CAREER CONNECT WASHINGTON

Maritime Sector

Summary of key themes, needs, and opportunities: June 2025

Prepared by the NW Center of Excellence for Marine Manufacturing & Technology

(1) What are the top 3-5 themes you hear from employers in your sector related to workforce development?

- Employers report an **immediate need for technicians** across maritime disciplines. This need is fueled by growth in the sector (including, for example, the assignment of defense assets to the state, such as the U.S. Navy designation of Naval Station Everett for the next generation of Constellation-class frigates). This dynamic is exacerbated by fierce competition across sectors vying for the same talent pool.
- Employers desire **increased education and training capacity** as one way to grow a maritime workforce bench, including expanding Career Launch programming. This requires support for existing programs to go through the Career Launch endorsement process, along with a focus on faculty development and credential attainment in high demand disciplines.
- There is a need for focus on **skills attainment** that support maritime career entry and progression: essential skills, project management, logistics.
- There is a need to expand and support **awareness and access for K12 students**, to include high demand maritime career pathway maps. This will facilitate student and family understanding of entry points, educational programs and professional attainment.

(2a) What are the 3-6 occupations that employers in your sector indicate should be high-priority for workforce development to help meet their hiring needs?

- **Marine Electrician**
- **Propulsion Technician** – (i.e. Diesel, Hybrid, Gasoline, Electric, new marine fuels)
- **Welding & Fabrication (aluminum and steel)**
- **Sailors & Marine Oilers** (i.e. Ordinary Seaman, Able Seaman, AB Unlimited, AB Special, AB OSV, Qualified Member of the Engine Department, Oiler)
- **Ship Engineer** (i.e. Hydraulic Engineer, Refrigeration Engineer, Electro-Technical Officer, Automation Engineer, Marine Chief Engineer, First Engineer)
- **Captains, Mates & Pilots** (i.e. Boat Captain, Captain, Ferry Captain, First Mate, Harbor Pilot, Mate, Tugboat Captain, Ship Pilot)

(2b) Which career connected learning programs are effectively meeting the hiring needs of employers in your sector? *NOTE: the following programs successfully train and develop entry level technicians. Effectively meeting hiring needs addresses only skill sets, not capacity issues.*

- Marine Maintenance Technology Program, Skagit Valley College (NW Region)
- Post-secondary welding programs (i.e. Peninsula College, Grays Harbor College, Walla Walla Community College, Clark College, Skagit Valley College, Perry Technical Institute, Machinists Institute)
- Post-secondary diesel technology programs (i.e. Lake Washington Institute of Technology, Skagit Valley College, Centralia College)
- Northwest Maritime Apprenticeship
- Plumber/Steamfitter, Seattle Area Plumbers Housing Plumbers Pipefitters HVAC-Service Controls Technician/Refrigeration Mechanics and Marine Pipefitters Apprenticeship Committee

(2c) Which career connected learning programs could be adjusted, expanded, or scaled to other regions to meet the hiring needs of employers in your sector?

- NW Maritime Apprenticeship and registered apprenticeship in general. Registered apprenticeship provides an excellent onramp to the maritime industry. Apprentices are employed as they learn and gain technical proficiency.
- Buoyant Beginnings Maritime Pre-Apprenticeship. While new and still developing, we are identifying this as a program with high potential for expansion to other regions in Washington State - addressing access barriers experienced by underserved and underrepresented communities.
- Marine Maintenance Technology Program, Skagit Valley College – the demand for shoreside technicians across sub-sectors of the industry continues to increase. New markets and expanded maritime activity will drive this. This is a standards-based program, and elements can certainly be articulated to other regions of the state, working with post-secondary and K12 programs.
- Washington Maritime Blue, Youth Maritime Collaborative – this model can be adapted or replicated in other regions of the state, bringing the industry to communities statewide, and supporting greater access and awareness.

(2d) Which career connected learning programs should be developed to meet the hiring needs of employers in your sector?

- The maritime industry is experiencing a significant gap in teaching professionals. Our goal is to support the **development of current and incoming faculty** through access to professional development opportunities, and the creation of a pathway for faculty to attain furtherance of their CTE credentials.
- **Underway programming -** underway employers are demanding a technically proficient workforce. Underway careers require levels of credentialing to enter programs and the workforce - this includes a driver's license (in most cases), TWIC card, Merchant Mariner Credential, health physical and background check. Developing programming with deeper support for these items will benefit students across communities and break down access barriers.
- **Autonomous systems** - the maritime industry is experiencing rapid and dynamic technological change. Autonomous technologies, across platforms are in use and advancing rapidly. Contextualized programming focused on the maritime industry will prepare student technicians for entry into the industry and address current and projected hiring needs.
- **Welding/MAC Project** - this is well underway. Now that we are entering the systemwide phase, instructional, capacity and faculty professional development considerations will be addressed.
- **Applied engineering** – building out a professional technical pathway in the community and technical college system to support applied engineering baccalaureates addresses a need across industry sectors for high demand engineering disciplines (specifically electrical engineering). This would also cross over to mechanical, materials and other engineering disciplines.
- **Project management** – this skill set is critical in all sub-sectors of the industry. It can be a stand-alone program (credit or non-credit bearing) or as a pathway for an existing program.
- **Maritime safety** programming – an opportunity to address all sub-sectors of the industry. Safety is critical to operations ashore and afloat.

(3) What are the top three efforts, initiatives, or investments that could meaningfully support the workforce development needs of employers in your sector?

- Identify high potential cross-sector projects focused on high demand technical skills and competencies.
- Framework development concentrating on contextualized sector and cross-sector application.
- Faculty professional development: a la carte/open model and cohort-based model. This facilitates shared content across teaching disciplines and specialized content focused on an industry and/or technical competency.

(4) What are the top 3-5 approaches you recommend to increase participation of underrepresented students in your sector's high priority occupations?

Our two overarching recommended strategies include:

1) Improve awareness and access to Maritime Career Pathways with an emphasis on partnerships and engagement with Black, Indigenous, and People of Color, rural, Veteran, as well as other under-invested communities. Sample approaches include:

- Develop contextualized Career Explore programs with leadership from Black, Indigenous, and People of Color, rural and other communities.
- Invest in Native community efforts to expand Maritime career pathway opportunities to youth and young adults.
- Implement Career Exploration programs in elementary and middle school: Develop cross-sector open resource curriculum aligned with CTE pathways and Next Generation Science Standards beginning at K5.

2) Build foundational tools to remove structural barriers to advance an equitable maritime workforce plan. Sample approaches include:

- Engage with K-12 CTE programs to identify barriers that need to be addressed and removed.
- Elevate native voices on identifying barriers facing their nations and communities.
- Identify policies to improve access to Career Connected Learning Opportunities in the greater Olympic Peninsula region and other rural communities statewide.
- Create an equity toolkit for maritime workforce partners to support organizational DEIB initiatives.

3) Invest in the development of statewide frameworks and pathways that clearly articulate industry awareness and career progression, K-5 to post-secondary programs statewide.

- Industry awareness and pathway access is imperative for youth and young adults from underinvested and underrepresented communities statewide. To mitigate some of those awareness and access barriers, pathway development introducing younger students to the maritime industry is critical. This facilitates skills development, early career awareness and exploration, enhances educational engagement and motivation and supports longer term academic persistence and completion. Aligned with that is faculty professional development, family and community involvement. Students from underrepresented communities often don't have access to, or awareness of, high demand career options. Frameworks that reach into earlier grades create an onramp for student awareness and engagement across communities.
- Frameworks and pathway maps may be focused on a single industry or take a cross-sector approach.

- All frameworks should be industry standards aligned and include professional development for faculty, K12 and post-secondary.