



COMMISSION
AGENDA MEMORANDUM

Item No. 7C

BRIEFING ITEM

Date of Meeting January 8, 2019

DATE: November 21, 2018

TO: Stephen P. Metruck, Executive Director

FROM: David McFadden, Managing Director Economic Development Division

SUBJECT: Washington State Maritime Blue Plan & Port Maritime Innovation Center briefing

EXECUTIVE SUMMARY

The Governor’s Maritime Sector lead, staff and guests will brief the Commission on Washington State’s new Maritime Blue Plan. This strategy charts a course towards a thriving sustainable maritime industry.

Washington Maritime Blue is committed to the development of maritime business, technology and practices that promote a sustainable future contributing to:

- **Economic Growth:** We will build a thriving business climate, supporting company competitiveness, attracting talent and investment to the industry through an efficient regulatory structure that supports innovation and maritime infrastructure.
- **Healthy Ecosystems:** We are committed to restoring and sustaining the health of our coastal and marine ecosystems.
- **Engaged & Resilient Communities:** We will apply a social justice lens to all our efforts to ensure thriving and resilient communities will be continuously engaged in the sustainable development of the maritime sector.

The Port’s proposed maritime innovation center is cited frequently in Maritime Blue as a hub for innovation and a centerpiece for overall strategic plan implementation efforts. Port staff is initially working to create a “virtual incubator” in partnership with education, business and entrepreneurs. This allows important partnerships and initial business acceleration efforts to gel while the Port finalizes a business plan and location for the center.

STATE OF WASHINGTON MARITIME BLUE 2050 PLAN

STRATEGIC GOAL: A Thriving, Low-Carbon Maritime Industry

Establish a decarbonized maritime industry that continues to grow and maintain resiliency by taking advantage of an ecosystem of innovations for cleaner air and efficient, cost-saving operations.

Meeting Date: January 8, 2019

Development Pathway: Deep Decarbonization

Accelerate the transition of Washington’s maritime industry to a low-carbon future through pursuing technological innovations, infrastructure, and incentives to enable the transition of local, coastal and international shipping.

Initiative 1: Low-carbon maritime technologies on board

Demonstration Projects

- Electrification of State & regional ferries.
- Joint Industry Project to develop Zero-Emission research vessel for NOAA Marine Sanctuary.
- Establish case studies to demonstrate return on investment & reduction in emissions for transition to electrification, LNG, renewable fuels, & fuel cells.

Initiative 2: Low-carbon shore side infrastructure

Demonstration Projects

- Strategic infrastructure planning to support investments in low-carbon energy and fuel infrastructure.

Initiative 3: Strategies for emissions reductions

Demonstration Projects

- Leverage real time emissions tracking tools to identify opportunities to improve performance.
- Leverage existing certification and collaborations to establish regional agreements for common emissions targets on the West Coast and beyond.

Policy Statements

1. Secure funding to support vessels & shore side infrastructure for electric operations and low-carbon fuels.
2. Adopt policies and incentives to create market conditions that reduce carbon (and other) emissions from maritime applications.
3. Ensure public funds directed towards clean energy and carbon mitigation are available for maritime, clean technology applications.

STRATEGIC GOAL: Global Innovation Hub

Establish Washington State as a global maritime technology innovation hub.

Development Pathway: Blue Innovation

Drive the commercialization of emerging blue technologies in Washington State by creating partnerships between public and private sectors.

Meeting Date: January 8, 2019

Initiative 4: Digital Transformation

Demonstration Projects

- Digitally assisted operations - Establish maritime innovation validation zone for R&D, Testing & Evaluation of safety & operational performance of digitally assisted operations & autonomous systems.
- Maritime data science - Establish shared data platform and standardized model to enable pilot for blue-ware and blockchain applications.

Initiative 5: Low-impact Vessel Design and Advanced Manufacturing

Demonstration Projects

- Joint Industry Project to implement low impact vessel design for NOAA Marine Sanctuary Program including propulsion, noise reduction, water quality, safety, crew comfort, etc..
- Create model for advanced manufacturing techniques and materials in shipbuilding while increasing jobs and training programs.

Initiative 6: Modernization of Fishing, Seafood and Ocean Innovation

Demonstration Projects

- Increase in-state seafood processing with full utilization technology.
- Development of new gear and marketing strategies for harvest of hatchery salmon in the lower Columbia for harvest of hatchery fish and release of wild fish.
- Pacific Northwest National Laboratory's Macroalgal NOMAD project, demonstration phase. Creation of bio fuels from offshore growing platform of kelp.

Initiative 7: Collaborative Research, Development and Commercialization of Innovation

Demonstration Project

- Design & build a Maritime Innovation Center to house cluster programing, co-working space and support commercialization of technology.

Policy Statements

1. Develop incentives and finance mechanisms for maritime innovation in shipbuilding & manufacturing, including vessel replacement for ferries and modernizing fishing fleet and noise reduction technology.
2. Designation of maritime innovation validation zone to perform R&D, testing & evaluation of safety and operational performance for digitally assisted operations and autonomous systems.
3. Fund and develop incubation, R&D and commercialization platforms for maritime innovation facilities and research centers.

Meeting Date: January 8, 2019

STRATEGIC GOAL: Competitive Gateway

Washington will be a premier region for imports, exports and maritime industrial activity with a reputation for safety, transparency, efficiency and sustainability.

Development Pathway: Working Waterfronts

Washington will lead the nation in efficient, clean and safe maritime practices across all sectors of the industry.

Initiative 9: Smart Ports

Demonstration Projects

- Digitalized processes - Support development of common platform, standards for data sharing across terminals & provide incentives to encourage participation.
- Clean & efficient operations - Modernization & electrification of NWSA terminals.
- Managing the future of maritime workforce - Host future of maritime workforce summit to address technology innovation alongside job growth.

Initiative 10: Infrastructure and Regulatory Reform

Demonstration Projects

- Long-term maritime infrastructure & transportation strategy - Create holistic long-term infrastructure and transportation strategy to plan for future needs and technology developments.
- Regulatory predictability & land use –
 - Work with regulatory agencies to create pilot permitting process for innovation that meets sustainable economic development criteria.
 - Regulatory bodies to leverage agreed upon certifications, best practices and standards to create incentive-based regulatory scheme.

Initiative 11: Blue Gateway

Demonstration Projects

- Attracting business growth through sustainability - Develop an optimization tool for maritime applications to gauge sustainability indicators like ROI, jobs & emissions impacts (for vessels, infrastructure, operations).
- Maritime sector stewardship & CSR – Maritime, NGO, and CBO partnerships for conservation supporting Corporate Social Responsibility (CSR) and social license.
- Increase eco-tourism & recreational boating – Build up shore power/wastewater infrastructure to reduce impacts.

Meeting Date: January 8, 2019

Policy Statements

1. Investment in critical Port and maritime infrastructure to maintain and increase modernization and competitiveness.
2. Align and simplify the regulatory and permitting process to improve, speed, efficiency and predictability in maritime infrastructure projects.
3. Develop Regional collaborations & partnerships that promote competitiveness and reduce ecological impact.

STRATEGIC GOAL: 21st Century Workforce

A technologically adaptable and inclusive workforce with a sustained stream of high-caliber entrants will be developed.

Development Pathway: Workforce Development

Next generation of an inclusive and diverse maritime workforce with technological expertise and access to clean, healthy, living wage jobs.

Initiative 12: Career pipeline, pathways & connection

Demonstration Projects

- Skill demand forecasting & strategy for creating workforce pipelines - Skill demand forecasting and creation of a forward-looking strategy framework that consolidates efforts to date.
- Mapping career pathways in & through the industry - Launch marketing campaign for maritime careers leveraging integrated website with mapped pathways & forecasts.
- Career-connected learning
 - Leverage existing registered apprenticeship programs to increase training across the maritime supply chain.
 - Youth Maritime Collaborative housed within Maritime Blue Cluster & sustained with funding to expand opportunities.

Initiative 13: Inclusivity, support & outreach

Demonstration Projects

- Create broader opportunities for equitable & inclusive participation - Develop an equity framework for maritime employers & training providers with Community Based Organizations.
- Outreach and engagement - Host a Maritime Blue Forum between workforce organizations, industry & ambassadors for under-represented communities.

Meeting Date: January 8, 2019

Policy Statements

1. Dedicate funding for maritime specific training, education and workforce development, including expansion of registered apprenticeships in youth programs.
2. Support initiatives for state wide workforce development that encourage alignment and efficiency of programs according to community and industry sector based priorities.
3. Adopt recommendations of Career Connected Washington and regional efforts to define and support maritime career pipeline development.

STRATEGIC GOAL: Competitive Cluster

An organized cluster of competitive companies and partners will continuously drive sustainable economic development for the maritime industry

Development Pathway: Cluster Coordination

A formal Cluster Organization will drive implementation of the WA Maritime Blue strategy & collaboration to ensure a strong maritime industry founded on competitive maritime companies & an attractive business environment.

Vision

Washington State will lead the country in maritime clean tech innovation and best management practices that support a strong maritime economy with living-wage jobs, a healthy environment and resilient communities.

Mission

Washington Maritime Blue is a strategic alliance to develop and support maritime business, technology and practices that promote a sustainable future contributing to economic growth, ecological health, thriving communities– the Blue Economy. The alliance will drive implementation of the Washington Maritime Blue Strategy and facilitate collaboration to ensure a strong maritime cluster founded on competitive maritime companies & an attractive business environment.

Scope of Work

BLUE Forum

- Networking and strengthening of the knowledge base: Host workshops & provide market data.
- Cooperation with authorities to create a better framework to develop new technology.
- Cross sector engagement and coordination with other clusters.

BLUE Forward

- Platform for collaborative R&D projects, Joint Industry Projects (JIP,) teaming for grant opportunities.

Meeting Date: January 8, 2019

- Incubation to drive early stage innovation to commercialization. Guidance and mentoring for start-ups & businesses looking to grow or expand into the blue economy.

BLUE Finance

- Conduit for public and private funding opportunities. Attract investors and connect the dots on the value proposition for innovators.
- Establish Maritime Innovation Fund for capital investment in innovation-based startups with a potential for high growth and job creation.

BLUE Force

- Cooperation to enable the workforce of the future through coordination, funding & public forums.
- Scholarships for workforce development. Job board. Fostering internship & apprenticeships. Mentor-mentee relationships. Hands on learning for K-12

BLUE Focus

- Implement a communications and marketing campaign plan in conjunction with partner organizations, to raise visibility & connect with opportunities.
- Establish website to serve as a focal point for information about & for Washington’s Blue Economy.

BLUE Facility

- The Maritime Innovation Center houses incubation, acceleration, co-working, and public meeting space. It acts as a hub to the many spokes in rural maritime communities across the state.

BLUE Federation

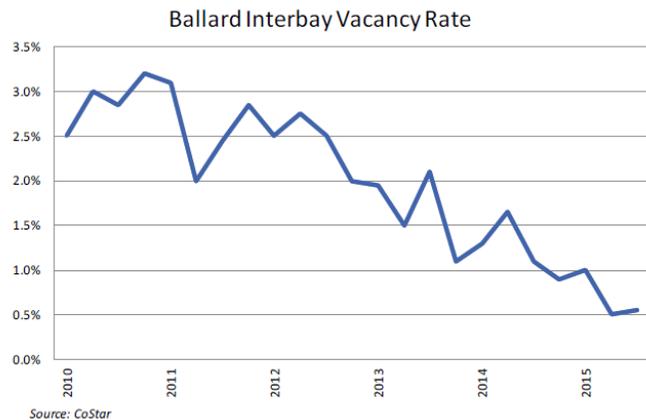
- Partnered with the Washington Maritime Federation to ensure continued support and coordination of industry priorities.

PORT OF SEATTLE MARITIME INNOVATION CENTER

BACKGROUND

As plans for redeveloping Fishermen’s Terminal (FT) unfolded in 2016 research completed by Madison Bay Commercial Real Estate cited that:

- The Ballard Interbay industrial submarket, which includes Fishermen’s Terminal, has an extraordinarily low vacancy rate of 0.60% at the end of Q3-2015, below the Puget Sound industrial real estate market vacancy rate of 4.91%, and far below the national average of 6.70%.



Meeting Date: January 8, 2019

- The limited supply of industrial property in Seattle in general, and Ballard Interbay in particular, is resulting in rising rents and building sale prices. The Port is in a position to relieve some of this pressure while supporting the fleet and the maritime industrial sector by developing additional industrial space in and around Fishermen’s Terminal..

Based on Madison Bay’s research, staff briefed the Port Commission in November 2016 and recommended developing new light industrial buildings at FT to help retain maritime and fishing supply companies within the region. A maritime incubator was also envisioned as part of these facilities where smaller and/or earlier stage maritime companies could find affordable space (and eventually grow into larger facilities)

In April 2017 staff started planning for and evaluating the potential of a maritime innovation center at Fishermen’s Terminal (FT). Prior to kicking off the study, Port real estate development staff determined that the Historic Ship Supply building at FT could potentially be redeveloped despite being damaged during the Nisqually earthquake. As a result, the Port’s maritime innovation center feasibility study focused on the Historic Ship Supply building’s potential as an incubator.

The Maritime Alliance, a maritime cluster organization in San Diego, was chosen to complete the maritime innovation center study. They started working on the study in August 2017 and generated extensive stakeholder input over the following six months:

- Hosted a workshop with 25 maritime stakeholders to identify the major strengths weaknesses and trends of Puget Sound’s maritime sector.
- Developed an online survey that solicited input from 150+ stakeholders.
- Hosted outreach meetings with partners in Anacortes and Port Hadlock.
- Interviewed 35 people (28 distinct organizations). And
- Facilitated a design charrette focused on adaptive reuse of the Port’s Ship Supply building.

Maritime Innovation Center Study Findings

In April 2018 the Port of Seattle completed its study on developing a maritime innovation center (**MIC**) at Fishermen’s Terminal. Top findings included:

- The global “Ocean Economy” is growing. It is valued on a conservative basis by the Organization for Economic Cooperation and Development (OECD) at \$1.5 trillion (2010) and growing to \$3.0 trillion by 2030;
- The Seattle region is rich in maritime resources and heritage, but this is under recognized by the general public and policy makers being overshadowed by high-tech. The maritime industry is also not particularly innovative;
- The Port’s Historic Ship Supply building at Fishermen’s Terminal could be the hub of a larger maritime innovation district;

Meeting Date: January 8, 2019

- Public and private partners are interested in maritime innovation center as focal point to help advance: 1) Electrification; 2) Ship and vessel design innovation; and 3) Marine renewables; and
- Promoting knowledge transfer, business incubation, and workforce development are the biggest needs in terms of addressing maritime innovation challenges (and opportunities).

Initial Follow-up

Staff met with its ad hoc advisory board in May 2018. This group helped guide the MIC study and is comprised of maritime research labs (ex. NOAA), higher education, private maritime companies (both established and emerging) and public sector partners. The advisory board suggested the Port should move maritime innovation efforts forward by developing a virtual maritime innovation center. Recognizing it will take 3 years to develop a facility, partners from the Applied Physics Lab, the State of Washington, and Washington Manufacturing Services want to work with the Port to stage events and entrepreneurial development activities right away. The University of Washington's CoMotion Laboratories is developing a virtual incubator in Spokane that could serve as a model for these efforts

PORT NEXT STEPS

1. Develop MOU with Washington State to formalize Maritime Blue implementation responsibilities
2. Develop more detailed business plan to drive future innovation center operations and funding sustainability
3. Complete design work on historic ship supply building to determine feasibility of location for innovation center
 - a. Evaluate other location options for center concurrently
4. Form advisory group to guide future efforts tapping into expertise from education, government and private industry
5. Develop virtual incubator initiative to spur innovation and entrepreneurship within Maritime sector during time it takes to develop permanent facility (3 years)

Memorandum of Understanding with Washington State

Maritime Blue is an ambitious long term plan to sustain Washington's maritime industries. Many of the plan's goals and strategies will be driven by the Port of Seattle so it is important to formalize a partnership with Washington State around plan implementation.

Developing a memorandum of understanding between the Port of Seattle and Washington State can help ensure that each partner's Maritime Blue responsibilities are clear. Staff recommends developing this MOU by Q2 2019 (which is concurrent with Washington State's efforts to formalize partnerships with other maritime stakeholders).

Meeting Date: January 8, 2019

Business Plan

The Maritime Alliance provided an initial business plan for the MIC as part of the study. This plan outlines:

- Operating Structures and Options
- Incubator Program Activities
- Space utilization concepts
- Operating Plans
- Revenue Segments
- Operating Expenses
- Financial Forecast

Table 2: Maritime Innovation Center Program Concept

PROGRAM ELEMENT	RENTABLE SF
Incubator space	3,600
Anchor office space	1,300
Accelerator space	800
Event space	2,300
Common area/ Conference/Admin	4,000
TOTAL	12,000

Source: ECONorthwest, 2018

While this plan is a good start it is already out of date and not detailed enough to support potential Port and partner investments in the facility and operations. Staff should update the MIC business plan so it reflects the State’s Maritime Blue plan, lessons learned from other maritime innovation centers, and new/unfolding opportunities for collaboration.

Updating this plan annually will ensure the Port highlights opportunities and partnerships growing from its maritime innovation initiative. This will be especially important as a permanent facility is developed and the Port operates a “virtual incubator”.

Complete initial design work on for Historic Ship Supply building and test its feasibility as location for innovation center

Governor Inslee has put a \$5 million request in the Department of Commerce proposed capital budget to help redevelop the Port’s Historic Ship Supply building. Staff estimates it will cost \$10.5 million to renovate this facility so Commerce’s request represents a significant contribution towards the maritime innovation center.

Funding to redevelop the ship supply building is currently funded in the Port’s Capital Investment Plan (CIP). Staff plans to seek Commission authorization for design funding on the historic ship supply building next month. Completing additional design work on the building can help pinpoint its redevelopment costs and help determine the overall feasibility of using this building for a maritime innovation center.

As the design work is completed on the Historic Ship Supply building, the FT Gateway building, and new buildings at Terminal 91, the Port will be in a better position to determine its preferred location for the maritime innovation center.

Starting to design this facility also signals we are committed to the center and could help show we have skin in the game to help match the State’s capital budget request.

Meeting Date: January 8, 2019

Form advisory group to guide future efforts tapping into expertise from education, government and private industry

Staff received invaluable feedback from its ad hoc advisory board that helped guide the Maritime Innovation Center study. This group is interested in staying engaged with the Port’s maritime innovation initiative and can help support center implementation efforts.

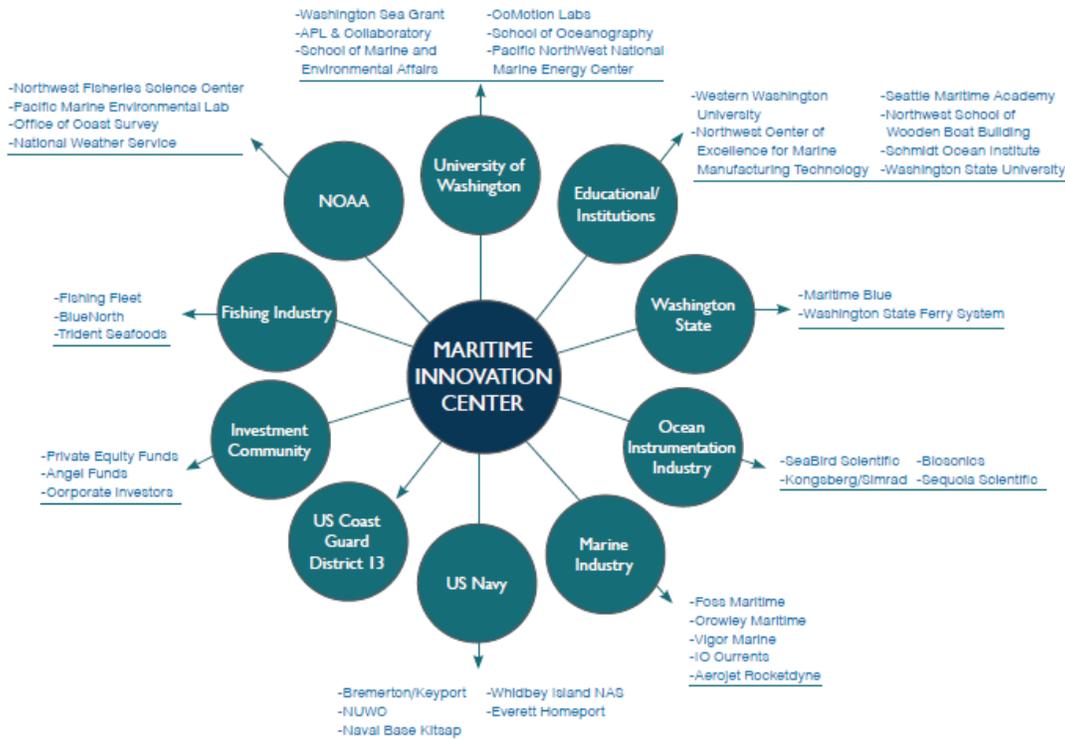
Maintaining a group of public and private advisors engaged with the Port’s maritime innovation center is key to its short and long term success.

Develop Virtual Incubator

It will take the Port three years to develop any facility for a maritime incubator so it’s vitally important to stage and scale the Port’s maritime innovation initiative. Formalizing partnerships and organizing initial maritime innovation activities over the next couple years can help lay a foundation for success in a permanent facility.

The Port, with the help of its advisory group, can stage pitch clinics, business plan contests, financing workshops, and other activities that generate interest in the maritime cluster. This virtual incubator phase can help prime the pump for maritime innovation and develop the specific alliances needed for longer term operations.

HUB AND SPOKE MODEL



Port Maritime Innovation Center would become hub for modernization

ATTACHMENTS TO THIS BRIEFING

- (1) Presentation slides
- (2) Maritime Innovation Center Final Report
- (3) Norway Netherlands Trip Report

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

None