay with AMHS before even leaving the Steward Department.

**DECK**



**ENGINE**



**PASSENGER SERVICES**

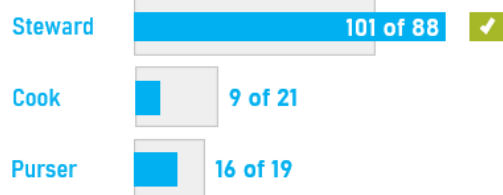


Figure 13: Winter 2023 Staffing Levels (actual vs preferred)

Furthermore, all crew members, regardless of department, are minimally required to receive a Merchant Mariner Credential to work aboard a vessel. The application process and time to receive



the document may take up to six months. This lengthy wait-time can often lead to employees separating from AMHS before starting any work with the fleet.

To move to higher positions in the fleet, both sea time and additional training is required. The time necessary for these promotions can again act as a demotivator for crew members to stay with AMHS. Additionally, it is difficult for AMHS to directly hire into these higher positions due to competition with commercial companies in the industry.

Currently, AMHS has several initiatives in place to close the gap between hires and separations. These initiatives include increasing hiring outreach through a variety of methods, such as job fairs, advertising and social media outreach, as well as implementing changes to improve current employee satisfaction.

### 2.3.4 Budget and Funding Framework

AMHS's operating budget is based on annual legislatively approved service levels. In recent years, AMHS has seen reduced revenue due to a loss of ridership and other services. Simultaneously, contracted crew levels and vessel availability have made it challenging for AMHS to scale up service levels to appropriated levels. Because of this, current funding levels are sufficient to support current levels and the 2022-2023 Winter Operating Plan. Table 7 shows the revenue and operating expenses of AMHS from FY2019 – FY2022.

**Table 7: Revenue and Expenditure FY2019 – FY2022**

(Expressed in actual \$ Millions)	2019	2020	2021	2022
<b>REVENUE</b>				
Customer Fares	50.8	28.3	27.9	31.3
General Fund Allocation	86.0	45.8	53.1	7.5
AK Motor Fuel Tax Fund	3.6	3.6	3.6	1.8
Federal Highway Administration	-	-	-	59.0
Federal Transit Administration	-	-	-	37.5
Gaming Tax Appropriation	10.1	-	-	-
Transfer from Inv Loss Trust	-	-	1.6	-
Transfer from AIDEA	-	-	14.5	-
Overhauls (capital)	-	-	(15.0)	-
Restricted Funds	0.4	0.7	0.3	0.6
Additional Appropriation	5.1	(5.0)	5.5	(2.6)
<b>Total Revenue</b>	<b>156.0</b>	<b>73.4</b>	<b>91.5</b>	<b>135.1</b>
<b>OPERATING EXPENSES</b>				
Vessel Operations	120.8	79.8	81.0	89.1
Shoreside Costs	16.9	12.7	13.0	15.4
Allocated Costs	3.2	2.1	2.1	1.9
<b>Total Operating Expenses</b>	<b>140.9</b>	<b>94.6</b>	<b>96.1</b>	<b>106.4</b>



More information can be found on the “AMHS Annual Financial Report for 2022” on the AMHS website.

### 2.3.4.1 Historical Funding Sources

Historically, AMHS has been funded by a combination of revenues and support from the government. The latter has traditionally included allocations from the State general fund and a portion of the State’s fuel tax. The allocation from all State funds was \$119.8 million in FY2015 and was proposed at \$55.2 million in FY2022. The actual spend in FY2022 was only \$7.5 million due to an infusion of \$96.5 million in federal funds: \$59.0 million from the Federal Highway Administration and \$37.5 million from the Federal Transit Administration.

The ratio of revenues compared to total operating cost is used by many transportation entities as a metric of performance. Known as the Fare Box Recovery Rate, this varies widely for ferry systems. For example, Washington State Ferries has averaged 75 percent fare box recovery for the past 10 years.

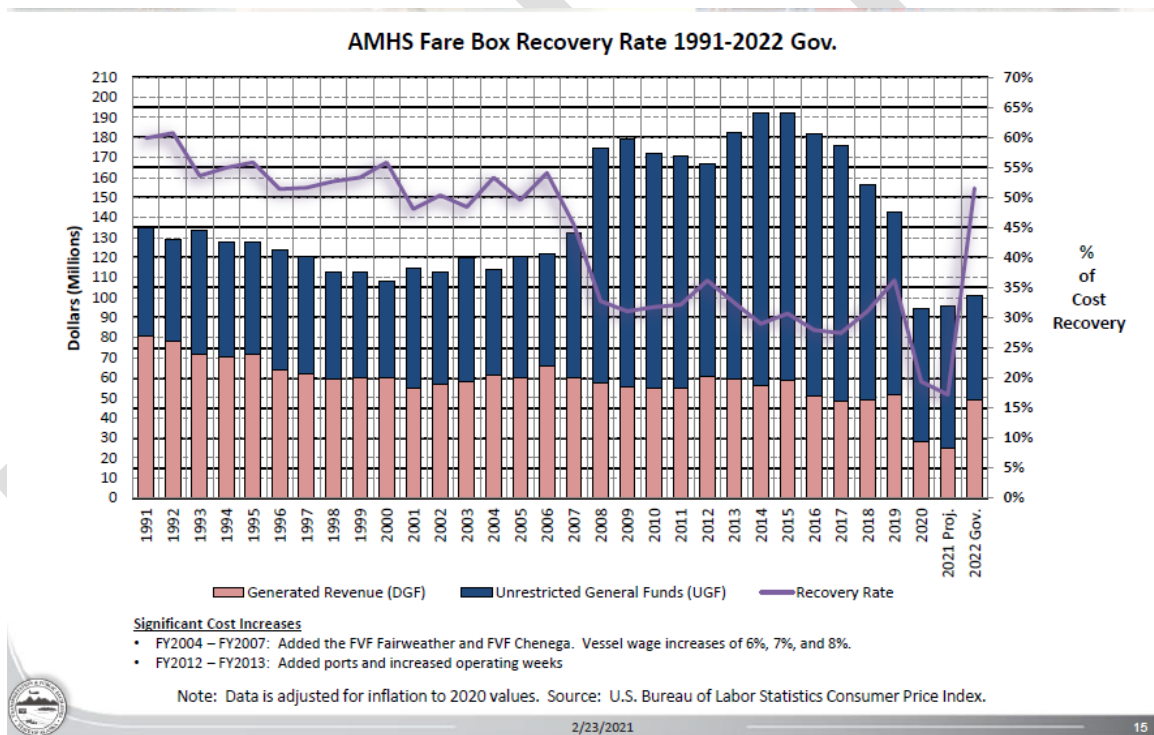


Figure 14: Fare Box Recovery Rate

### 2.3.4.2 Infrastructure Investment and Jobs Act

The Infrastructure Investments and Jobs Act (IIJA) is the largest federal investment ever made in public transit. It provides \$550 Billion dollars over five years for repairs and upgrades to United States Infrastructure. Of the entire funds, \$1 Billion is allocated to ferry-specific projects, and a small provision requires that eligible routes must span greater than 50 miles, which allows Alaska to collect a majority of the funds. The bill also sets aside \$250 million dollars for a pilot project

electric or low emission ferry, with a provision requiring one of the pilot tests to occur in AMHS. Next, \$342 million is set aside for the construction of ferry boats and ferry terminals facilities, of which Alaska is expected to receive \$73 million.

## 2.4 Needs Assessment

As a pre-requisite of future planning, identifying gaps/needs in existing infrastructure and operational elements can shed light to future initiatives, strategies, metrics or investments needed to meet the priorities, goals, mission and vision of AMHS. The LRP will serve to bridge these gaps with short-, medium- and long-term strategies and investments that will be identified in Phase 2 of the LRP with an outlook to 2045.

### 2.4.1.1 Fleet

- Vessel retirement and replacement schedule
- Fleet-wide maintenance strategy to address equipment reliability.
- Asset management system to track the lifecycle of each vessel component and facilitate proactive maintenance planning.
- Root causes of deficiencies program in vessel design and systems.
- Fleetwide environmental sustainability program that promotes energy-saving measures in operations.
- Comprehensive risk management framework to identify and mitigate potential hazards and vulnerabilities.

### 2.4.1.2 Shore Facilities

- Integrated terminal program planning within AMHS.
- Comprehensive facility asset management plan for terminals. The current system of inspection and repairs is adequate for short-term maintenance but a plan with a longer forecasting timeframe would help establish future maintenance budgets to support long-range budget forecasting.
- Shore facility resiliency plan to address specific risks presented by sea level rise and climate change and mitigation at each terminal.

### 2.4.1.3 Workforce

- Targeted and increased recruitment efforts will be continued to increase the number of new hires.
- Issues experienced by current employees will be evaluated to mitigate the number of separations.



- Intensive safety training will be implemented to foster an overarching culture of both crew and passenger safety and wellbeing.

#### **2.4.1.4 Technology**

- Improved internet connectivity onboard for both crew and passengers.
- Improved reservation system that aligns with the industry best practices.
- Scheduling software should be implemented for crew and the fleet.
- Integrated scheduling scenario tool to assist with budgeting, crewing, and level of service decisions.

#### **2.4.1.5 Budget and Funding Framework**

- Integrated long-range infrastructure capital program plan.
- Improved financial forecasting and financial reporting.

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# 3. Engagement Plan

This Long-Range Plan will be strengthened through engagement with diverse groups of stakeholders as diverse as the communities AMHS serves. The Plan will be guided from both internal ferry operations management at AMHS, the Alaska Marine Highway Operations Board of volunteers

Engagement with a variety of stakeholder groups will inform the process of developing and reviewing this Long-Range Plan throughout all phases. Existing and ongoing planning efforts, summarized below, can be referenced for context. Many of these existing community resources are being looked to for continued input and participation throughout the development of this Long-Range Plan.

- AMHOB
  - AMHOB is led by the deputy commissioner of DOT&PF and chaired by eight public members. AMHOB serves to provide recommendations on the Statewide Transportation Improvement Program (STIP), short-term and long-term planning efforts, and on the operation and management of AMHS.
- Ferry Focus Groups
  - As a part of the Charting the Course (CTC) initiative, DOT&PF has begun hosting Ferry Focus Groups (FFG). These are service area-specific groups of community stakeholders, formed to gain local input for service schedules, supplemental service opportunities, and event occurrences.
  - The first round of FFGs occurred in April 2023, with five separate virtual focus groups. These meetings established the groups, began to gauge service schedule feedback, and explored ways to increase awareness for and attendance of the meetings. These groups are planned to meet on a quarterly basis.
- Southwest Alaska Municipal Conference
  - The Southwest Alaska Municipal Conference (SWAMC) is a non-profit regional economic development organization for Southwest Alaska. SWAMC serves three sub-regions of Southwest Alaska: the Aleutian/Pribilofs Islands, Bristol Bay, and Kodiak. SWAMC helps promote economic opportunities to improve quality of life and influences long-term responsible development<sup>8</sup>.
- Southeast Conference
  - As the state and federally designated regional economic development organization for Southeast Alaska, Southeast Conference (SEC) serves as the collective voice for

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<sup>8</sup> Source: SWAMC. <https://swamc.org/about/>





advancing the region's economy. SEC has 180 member organizations representing 1,200 people from 32 regional communities<sup>9</sup>.

- In February of 2020, SEC conducted a public SWOT Analysis (strengths, weaknesses, opportunities, and threats), receiving roughly 1,300 handwritten comments as feedback. The top identified weakness, opportunity, and threats as identified by the SEC all related to the state's ferry service.
- Public Comment Solicitation
  - Community members can provide public comment at any time through the Public Comment platform on the AMHS or CTC websites.

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<sup>9</sup> Source SEC Mission Statement. <https://statics.teams.cdn.office.net/evergreen-assets/safelinks/1/atp-safelinks.html>



## 4. AMHS Mission & Vision DRAFT

AMHS is an essential service to many of Alaska’s otherwise isolated communities, as it provides connections to and transportation for people, goods, and services. The AMHS LRP serves to provide a vision to guide the system through 2045 by identifying short-, medium-, and long-term investments. The development of this vision is informed by the priorities and goals identified through system analysis, and supported by input and recommendations by Alaskans.

Mission and vision statements will be informed by these defined priorities. Existing and ongoing planning efforts (AMHOB, existing Long Range Transportation Plans [LRTPs]) have proposed priorities, strategies, and mission statements that will be referenced in the development of the LRP.

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## 5. Priorities, Goals, and Performance Measures

The LRP is set up to outline priorities, propose strategies to approach these goals, and identify performance metrics to measure progress toward the envisioned system. As explained in Section 4, a large part of this effort has involved synthesizing existing planning materials to gauge historical trends and progress. DOT&PF's two existing LRTPs are summarized below:

- ***Let's Keep Moving 2036*** envisioned a transportation network that enabled a robust and growing economy. The plan prioritized investment in modernization and promoting economic vitality. Similar to the LRP, *Let's Keep Moving 2036* used a performance-based measurement approach to monitor progress.
- ***Alaska Moves 2050***, drafted in 2022, superseded *Let's Keep Moving 2036* as the State's LRTP. This multimodal plan set forth six priority areas: safety, mobility and access, economic vitality, state of good repair, resiliency, and sustainability. The plan envisioned a multimodal, connective, and resilient system.

The AMHS LRP, expected in Summer 2024, will fit into the vision outlined in the LRTP, focusing acutely on the role of AMHS within the larger context of Alaska's multimodal transportation network.

To kick off the current LRP effort, workshops in October 2022 and April 2023, with members of the Alaska Marine Highway Operations Board (AMHOB) and DOT&PF, were held to begin identifying priorities and goals for the planning horizon. In combination with the DOT&PF Goals and Strategic Investment Areas, these priorities identified by AMHOB will inform the goals set forth in the AMHS LRP. From this workshop, six main priorities were identified:

- **Fleet Modernization**—evaluation of existing fleet mix and looking forward to growing the fleet with efficiencies and utilizing funding resources
- **Service Level Improvement**—foundational planning of service based on community characteristics and understanding the impact of service on that community
- **Leverage Sales and Marketing**—to help the system track and plan for future investments, understand the impacts of system fare policy and service and maximize system capacity
- **Employee Support and Retention**—increase the resiliency and reliability of the system through a focus on workforce planning and support
- **Vessel Maintenance and Replacement Plan**—to support the safety and reliability of the system fleet through strategic maintenance planning and a fleet and service plan that is able to support scheduled maintenance



- **Funding**—Funding is at the core of the implementation of the considerations and goals discussed by AMHOB, with discussion around strategies and considerations to increase system financial resiliency

In addition to this input from AMHOB, AMHS staff will work on an internal priority identification focused on operations and management to prepare a comprehensive list of priorities and strategies. This work is on-going and will be strengthened in Phase 2 of the LRP effort, which will structure these focused elements into a framework of **goals/priorities** that will guide AMHS planning and investment, **strategies** that will include implementable actions in the short, medium and long-term, and **metrics** for accountability.

## 5.1 Service Prioritization Framework

### 5.1.1 Background

For the purposes of AMHS planning efforts, level of service (LOS) is defined as the number of port calls each community receives. To determine the LOS to be provided to each community, a framework must be established based on community characteristics.

### 5.1.2 Goals

Establish a framework for allocating levels of service by community to inform planning of future resources.

### 5.1.3 Initiatives

To create the service prioritization framework, AMHOB input was solicited to establish a set of community characteristics relevant to determining LOS requirements. These characteristics, which represent a community's access to basic needs and facilities, can be used to create a decision-making framework to determine the target LOS that the system should provide to each community.

From the characteristics compiled and prioritized by AMHOB, communities can be grouped into tiers. These tiers can be assigned minimum and target LOS for the system to meet, which will guide fleet and budget plans.

### 5.1.4 Performance Measures

Track actual LOS provided against minimum and target LOS.

## 5.2 Safety

### 5.2.1 Background

Safe operation is fundamental to all modern ferry operations. In the United States, ferries are regulated by the USCG under the U.S. Code of Federal Regulations, primarily Title 33, Navigation and Navigable Waters, and Title 46, Shipping. In addition, AMHS vessels are also overseen by a



third-party Classification Society, ABS with requirements for construction and adherence to a formal Safety Management System (SMS). Safety is designed into the vessels, overseen during construction, and verified through periodic inspections.

A recent evaluation of AMHS noted “a strong reference to safety from its discussions with crew members across the fleet.” However, that same survey noted some specific risk areas:

- Failure to enforce existing regulations—for example, potential breaches of working hours noted under Standards of Training and Certification of Watchkeeping, lack of maintenance data inputs leading to a potential breach of International Safety Management regulations (ISM).
- Suboptimal vessel design—including bridge, and other critical locations, ergonomics, passenger facilities) for example, the ships appear dated, even in the newer vessels, and do not offer the passenger experience expected today in developed nations. Modern equipment supplied is not being used to its full potential, through lack of experience, lack of training or not wishing to diverge from old and trusted practices.
- Suboptimal technology aboard—for example, limited onboard connectivity, system links or data uploads impacting communications and invalidating maintenance toolset utilization such as Asset Management Operating System (AMOS).
- Incomplete or less than best-practice training—for example, issues noted with the overarching principles of crew training, limited facilities appear available for onboard crew training, mechanisms for funding of associated travel and accommodation while training also noted by crew as less than ideal.
- Suboptimal safety culture producing dangerous behaviors and decisions—for example, dangerous rope handling incident noted during the visit to Alaska, also a single instance of vehicle deck overboard valves being open but intentionally blocked, this likely to be a major safety deficiency.

Another aspect of safety is the interaction with the flag state, specifically deficiencies reported as the result of periodic inspections. In the United States, this can be measured by the number of USCG Form 835 reports that have been issued to the operator.

## 5.2.2 Goals

Keeping both passengers and employees safe is a priority for AMHS and for DOT&PF. One of the goals identified in the draft DOT&PF LRTP *Alaska Moves 2050* is to provide for and continuously improve the safety of the transportation system for all users.

Since 2014, passenger injuries have generally been decreasing from a high of 70 to a low of 6 in 2020. However, 2020 and 2021 had reduced service/ridership due to the COVID-19 pandemic. Figure 15 shows the number of passenger injuries each year from 2007 to 2022. In 2014 and 2020 the system transported 319,004 and 52,196 passengers, respectively. The accident rate has varied



between one injury per 4,557 people transported (2014) to one injury per 8,699 people transported (2020).

The goal for passenger injuries is to be below the 10-year average from 2011 to 2020 or less than one injury per 6,772 passengers carried.

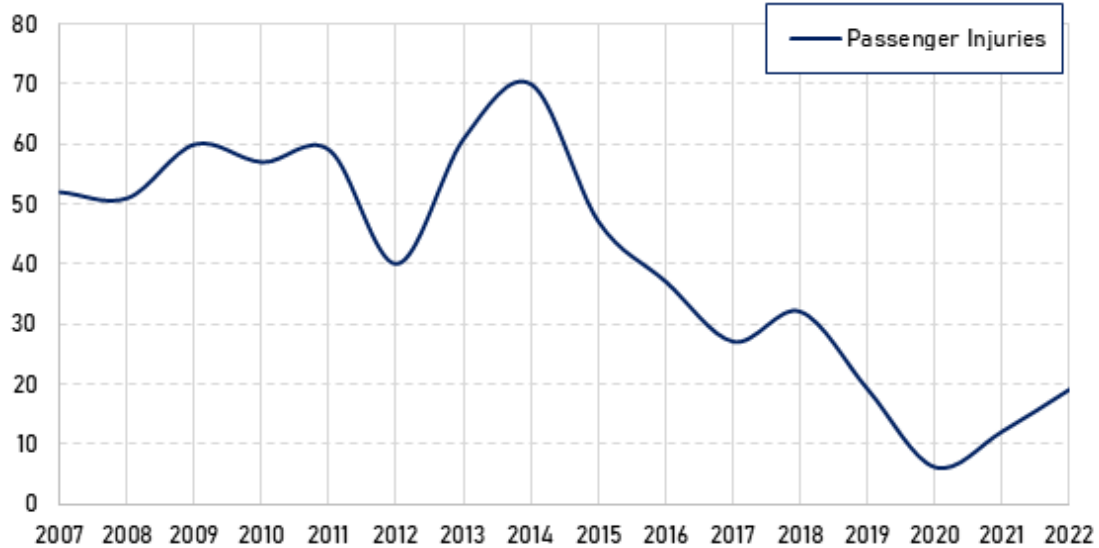


Figure 15: Passenger Injuries 2007 - 2022

Employee injuries have unfortunately not followed the same trend. The highest number of injuries (excluding personal illness or family emergencies) was 307 in 2014 and the lowest was 86 in 2020. However, 2020 and 2021 had reduced service/ridership due to the COVID-19 pandemic. Between 2010 and the beginning of 2023 there were a total of 2,801 injuries. The top two most common injuries were slips/trips/falls (584) and lifting/moving objects (502). Figure 16 shows the number of employee injuries between 2010 and 2022. Over the same period, AMHS had 37 lost-time injuries with 2,856 lost workdays.

The goal for employee injuries is to be below the 2019 injury level (representing the last year of service before COVID-19 impacts).



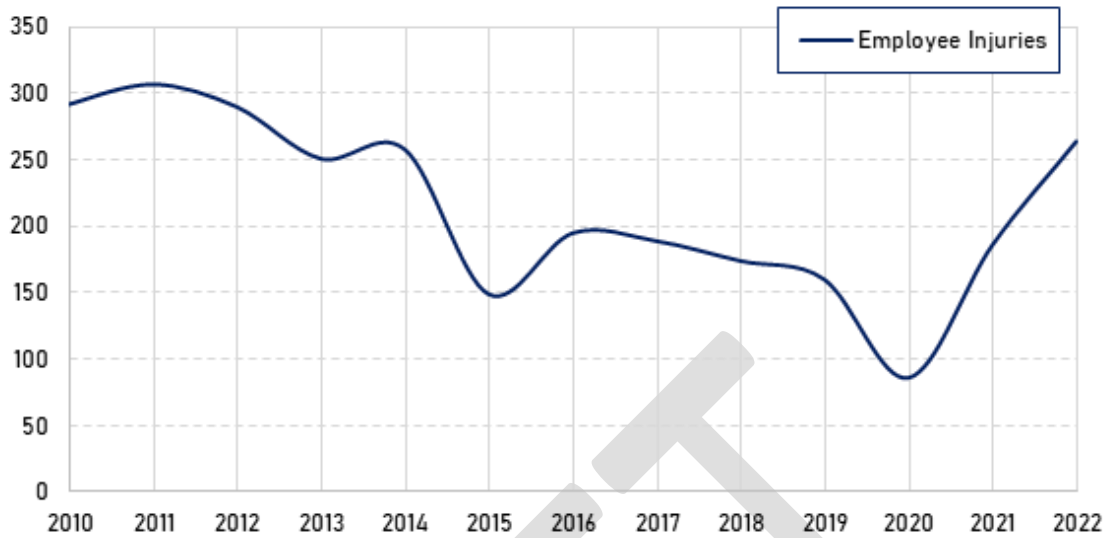


Figure 16: Employee Injuries 2007 – 2022

### 5.2.3 Initiatives

AMHS is undertaking several initiatives to improve safety, beginning with the replacement of the older vessels in the fleet. AMHS is also actively recruiting new vessel staff which will provide an opportunity to reinforce the existing safety culture onboard AMHS vessels. This will also reduce the risk of fatigue due to crews needing to be “held over” due to insufficient crewing reserves.

Additionally, AMHS is currently rewriting their SMS to bring it up to date with current policy and procedures. AMHS is also creating a Safety Action Plan with safety goals and initiatives for next year. The plan and goals will be reviewed regularly.

AMHS will also begin to have crew members start attending a yearly Crew Safety Conference. Furthermore, AMHS will conduct wheelhouse assessments on each vessel to assess operations and good bridge resource management.

### 5.2.4 Performance Measures

The critical key performance indicators for safety will include the following:

- Passenger Injury Rate
- Crew Injuries
- Vessel Deficiencies

## 5.3 Customer Experience

### 5.3.1 Background

AMHS emphasizes customer experience by tracking and monitoring public opinion. Though AMHS is an essential lifeline service for Alaskan communities, providing a high level of comfort and





hospitality remains a core value. Interactions with crew, access to amenities, and quality of service are aspects of customer experience that can be measured to gauge success in achieving a positive overall customer experience.

### 5.3.2 Goals

- Provide and maintain a high level of customer service
- Monitor and track areas of growth
- Foster a customer-oriented system
- Guide improvement measures and goals for crew training

### 5.3.3 Initiatives

The following initiatives will continue to be used to facilitate community feedback on AMHS services. These provide valuable insights for the agency's prioritization and planning efforts.

#### 5.3.3.1 On-Board Surveys

Surveys are distributed to customers after their most recent trip help to gauge customer satisfaction and experience. One part of the survey asks customers to rate, on a scale of 1 to 5, their experience on-board in terms of a number of criteria. Consistently from 2019 through 2023 (to date), the system has received a total aggregate score of roughly 4.3, with little variation from year to year (see graphic below). The lowest scoring categories have consistently related to amenities on the vessel, meal quality and choices, and movies and/or play areas for children. Courtesy, helpfulness, attitude, and appearance of the crew consistently received the highest ratings.

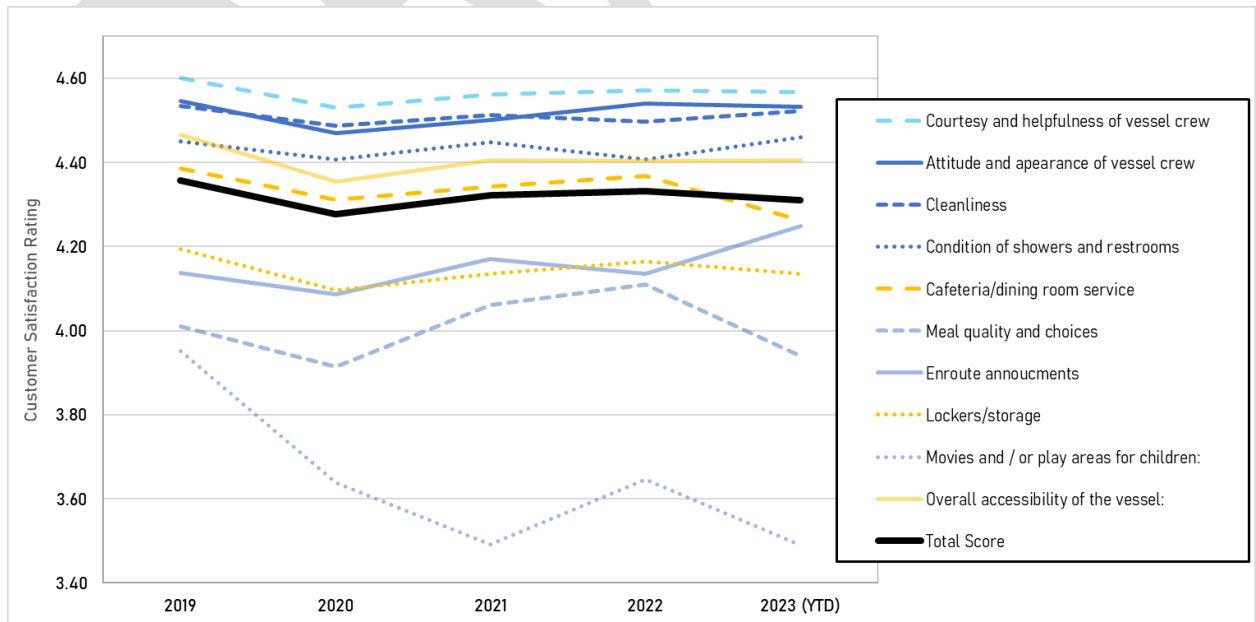


Figure 17: Customer Satisfaction Survey Results



### 5.3.3.2 Ferry Focus Groups

As a part of the CTC initiative, DOT&PF has formed and is facilitating FFGs to more effectively engage with Alaska’s many service areas. While this effort is focused on gaining input for future service schedules, these forums allow for an open discussion between community members and DOT&PF personnel, allowing individuals to share feedback of any kind.

### 5.3.3.3 Public Comment Forums – Public Input and Smart Comment

Customers are welcome to provide public comment through the AMHS website, either as a response to published service schedules, or to share general feedback.

## 5.3.4 Performance Measures

To monitor the health and progress of the customer experience on AMHS ferries, AMHS will use a series of performance measures, such as:

- Comfort and safety
- Availability and satisfaction with amenities
- Quality of interactions with crew members on-board
- Access to information

## 5.4 Workforce Support and Development

### 5.4.1 Background

Vessel crews are a vital part of AMHS. Currently, AMHS faces several issues concerning crewing levels, particularly in replacing staff to keep up with retiring and separating crew. With current limitations in the pool of both unlicensed and licensed crew, there are often one or two vessels in layup due to crewing shortages. Given the importance of crewing levels to the functioning of the system, supporting and developing the AMHS workforce is a necessary element to the proper functioning of the system.

### 5.4.2 Goals

- Foster a safety-first mindset amongst crew and staff
- Attract a larger pool of applicants, particularly residents of Alaska
- Maintain crewing levels sufficient to minimize crew-related vessel layups
- Maintain crew relief pool levels sufficient to allow for planned and unplanned crew leave
- Retain employees from new hire to highest positions within the system



### 5.4.3 Initiatives

To improve the health of the crewing workforce, several initiatives have been implemented. These initiatives target meeting the goals of improving safety, recruitment, and retention.

#### 5.4.3.1 Employee and Passenger Safety

AMHS currently provides a mandatory five-day orientation followed by a three-day post-hire training. This training provides information necessary for the general success and safety of employees. To further improve the safety of employees and passengers, AMHS should adopt a continuing safety program for employees and reward safe practices. These orientations and trainings will be continued and improved upon.

#### 5.4.3.2 Recruitment

AMHS has initiated efforts to increase the level and breadth of recruitment. These initiatives include frequent attendance at job fairs and school recruitments, diversification and increased number of advertisements, and growth of social media presence. AMHS has also contracted with PeopleAK to attract additional applicants.

These existing recruitment efforts will be continued and expanded upon. Recruitment efforts will be analyzed for their efficacy to identify initiatives with the greatest impacts.

#### 5.4.3.3 Retention

AMHS has been working to improve employee satisfaction and identify policies and procedures that may cause employees to separate from the system. As mentioned in Section 2.3.3, all new hires must enter the system through the steward department, which can often lead to early employee resignations. To reduce these early separations, AMHS should consider a reorganization of the current entry process for new employees to allow for immediate placement into employees' target department. Additionally, AMHS should continue to identify initiatives to increase employee satisfaction, such as additional training programs, streamlining cumbersome processes, and maintaining crew positions in the off-season.

### 5.4.4 Performance Measures

To monitor the health and progress of the system's crewing levels, AMHS will use a series of performance measures, such as:

- Staffing levels
- Hires and separations
- Relief pool levels
- Crew injuries
- Employee satisfaction



## 5.5 Capital Improvement

### 5.5.1 Background

AMHS is vital to the health of Alaska. The DOT&PF's *Let's Keep Moving 2036* and the draft *Alaska Moves 2050* provides strategic goals for all modes of transportation, which are translated through all of DOT&PF's activities as Strategic Investment Areas.

Reliability has been identified as an issue for AMHS because of mechanical failures due to an aging fleet, weather delays, and available funding levels and operating budgets. In addition to these trends, AMHS is also facing significant challenges with hiring qualified staff, a trend that is being observed by many ferry systems across the United States.

Fleet capital improvement projects (CIP) address bigger maintenance or refurbishment items that aren't covered under a normal overhaul (Section 6.3.3) but are necessary to keep the fleet operational. CIPs can also include major changes to the vessel that improve the operation of the vessel or expand the routes that a vessel can operate on. CIPs include work that can't be completed while the vessel is operating and sometimes the work is required to meet new/updated regulations. In order to operate, AMHS must meet the inspection requirements of and standards of safety and seaworthiness for ABS and USCG. AMHS must also meet additional requirements for the two vessels that have SOLAS certifications.

Similar to the fleet, terminals require regular maintenance and CIP projects to remain functional. It is important that terminals be in good working condition for the safety of the vessels, crew, and passengers.

### 5.5.2 Goals

Some of the goals identified in the *Let's Keep Moving 2036* and the draft *Alaska Moves 2050* relating to capital improvements are:

- **Safety:** Provide for and continuously improve the safety of the transportation system for all users.
- **System Preservation:** Manage the Alaska Transportation System to meet infrastructure condition performance targets and acceptable levels of service for all modes of transportation.
- **State of Good Repair:** Plan for full life cycle costs across the transportation system, including planning, construction, operation, and maintenance to improve funding allocation in a consistent and effective manner.
- **Economic Vitality:** Monitor and consider statewide economic trends, such as job creation, access to jobs, and workforce training, and plan for and invest in transportation infrastructure that facilitates and supports economic growth and lowers the cost of goods and services.



- **Resiliency:** Assess risk and invest in solutions to develop a transportation agency and system that will adapt to and recover from the effects of climate change, natural disasters, and other disruptions.
- **Modernization:** Make the existing transportation system better and safer through transportation system improvements that support productivity, improve reliability, and reduce safety risks to improve performance of the system.
- **Sustainability:** Promote a sustainable, clean, equitable transportation system to reduce costs to consumers and businesses and provide wider social and environmental benefits.
- **Economic Development:** Promote and support economic development by ensuring safe, efficient, and reliable access to local, national, and international markets for Alaska's people, goods, and resources, and for freight-related activity critical to the State's economy.
- **Livability, Community, and the Environment:** Incorporate livability, community, and environmental considerations in planning, delivering, operating, and maintaining the Alaska Transportation System.

### 5.5.3 Initiatives

The DOT&PF is working to stabilize AMHS through immediate investment in staff, vessels, and shoreside infrastructure, with a focus on building a sustainable and reliable marine highway system that safely and reliably transports people where they need to go while offering consistent service levels needed to support economic growth.

#### 5.5.3.1 Safety/System Preservation/State of Good Repair

Projects relating to Safety, System Preservation, and State of Good Repair are:

Fleet CIP projects:

- **Matanuska Safety Improvement Project<sup>10</sup>:** This project completes the necessary modifications to be in compliance with SOLAS regulations including refurbishing and renovating passenger accommodation staterooms to remove dead end corridors and converting the Chief Mate's stateroom into a SOLAS compliant Safety Center. Additionally, this project will remove and replace excessive corrosion in the voids and ballast tanks.
- **Columbia Controllable Pitch Propeller Replacement<sup>7</sup>:** This project replaces the CPP system, Fire Detection System, and upgrades the existing Alarm and Monitoring System.

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<sup>10</sup> Project still under review and may not proceed.



- **Kennicott Emissions and Exhaust Upgrades:** This project upgrades the Kennicott's emissions and exhaust systems to assure compliance with Alaska Department of Environmental Conservation and U.S. Environmental Protection Agency.

Terminal CIP projects:

- **Mooring improvements at Auke Bay (Juneau):** The work includes replacing deteriorated mooring dolphin structures, and installing cathodic protection anodes.

### 5.5.3.2 Economic Vitality /Modernization/Resiliency

Projects relating to economic vitality and modernization include new service vessels and new terminals. Resiliency projects include fleet modernization, vessel replacement, and terminal upgrades.

Planned new service vessels:

- **Tustumena Replacement Vessel (TRV):** This project constructs a replacement vessel for the *M/V Tustumena*.
- **Mainline Replacement Vessel (MRV):** This project will provide AMHS with a vessel to replace one of the aging mainline vessels. The new vessel will also enhance the currently provided transportation of passengers, vehicles, and freight.
- **No-Low Emission Vessel:** This project designs and builds an electric or low emission ferry to replace the *M/V Lituya* using funding received from the IIJA.

Planned fleet modernization projects include:

- **Tazlina Crew Quarters Addition:** This project is to add crew sleeping quarters, a galley, scullery, and mess facilities to allow the vessel to serve on routes over 12 hours, expanding the area of operation for the Tazlina.

Planned new terminals include:

- **Pelican Ferry Terminal:** This project builds a new ferry terminal facility for ACF vessels. The existing terminal is currently configured for the LeConte and will not work with ACF vessels.
- **South Tongass Ferry Terminal:** This project includes constructing a new end berth facility at the Saxman seaport for the *M/V Lituya*.
- **Tatitlek Ferry Terminal:** This project includes constructing a new end berth ferry terminal facility to accommodate *M/V Aurora* and the ACF vessels. Improvements would include a new end loading ferry terminal structure including a vehicle transfer bridge and bridge support float (or lift bridge support) at the location of the existing tidal ramp ferry facility.



Planned terminal upgrades include:

- **Angoon Ferry Terminal Improvements:** This project includes installation of marine structures to accommodate the ACF vessels and modifications to the intermediate ramp/apron lift system controls to improve reliability.
- **Chenega Ferry Terminal:** This project includes installation of a transfer bridge and marine structures to accommodate the ACF vessels.
- **Cordova Ferry Terminal Improvements:** This project includes removing two floating fenders and replacing them with fixed-fender dolphins and catwalks for improved mooring and line handling along the face of the dock. It also includes modifications to the stern berth required to accommodate the ACF vessel which includes a new fixed-fender dolphin and removal of submerged debris.

### 5.5.3.3 Sustainability

DOT&PF has created a Sustainable Transportation Plan<sup>11</sup>, a multimodal transportation program, in order to meet the needs of the present without compromising the ability of future generations to meet needs of the future. It involves developing sustainable transportation infrastructure with a multi-modal lifecycle approach that considers environmental quality, economic development, and social equity.

The Sustainable Transportation Program will help communities thrive through transportation investments that promote reduced greenhouse gas emissions, energy independence, efficiency, low-cost transportation, and a healthy environment. Ongoing and future projects relating to AMHS include:

- Sustainable Transportation Research
  - No-Low Emission Ferry
  - Renewable Diesel
  - Automation through Digitization
- Fleet Modernization
  - TRV – Hybrid
  - No-Low Emission Shuttle Ferry – Electric/Hybrid
  - MRV – Diesel Electric
  - Shoreside Charging – Port Electrification

Other work that has been already completed is the development of Ship Energy Efficiency Management Plans (SEEMPs) for the *M/V Matanuska* and the *M/V Kennicott*. The SEEMP

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<sup>11</sup> Sustainable Transportation Plan, <https://dot.alaska.gov/stwdplng/cip/stip/projects/STP.shtml>





delineates all the best practices that need to be followed on board and within the organization to support the smooth sailing and maximum efficiency of the vessel. The SEEMP is a living document that continues to be refined and modified throughout the life of the vessel.

## 5.5.4 Performance Measures

There are several performance measures that will be used to monitor the capital improvement projects such as:

- **Percentage of terminal projects completed on time/budget**—Evaluate overall performance of completing terminal projects on time
  - Data will be used to assist with future project scheduling
- **Overhaul Completion on Schedule**—Evaluate overall performance of getting vessel through their overhaul periods on time
  - Data will be used to create a trend on overhaul time for each vessel to assist with future vessel overhaul scheduling
- **The quantity of outstanding maintenance requests by vessel remaining after an overhaul period**—Evaluate maintenance performed vs deferred
  - Data will be used to determine if needed maintenance is being performed or is largely being deferred which can be used to inform future maintenance costs and time needed for maintenance
- **Ship Availability**—Evaluate vessel availability for conformance to budgeted operating plan.
  - Identifies what ships met schedule availability
  - Provides input to future maintenance scheduling decisions
  - Provides visibility of unscheduled maintenance events by ship
  - Provides overall availability data to justify AMHS budget and response to reliability criticism
  - Shows systems ability to mitigate vessel unavailability

## 5.6 Operational Support Infrastructure

### 5.6.1 Background

It takes more than just a fleet of vessels, terminals, and crew to operate AMHS. AMHS is a complex system with diverse infrastructure and many shoreside departments that support its operations. It is critical that operational support is maintained and kept up to date.



## 5.6.2 Goals

Some of the goals identified in the *Let's Keep Moving 2036* and the draft *Alaska Moves 2050* relating to operational support infrastructure are:

- **System Management and Operations:** Manage and operate the system to improve operational efficiency and safety.
- **System Preservation:** Manage the Alaska Transportation System to meet infrastructure condition performance targets and acceptable levels of service for all modes of transportation.
- **State of Good Repair:** Plan for full life cycle costs across the transportation system, including planning, construction, operation, and maintenance to improve funding allocation in a consistent and effective manner.
- **Modernization:** Make the existing transportation system better and safer through transportation system improvements that support productivity, improve reliability, and reduce safety risks to improve performance of the system.

## 5.6.3 Initiatives

### 5.6.3.1 System Management and Operation

Managing and maintaining a fleet of nine vessels of varying ages with a wide range of equipment and infrastructure is challenging. AMHS has used the Maintenance module of AMOS for over 20 years to assist with planning and tracking maintenance on each vessel. When the Maintenance module was set up, a basic equipment "component" maintenance structure was created for each vessel specific to each vessel's respective equipment. From this equipment list, AMOS was used to build a master maintenance and planning program that was specific to each vessel. This maintenance and planning program tracks what maintenance has been done, what is due to be done, what is overdue, and what needs to be done soon. Repair orders can also be added and tracked. The Maintenance module can also monitor the vessel's overall performance and it tracks the required spare parts for each piece of machinery. The Maintenance module allows a standardized and centrally controlled approach to planned maintenance, combined with a single view of spare parts company-wide. The Maintenance module is not just for the engineers onboard; marine engineering leads and port engineers have access to the whole fleet and can review each ship's planned maintenance routine to ensure that the ship's maintenance is being completed and overdue maintenance is kept to minimum levels.

AMHS ended the AMOS training program about 10 years ago (~2013), since then the use of the Maintenance module has dwindled as the number of employees knowing how to use it has decreased. AMHS also removed the AMOS dedicated servers from each vessel and replaced them with a central server in Juneau that the vessels could access via a Citrix/web link. Internet access on the vessels is dependent on cellular service, which is only available near ports. Citrix is often



unavailable, making it challenging for the engineers to access and keep current maintenance information.

AMHS has been looking for an alternative maintenance database for the last few years but hasn't found a system that will perform better. It is imperative that maintenance be performed and maintenance records maintained. Proper maintenance records are an ISM SMS requirement and are part of the checklist reviewed during ABS annual surveys. Since the framework of the Maintenance module still exists for most of the vessels in the fleet, AMHS should restart the AMOS training program, upgrade to the most recent version software, update the equipment lists for each vessel, create equipment lists for vessels that currently don't have one, and reinstall the dedicated servers on each vessel to allow the engineers onboard to access and maintain the records. The servers onboard should be backed up to a shore-based server on a regular basis for access by marine engineering and port engineers.

AMOS has a wide range of modules available to assist maritime businesses. The AMOS Projects module offers a comprehensive management tool for all projects such as dry dockings and in water overhauls. The module fully integrates with the maintenance module which allows schedule maintenance tasks and repair orders to be removed from the day-to-day list and incorporated into a project. The module also has the ability to include standard overhaul task and services required for the docking/overhaul period to be combined in an editable specification document that can then be sent to the shipyard.

Projects can be built from scratch or from past projects and a record of all completed project jobs is automatically included in the vessel's maintenance history to provide a complete picture of when work was carried out. The module also allows for tracking the status of each activity within a project as well as the costs for each activity. Using the Project module would assist AMHS with clarifying shipyard activities needed and providing the shipyards with specifications prior to the vessel arrival. In coordination with the shipyard, the Project module would assist AMHS in tracking all shipyard activities and costs. AMHS should add the Project module to their AMOS platform.

Another AMOS module that would be of assistance to AMHS is the Quality and Safety module which covers all areas of the Quality, Health, Safety, and Environment processes. The Quality and Safety module includes ISM, International Standards Organization (ISO), and International Ship and Port Facility Security Code (ISPS) document management which enables the crew to perform everyday tasks quickly and safely in line with ISM/ISO and other common standards at all times. This module also assists with keeping all ships up to date with new procedures and checklists; documentation may be updated and distributed to the entire fleet with a few clicks. Furthermore, the module assists with risk management, and it can improve the health and performance of the vessel by identifying possible hazards before they become risks and preventing accidents from occurring. This module would assist AMHS in compliance with various regulations and should be added to the AMOS suite.



One final AMOS module that would assist AMHS is the Staff Management module. The module assists with crew planning and it tracks crew-related costs such as travel, dispatch, and payroll. It also keeps track of crew member certifications to ensure that competence requirements are met and each vessel has the crew with the right certifications at all times. The module also includes a work/rest hour reporting section to assist in crew rotation and crew changes and track compliance with work/rest hours requirements.

In addition to scheduling crew, AMHS also has to schedule vessels, what ports each vessel goes to and when each port receives service. AMHS has regular conversations with communities regarding their service needs and produces a seasonal vessel schedule by creating spider graph for the three operating regions (Southeast, Prince William Sound, and Southwest) for 4 weeks to represent a monthly schedule. The spider graphs show the days of the week, communities, and the travel of each ship. The draft spider graphs are then posted online, and community/public feedback is solicited. Travel to/from special community events are also taken into consideration when developing the schedules. Once published the schedules are sometimes modified to serve additional community events. The development of the vessel schedules is a complex and laborious task that could be simplified with scheduling software. DOT&PF Information Technology department is currently in the process of developing a vessel scheduling program to assist AMHS.

To ensure AMHS is providing quality service, AMHS should also create an internal Quality Steering Committee that will review operations and create quality initiatives for items that they want to improve and how the improvements will happen. This committee should meet quarterly to ensure regular quality review and that AMHS is delivering the best service for their customers.

In addition to providing quality service, AMHS currently doesn't have a process for changes to be reviewed and approved. A Management of Change committee should be formed to review submitted management changes to ensure that they are thoroughly reviewed prior to implementation.

### **5.6.3.2 System Preservation and State of Good Repair**

AMHS currently does not do any root cause analysis to prevent incidents. AMHS should provide training to their crew and staff on root cause analysis and when to use it. The root cause analysis at minimum should cover incidents, failures, and spills.

AMHS has recently experienced a lot of attrition throughout the whole operation, but especially in the Marine Engineering department. The lack of qualified personnel within the department has made it challenging to estimate, schedule, and manage shipyard maintenance projects. AMHS recently awarded a contract to ECS Maritime Systems for asset management support which covers a wide range of items. This contract should be maintained until AMHS hires the necessary staff to cover all areas that ECS is assisting with.

While AMHS has a Marine Engineering department, currently there are no Professional Engineers (PE) with a marine background. USCG and ABS often require PE stamps on repair and capital improvement plans. AMHS currently has a number of Term Service Agreements in place with



various marine engineering firms to assist with developing and signing repair and other plans that have to be submitted to USCG and ABS for review. AMHS should continue to maintain these Term Service Agreements.

### 5.6.3.3 Modernization

Since AMHS began in 1963, technology has drastically changed and the AMHS fleet has not kept pace. Given the digital age that we now live in, it is important that the crew have the ability to access the internet in order to respond to emails, communicate with shoreside staff, and access records and check lists on AMOS. Additionally, people have become accustomed to always having the internet available at their fingertips. AMHS operates in remote areas often without cell signal when traveling from port to port. Adding satellite internet by Starlink or another provider to improve vessel communication and connectivity would greatly benefit the crew and passengers. If AMHS adds on-board Wi-Fi for passengers, AMHS can market itself as a viable transportation option for the remote worker. AMHS is currently testing Starlink on the *M/V Hubbard* and the *M/V Columbia*, access is currently restricted to crew only.

Another area of new technology is real-time tracking. It is important for passengers waiting for the ferry to know ferry status, including arrival times. This allows passengers to better plan around the ferry schedule. AMHS should provide real time monitors showing the location of the vessel in the terminals.

With the increase in internet availability, more people are looking to the internet to make reservations. AMHS is working to boost its online presence and increase the number of customers booking online. In 2022, AMHS implemented a new online booking portal. This booking portal will continue to be improved and made more user friendly. AMHS is also working with CARUS on an app that will be more user-friendly and improve customer service. CARUS will also evaluate AMHS's reservation system and compare it to the industry's best practices. Improvements will then be made to AMHS where needed.

In order for AMHS to be a more reliable operation they need to track when a vessel has service interruptions or out-of-service events, and they need to also track the cause of the issue. To assist with this effort, internal staff will develop a process and system for tracking service interruptions and out-of-service events as well as their causes.

## 5.6.4 Performance Measures

One performance measure would be the percentage of initiatives that are done on time/budget.



# 6. Three Year Strategic Maintenance and Vessel Replacement Plan

## 6.1 Three Year Capital and Operating Budget Objective

In the next three-year planning horizon, the Phase 1 LRP will identify key infrastructure project initiatives, organizational supporting software and management tools, and a continued emphasis on workforce safety, recruitment and retention. All of these proposed investments will serve to stabilize the system with a focus on reliability.

## 6.2 Scenario Alternatives Analysis

DOT&PF has created a set of tools to conduct a scenario alternatives analysis. These tools analyze and compare a variety of operating and planning decisions to determine costs and revenue, LOS, and staffing requirements.

- The framework for LOS, developed with the input of AMHOB and FFG surveys, will be used to establish minimum and target service levels for each community
- Set minimum and target LOS to inform fleet plan decisions going forward
- Tools created can be used to assess costs and revenue associated with LOS and operating plans.

## 6.3 Three Year Fleet Plan

Below is a list of each vessel and where it is planned to operate from 2024-2026.

- *M/V Matanuska* will be in layup in Ketchikan
- *M/V Columbia* will operate the southeast route from Bellingham to Skagway
- *M/V LeConte* will serve the smaller communities in the Northern Inside Passage until summer of 2024 when the crew quarter installation project on the *M/V Tazlina* is complete at which time the LeConte will become a backup vessel for the *M/V Aurora*
- *M/V Hubbard* will operate in the North Lynn Canal area
- *M/V Tazlina* will undergo a CIP project to add crew quarters and then in the summer of 2024 she will take over the *M/V LeConte* and serve the smaller communities in the Northern Inside Passage
- *M/V Kennicott* will operate the Cross Gulf route from Bellingham to Homer
- *M/V Tustumena* will connect the Aleutian Chain to Kodiak and Homer in the summer and in the winter, she will continue to serve Kodiak, Ouzinkie, Homer and Port Lions
- *M/V Aurora* will serve in the Prince William Sound region
- *M/V Lituya* will provide shuttle service between Ketchikan and Metlakatla



Figure 18 shows the three-year fleet plan with the ports served by each vessel and the projects that are planned for each year and Table 8 shows the fleet status for each year. Calendar Year (CY) 2023 is provided for reference. Appendix B provides a key to the port abbreviations.

Route	Vessel/Terminal	Age as of 2023	2023	2024	2025	2026
SE	Matanuska (1963)	60	Vessel in Reliability Risk (Over 30 yrs)			
	Columbia (1974)	49				
	MRV 1 (2028)	0		MRV 1 Design	MRV 1 Build Est. Complete End of 2027	
	LeConte (1974)	49	JNU, HNH, TKE, GUS, ANG, PEL, KAE	Backup for Aurora		
	Hubbard (2019)	4	JNU, HNS, S6Y			
	Tazlina (2019)	4	Layup	Crew Qtr Des	Crew Quarter Build	JNU, HNH, TKE, GUS, ANG, PEL, KAE
X-Gulf	Kennicott (1998)	25	BEL, KTN, JNU, YAK, WTR, CHB, KOD, HOM			
SW	Tustumena (1964)	59	SDV, HOM, ORI, OUZ, KOD, CHG, SDP, KCV, CBY, FPS, AKU, OLD, UNA			
	TRV (2026)	0	TRV Design		TRV Build	
PWS	Aurora (1977)	46	CHB, WTR, VDZ, TAT, CDV			
KTN/MET	Lituya (2004)	19	KTN, ANB			
	No-Low Emission Electric (2026)	0		No-Low Design		No-Low Build

Legend	
	Existing / In Service
	CIP Design
	CIP Build
	Vessel in Reliability Risk (Over 30 yrs)
	Layup

Figure 18: Three Calendar Year Fleet Plan

Table 8: Fleet Status

	2023*	2024	2025	2026
In Service	7	7	7	7
Layup	2	1	1	1
Backup (for Aurora)	0	1	1	1
Reliability Risk	5	5	5	5
Total Fleet #	9	9	9	9
Vehicle Capacity (linear ft)	9,835	9,835	9,835	9,835
Quantity of 20 ft Vehicles	489	489	489	489

\*2023 provided for reference





### 6.3.1 New Vessels

No new vessels will join the fleet between 2024 to 2026. However, new vessel projects planned include:

- Finalizing the design of the TRV and constructing the new vessel. The TRV is expected to be in operation at the beginning of 2027 and will replace the *M/V Tustumena*
- Designing the MRV and starting construction. Construction is estimated to be complete by the end of 2027
- Designing and building the No-Low Emission vessel to replace the *M/V Lituya*. The new vessel is expected to be in service in 2027

### 6.3.2 Retiring Vessel

No vessels are schedule to be retired prior to 2027.

### 6.3.3 Vessel Preservation & Maintenance

Each year, every vessel goes through an overhaul period that includes inspection, repair, and maintenance that cannot be performed while the vessels are operating. This work includes drydocking the vessel; performing wear down tests and inspections on propeller shafts, rudders, pintles and gudgeons; inspecting impressed current cathodic protection system; inspecting and cleaning the propeller blades, seals and CPP system (if applicable); inspecting and cleaning the thruster(s); opening and cleaning sea chests; replacing zincs in sea chests; opening, cleaning, testing, and rebuilding (if necessary) sea and car deck valves; inspecting, cleaning, and repairing coatings in voids and ballast tanks; cleaning bilges; replacing zincs as needed; servicing fire equipment; cleaning, blasting, and painting areas of corrosion, rust, scale, and deteriorated coatings on the hull, superstructure and decks; cleaning marine growth from the seawater systems; cleaning ventilation ducting and galley exhaust; cleaning, inspecting, and repairing (if needed) the sewage treatment systems; cleaning and gas freeing all tanks; removing and reinstalling all life rafts and marine evacuation chutes; cleaning, measuring, remarking the anchor chain; dye checking the anchor swivel; cleaning debris from the chain lockers.

Additionally, AMHS must meet the inspection requirements and standards of safety and seaworthiness for ABS and the USCG. At the end of the overhaul period, the vessel must pass the USCG inspection to obtain a COI to operate and carry passengers.

Overhaul durations vary each year depending on the vessel and the amount of work to be completed, but other than the *M/V Lituya* they are at minimum six weeks. Table 9 shows when each vessel normally has their overhaul period and an approximate number of weeks for the overhaul period.



**Table 9: Normal Overhaul Period**

<b>Vessel</b>	<b>Normal Overhaul Period</b>	<b># of weeks</b>
<i>M/V Kennicott</i>	November through December	9
<i>M/V Columbia</i>	January through February	9
<i>M/V Aurora</i>	October through Mid-December	10
<i>M/V Lituya</i>	Beginning August through Mid-August	2
<i>M/V LeConte</i>	Mid December through February	10
<i>M/V Tustumena</i>	Mid-February through April	11
<i>M/V Hubbard</i>	Mid-March through Mid-May	9
<i>M/V Tazlina</i>	Mid-January through Mid-March	9

## 6.4 Three Year Shore Facility Plan

### 6.4.1 Vessel Interface Considerations

The current configuration of and access to the shore facilities throughout the system limits the size and type of vessel that can serve each community. As improvements are made to the fleet, facility maintenance, resilience, and sustainability efforts should also consider addressing the shortcomings of each facility to increase the number of vessel classes it can serve.

### 6.4.2 Capital Improvement Projects

Projects that are planned for the next three years are listed below. Figure 19 illustrates the phases for each project.

- Terminal improvements to accommodate ACFs at Angoon, Chenega, Cordova, Pelican, Skagway, and Tatitlek
- New Kodiak Terminal (not in STIP or Phase 4 Obligations list)
- Mooring improvements at Auke Bay (Juneau)
- New terminal at Cascade Point to provide more efficient service on Lynn Canal between Juneau, Haines, and Skagway
- New terminal at Saxman to support electric ferry service to Metlakatla
- Yakutat Terminal improvements (undefined in available documents)



Route	Vessel/Terminal	Age as of 2023	2023	2024	2025	2026
SE	Angoon (2011)	22		Design	Improvements for ACF	
	Pelican (2012)	11		Design	ROW	New Terminal for ACF
	Auke Bay East Berth (1982)	41	Design		Mooring Improvements	
	South Tongass (2026)	0	Design	ROW	South Tongass Terminal Build	
PWS	Chenega (1995)	28		Design	ROW	Improvements for ACF
	Corдова (2005)	18		Design		Improvements for ACF
	Tatitlek (1995)	28		Design		Improvements for ACF

Legend (terminals)	
	Terminal CIP Design
	Terminal CIP Right of Way (ROW)
	Terminal CIP Construction

Figure 19: Three Year Terminal Plan

## 6.5 Operating Budget Recommendations

There are two parts of the AMHS budget, the operations budget and the capital budget. The operations budget is dependent on the operations plan, which dictates when and where each vessel operates. To support the operating budget recommendations in the plan, notional operations plans for CY2024 through CY2026 were developed based on typical overhaul periods and planned CIP. These plans are shown in Figure 20 – Figure 22.

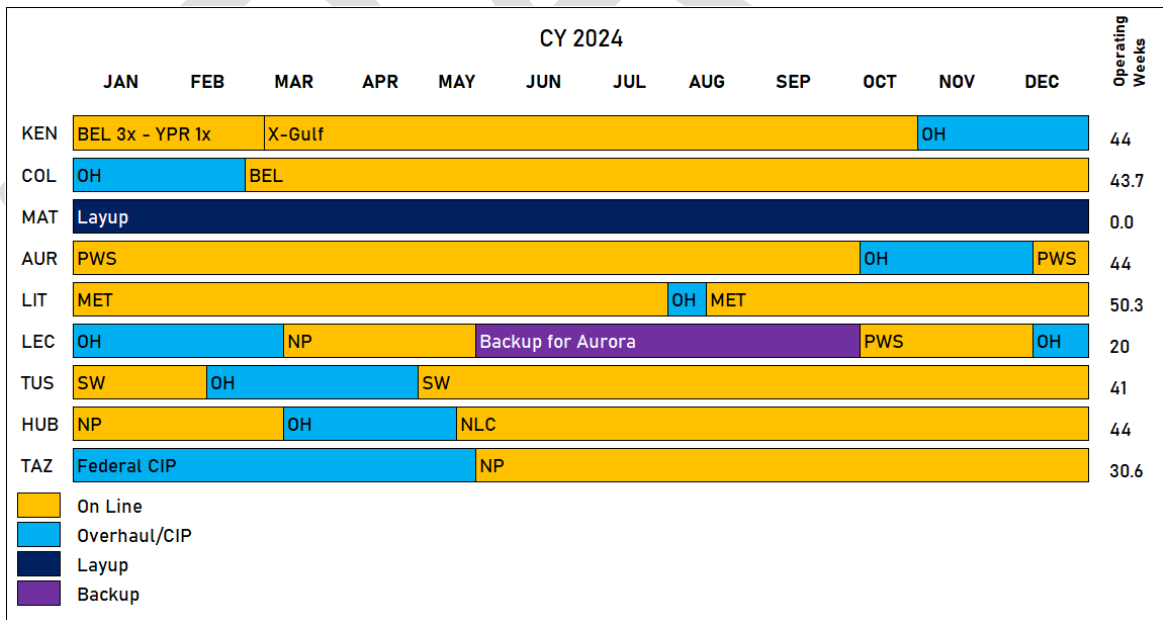


Figure 20: CY2024 Operation Plan

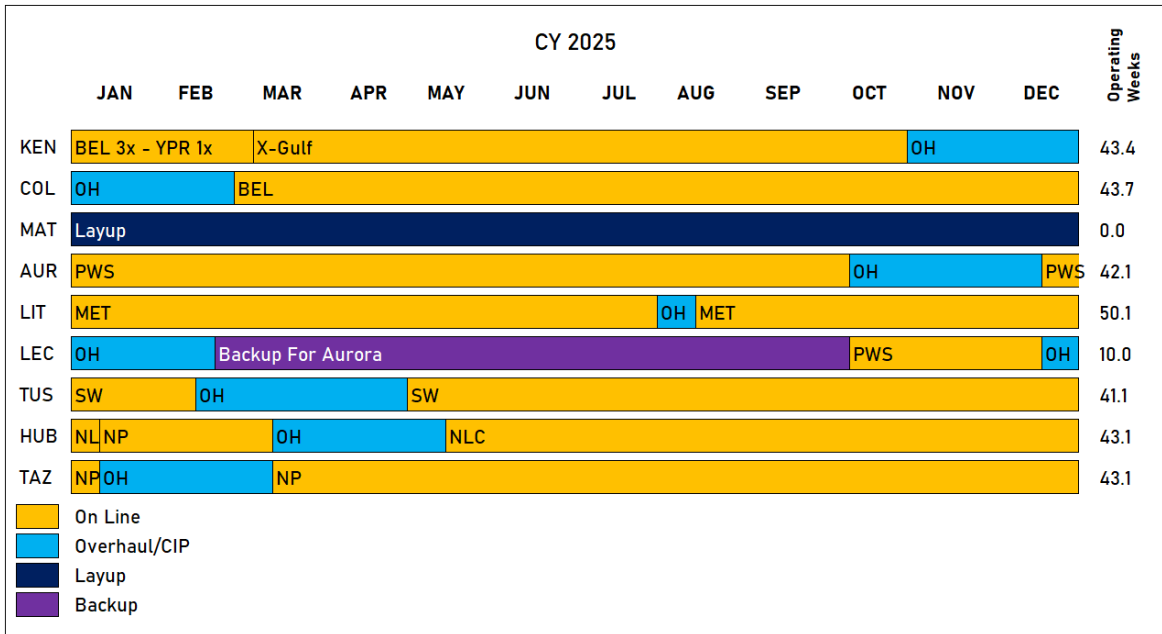


Figure 21: CY2025 Operating Plan

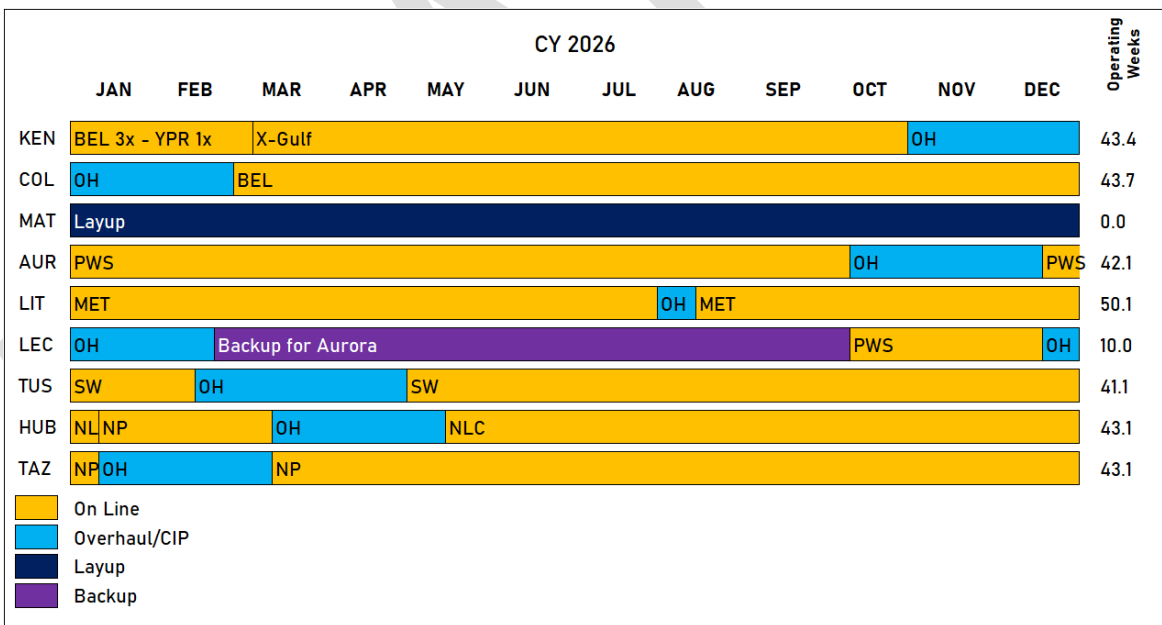


Figure 22: CY2026 Operating Plan

### 6.5.1 Operating Costs

AMHS has a tool called the Scenario Spreadsheet that is used to determine the operating costs not including capital costs for each operating plan. This tool is complex and requires a number of inputs to be adjusted each year. Inputs include, but are not limited to, wages, overtime assumptions, benefits, reimbursable service agreements with other departments, fuel costs, and outsource service costs.

Wages that are updated include crew, marine shore operations, marine engineering, vessel operations management, and reservations. The three union agreements, International Organization of Masters, Mates, and Pilots (MMP), MEBA, and IBU, dictate the crew wages and yearly increases. The MMP contract states "Effective July 1, 2023, the pay rates in effect on June 30, 2023, shall be increased by 3.75%. Effective July 1, 2024, the pay rates in effect on June 30, 2024, shall be increased based on the Consumer Price Index (CPI) for Urban Alaska's annual percentage for CY2022 as listed on the Alaska Department of Labor and Workforce Development (DOLWD) website." It also provides Table 10 as a reference for the cost-of-living differential (COLA) rate increases. As outlined on the DOLWD website, the CPI for Urban Alaska in 2022 was 8.1 percent and therefore the pay increase on July 1, 2024, will be 8.1 percent and COLA will increase 5 percent. For the first half of 2023, the CPI for Urban Alaska has decreased, but it is unknown what will happen in the future. Thus, for CY2025 and CY2026 the budget calculations assume that there will be a 5 percent increase in both pay and COLA each July.

The MEBA contract states the following, "Effective July 1, 2023, the pay rates in effect on June 30, 2023, shall be increased by 3.75%. Effective July 1, 2024, the pay rates in effect on June 30, 2024, shall be adjusted as follows, not to exceed five (5) percent based on the changes for the calendar year in accordance with the table below [Table 10] compared to the prior calendar years of the U.S. Department of Labor, Bureau of Labor Statistics, CPI for All Urban Consumers (CPI-U) for Anchorage Alaska. The CPI-U for Anchorage, Alaska in 2021 was 4.9 percent and in 2022 was 8.1 percent, this is a difference of 3.2 percent and the CY2024 budget includes a 2.5 percent pay increase in July 2024. The CY2025 and CY2026 budgets include a 2.5 percent pay increase each July. COLA has been assumed to remain as is.

**Table 10: COLA percentage Increase**

CPI – Urban Alaska	COLA
Less than 1%	0%
Greater than or equal to 1% and less than 2%	1.25%
Greater than or equal to 2% and less than 4%	2.5%
Greater than or equal to 4%	5%

The IBU contract states that "Effective July 1, 2023, the hourly pay rate will increase 6.75%. Effective July 1, 2024, the hourly pay rate will increase with a minimum of 0% and a maximum of 5% based on the CPI-U for Anchorage in CY2022." Since the CPI-U was 8.1 percent in 2022, the CY2024 budget includes a 5 percent pay increase in July 2024. The CY2025 and CY2026 budgets include a 5 percent pay increase each July. COLA is assumed to remain as is.

The employees in marine shore operations, marine engineering, vessel operations management, and reservations belong to a variety of bargaining units. Most of the bargaining unit contracts expire on June 30, 2024, and therefore they do not have wage increases included for July 2024. However, the Alaska State Employees Association General Government Unit bargaining unit's contract goes through June 30, 2025. Their contract states "Effective July 1, 2024, the wages shall



be adjusted as follows, not to exceed five percent, based on the changes for the calendar year 2022 compared to the prior calendar year of the U.S. Department of Labor, Bureau of Labor Statistics, CPI-U for Anchorage, Alaska.”

<b>Anchorage CPI-U calendar year 2022 compared to prior year</b>	<b>COLA effective July 1, 2024</b>
Less than 1%	0%
Greater than or equal to 1% and less than 2%	1.25%
Greater than or equal to 2% and less than 4%	2.50%
Greater than or equal to 4%	5.00%

It has been assumed that the other bargaining units' contracts will include similar language when they are updated. Therefore, based on the 2022 CPI-U, the CY2024 budget includes a 2.5 percent pay and COLA increase in July 2024 for all marine shore operations, marine engineering, vessel operations management, and reservation employees. The CY2025 and CY2026 budget also include a 2.5 percent pay and COLA increase each July.

Table 11 and Table 12 show the percentages that were assumed for overtime for crew.

**Table 11: Overtime Assumptions**

	<b>MMP</b>	<b>MEBA</b>	<b>IBU</b>	<b>Lituya – MMP</b>
Straight OT	6.5%	6.5%	10.5%	17.5%
Holiday OT	3.0%	3.0%	3.0%	3.0%
Late Arrival OT	0.1%	0.1%	0.0%	0.1%
Hold Over OT	5.0%	5.0%	3.5%	0.0%
Yard OT	20.0%	45.0%	8.0%	-
Early Call Back	1.0%	1.0%	0.1%	1.0%

**Table 12: Overtime Assumed for Other Forms of Pay**

	<b>MMP</b>	<b>MEBA</b>	<b>IBU</b>
Travel Pay	2.0%	1.5%	1.0%
Minimum Guarantee	1.5%	1.5%	1.2%
Split Wages	0.1%	0.1%	0.0%
Unearned Maintenance Wage	0.4%	0.2%	1.0%
Longevity Pay	2.0%	0.0%	1.1%
Penalty Pay	0.0%	2.6%	0.0%
Non-Watch	0.0%	0.0%	0.0%
Other	0.0%	0.1%	0.0%



Health care and other variable benefits for crew have been assumed to be approximately 66 percent of the overall wages. Benefits for marine shore operations, marine engineering, vessel operations management, and reservations have been assumed to be 70 percent of overall wages. Other budget components (travel, services, and commodities) associated with marine shore operations, marine engineering, overhaul, vessel operations management, and reservations have been assumed to increase 2.5 percent per year. Overhaul costs associated with shoreside have been assumed to remain the same at \$1,700,000 each year.

Fuel costs have been estimated by 10 percent each year, \$3 per gallon has been used for CY2024. Risk management has been estimated to remain the same as FY2023.

Allocated costs such as Southeast Support Services, Administrative Services, Human Resources, ISSD, and the Commissioner's Office have been assumed to increase 2 percent per year.

Table 13 shows the proposed operating costs that result from CY2024 through CY2026 operating plans. A more detailed breakdown is shown in Appendix A.

**Table 13: CY2024-2026 Proposed Operating Costs & Statistics (in Thousands)**

	CY2024	CY2025	CY2026
<b>Operating Costs</b>			
Marine Vessel Costs*	\$134,172	\$136,174.3	\$141,127.2
Shoreside Costs*	\$21,380.9	\$21,058.1	\$21,347.6
Allocated Admin	\$1,984.8	\$2,024.5	\$2,065.0
<b>Total Proposed Operating Costs</b>	<b>\$157,537.7</b>	<b>\$159,256.9</b>	<b>\$164,539.8</b>
<b>Operating Statistics</b>			
Weeks of Service	316.6	319.9	319.9
Fuel Burn (Gallons 000)	7,337.8	7,231.4	7,231.4
Fuel Price per Gallon	\$3.00	\$3.30	\$3.63
*Preliminary – Some costs are pending decisions.			

## 6.5.2 Capital Costs

The various proposed capital costs are listed in Table 14. These costs are estimates only and are based on a logical spend down plan of the amounts included in the draft 2023-2026 STIP and the fleet plan.





**Table 14: CY2024-2026 Proposed Capital Costs (in Thousands)**

	<b>CY2024</b>	<b>CY2025</b>	<b>CY2026</b>
<b>Vessel Projects</b>			
<i>TRV</i>	\$10,000.0	\$170,000.0	\$170,000.0
<i>MRV</i>	\$2,000.0	\$11,833.3	\$23,666.7
<i>No-Low Emission Ferry</i>	\$10,000	\$40,000.0	\$100,000.0
<i>Annual Overhauls</i>	\$22,000.0	\$22,000.0	\$22,000.0
<i>FCS Update</i>	\$300.0	-	-
<i>Tazlina Crew Quarters</i>	\$23,750.0	-	-
<i>Matanuska Safety Improvement Project*</i>	\$37,950.0	-	-
<i>Columbia CPP*</i>	\$13,732.7	-	-
<i>Kennicott Emissions and Exhaust Upgrades</i>	-	\$13,881.1	-
<b>Total Proposed Vessel Capital Costs</b>	<b>\$119,732.7</b>	<b>\$257,714.5</b>	<b>\$315,666.7</b>
<i>*Project still under review and may not proceed</i>			
<b>Terminal Projects*</b>			
<i>Shoreside Facilities Condition Survey</i>	\$240.0	\$240.0	\$240.0
<i>AMHS System Wide Mooring System Improvements</i>	\$1,200.0	\$1,200.0	\$1,200.0
<i>Angoon Ferry Terminal Improvements</i>	\$4,000.0	-	-
<i>Auke Bay East Berth Terminal Improvements</i>	\$11,000.0	-	-
<i>Chenega Ferry Terminal Improvements</i>	\$710.0	-	\$13,000.0
<i>Cordova Ferry Terminal Modifications</i>	\$450.0	\$6,000.0	-
<i>Pelican Ferry Terminal Improvements</i>	\$910.0	-	\$13,000.0
<i>South Tongans Ferry Terminal</i>	\$510.0	\$12,300.0	-
<i>Tatitlek Ferry Terminal Improvements</i>	\$900.0	-	\$11,000.0
<b>Total Proposed Terminal Projects</b>	<b>\$19,920.0</b>	<b>\$19,740.0</b>	<b>\$38,440.0</b>
<b>Total Proposed Capital Projects</b>	<b>\$139,652.7</b>	<b>\$263,573.3</b>	<b>\$354,106.7</b>
<i>*Other projects maybe in the planning stages, but were not included in the draft 23-26 STIP.</i>			



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## Appendix A

CY2024-CY2026 Proposed Operations Budget



	CY2024	CY2025	CY2026
<b>Marine Vessel Operations</b>			
Personnel Service	\$89,548.3	\$90,150.5	\$92,269.3
Travel	\$2,888.4	\$2,907.8	\$2,976.3
Services	\$13,334.2	\$13,091.8	\$13,320.1
<i>Training Needs</i>			
<i>Root Cause Analysis</i>	\$35.0	-	-
<i>Crew Safety Conference</i>	\$80.0	\$80.0	\$80.0
<i>Supplemental Service</i>	\$3,500.0	\$3,000.0	\$3,000.0
<i>AMOS Maintenance*</i>	\$20.0	\$5.0	\$5.0
<i>Vessel Communication and Connectivity Upgrades*</i>	\$24.5	\$12.0	\$12.0
<i>AIS Real Time Monitoring</i>	\$5.0	\$5.0	\$5.0
Fuel	\$22,013.4	\$23,863.7	\$26,250.0
Commodities	\$6,387.7	\$6,430.6	\$6,581.8
<b>Subtotal Marine Vessel Operations</b>	<b>\$134,172.0</b>	<b>\$136,174.3</b>	<b>\$141,127.2</b>
<b>Shoreside Costs</b>			
Marine Shore Operations	\$8,029.2	\$8,159.4	\$8,292.2
Vessel Ops Management	\$5,313.9	\$5,370.9	\$5,439.1
<i>AMOS Business Suite</i>	\$396.2	\$296.0	\$300.0
<i>AMOS Staff Management*</i>	\$20.0	\$5.0	\$5.0
<i>SMS Rewrite</i>	\$10.0	-	-
<i>New Positions (Mgmt, Marketing, Biz Dev, Analyst)*</i>	\$510.0	\$522.8	\$535.8
Reservations & Marketing	\$1,562.0	\$1,602.5	\$1,624.9
<i>Reservations Improvements</i>	\$20.0	\$20.0	\$20.0
Marine Engineering	\$3,884.6	\$3,886.6	\$3,935.6
<i>AMOS Projects*</i>	\$20.0	\$5.0	\$5.0
<i>Wheelhouse Assessment Plan</i>	\$100.0	\$100.0	\$100.0
<i>Asset Management Support</i>	\$50.0	-	-
<i>Marine Engineering Consultant Support</i>	\$500.0	\$500.0	\$500.0
Overhaul	\$1,700.0	\$1,700.0	\$1,700.0
Other	\$435.0	-	-
<i>SRP/LRP Development*</i>	\$435.0	-	-
<b>Subtotal Shoreside Costs</b>	<b>\$21,380.9</b>	<b>\$21,058.1</b>	<b>\$21,347.6</b>
<b>Allocated Costs</b>			
<i>SE Support Services</i>	\$46.5	\$47.4	\$48.4
<i>Admin Services</i>	\$1,487.8	\$1,517.6	\$1,547.9
<i>Human Resources</i>	-	-	-
<i>ISSD</i>	\$195.8	\$199.7	\$203.7
<i>Commissioner's Office</i>	\$254.7	\$259.8	\$265.0
<b>Subtotal Allocated Costs</b>	<b>\$1,984.8</b>	<b>\$2,024.5</b>	<b>\$2,065.0</b>
<b>Total Proposed Operational Costs</b>	<b>\$156,998.2</b>	<b>\$159,221.1</b>	<b>\$164,500.0</b>
*Costs are still in progress.			



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**Appendix B**  
**Port Abbreviations**



Community	Identifier	Scheduled Region
Akutan	AKU	SW
Angoon	ANG	SE
Bellingham, WA	BEL	SE & CG
Chenega Bay	CHB	SC & CG
Chignik	CHG	SW
Cold Bay	CBY	SW
Cordova	CDV	SC & PWS
Dutch Harbor	UNA	SW
False Pass	FPS	SW
Gustavus	GUS	SE
Haines	HNS	SE
Homer	HOM	SW & CG
Hoonah	HNH	SE
Juneau	JNU	SE & CG
Kake	KAE	SE
Ketchikan	KTN	SE & CG
King Cove	KCV	SW
Kodiak	KOD	SW & CG
Metlakatla	ANB	SE (MV LIT)
Old Harbor	OLD	SW
Ouzinkie	OUZ	SW
Pelican	PEL	SE
Petersburg	PSG	SE
Port Lions	ORI	SW
Prince Rupert, BC	YPR	SE
Sand Point	SDP	SW
Seldovia	SDV	SW & CG
Sitka	SIT	SE
Skagway	SGY	SE
Tatitlek	TAT	SC & PWS
Tenakee	TKE	SE
Valdez	VDZ	SC & PWS
Whittier	WTR	SC, PWS & CG
Wrangell	WRG	SE
Yakutat	YAK	SE & CG

