

University of Alaska Southeast – Ketchikan Regional Maritime Training Center Mission Area Analysis and Statement of Need

April 2015

Scope of this Document

This document contains two components: Mission Area Analysis (MAA) and Statement of Need (SON) for the Ketchikan Regional Maritime Training Center. This entity will be referred to as the “Maritime Training Center” throughout this document.

The Mission Area Analysis describes the programmatic offerings, their alignment with UA statewide and UAS goals, as well as established objectives of strengthening and expanding programs and related courses that are critical to the maritime industry workforce in the Southeast region. The SON summarizes the collective needs of these programs derived from the MAA. The next step is to develop a Statement of Requirement (SOR) that identifies the options to satisfy the SON and their associated personnel, facility needs (including reallocation and repurposing), furnishings, equipment and operating costs.

Mission Area Analysis

Introduction and Background

A major goal of the University of Alaska Southeast is to educate and train Alaskans for Alaskan jobs. The University of Alaska Southeast Ketchikan (UASK), a branch campus of the University of Alaska Southeast, has been providing industry-specific training and liberal arts degrees for more than 60 years, aligning program and delivery formats as technology and community needs change.

UASK has offered marine transportation training to mariners for the better part of 30 years. The mission of the Maritime Training Center is to “provide Alaskans statewide with the skills and technical knowledge to enable them to be productive in the continually evolving maritime industry.”¹

The program accomplishes this mission by offering post-secondary education and training in partnership with other UA campuses and partners with local and regional industries to provide critical workforce skills. Specific offerings include an Occupational Endorsement in Marine Transportation, 22 U.S. Coast Guard (USCG) approved marine transportation certificates and licenses, and one U.S. Coast Guard-approved marine oiler/QMED certificate and UAS Workforce Credential. The program also offers welding, diesel, refrigeration, hydraulics and marine electrical courses, and Certified Maritime First Aid/CPR/ADE training.

The Marine Transportation and Marine Oiler/QMED Programs are part of the Regional UAS School of Career Education. The UAS School of Career Education’s primary role is to provide academic, vocational, and technical courses while assisting students in the transition to college and successful completion of their programs of study at all levels from the Workforce Credential, Occupational Endorsements to Associate of Applied Science degrees.

¹ Maritime Department internal documentation

To be effective in accomplishing its mission, the industries for which the program trains students require strong partnerships with employers. The Maritime Training Center has active and engaged partnerships with:

- Alaska Marine Highway System,
- Vigor Alaska,
- U.S. Coast Guard,
- Southeast Alaska Pilots Association,
- Alaska Maritime Safety Education Association,
- Revilla Tug,
- Inter-Island Ferry Authority,
- Allen Marine,
- Amak Towing
- North Tongass Volunteer Fire Department,
- City of Ketchikan
- PeaceHealth

The campus also partners with other local health care agencies, Ketchikan Indian Community, and the Ketchikan Gateway Borough School District.

In recent years, the Maritime Training Center has placed an even greater focus on working with partners to meet the needs of the maritime industry including shipbuilding, vessel maintenance and repair, marine transportation, and related fields. For example, in 2014, a faculty member was hired to develop and deliver the new Maritime and Multi-skilled Worker (MMSW) credential for both AMHS and Vigor Alaska employees.

The ultimate goal is to develop and expand maritime programming to create additional pathways and career ladders while continuing to meet regional training needs, thus transforming the current entity into a Regional Maritime Technical Training Center.

To make the Maritime Training Center a reality, UAS Ketchikan requested and was awarded a five-year \$6.6 million grant from the Department of Education to renovate the current facility and transform it into a Regional Maritime Technical Training Center that offers the training and education necessary for Alaska Native, Rural Alaskans, and other students to qualify for living-wage jobs in the communities where they live.

Strategic Alignments

The University of Alaska's *Shaping Alaska's Future* is the roadmap for navigating the challenging terrain ahead, and it will guide decisions about people, programs and resources at UA for many years to come."² The five themes covered in this document are:

- 1) Student Achievement and Attainment
- 2) Productive Partnerships with Alaska's Schools
- 3) Productive Partnerships with Alaska's Public and Private Industries
- 4) Research and Development and Scholarship to Enhance Alaska's Communities and Economic Growth
- 5) Accountability to the People of Alaska

The transformation to a Regional Maritime Technical Training Center directly supports *Shaping Alaska's Future*, especially themes three and five.

Theme 1: Student Achievement and Attainment

Several of the current UAS strategic planning goals closely mirror this theme:

- Educate Students to be informed, responsible, active citizens by incorporating real-world experiences and applications into the undergraduate curriculum.
- Serve Alaska's diverse communities in ways that are more responsive and accessible and enhance the social, economic, and environmental well-being of individuals and communities.
- Improve assistance to students in making transitions across all phases of the education continuum.

The Maritime Training Center serves a diverse demographic of students, through face-to-face courses, e-learning courses, real world lab scenarios, and maritime navigational computer simulation. These interactions assist students as they cultivate their knowledge of a variety of subjects that can be applied in real world scenarios.

Theme 2: Partnership with Alaska's Schools

The Maritime Training Center is also pursuing tech prep and dual enrollment opportunities with secondary school districts to encourage Alaska Native and rural Alaskan high school students to pursue high demand, well-paying careers in the maritime industry sector. Each year the Maritime Training Center hosts over 100 middle school students exposing them to maritime careers.

Theme 3: Productive Partnerships with Alaska's Public and Private Industries

Several of the current UAS strategic planning goals closely mirror this theme:

- Partnerships with labor, government and industry
- Career Pathways for students
- Workforce development for Alaska's future

The Maritime Training Center has more than two dozen business and industry partnerships, and the list is growing. Some partners have employees that serve as advisory committee members, while others donate equipment to the program. Companies like Vigor Alaska often request that UASK provide workforce training for their employees.

Theme 4: Develop and Enhance Programs to Respond to State Needs

UAS Ketchikan campus is regional provider of U.S. Coast Guard-approved marine transportation and marine engineering courses. The maritime industry in Southeast Alaska is responsible for over a quarter of all work-related income in the region. The Maritime Training Center continues to respond to the workforce development needs of the maritime industry. The new Maritime and Multi-Skilled Worker program was developed in direct response to both the Alaska Marine Highway System for a U.S. Coast Guard-approved QMED program and to Vigor Alaska for an industrial multi-skilled worker shipbuilding and repair program.

In addition to the five themes outlined in the University of Alaska's *Shaping Alaska's Future* document, the future direction of the Maritime Training Center also supports the University of Alaska Southeast Strategic Plan core themes:

UAS Strategic Plan Core Theme 1: Student Success

This project will allow UAS Ketchikan to continue to provide and expand:

- Workforce development courses and programs in high demand occupations
- Small classes with talented faculty
- Strong employment placement success

The *Alaska Maritime Workforce Development Plan* identifies the maritime industry as one of the high demand occupations now and into the future. According to the plan, the industry, across all sectors, is 'graying' and there is not a trained workforce to fill vacated jobs.³

UAS Strategic Plan Core Theme 2: Teaching and Learning

This project will allow UAS Ketchikan to continue to provide and expand:

- Breadth of programs and services
- More intensive hands-on training
- Expanded virtual learning including e-learning experiences

The goal is to expand coursework in both the Marine Transportation and the Maritime and Multi-Skilled Worker programs. Expanded coursework will, in turn, allow faculty to develop new Occupational Endorsement, Certificate, and Associate degree offerings for the multi-faceted maritime industry sectors.

UAS Strategic Plan Core Theme 3: Community Engagement

This project will allow UAS Ketchikan to continue to provide and expand:

- Partnerships with labor, government and industry
- Career Pathways for students
- Workforce development for Alaska's future
- Student internships

In addition to alignment with UA and UAS strategic goals, the University teams with Alaska industries to develop timely reports and workforce plans. The most recent plan addresses the needs of the maritime workforce.

In May 2014, representatives from the Alaska Fisheries, Seafood, and Marine Industry Sectors, Alaska State Agencies, and the University of Alaska issued the *Alaska Maritime Workforce Development Plan*, the first comprehensive effort to understand the maritime industry's economic impact and to address the growing maritime workforce needs in Alaska.⁴

³ *Alaska Maritime Workforce Development Plan*, May 2014

⁴ *Southeast Alaska by the Numbers 2014*, Southeast Conference

In the *Alaska Maritime Workforce Development Plan*, the three overarching goals of the plan are:

- 1) Developing a responsive workforce that enables the maritime sector to remain a substantial contributor to the state,
- 2) Guiding Alaska's workforce to discover and prepare for the wide range of employment opportunities in the maritime sector, and
- 3) Increasing the number of Alaskans working in skilled maritime occupations.

Strategies outlined in the plan include:

- Grow Awareness of Occupations and Develop Career Pathways
- Improve Workforce Readiness
- Train Alaskans for Maritime Careers

These strategies resonate very well with the mission and objectives of the Maritime Training Center. The Maritime Training Center faculty and staff fully endorse this plan and are working diligently to support the plan with a highly educated workforce in Alaska.

Industry Overview and Occupational Demand

Program demand is strategically aligned with the growth of the maritime industry and its workforce needs. The Southeast Alaska economy was in expansion mode between 2008 and 2012. While the general economy was basically flat in 2013 and 2014, the maritime sector continued to expand. Since 2010, the maritime economy of the region has grown by 14% or 900 jobs while wages grew by \$76.4 million or 24%.⁵

To better understand the need for the Regional Maritime Training Center, the reader has to fully understand the magnitude of the maritime industry in Alaska. The maritime industry is the largest private employer in the state of Alaska. While a complete economic picture is not available, the seafood industry alone is responsible for \$6.75 billion in total economic impact to the state. There are over 68,000 jobs in the collective maritime industry across the state, from commercial fishermen to longshoremen to state workers in both Fish and Game and the Alaska Marine Highway System.⁶

Maritime employment sets Southeast Alaska apart from the rest of the United States, where maritime jobs are 49 times more prevalent in Southeast Alaska than in the U.S. as a whole. Statewide, there were 28,800 "blue jobs" with associated direct earnings of \$1.4 billion in 2013. Approximately 8,200 of these workers are employed in Southeast Alaska.⁷

Nearly every element of the Southeast Alaska economy is intermingled with the maritime economy:⁸

- More than 1.5 billion pounds of commodities are transported to the region on barges
- A million visitors come to Southeast Alaska via 500 cruise ship voyages during the summer
- A flotilla of 3,000 commercial fishing vessels home-port in the region
- Two public ferry systems provide transportation between communities
- With more than 760 employees, U.S. Coast Guard employment is expanding and has recently displaced the Forest Service as the number one federal employer in the region

⁵ *Alaska Economic Trends*, Employment Forecast for 2015, January 2015

⁶ *Southeast Alaska by the Numbers 2014*, Southeast Conference

⁷ *Southeast Alaska by the Numbers 2014*, Southeast Conference

⁸ *Alaska Maritime Workforce Development Plan*, May 2014

Several years of increased growth are predicted for Southeast Alaska maritime and manufacturing industries:

- A \$140,000 million recent investment into the Ketchikan Shipyard (dba Vigor Alaska) will allow it to build 500-foot ships and increase its capacity and competitiveness. The shipyard’s expansion has the ability to transform Southeast Alaska into a premier marine transportation and industrial hub. Achieving this will require partnerships and a highly trained and skilled workforce. Vigor Alaska built the Artic Prowler in 2013, the first larger fishing vessel to be constructed in Alaska;
- In the manufacturing industry, the State of Alaska has hired Vigor Alaska to build two Alaska Class ferries. According to the *Alaska Economic Trends* employment forecast for 2015, the company plans to hire up to 80 additional employees, in jobs that tend to be high-skill, high-wage;⁹

Alaska’s seafood harvesting average monthly employment has been growing to levels not seen since 2000. Southeast Alaska has been the regional leader in both volume and value since 2011, thus generating the largest job counts. In the seafood industry, the volume of the 2015 seafood harvest is expected to be well above 2014 levels;¹⁰

- In the visitor industry, a new cruise passenger record is anticipated by 2016, with a trend toward increasing ship size. The number of passengers to the region is expected to rise by three or four percent per year.¹¹ Southeast Alaska marine pilots are required to pilot all cruise ships through Southeast Alaska waters.
- In 2017, new federal regulations will require Alaska mariners to complete certification renewal courses every 5 years. With 500 AMHS crew members as well as mariners from the private sector, the program anticipates an increase of more than 100 students or 200 non-credit hours each year. The new federal regulations will also require Alaska fishermen to take training and earn certification in vessel safety. With 2,330 fishermen in Southeast Alaska (Maritime Economy of SE Alaska, 2013), these additional regulations will add hundreds more students annually to the Maritime Training Center Programs.
- According to the report *Trends and Opportunities in the Alaska Maritime Industrial Support Sector*, as prepared by the McDowell Group, September 2014, the Alaska fleet contains approximately 9,400 vessels, of which 81% are homeported in Alaska. Southeast Alaska, with a total of 3,221 vessels (see graph below) is home to more vessels than any other region in the state. According to the report, Southeast Alaska vessels tend to be older than those found in other regions. The report also notes that Alaska fleet vessel owners likely spend a total of approximately \$80 to \$100 million on repair and maintenance annually.

	Commercial Fishing	Recreation	Oil & Gas	Passenger & Cruise	Tugs	Barges	Other	Total
Vessel								
Vessel Count	2,237	533	9	259	66	68	49	3,221
Vessel Pct.	69%	17%	0%	8%	2%	2%	2%	-

⁹ *Alaska Economic Trends*, Employment Forecast for 2015, January 2015

¹⁰ *Southeast Alaska by the Numbers 2014*, Southeast Conference

¹¹ *Southeast Alaska by the Numbers 2014*, Southeast Conference

Maritime industries employee demands are difficult to quantify because there are multiple employers with numerous job classifications. More than 80 occupations in the state have been identified as related to fisheries, seafood, or maritime industries. In reviewing companies that are driving growth, Vigor Alaska is planning to add up to 80 additional employees.

In looking at the Alaska occupational forecast data through 2022, many of the occupations that require maritime related skills are anticipated to grow faster than the statewide employment average of 11%.¹² Many of the jobs listed are considered moderate to high growth and moderate to extremely high vacancies.

Alaska Occupational Forecast 2012 to 2022

Occupational Title	Employment Estimate 2012	Employment Projection 2022	Percent Change	Total Openings
All Alaska Occupations	333,953	370,065	11.0	131,329
Fishers and Related Fishing Workers	531	580	9%	229
Bus and Truck Mechanics/Diesel Engine Specialists	697	793	14%	24
Heating, AC, Refrigeration Mechanics and Installers	329	355	8%	8
Electricians	2355	2531	7%	79
Structural Metal Fabricators and Fitters	90	105	17%	3
Carpenters	2973	3318	12%	96
Machinists	207	232	12%	6
Welders, Cutters, Soldiers, and Braziers	732	861	18%	318
Water Transportation Workers	1,511	1,704	13%	751
Sailors and Marine Oilers	590	655	11%	312
Captains, Mates, and Pilots of Water Vessels	608	701	15%	311
Motorboat Operators	39	46	18%	21
Ship Engineers	274	302	10.0	107

Source: Alaska Department of Labor and Workforce Development - Research and Analysis Section. 9/4/2014

Overview of Existing Programs

For the better part of seven years, student enrollments in Maritime Training Center have been growing steadily. Maritime Training Center programs offer individual courses to mariners. As such, it is not a cohort-based program.

Student demographics from FY 2014 and current FY 2015 reveal that 79% are male, 15% are Alaska Indian or Native, with 86 (34%) of the student residing in Ketchikan, 79 (30%) from Juneau, 11 (4%) out-of-state, and 80 (32%) from other areas in Alaska. Program courses are less than a full semester and start and stop throughout the year. Because of U.S. Coast Guard regulations, the curriculum in these courses are built around the necessary contact hours (as determined by USCG) with lectures followed by demonstrations and then hands-on training and practice with the majority of courses offered in a face-to-face format.

¹² Alaska Department of Labor and Workforce Development, Research and Analysis Sections, 2014

Current courses and the number of credit hours are noted below :

Current Marine Transportation Courses Offered Every Semester

Skiff Operator (1credit hour)
Outboard Motor Maintenance (1cr)
Outboard & Small Engine Repair (3cr)
Diesel Engine Maintenance (3cr)
Basic Safety Training (2cr)
Proficiency in Survival Craft (2cr)
Able Seaman (2cr)
Ratings Forming Part of Navigation Watch (1cr)
Fast Rescue Boat (2cr)
Master 100 Ton & Operator of Uninspected Passenger Vessel (5cr)
Master 200 Ton Upgrade (2cr)
Towing Apprentice Mate Upgrade (1cr)
Advance Fire Fighting (2cr)
Crisis Management and Human Behavior (1cr)
Radar Observer (2cr)
Automatic Radar Plotting (2cr)
Electronic Chart Display Information Systems (2cr)
Marine Transportation Laboratory (3cr)
Marine Transportation Practicum (1-3cr)

Current Power Technology Courses Offered Every Semester

Diesel Engines (6cr)
Basic Electrical Systems (3cr)
Hydraulics (3cr)
Refrigeration & Air Conditioning (3cr)
Basic Welding (3cr)
Advanced Welding

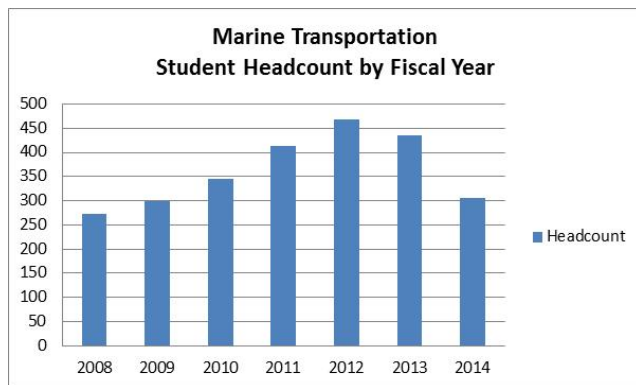
Unlike a traditional college courses, a typical course offered at the Maritime Training Center is scheduled eight hours per day and is three to ten days in duration. On any given week there are between 12 and 30 students attending the Maritime Training Center. Many courses are offered more than once a semester, including summer. For example, Marine Transportation offers multiple sections of Basic Safety Training, 100 Ton, 200 Ton, Advance Fire Fighting, Radar Observer and Proficiency in Survival craft. Past summer courses have included Radar Observer; Crowd Management; Crisis Management; Marine Computer Simulator Seminars (for Marine Pilots on specific areas of SE Alaska like Peril Straits and Wrangell Narrows).

While each class is different, students spend an average of 50% in the classroom and 50% in a laboratory setting. Classes like Radar Observer spend 100% of their time in a laboratory while students in the 100 Ton Master course spend about 30% of their time in a lab. Regardless of the course, the goal is to provide more hands-on lab time, but proper facilities are required to do so. Only a few of the classes (Proficiency in Survival boat, Fast Rescue Boat) have components where they are outside of the building on ships or on the lifeboat davit (located on the campus).

Currently, there are only four courses delivered via e-learning serving 5% to 10% of current students. E-learning courses have been limited as the U.S. Coast Guard has to approve e-learning courses and faculty have not had the time to develop the curriculum. Currently the Coast Guard has

only approved one online course (Radar Renewal) but this is only a partial online course. Students still have to come to Ketchikan to test in person with an approved instructor. The other three classes are approved as videoconference courses between Ketchikan and Juneau.

The goal is to expand e-learning offerings, but it will be dependent the U.S. Coast Guard easing requirements on the way in which programs can deliver e-learning. Expansion will also be dependent on faculty workload and the availability of adequate space with imbedded technologies that can support videoconferencing (VCon). The Maritime Transportation and MMSW programs do not have dedicated VCon equipment. Given that classes are typically 8 hours a day for up to a week, scheduling a VCon unit and dedicated room has been difficult in the past.



The enrollment chart provides an overview of the Marine Transportation program headcount for the last seven years. During the last fiscal year (FY), the Alaska Marine Highway System declined to pay for Basic Safety Training for its workforce, reducing headcount and revenues in FY14. (They have since reversed this decision.) Based on current numbers, student headcount in FY15 will return to 2012 levels as fall 2014 enrollment in Marine Transportation is above where it was in FY14 at 196 students.

The Maritime and Multi-Skilled Worker program began in fall 2013. Eight out of nine students completed the 12-week course. The ninth student left the program to take a job with Vigor Alaska. The maximum capacity for this program today is 12 students per semester due to current size of facilities and quantity of equipment.

The fall 2014 sequence was full a month before courses started, with several students on the waiting list. All 12 students successfully completed the program in fall 2014.

Maritime Transportation and Welding & Power Technology faculty at the Maritime Training Center have recently expanded several programs and are poised to further increase the number of courses and training required to meet the needs of the region and train Alaskans for Alaska's jobs. This includes both campus-based courses and e-learning classes. As mentioned earlier, the program has also received approval by the U.S. Coast Guard to offer blended learning opportunities via videoconference to students unable to travel to the campus for extended periods of time.

The Maritime Transportation program offers 22 Coast Guard approved courses each year. Students completing these courses can receive an Occupational Endorsement. The program has two full-time faculty and a part-time coordinator, with an additional 11 to 12 adjunct faculty. An Associates of Applied Science degree is currently working its way through the curriculum process and is expected to be before the UA Board of Regents for approval in spring 2015. Classes in maritime health, safety, and security will be developed if a third faculty position is approved.

The Maritime and Multi-Skilled Worker (MMSW) Program is a new program that was created using federal grant funds based on industry request and demand. UAS is seeking approval to grant an Occupational Endorsement for the MMSW program. The program has one full-time faculty member and just hired another full-time faculty member to enhance and expand the program. The position will be tasked with strengthening the welding curriculum while offering courses that are needed for

an Occupational Endorsement in Welding as well as working closely with Vigor Alaska to offer shipbuilding courses like pipefitting and naval blueprint reading. Another goal includes increasing the number of students in the program and assist current faculty with developing courses to offer new program pathways that are relevant to shore-based maritime industries.

Overall, several program have recently expanded. The MMSW expanded to offer two additional courses in spring 2015. In addition to Basic Welding and Advanced Welding, welding faculty are offering pipe fitting and pipe welding and also training Vigor Alaska employees from April – August 2105 one day a week for three hours per day.

In the Maritime and Multi-Skilled Work program the size of the space and the student to faculty ratio are completely dependent on US Coast Guard approval of classroom and lab size. The Coast Guard uses square footage per student to determine how many students can occupy a space. There are different instructor-to-student ratios that the USCG uses depending on the type of class (i.e. lecture only, lecture/lab, and practice drills). In many of the aforementioned programs, adjunct faculty are used to continue program expansion. Currently 10 or more adjuncts teach between two and four courses a semester. Others teach one course per semester.

Forecast of Program Demands

In 2017, new regulations and interpretations of international maritime standards by the U.S. Coast Guard go into effect. Planning is already underway for these changes, and the Marine Transportation program will be adding multiple new courses with an estimated impact of 250 credit hours to the Maritime Training Center. To meet workforce demands, new courses and programs will be needed. The new courses listed below incorporate both expansion of the MMSW program and the new regulations. Courses will be offered in place-bound, as well as e-learning versions whenever possible. The split between face-to-face and e-learning delivery is difficult to predict at this time as each course will require U.S. Coast Guard approval.

Proposed Courses and Programs

Blueprint reading (maritime specific)	Marine Transmissions
Shipbuilding Fundamentals	Vessel Security Officer
Aluminum welding techniques	Vessel Personnel with Security Related Duties
Industry math	Security Awareness
Pipe cutting/fitting/welding	Medical First Aid Provider
Applied Marine Hydraulics	Management of Medical Care
Advanced Marine Hydraulics	Basic Training Refresher
Advanced Marine Electronics	Proficient in Survival Craft Refresher
Basic and Advanced Rigging	Fast Rescue Boat Refresher
Forklift Safety & Operation	Advanced Fire Fighting Refresher
Marine Auxiliary Systems	
Estimating, Planning & Materials Management (maritime specific)	

The following student credit hour (SCH) enrollment estimates are based on a maritime industry workforce need. As noted earlier, new federal regulations are being implemented for Mariners. UASK currently trains 350 mariners per year. Since all mariners are required to renew training every 5 years, there is an anticipated increase of 100 students per year for the initial training and

another 100 students taking the renewal training annually for the foreseeable future in the Marine Transportation program.

Additional factors that will impact growth is the fact that the fishing fleet is aging in Southeast Alaska with fleet vessel owners spending \$80-\$100 million on repair and maintenance – this provides Vigor Alaska with a bulk of work into the future. Vigor Alaska is also building two new ferries and has contracts to repair multiple more AMHS ferries in addition to the fishing vessel replacements. The President of Vigor Alaska has stated that he envisions 10-15 years of steady work ahead for the Ketchikan shipyard.

Finally, marine pilots must pilot cruise ships through Alaskan waters and must renew licenses and certification every year. The number of cruise ships coming to Alaska is expected to increase modestly but steadily.

Enrollment will vary between MTR, MMSW and Welding as mariners will be most affected by the change in Coast Guard regulations. UASK anticipates that the MMSW and welding program will see slow steady growth. The estimates are based on projected growth of 2% to 3% annually depending on program. Growth in the MMSW and Welding are also dependent on having adequate faculty and facilities. Current numbers for fall 2014 are 487 student credit hours and current to-date for spring 2015 is 405 SCH as of March 24, 2015.

The following student credit hour (SCH) enrollment estimates are based on a conservative maritime industry workforce need, increased maritime regulations, shipyard production estimates, number of new classes developed, and additional faculty.

AY2015	AY2016	AY2017	AY2018	AY2019	AY2020
MTR 594 SCH	MTR 611 SCH	MTR 642SCH	MTR 661 SCH	MTR 681 SCH	MTR 702 SCH
MMSW 450 SCH	MMSW 459 SCH	MMSW 468 SCH	MMSW 477 SCH	MMSW 487 SCH	MMSW 496 SCH
Welding 144 SCH	Welding 146 SCH	Welding 149 SCH	Welding 152 SCH	Welding 155 SCH	Welding 159 SCH

Outputs, Outcomes and Impact

Over the last three years, the maritime program has awarded 1,195 U.S. Coast Guard certification and licenses in multiple areas to mariners across the state of Alaska. Since the inception of MMSW program in 2013, 20 students (8 in year 1 & 12 in Year 2) have received U.S. Coast Guard certifications for Qualified Member of the Engine. Both programs have extremely high employment placement rates. Ninety (90%) percent of students in the Marine Transportation program either have a job or have been offered a job in the maritime industry. In the first year of offering the Maritime Multi-Skilled Worker program, 100% of the students were employed upon successful completion of the program.

In addition to certification and licensure awards, the Maritime Training Center works closely with industry, providing innovative workforce skills to maritime workers. In spring 2014, Vigor Alaska, a leading provider of shipbuilding, complex fabrication and ship repair in the Pacific Northwest and Alaska, contracted with the Maritime Training Center and the Maritime and Multi-Skilled Worker Program to provide courses in math, blueprinting reading, electrical maintenance and repair, and refrigeration maintenance and repair. Over 35 Vigor Alaska employees took one or more of these courses on the UAS campus. Five of these employees successfully completed a national refrigeration certification.

All of these courses were offered at the UASK maritime campus. The program also uses the Ketchikan Recreation Center for pool exercises and the North Tongass Fire Department for fire training. Fast rescue boats use the boat launches (2 miles North or 6 miles south of campus) and conduct drills.

Vigor Alaska has asked the Maritime Training Center to provide more training in spring 2015, including tug welding, aluminum, steel and flux core welding for employees who want to further their education. Fall 2015 classes for Vigor Alaska include pipefitting and pipe welding for supervisors and potential employees. Vigor Alaska has indicated that they will hire as many qualified Maritime and Multi-Skilled Worker program graduates as work allows. Vigor Alaska has committed to hiring local residents and is looking to UAS Ketchikan to expand training and education opportunities and to provide Alaskans with family-wage career options. Vigor is anticipating a workforce in Ketchikan alone of 300. Currently they have approximately 100 employees. They have not indicated what their workforce needs will be for the Seward shipyard as this facility has just been purchased.

In another example, the Alaska Marine Highway System partially funded four of the first eight students in the MMSW's first cohort and four in the second cohort. Students were current employees who wanted to upgrade their positions from deck mate to marine oiler. The Alaska Marine Highway System is providing onboard internships for MMSW graduates, including four in spring 2015 and has indicated they will continue to need to hire marine engine oilers for many years to come.

Capacity to Support Program Expansion

The UAS Ketchikan campus is comprised of four buildings. The campus is divided into upper and lower campuses that are approximately one mile apart. Known as the Maritime Training Center, the campus is comprised of two buildings. Maritime programs are housed in two facilities that contain classrooms, laboratories, offices, and storage areas for the Marine Transportation and Maritime and Multi-Skilled Worker programs. These programs are also equipment intensive, requiring fast rescue boats, maritime simulators, fire training equipment, diesel engines, welding equipment, refrigeration units, hydraulic and marine electrical training units, and outboard engines.

The 2012 UAS Campus Master Plan stated that the campus had an excess of both classrooms and laboratories. However, this analysis was completed before the MMSW program was developed and the addition of a Class A Marine Computer Simulator laboratory. An updated utilization and space needs analysis will be completed as part of the SOR.



Currently program space is at a premium requiring the Marine Transportation program to rent a pool and borrow a Fire Department Training site three to four times per semester for exercises, including Marine Highway System vessels.

A newer 2014 UASK Space Utilization Study noted that the facility needs more classroom space for marine transportation, including a larger simulator room and additional laboratory space for the MMSW courses that utilize large diesel and marine engines. The images at left illustrate cramped conditions in the Robertson building (room 117). The close proximity of the equipment and the increasing number of students in the space are a growing safety concern.



In order to be an U.S. Coast Guard-approved training site, The Maritime Training Center has to provide 36 square feet of training space to every one student for classrooms and laboratories and 72 square feet of training space to every one faculty member. Laboratory equipment also has to be approved by the USCG.

Currently the Maritime Training Center has two U.S. Coast Guard-approved classrooms and two U.S. Coast Guard-approved training laboratories. Current facilities would need to be renovated to accommodate increased students and additional course sections.



The next two images are of the Robertson building, room 109, commonly referred to as the old boat shop area. The space has a roof but the walls are fenced, exposing the area to the elements. At times, wind and rain blow directly into the area. The area is not suited for teaching power technology classes nor is there the clearance available to safely maneuver and teach around stored equipment. As this space is unheated, it limits the time it can be used for instruction. One of the goals of the grant is correct building deficiencies and achieve a higher utilization of these types of spaces.



Ketchikan is an island community of approximately 12,000 residents. Smaller communities dot the islands surrounding Ketchikan and are linked together with a system of ferries and small plane services. The number of Alaska Native and rural Alaskans interested in maritime workforce training opportunities that can provide living wages for themselves and their families has been increasing. Alaska Native students account for 20% of the UASK student population. During inclement weather, planes do not fly and ferries often cancel their trips. As a result, students end up missing courses that cannot be rescheduled due to space and equipment limitations.

In summary, the transition to a Regional Maritime Technical Training Center will require modernized facilities that are capable of accommodating enrollment growth and additional equipment.

Provost Signature

Statement of Need

The MAA clearly demonstrates that the maritime industry is economically vibrant and poised for growth. The *Alaska Maritime Workforce Development Plan* provides the strategies and action steps needed to address the growing maritime workforce needs of Alaskans.¹⁴ The Maritime Training Center faculty and staff are ready and able to assist in this endeavor by ensuring that Alaskans are qualified to fill these skilled and well-paid positions through numerous U.S. Coast Guard approved occupational endorsements, certificates, licenses and credentials.

As the maritime sector continues to expand, it brings the need for additional courses, programs and equipment. With new standards and additional workers in new and emerging industries, the Maritime Training Center will be the primary educational institution in the region for maritime and marine manufacturing industries. The Maritime Training Center is one of very few maritime programs in Southeast Alaska and the state with U.S. Coast Guard approved e-learning opportunities.

There is a need to equip instructional and academic support spaces with the necessary state-of-the-art technology. Expanding course offerings and training opportunities for the maritime industry is constrained at this time due to an aging infrastructure and overall lack of adequate space for major pieces of equipment. Space needs will be exacerbated as new courses intensify and additional sections are added to current programs.

Due to the number of courses and workforce training programs, student face time constraints and are unable to practice skills outside of scheduled instructional time. Ideally, space should be available to allow students time to practice skills multiple times over several days, improving safety for both instructors and students.

With the upper campus remotely located from the Maritime Training Center, spaces such as the library, Learning Center, and study areas are not easily accessible. In some courses, students spend eight hours per day in schedule instruction. The Maritime Training Center is basically void of student study areas or places where faculty and students can interact, relax, or receive academic support.

The renovation project is needed for the Maritime Training Center to expand courses and programs into other areas of the maritime industry and in turn increase partnerships within industry. Additional space and/or reconfigured spaces are needed to provide opportunities for partnerships within the towing industry, seafood processing industry, fishing industry and other maritime related employers. Renovated and reconfigured spaces will provide safer and more secure working environments for both students and faculty. It will also allow facilities staff and faculty to focus on their intended work rather than monitoring problematic building maintenance issues and building safety.

To make the Ketchikan Regional Maritime Technical Training Center a reality, UAS Ketchikan requested and was awarded a five-year \$6.6 million grant from the Department of Education to renovate the current maritime facility and transform it into a Regional Maritime Technical Training Center that offers the training and education necessary for Alaska Native, rural Alaskans, and other students to qualify for living-wage jobs in the communities where they live.

Year one of the grant provides \$439,000 for planning a 4-year phased renovation. The funding will secure consultants including architects, engineers, and academic space planners to study and recommend a desired course of action. First year planning funds will also be used to develop all

¹⁴ Alaska Maritime Workforce Development Plan, May 2014

architectural and engineering construction documents and obtain necessary approvals in order to begin renovations in year two of the grant.

This project is a high priority for the Ketchikan campus. The maritime industry is looking to the University of Alaska to provide innovative education and training programs to current and future employees. Renovation and the possible expansion of the Maritime Training Center will ensure that industry demands are satisfied with U.S. Coast Guard-approved courses and programs that are not available anywhere else in the UA System.

Capital Budget Impact

The Robertson Building was constructed in 1977 and the Hamilton Building was constructed in 1985. Many of the original building systems have suffered from changing uses and ad hoc adaptations to those uses. Some of the equipment that needs to be accommodated includes a refrigeration training unit with A/C cooling unit (needs water hookup and drainage), marine-Grade Conex refrigeration unit (used on barges), hydraulic training unit, ten diesel engines of various sizes, marine engines, including outboard motors, six electrical training units, class A MTR marine computer simulator, 15 welding units, forklift, two fast rescue boats, bridge crane and survival suits and gear. Dry storage for steel, aluminum and other metal as well as diesel engines and other equipment is also nonexistent.

In the 30 year history of the Hamilton Building there have been no substantial renovations. The building is in need of new DDC building automation controls, a new HV system, and other upgrades based on USAK facility manager observations. There are also external buildings concerns. Proposed renovations will remediate these issues and improve safety, especially icy conditions during winter months.

Annual Operating Budget Impact

Using grant funds to renovate the Maritime Training Center will reduce the level of deferred maintenance for this facility and the UA System. The renovation of the Maritime Training Center will also reduce utility, maintenance, and operating costs. Cost savings are difficult to estimate at this phase, but new heating and ventilations systems will be more energy efficient, resulting in decreased energy use.

No additional staffing will be needed to maintain the Maritime Training Center. Adjunct faculty will be hired as demand increases for the courses and programs offered, having no impact on the annual operating budget as the program only runs classes that break even or increase revenue. The rightsizing and repurposing of some laboratories will provide additional opportunities to increase revenues through expansion of courses and programs offered each year and into the future.

In summary the current facility is aging and was built for a different set of training needs; both pedagogy and technology has changed over the years. The Marine Transportation and Maritime and Multi-Skilled Worker programs have equipment, electrical, and technology requirements that are not being met by the existing facility.

Provost Signature