Port of Vancouver USA and Cascadia Tech Academy
Maritime Technology Partnership



Students from Cascadia Technical Academy visit the United Grain facility at the Port of Vancouver USA.

Port of Vancouver USA

Background, Purpose and Goals

The Port of Vancouver USA is a major Columbia River trade gateway and economic engine for Southwest Washington, supporting regional freight movement, industrial activity, and family-wage jobs. Cascadia Tech Academy is a regional career and technical education skills center serving high school juniors and seniors across Southwest Washington. For the 2025–26 school year, the two organizations partnered to launch Cascadia Tech's new Maritime Technology program at the Port of Vancouver. The new program provides students learning opportunities in maritime operations, vessels, equipment, logistics, safety practices, and career pathways in an active port environment.

The overall purpose of the program is to build a stronger local maritime workforce pipeline by exposing students to high-demand, high-wage career opportunities while giving industry a more direct role in preparing future workers. By holding classes at the port, the partnership helps students understand that maritime careers extend beyond work on boats to include cargo movement, marine operations, mechanics, logistics, environmental stewardship, safety, and the broader economy that supports river-based commerce. Goals of the partnership include:

- Providing hands-on, place-based learning in an active maritime and industrial setting.
- Preparing students for entry-level maritime, transportation, logistics, and skilled trades careers.
- Helping students earn relevant credentials and develop job-ready technical and safety skills.
- Address long-term workforce needs as experienced maritime workers retire and regional employers seek new talent.
- Strengthening connections among education, industry, and economic development partners in Southwest Washington, and
- Increasing student awareness of local career pathways that can lead to living-wage employment without requiring students to leave the region.

Implementation and Resources

This outline summarizes how the partnership between the Port of Vancouver USA and Cascadia Technical Academy was implemented the launch of the Maritime Technology program at the port. The program was designed to connect high school students with

hands-on maritime career training, respond to regional workforce needs, and expose students to port operations in an active waterfront setting.

1. Implementation Methodology

- **Needs assessment:** The partners identified an aging maritime workforce and a need for a local talent pipeline into maritime, logistics, transportation, vessel operations, maintenance, and related support industries.
- **Industry-aligned program design:** Cascadia Tech used the state-approved maritime curriculum framework while adapting instruction to local port operations, employer expectations, safety requirements, and hands-on learning opportunities.
- **Place-based learning model:** Locating the program at the Port of Vancouver allowed students to observe maritime activity directly and connect classroom instruction to real-world port operations.
- **Partnership governance:** Implementation relied on coordination between Cascadia Tech leadership, port economic development staff, port operations and facilities teams, instructors, school districts, and industry partners.
- **Phased launch:** The program was developed through planning, facility preparation, staffing, student recruitment, curriculum deployment, and continuous improvement after opening.

2. Implementation Timeline

Phase	Approximate Timing	Implementation Focus
Concept and workforce need validation	2024–early 2025	Confirm regional maritime workforce demand, identify target student population, and evaluate feasibility of a port-based satellite program.
Program announcement and recruitment	January–spring 2025	Announce the Maritime Technology program as a new satellite offering at the Port of Vancouver and begin student outreach through Cascadia Tech and partner districts.
Facility and lease coordination	Spring 2025	Secure and prepare a small port facility on the Columbia River for classroom and training use.
Staffing and curriculum preparation	Spring–summer 2025	Hire qualified maritime instructors, align curriculum to state requirements, identify certifications, and prepare supplies and equipment.

Program launch	September 2025	Begin instruction with morning and afternoon cohorts, integrate classroom learning with port-based exposure, and initiate safety and credential pathways.
Operational refinement	2025–2026 school year	Evaluate student experience, refine employer engagement, improve field activities, and identify future expansion or funding opportunities.

3. Key Activities

- Established the Port of Vancouver location as a satellite campus for Cascadia Tech's Maritime Technology program.
- Leased and adapted a port-owned building to support classroom instruction and waterfront learning.
- Developed a maritime career pathway for high school students, including exposure to vessels, port operations, logistics, marine safety, and the broader economic ecosystem supporting maritime activity.
- Organized students into morning and afternoon sessions to maximize facility use and expand access.
- Aligned coursework with the 540-hour maritime curriculum approved by Washington state education officials.
- Planned student credential pathways such as boater education cards, Occupational Safety and Health Administration safety certifications, and Transportation Worker Identification Credential preparation.
- Engaged port leadership, instructors, school administrators, and industry representatives to support student tours, mentorship, demonstrations, and possible work-based learning.

4. Implementation Challenges Addressed

- **Workforce awareness:** Many students may not initially understand the range of careers in maritime beyond vessel operation. The program addressed this by emphasizing the full industry ecosystem, including transportation, maintenance, logistics, environmental work, and port operations.
- **Facility conversion:** A port facility had to be adapted for education use while remaining compatible with an active industrial waterfront setting.
- **Safety and access:** Student learning near port operations required attention to safety protocols, credentialing, supervision, and appropriate separation from operational areas.

- **Instructor recruitment:** Qualified maritime instructors need both industry experience and career and technical education credentials, making staffing a specialized requirement.
- **Curriculum localization:** The partners needed to translate a statewide curriculum into lessons that reflect local employers, Columbia River activity, and Southwest Washington career opportunities.
- **Transportation and scheduling:** As a satellite program, student access depended on coordination with sending school districts, class schedules, and cohort logistics.

5. Resources Used

Resource Type	Resources Applied
Financial	Facility lease arrangement; career and technical education program funding; potential district, state, grant, and workforce development resources; equipment and supply budgets for maritime training.
Human	Cascadia Tech administrators and instructors; Port of Vancouver economic development, facilities, operations, and leadership staff; partner school district counselors and transportation coordinators; industry speakers and mentors.
Technological	Classroom technology; maritime instructional equipment; safety training tools; curriculum platforms; possible simulation, navigation, mapping, communications, and credential-preparation resources.
Physical	Port-based classroom facility, waterfront location, proximity to vessels and cargo operations, student learning materials, safety equipment, and transportation access.

6. Efficiency Measures and Value Engineering

- **Use of existing port assets:** Leasing and adapting an existing port building reduced the need for new construction and accelerated implementation.
- **Satellite campus model:** Locating instruction at the port created high educational value without requiring a full new campus.
- **Shared expertise:** Port staff, industry partners, and instructors supplemented formal curriculum with real-world context, reducing reliance on classroom-only instruction.
- **Cohort scheduling:** Morning and afternoon class sessions improved utilization of limited facility space and staff capacity.

- **Credential stacking:** Aligning instruction with recognized safety and access credentials increased student employability without creating separate standalone programs.
- **Phased expansion:** Launching with a manageable student cohort allowed the partners to test the model, refine operations, and scale based on outcomes and funding availability.

7. Alternate Funding Mechanisms

- **Career and Technical Education (CTE) allocations:** State and district CTE funding can support instruction, equipment, and program operations.
- **Workforce development grants:** Regional workforce boards, state workforce programs, and sector-based training grants may support maritime career pathways.
- **Port economic development funds:** The port may support activities that strengthen the regional workforce pipeline and align with economic development goals.
- **Industry sponsorships:** Marine employers, terminal operators, logistics firms, shipyards, unions, and trade associations may provide equipment, guest instruction, scholarships, or paid work-based learning opportunities.
- **Federal and state transportation or maritime grants:** Maritime workforce, port infrastructure, and transportation-related grant programs may be suitable for equipment, safety training, or curriculum expansion.
- **Foundation and philanthropic support:** Education foundations and community funders may support student supplies, transportation, outreach, and equity-focused access.
- **Fee-for-service or shared-use arrangements:** Specialized equipment or training spaces could be shared with industry partners when not in student use, generating revenue or offsetting costs.

8. Measures of Success

- Student enrollment and retention in the Maritime Technology program.
- Completion of industry-recognized credentials and safety training.
- Student participation in tours, employer engagement, mentorship, and hands-on learning.
- Placement into internships, apprenticeships, maritime jobs, postsecondary programs, or related technical pathways.
- Employer satisfaction with student preparedness and awareness of maritime careers.
- Program scalability, cost effectiveness, and continued partnership sustainability.

Innovation and Relevance

The partnership between the Port of Vancouver USA and Cascadia Tech Academy introduces a practical, place-based model for building a maritime technical school that responds directly to regional workforce, infrastructure, and industry needs. The model is notable because it moves maritime education out of a traditional classroom-only setting and into an operating port environment, where students can learn on real vessels, equipment, and port infrastructure while earning high school credit, potential college credit, and industry-recognized skills.

New Ideas and Approaches Introduced

- **Port-based learning campus:** Locating maritime instruction at or near the Port of Vancouver gives students direct exposure to cargo movement, vessel operations, safety systems, logistics, equipment maintenance, and environmental practices.
- **Career-connected technical education:** The Cascadia Tech Academy model connects secondary education with employer needs, allowing students to build job-ready competencies before graduation rather than waiting until after high school.
- **Shared-use training infrastructure:** Port facilities, vessels, shops, simulators, docks, and maintenance areas can be used as living laboratories, reducing duplication of expensive training assets and making instruction more relevant.
- **Stackable credentials and dual credit:** Students can progress from introductory maritime awareness to certifications, college credit, apprenticeships, and entry-level employment pathways.
- **Employer-informed curriculum:** Port tenants, maritime employers, labor partners, and public agencies can help shape curriculum around real hiring needs, including diesel mechanics, welding, electrical systems, vessel operations, logistics, safety, and environmental compliance.

Technologies and Practices with Practical Application

Innovation	Practical Application for the School	Operational Challenge Addressed
Real-vessel and equipment training	Use port-based vessels, maintenance bays, and equipment for hands-on labs in safety, mechanics, navigation basics, rigging, and inspection.	Closes the gap between classroom learning and actual maritime work conditions.

Simulation and digital learning	Add vessel-operation simulators, logistics software, GIS mapping, and cargo-flow scenarios to teach navigation, terminal operations, and decision-making.	Improves readiness without exposing students to unnecessary operational risk.
Industry certification pathways	Align coursework with OSHA safety, first aid, forklift awareness, basic maritime safety, environmental compliance, and future Coast Guard-aligned training where appropriate.	Reduces onboarding time for employers and improves student employability.
Port logistics curriculum	Teach supply chain basics, cargo handling, rail-truck-vessel connections, warehousing, and export/import documentation.	Addresses the need for workers who understand modern port operations beyond vessel work alone.
Sustainability and clean maritime technology	Introduce shore power, electrification, alternative fuels, stormwater protection, habitat stewardship, and emissions reduction practices.	Prepares students for the environmental and energy transition occurring across the maritime sector.

Addressing Current Gaps in Operations, Infrastructure, and Maritime Workforce Needs

The proposed maritime technical school would address several current gaps. First, the maritime sector faces a shortage of technically trained workers who can enter roles in maintenance, transportation, logistics, vessel support, and port operations. Second, many students are unaware that maritime careers include high-demand shoreside jobs in mechanics, electrical systems, environmental services, operations, and supply chain management. Third, employers often need workers with safety awareness and practical experience before they can be productive on job sites. Finally, traditional school facilities may not have the specialized equipment, space, or real-world context needed to teach maritime skills effectively.

Implementation Priorities for Vancouver

1. **Establish a formal school-port-employer advisory group** to keep curriculum aligned with port operations, tenant needs, labor standards, and regional economic development priorities.
2. **Develop a phased curriculum** beginning with maritime awareness and safety, then advancing into mechanics, electrical systems, welding, logistics, vessel operations, and environmental stewardship.

3. **Build shared training spaces** such as a classroom, shop lab, simulator room, safety-training area, and controlled access to port operations for observation and applied learning.
4. **Create clear student pathways** into apprenticeships, Clark College or other postsecondary programs, maritime academies, internships, and entry-level port or maritime employment.
5. **Measure outcomes** through student enrollment, credential completion, job placement, employer participation, internship hours, and reduced hiring gaps in maritime occupations.

This is more than a new school program. It is a workforce development strategy, an infrastructure strategy, and an economic development strategy. By combining the Port of Vancouver USA's operational environment with Cascadia Tech Academy's career and technical education model, Vancouver can create a maritime technical school that prepares students for family-wage careers, supports employer competitiveness, strengthens port operations, and positions the region for the next generation of maritime technology.

Results, Evidence and Impact

The partnership between Port of Vancouver USA and Cascadia Technical Academy on the Maritime Technology Program, has achieved the following outcomes thus since its inception.

Quantitative outcomes

- Student participation: The program launched with about 40 students split between morning and afternoon classes, giving the port and school an initial cohort to test curriculum, employer engagement, and student demand.
- Instructional scale: Washington's approved maritime curriculum is a 540-hour program, providing a substantial career and technical education pathway rather than a short exposure course.
- Credential pipeline: Students work toward credentials such as boater education cards, OSHA certifications, and Transportation Worker Identification Credentials, which can reduce onboarding barriers for maritime and port-related employers.
- Career wage relevance: State data cited in reporting shows maritime occupations can offer strong wages, including average annual earnings of about $107,696 for captains, mates, and pilots of water vessels and $60,424 for transportation and material movers.

- Workforce exposure: The program's location at the port gives students direct exposure to maritime activity, equipment, vessels, cargo movement, and related logistics operations.
- In its initial year of operation (2025-26) several students have earned internships which could translate into entry level positions as deckhands with local marine tug businesses.

Qualitative outcomes

- Stronger career awareness: Students gain a clearer understanding that maritime work includes not only vessel operations, but also logistics, cargo handling, maintenance, safety, security, environmental work, engineering, and support services. [washington…enters.org]
- Hands-on learning: The program uses proximity to the port as a living classroom, allowing students to observe maritime operations and connect classroom instruction to real industry conditions. [washington…enters.org]
- Industry validation: The partnership signals that maritime employers and the port see value in building the workforce pipeline earlier, at the high school level. Mike Bomar noted that the maritime workforce is aging and that the industry needs workers with a wide range of skills. [washington…enters.org]
- Improved student motivation: Because the program connects education to visible, local, high-wage career pathways, students can better see the relevance of academic and technical skills. [washington…enters.org]
- Community and employer alignment: The program strengthens relationships among education, industry, workforce development, and port leadership, making career pathways more visible to families and regional partners. [washingtonports.org], [washington…enters.org]

Short-term impacts

- Immediate workforce awareness: Students quickly gain exposure to port operations, maritime career options, safety expectations, and employer needs.
- Credential readiness: Students leave the program better positioned to pursue entry-level maritime, logistics, transportation, or port-related roles because they begin earning relevant credentials before graduation.

- Employer engagement: The port gains a practical platform to interact with students, educators, and potential future workers through tours, mentorship, program development, and hands-on learning opportunities.
- Program visibility: The launch creates public awareness that Southwest Washington has a local maritime training pathway connected directly to a working port.

Long-term impacts

- Talent pipeline development: Over time, the program can help address retirements and workforce shortages by introducing students to maritime careers before they make postsecondary or employment decisions. [washington…enters.org]
- Regional economic resilience: A stronger local labor pipeline supports the port's ability to serve cargo, industrial, logistics, and marine employers that contribute to the region's economy. [portvanusa.com], [washington…enters.org]
- Career mobility for students: Students can move into multiple pathways, including direct employment, apprenticeships, maritime academies, community college programs, logistics, marine trades, vessel operations, and port support occupations. [washington…enters.org], [linkedin.com]
- Industry competitiveness: A visible workforce-development partnership can make the region more attractive to employers that need dependable access to trained labor and industry-aware entry-level workers. [portvanusa.com], [washington…enters.org]
- Scalable education model: If successful, the model could inform other port-school partnerships in Washington and strengthen statewide maritime workforce systems. [washington…areers.org], [linkedin.com]

Lessons learned

- Location matters: Placing the classroom at or near the port increases authenticity and helps students connect technical instruction to real operations.
- Early exposure is critical: Maritime careers are often less visible to students than health care, construction, or technology careers; direct exposure helps correct that awareness gap.
- Credentials should be embedded: Building OSHA, boater safety, and TWIC-related preparation into the program helps turn career exploration into employability.

- Industry must help shape curriculum: The port's involvement, along with private maritime businesses such as tug operators, barge lines and others, helps ensure students learn skills that match real workforce needs, not just general classroom concepts.
- Maritime as a class should be framed broadly: Students benefit from understanding the full ecosystem—vessels, terminals, cargo, rail, trucking, warehousing, environmental compliance, security, and maintenance.
- Partnerships need sustained engagement: A successful program requires more than a launch event; it needs ongoing employer visits, mentorship, internships, curriculum feedback, and clear next-step pathways, all of which the port assists in providing to the students.

Benefits to the port and industry

- Workforce pipeline: The program helps create a local pool of students already familiar with maritime terminology, safety culture, port operations, and industry expectations. [washington...enters.org]
- Reduced recruitment barriers: Students with credentials and real-world exposure may require less basic orientation and may be more likely to pursue maritime employment. [washington...enters.org]
- Community goodwill: Supporting a youth training pathway demonstrates that the port is investing in local education, career opportunities, and economic mobility. [washingtonports.org], [portvanusa.com]
- Industry awareness: The partnership helps families, educators, and students understand that maritime careers are high-skill, high-demand, and connected to the regional economy. [washington...enters.org]
- Economic development alignment: The program supports the port's broader role as a regional economic engine by connecting workforce preparation to trade, transportation, logistics, and industrial growth. [portvanusa.com], [linkedin.com]

Suggested success measures going forward

- Student enrollment, retention, and completion rates
- Number of students earning OSHA, boater safety, TWIC, or other industry-recognized credentials

- Number of employer site visits, guest speakers, mentors, internships, and job-shadow placements
- Graduate placement into maritime jobs, apprenticeships, community college, maritime academies, or military/Coast Guard pathways
- Employer satisfaction with student preparedness
- Student demographic access and equity outcomes
- Number of port tenants or maritime employers participating
- Longitudinal tracking of alumni entering maritime or logistics careers

Bottom line

The partnership between Port of Vancouver USA and Cascadia Technical Academy creates a practical, place-based workforce pipeline for the maritime industry. In the short term, it gives students hands-on exposure, credentials, and career awareness. In the long term, it can help address workforce shortages, strengthen regional industry competitiveness, and support the port's economic-development mission.

Integration, Adaptability and Scalability

The Maritime Program initiative between the Port of Vancouver USA and CascadiaTechnical Academy is designed to integrate directly with existing port systems, workforce pipelines, industry partnerships, and educational infrastructure. Rather than operating as a stand-alone program, it builds on established port operations, maritime career pathways, employer relationships, safety practices, logistics networks, and regional workforce development efforts. Students are introduced to the real-world processes that support port activity, including cargo movement, trade, transportation, environmental stewardship, equipment operations, safety protocols, maintenance, and supply-chain coordination. This connection allows the program to align classroom instruction with the systems and processes already used by the maritime and industrial sectors.

The initiative is also adaptable to changing conditions and evolving port needs. As maritime operations respond to shifts in trade, technology, labor demand, environmental standards, and supply-chain requirements, the program can adjust its curriculum, training modules, employer engagement, and hands-on learning experiences. Emerging technologies—such as automation, clean-energy equipment, advanced logistics systems, digital tracking tools, and environmental monitoring—can be incorporated into instruction

over time. This flexibility ensures that students are not only prepared for current maritime careers but are exposed to the skills needed for future port operations.

Strategic integration is a key strength of the program. By connecting the Port of Vancouver USA's operational knowledge and industry partnerships with Cascadia Technical Academy's technical education model, the initiative creates a practical bridge between education and employment. The program supports workforce readiness, strengthens awareness of maritime careers, and helps build a pipeline of local talent for port-related industries. It can also complement existing career and technical education programs by adding maritime-specific content, employer-led learning, site visits, mentorship, internships, and project-based instruction.

The initiative has strong potential for expansion and replication. Because it is built around adaptable partnerships, modular curriculum, and industry-informed training, the model can be expanded to additional grade levels, career pathways, employers, or regional training providers. It could also be replicated by other ports, school districts, or technical academies seeking to connect students with high-demand careers in maritime, logistics, advanced manufacturing, clean energy, and transportation. As port needs evolve, the program can scale to include new certifications, specialized training tracks, apprenticeship connections, and stronger alignment with emerging workforce demands.

Overall, the Maritime Program demonstrates flexibility, strategic integration, and adaptability to new challenges by linking education, workforce development, and port operations in a way that can evolve over time. Its structure allows it to respond to changing economic conditions, incorporate emerging technologies, support regional workforce priorities, and serve as a replicable model for future maritime education partnerships.

Stakeholder Engagement and Collaboration

The Port of Vancouver USA and Cascadia Technical Academy developed the program through a collaborative process that engaged internal teams, external stakeholders, community partners, tenants, and industry representatives. Port staff helped align the program with workforce, economic development, and maritime-sector priorities, while Cascadia Technical Academy contributed technical training expertise and industry knowledge. Community partners and educational stakeholders provided insight into local workforce needs and opportunities for student and job-seeker engagement. Port tenants and maritime employers helped identify skill gaps, training requirements, and pathways to employment, ensuring the program was responsive to real-world industry needs and beneficial to the broader community.

Conclusion

The partnership between the Port of Vancouver USA and Cascadia Techical Academy represents a forward-looking investment in students, employers, and the long-term competitiveness of Southwest Washington's maritime economy. By placing career and technical education inside an active port environment, the initiative connects classroom instruction with real-world maritime operations, giving students early exposure to vessels, cargo movement, logistics, safety practices, environmental stewardship, and the broad range of careers that support river-based commerce.

The program addresses a clear regional need: building a stronger pipeline of skilled, work-ready talent for maritime, transportation, logistics, maintenance, and port-related industries. Through hands-on learning, industry-informed curriculum, credential preparation, internships, mentorship, and direct employer engagement, students gain practical skills and a clearer understanding of local career pathways that can lead to family-wage employment. At the same time, the port and maritime employers benefit from a more visible, better-prepared future workforce.

Just as importantly, the initiative demonstrates an efficient and adaptable model for workforce development. By using existing port assets, aligning with state-approved curriculum, coordinating across education and industry partners, and incorporating stackable credentials, the program creates value without requiring a traditional stand-alone campus. Its phased structure allows the partners to refine operations, respond to changing industry needs, and expand over time as student demand, employer participation, and funding opportunities grow.

Overall, the Maritime Technology partnership is more than a new class; it is a strategic workforce, education, and economic development initiative. It prepares young people for meaningful careers, supports employers facing long-term labor challenges, strengthens the Port of Vancouver's role as a regional economic engine, and offers a scalable model that other communities could adapt to connect students with high-demand maritime and industrial career pathways.