

State of Alaska FY2010 Governor's Operating Budget

Department of Transportation/Public Facilities Marine Engineering Component Budget Summary

Component: Marine Engineering

Contribution to Department's Mission

Ensure that all Alaska Marine Highway System (AMHS) vessels and terminal facilities are safe, reliable, comfortable, and accessible to all Alaskans and visitors to the state.

Core Services

- Conduct annual fleet and terminal condition surveys to develop functional operational assessments and provide technical information for long-range maintenance and shore facility and vessel development.
- Develop plans, specifications, and estimates, and manage the construction contracts for new vessel construction and for the repair, refurbishment, and modernization of existing AMHS vessels. Assure that the vessels continue to comply with state, federal, and international regulations, as well as all United States Coast Guard (USCG) and marine classification society requirements.
- Support fleet operations through the port engineer functions located in the Ketchikan engineering waterfront facilities. Attend AMHS vessels at commercial shipyards during both state overhauls and federal aid projects.
- Perform preventive maintenance on 16 widely-dispersed state-owned ferry terminals ranging in location from Homer to Ketchikan. Perform semi-annual inspections and maintenance for regulatory compliance and accomplish upgrades and repairs of the terminal facilities. Terminal facilities include transfer bridges, mooring structures, staging areas and terminal buildings. The majority of terminals are located on the National Highway System.

FY2010 Resources Allocated to Achieve Results

FY2010 Component Budget: \$3,113,000

Personnel:

Full time	21
Part time	0
Total	21

Key Component Challenges

The existing Marine Sanitation Device (MSD) Systems onboard the M/V Columbia, M/V Malaspina, M/V Kennicott, M/V Matanuska, and M/V Taku are not Advanced Technology Wastewater Treatment (ATWT) Systems and do not meet the Alaska Department of Environmental Conservation (ADEC) discharge requirements for ATWT Systems. As a result, AMHS is currently operating the MSD systems in accordance with a Best Practices Assurance Program (BPAP) negotiated between AMHS and ADEC. The agreement currently requires AMHS to upgrade or replace the MSD Systems no later than the beginning of the vessels' 2013 operating season. We have implemented a project to perform a two step upgrade on each vessel. Step one is to perform upgrades to the existing MSD Systems to assure proper operation and to comply with the BPAP. Step two is to replace or upgrade the existing systems with new wastewater treatment systems and be in full compliance with ADEC Regulations.

The Environmental Protection Agency (EPA) is addressing emissions from marine engines in two ways, through their fuels and through their emission limits. In May 2004, EPA finalized new requirements for non-road diesel fuel that will decrease the allowable levels of sulfur in fuel used in marine vessels by 99 percent. These fuel improvements, which began to take effect in 2007, create immediate and significant environmental and public health benefits by reducing particulate matter from new and existing engines. Newly instituted EPA emission regulations, specifically targeting locomotives and marine vessels (including ferries) pose several financial challenges for the Alaska Marine Highway System. Since the new regulations are mandated, the system must comply or those vessels will not be allowed to operate. By taking an in-depth look at our existing diesel platforms (i.e. manufacture/ conversion cost) and the regulations, we can develop a cost and phase schedule plan that will stretch out the cost impact to the state. Each

vessel's specific solution for both manufacturer refurbishment and Nitrogen Oxide level emission standards will be performed within the current AMHS federal CIP program in accordance with the information found from the research.

To create transition plans for Alaska Marine Highway vessels to guide design and construction on these vessels that is compliant with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. The transition plan will identify non-compliant features within the vessels to target those features for compliant design and reconstruction.

To properly manage the AMHS fleet a new vessel replacement schedule must be developed based on replacement intervals, fleet condition, and internal input. A "required capital cost" time line must be developed using the new replacement schedule.

Recruitment of Vessel Construction Managers and Port Engineers primarily due to retirement and transfer from state service will continue to be challenging. Hiring qualified candidates that have specialized skills and experience normally requires nationwide recruitment and at least six months lead time.

Significant Changes in Results to be Delivered in FY2010

No significant changes are anticipated.

Major Component Accomplishments in 2008

- Successfully managed three design projects totaling \$1.5 million and two construction projects totaling \$19.5 million. Vessels were delivered within budget and on time. Started three refurbishment and one new design-build projects forecasted to total \$2.5 million. Executed extensive remote field office operations in support of these projects, which lasted several months.
- M/V Columbia Construction Federal Aid Project, work included: Furnished all labor and materials and/or equipment for refurbishment of 2nd deck crew's quarters; Heating, Ventilation and Air Conditioning (HVAC) system modifications; conversion of anchor windlass motor control system to variable frequency drive; overhaul and refurbishment of three mooring capstans; overhaul and refurbishment of anchor windlass; sandblasting and painting of three ballast tanks; freight elevator refurbishment; main engine overhaul and modifications; SAT COM wireless internet installation; Americans with Disabilities Act (ADA) restroom fabrication; safety equipment replacement; ship service generator overhaul; stability assessment; and annual overhaul work and dry docking.
- M/V Aurora Construction Federal Aid Project, work included: Renovation of accommodation and machinery spaces: inspect/upgrade mechanical and structural as needed in areas being renovated. Removed all asbestos containing material in areas being renovated. Upgrade/modifications of navigational and lifesavings equipment. Upgraded electrical services, blasted and painted selected decks, bulkheads, overheads, tanks and voids. Performed ancillary ship upgrades and dry dock for regulatory inspections, SAT COM wireless internet installed.
- M/V Fairweather Design Federal Aid Project, work included: Providing Temporary Services, structural and miscellaneous outfitting including, maintenance and refurbishment of engine lifting device, main engine maintenance, upgraded main engine exhaust, modified piping systems, mechanical and electrical modifications associated with the above modifications, tested all new equipment and demonstration of satisfactory and acceptable operation to applicable regulatory bodies and the owner. Prepared completely detail construction drawings, performed all engineering and design work and prepared all documentation of the work, thoroughly cleaned surface preparation and painted all areas affected by the work.
- M/V Matanuska Design Federal Aid Project, work included: Safety of Life at Sea (SOLAS) fire safety modifications including structural fire protections, means of escape from passenger and crew spaces, fire boundary door upgrades, fire extinguishing upgrade, lube and fuel oil storage tank modifications, ventilation modifications and fire pump control modifications as recommended in the 2006 Vessel Condition Survey, the ABS current and future survey status, the Coast Guard inspection status, and compliance with existing and pending regulations. Stability assessment; sea trials and annual overhaul work and dry docking.
- M/V Tustumena Design Federal Aid Project, work included: vehicle elevator safety improvements, installed accommodation ladder hydraulic lifting cranes, bridge window replacement, window wash system, bridge deck HVAC improvements, Transas/Navigation equipment installed/ upgrades, piping system evaluation/ replacement, passenger restroom refurbishments, ADA upgrades/ improved access, ADA Shower improved drainage, weather

door replaced, passenger space refurbished, security upgraded; camera system replaced, gates and access improved, deck machinery refurbished, emergency locker additions and upgrades, interior and exterior coatings. Stability assessment; sea trials and annual overhaul work and dry docking.

- Successfully executed the annual Fleet Condition Survey project which included updating the fleet survey documents and database to indicate status of recently completed work and defined regulatory work required to maintain operational status. This year, AMHS developed a user interface to the report that can be delivered and viewed electronically. In addition, a vessel coatings matrix was added that will assist in tracking what areas of the vessel were coated when instigation of more frequent vessel site visits by AMHS staff that supports the data being fed into the Fleet Condition Survey.
- Started Phase 2 (design phase) of the M/V Kennicott Refurbishment project which will include development of the plans, specifications, and estimates of the following work items: improvements required to maintain vessel SOLAS certification beyond 2010, renovation of accommodation and machinery spaces, elevator system modifications, overhaul/ replacement of machinery and controls, installation of fuel management system, inspections of piping systems and replacement as required, inspection for structural deficiencies with shell and deck plate replacement as required, passenger space upgrades and modifications, installation and upgrades of navigation, communications and lifesaving equipment, upgrades of electrical services, blast and paint of selected decks, bulkheads, overheads, tanks and voids, performed engine, generator and machinery upgrades, performed upgrades as required by regulatory agencies, and annual overhaul work as required, such as dry docking, sea chest cleaning, valve repairs and regulatory inspections.
- Repairs to AMHS facilities included carpet replacement, removal of existing pneumatic heating controls, and installation of new DDC controls, Phase 2 Design for Heat Trace Modification Project, Phase 2 Design for Delta-Wye Conversion, supply lights and power to Conex boxes being used for storage by the fast vehicle facility, installed new man gate in the existing gate located at the head of the bridge at the LeConte Berth for Crew access.

Regulatory requirements continue to mandate that AMHS facilities have sophisticated security features which prompted us to re-key all of the AMHS Ferry terminals, installed a new security gate at the head of the gangway at the Cordova Ferry Terminal, added security lighting at the Wrangell Ferry terminal, and the addition of security fencing at the Haines Ferry Terminal between AMHS Property and the city dock. Major accomplishments to AMHS ferry terminals throughout the state include carpet replacement, additional security fencing at the Haines Terminal, new potable waterline system installed at the Ketchikan Terminal, and modifications to existing buildings at the Ketchikan Waterfront area.

AMHS continues to work towards the reduction of frequency and severity of terminal casualties and emergency repairs. This is being accomplished through the use of improved, condition-based, planned, and programmed preventive maintenance.

Statutory and Regulatory Authority

AS 19

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Contact Information

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**Marine Engineering
Component Financial Summary**

All dollars shown in thousands

	FY2008 Actuals	FY2009 Management Plan	FY2010 Governor
Non-Formula Program:			
Component Expenditures:			
71000 Personal Services	2,320.3	2,695.9	2,740.2
72000 Travel	86.1	75.1	75.1
73000 Services	191.5	152.5	152.5
74000 Commodities	116.7	145.2	145.2
75000 Capital Outlay	0.0	0.0	0.0
77000 Grants, Benefits	0.0	0.0	0.0
78000 Miscellaneous	0.0	0.0	0.0
Expenditure Totals	2,714.6	3,068.7	3,113.0
Funding Sources:			
1004 General Fund Receipts	24.6	0.0	15.8
1061 Capital Improvement Project Receipts	798.0	1,488.7	1,517.2
1076 Marine Highway System Fund	1,892.0	1,580.0	1,580.0
Funding Totals	2,714.6	3,068.7	3,113.0

Estimated Revenue Collections

Description	Master Revenue Account	FY2008 Actuals	FY2009 Management Plan	FY2010 Governor
Unrestricted Revenues				
None.		0.0	0.0	0.0
Unrestricted Total		0.0	0.0	0.0
Restricted Revenues				
Capital Improvement Project Receipts	51200	798.0	1,488.7	1,517.2
Restricted Total		798.0	1,488.7	1,517.2
Total Estimated Revenues		798.0	1,488.7	1,517.2

**Summary of Component Budget Changes
From FY2009 Management Plan to FY2010 Governor**

All dollars shown in thousands

	<u>General Funds</u>	<u>Federal Funds</u>	<u>Other Funds</u>	<u>Total Funds</u>
FY2009 Management Plan	0.0	0.0	3,068.7	3,068.7
Adjustments which will continue current level of service:				
-FY2010 Wage and Health Insurance Increases for Bargaining Units with Existing Agreements	0.0	0.0	44.3	44.3
-Correct Unrealizable Fund Sources in the Salary Adjustment for the Existing Bargaining Unit Agreements	15.8	0.0	-15.8	0.0
FY2010 Governor	15.8	0.0	3,097.2	3,113.0

**Marine Engineering
Personal Services Information**

Authorized Positions			Personal Services Costs	
	<u>FY2009 Management Plan</u>	<u>FY2010 Governor</u>		
Full-time	21	21	Annual Salaries	1,133,315
Part-time	0	0	COLA	45,161
Nonpermanent	0	0	Premium Pay	339,048
			Annual Benefits	719,878
			<i>Less 0.00% Vacancy Factor</i>	(0)
			Lump Sum Premium Pay	0
Totals	21	21	Total Personal Services	2,237,402

Position Classification Summary

Job Class Title	Anchorage	Fairbanks	Juneau	Others	Total
Data Processing Tech I	0	0	0	1	1
Facilities Manager I	0	0	0	1	1
Maint Gen Journey	0	0	1	2	3
Maint Spec Bfc Jrny II/Lead	0	0	1	0	1
Marine Trans Srvs Mgr	0	0	0	1	1
Stock & Parts Svcs Journey II	0	0	0	2	2
Vessel Const Manager I	0	0	0	2	2
Vessel Const Manager II	0	0	0	4	4
Vessel Const Manager III	0	0	0	2	2
Totals	0	0	2	15	17