

WASHINGTON MARITIME



blue

Charting a course towards a thriving, sustainable maritime industry



Washington Maritime BLUE Strategy



VISION:

Washington State will be home to a world-class, thriving, and sustainable maritime industry by 2050.

MISSION:

The Washington Maritime Blue Strategy will accelerate growth in the Blue Economy and establish WA State as a global leader in maritime clean tech innovation and best management practices that support a growing maritime economy in all sectors with increasing living-wage jobs, a healthy environment and resilient communities. The state will accomplish this in partnership with all stakeholders; including business, academic and research institutions, ports, labor, and community organizations.

Governor's Maritime Innovation Council

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Dennis McLerran, Fmr EPA Region 10

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Stefanie Moreland, Trident Seafoods
Vince O'Halloran, Maritime Trades / AFL-CIO
Bob Miyamoto, UW Applied Physics Lab
John Dwyer, USCG Sector Puget Sound
Bruce Anderson, Starcrest Consulting
Barbara "b.g." Nabors-Glass, Seattle Goodwill

Planning Efforts Intertwined



- Port of Seattle kicked off efforts to investigate and plan for maritime innovation center in August 2017
 - Department of Commerce helped fund Ship Supply Design Charrette and outreach sessions with Anacortes and Port Hadlock maritime communities
 - **More narrowly focused on possible innovation center development as part of Fishermen's Terminal redevelopment**



- State of Washington kicked off Maritime Blue planning efforts in December 2017
 - Port of Seattle helped provide match funds for Maritime Blue planning funds
 - **More broadly focused on longer term strategies for the cluster**

Washington Maritime BLUE Initiative



Create a **Strategy** for accelerating the BLUE economy, technology innovation and sustainability in Washington's maritime industry.

Formalize the **Cluster** as a focal point for coordination, incubation, capital investment & commercialization.



Establish a **Maritime Innovation Center** for R&D and commercialization of innovation technology through public/private partnerships.



The Blue Economy and Sustainable Development

Development of maritime business, technology and practices that promote a sustainable future contributing to economic growth, ecological health, and thriving communities – **the Blue Economy**.



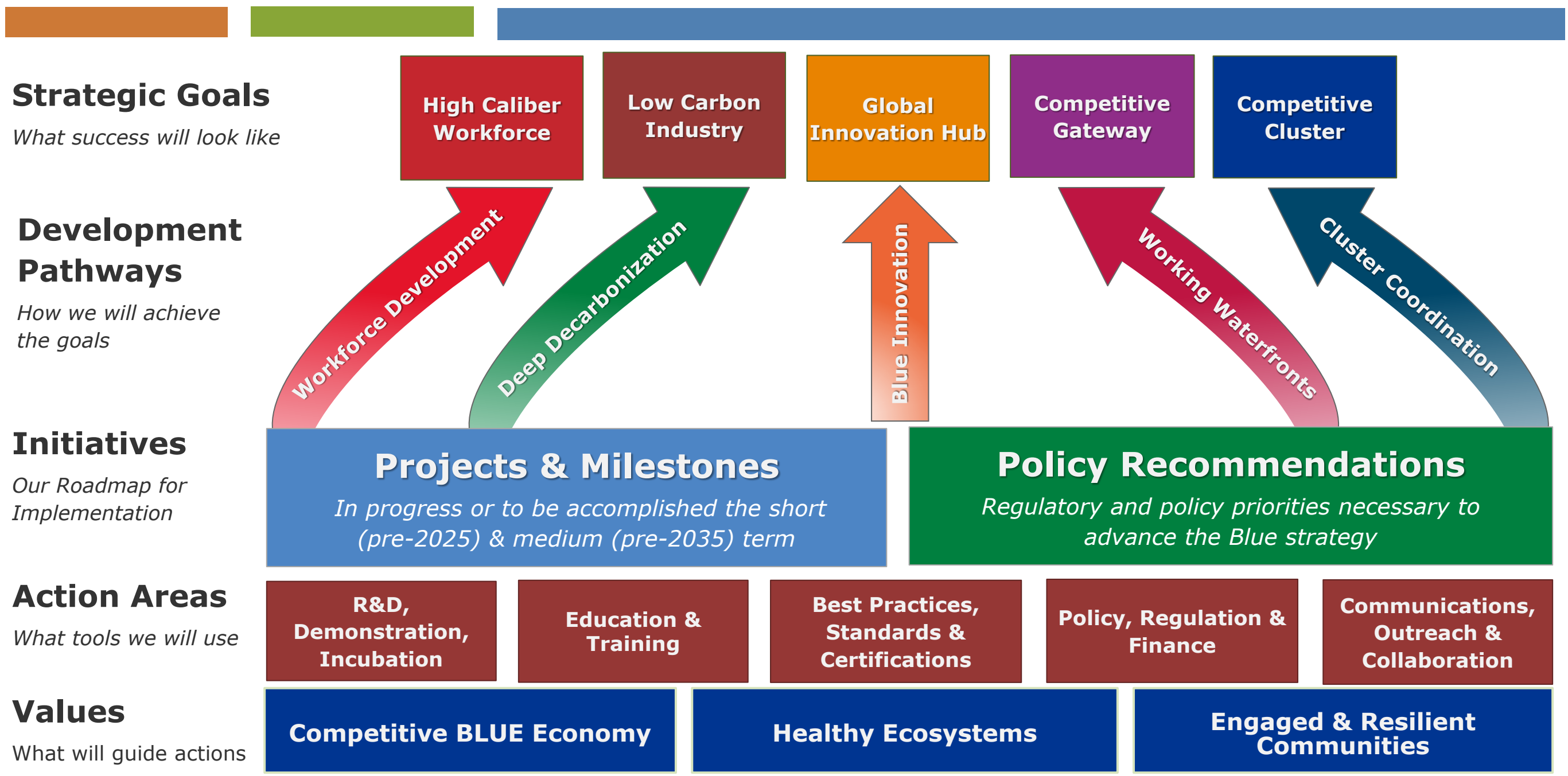
Growing Economy: building a strong business climate, investment, efficient regulation for innovation and infrastructure.

Healthy Ecosystems: committed to restoring and sustaining the health of our coastal and marine ecosystems.

Resilient Communities: consider a social justice lens to all our efforts to ensure thriving and resilient communities.



Maritime Blue Strategy Framework



Strategic Goals
What success will look like

Development Pathways
How we will achieve the goals

Initiatives
Our Roadmap for Implementation

Action Areas
What tools we will use

Values
What will guide actions

**Thriving,
Low Carbon
Industry**

Deep Decarbonization: Accelerate the transition of Washington’s maritime industry to a low-carbon future.

Initiative 1: Low-carbon maritime technologies board

Initiative 2: Low-carbon shore side infrastructure

Initiative 3: Strategies for emissions reductions

**Global
Innovation
Hub**

Blue Innovation: Drive the commercialization of emerging blue technologies.

Initiative 1: Digital transformation

Initiative 2: Modernization of fishing & seafood industries

Initiative 3: Collaborative R&D

Initiative 4: Maritime Innovation Center

**Growing
Gateways**

Working Waterfronts: Lead the nation in efficient, clean and safe maritime practices across all sectors of the industry.

Initiative 1: Smart Ports

Initiative 2: Infrastructure & Regulatory Strategy

Initiative 3: Green Gateway

**21st Century
Workforce**

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

Initiative 1: Career pipeline, pathways, & connections

Initiative 2: Inclusivity, support, & outreach

**World-Class
Cluster**

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

Blue Focus





Blue Forum

Blue Forward

Blue Force

Blue Finance

Combined Policy Recommendations for Blue Goals

 <p style="text-align: center;">Thriving, Low Carbon Industry</p>	<p>Secure funding to develop and support vessels & shore side infrastructure for electric operations and cleaner low-carbon fuels.</p>	<p>Adopt policies and incentives to create market conditions that reduce carbon (and other) emissions from maritime applications.</p>	<p>Ensure public funds for clean energy and carbon mitigation are directed towards maritime, clean technology applications.</p>
 <p style="text-align: center;">Global Innovation Hub</p>	<p>Develop incentives & finance mechanisms for maritime innovation in shipbuilding & manufacturing, including vessel replacement for ferries, modernizing fishing fleet, noise reduction, & water quality.</p>	<p>Designate a maritime innovation validation zone to perform R&D, testing & evaluation of safety and operational performance for digitally assisted operations.</p>	<p>Fund and develop incubation, R&D and commercialization platforms for maritime innovation facilities and research centers.</p>
 <p style="text-align: center;">Growing Gateways</p>	<p>Invest in critical Port and maritime infrastructure to maintain and increase modernization and competitiveness.</p>	<p>Align and simplify the regulatory and permitting process to improve, speed, efficiency and predictability in maritime infrastructure projects.</p>	<p>Develop Regional collaborations and partnerships that promote competitiveness and reduce ecological impact.</p>
 <p style="text-align: center;">21st Century Workforce</p>	<p>Dedicate funding for maritime specific training, education and workforce development, including expansion of registered apprenticeships and youth programs.</p>	<p>Support initiatives for statewide workforce development that encourage alignment and efficiency of programs according to community and industry sector-based priorities.</p>	<p>Adopt recommendations of Career Connect Washington and regional efforts to define and support maritime career pipeline development.</p>

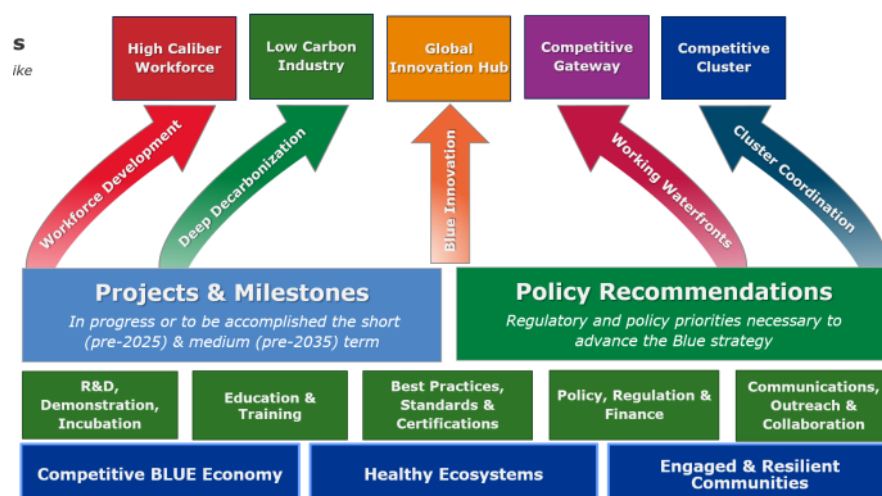
Implementation

Blue Strategy → Blue Cluster



The **Strategy** was created by stakeholders to ensure that Washington State be home to world-class thriving, sustainable maritime industry through accelerating innovation for a Blue Economy.

The **Cluster** is a Strategic Alliance for Maritime Innovation and Sustainability, created to implement the Strategy through coordination, incubation, business development, and joint industry projects



What Does a Cluster Organization do?

General cluster development

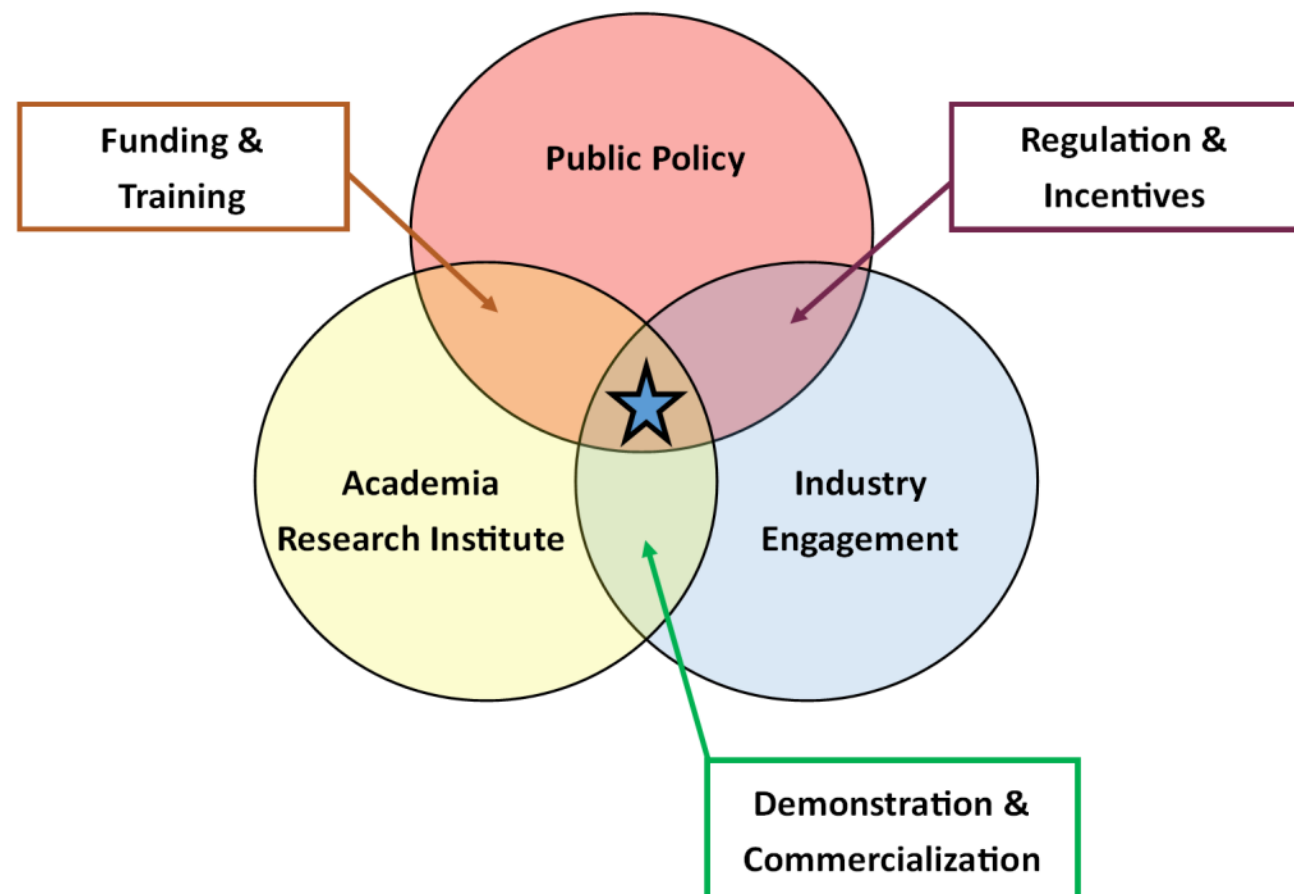
- Networking activities
- Facilitate collaboration
- Strengthen the knowledge base
- Improve practices and efficiency
- Attract investors and talent
- Communications and marketing
- Drive commercialization
- Connect to education and training
- Advocacy and awareness

Innovation collaboration

- Set research priorities
- Facilitate funding / financing
- Accelerate tech development
- Joint industry projects

Knowledge collaboration

- R&D and education initiatives
- Build international relationships
- Direct Advisory services



Next Steps

January 8th, 2019



Rollout Strategy and Launch Cluster Alliance

Short Term – Q1-Q2

Outreach-Maritime Communities
Board Development
Membership Drive
Kick-off Blue Forum Topics
Blue Fund – Landscape Analysis
Kick-off Marketing Campaign
Incoming Trade Mission
Innovation Center Planning

Longer Term – Q3-Q4

Kick-off Incubator/Accelerator
Blue Fund Development
Support Satellite Sites
Kick-off Marketing Campaign
Outgoing Trade Mission
**Continued...Innovation
Center Planning**

Ongoing Programs

Business Services and Consultation
Youth Maritime Collaborative
Joint Industry Project Planning
B2B Intros and Connections

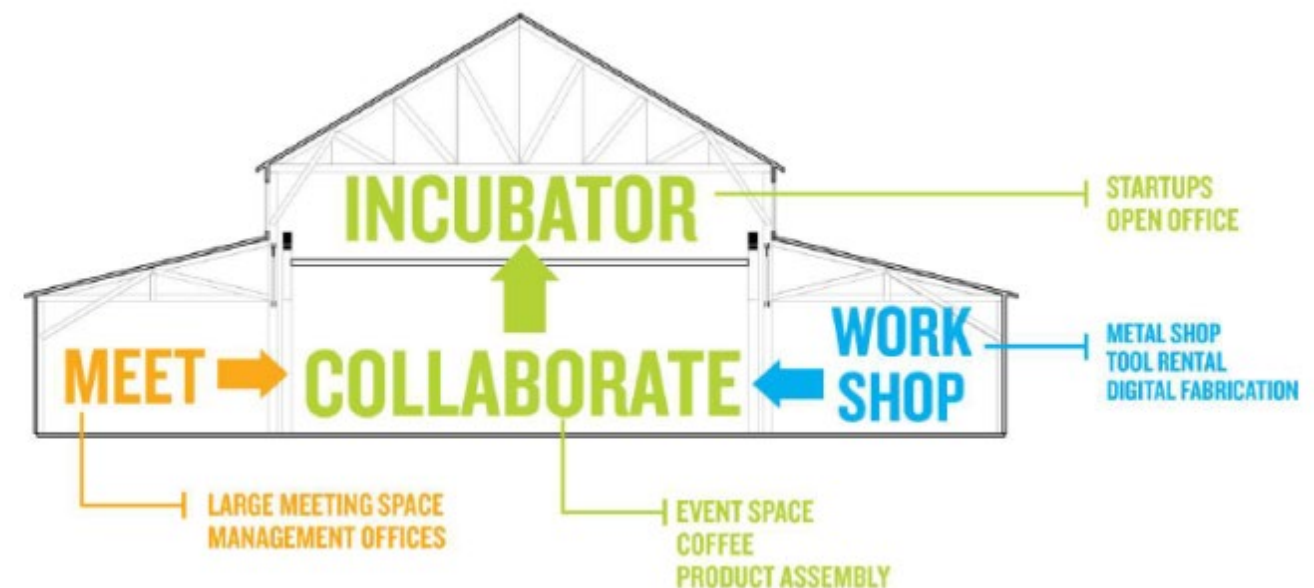
Blue Forum (Topics TBD)
Youth Maritime Collaborative
Joint Industry Project Planning
B2B Intros and Connections

Maritime Innovation Center Planning Study Scope of Effort

1. Work with Maritime stakeholders to establish entrepreneurial focus points for center
2. Work with architectural team to define space and equipment requirements
 - Provide Initial facility design specifications
 - Define equipment specs and space requirements
3. Develop plan and case for incubator including initial and longer term Proformas
4. Provide incubator management options and recommendations



The Port's Historic Ship Supply Building



Maritime Innovation Initiatives



Port staff with Dr. Hans Maas at RDM Rotterdam

Maritime Community Engagement

Innovation Center outreach highlights:

- 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)
- Facilitated a design charrette focused on adaptive reuse of the Port's Ship Supply building

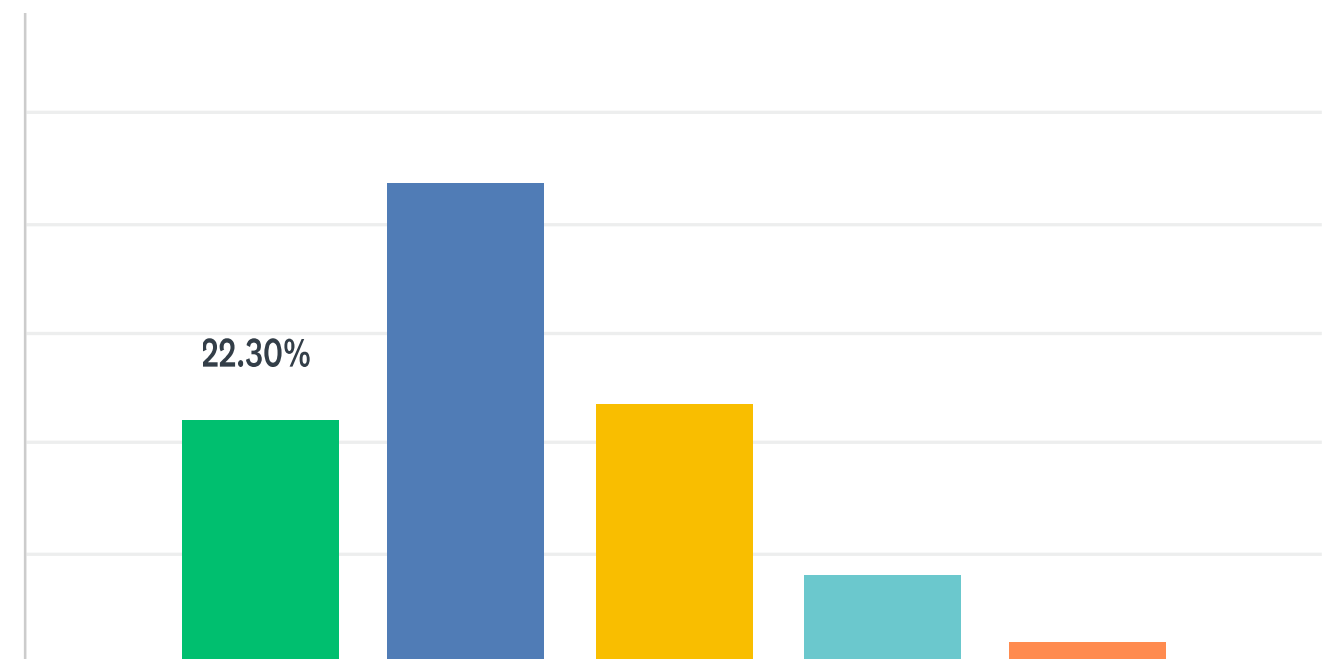


Stakeholder Input: Room and Opportunity for Improvement

Business Innovation Center Survey

1. The Maritime industry does not enjoy the visibility or reputation that other industries enjoy in Seattle (ex. Aerospace and IT)
2. Washington's Maritime industry is not particularly innovative
3. The top three trends/opportunities for the Washington maritime sector include:
 - Electrification
 - Ship and vessel design innovation
 - Marine renewables

Q3 Compared to other industries, how would you assess the "innovation" performance within the maritime sector? Innovation can be defined as either new business starts or development of commercially viable new products or services.



Top Priority Incubation Services

1. Shared resources with research centers, testing facilities, universities and private companies
2. Guidance and mentorship from business leaders/investors
3. Business support service provider assistance (e.g. HR, legal, marketing)
4. Access to general equipment for testing or fabrication of prototypes
5. Classes/training for workforce and skills development



RDM Rotterdam

Maritime Innovation Initiatives @ the World



- **AltaSea** is working with the Port of Los Angeles to repurpose a 35-acre pier into a Science Hub and Business incubator
- **COVE** in Halifax is an old Coast Guard facility that has been converted into a hub for scientific research, events, incubator space, ocean technology tenants, and workforce programming
- **RDM Rotterdam** in Rotterdam is a defunct shipyard that has been converted into a technical training academy and incubator
- **Port XL** “World’s first Port Accelerator,” spun out of the Port of Rotterdam, runs as an independent accelerator

Next Steps – Maritime Innovation Initiative

- 1. Develop MOU:** Formalize implementation responsibilities with Washington State
- 2. Update Business Plan:** Develop more detailed business plan to drive future innovation center operations and funding sustainability
- 3. Complete design work:** Determine cost of redeveloping historic ship supply building
 - Evaluate other location options for center concurrently
- 4. Form advisory group:** Tap into expertise from education, government and private industry to guide future efforts
- 5. Develop virtual incubator:** Spur innovation and entrepreneurship within Maritime sector during time it takes to develop permanent facility (3 years)



APPENDIX

Project Schedule



Strategic Goal: A Thriving, Low-Carbon 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.

Pathway: Deep Decarbonization

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

Initiative 1: Low-carbon maritime technologies board.

Initiative 2: Low carbon shore side infrastructure.

Initiative 3: Strategies for emissions reductions

Demonstration Projects:

Electrification of State & regional ferries.

Establish case studies to demonstrate return on investment & reduction in emissions for transition to electrification, LNG, renewable fuels, & fuel cells.

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

Leverage real time emissions tracking tools to ID opportunities to improve performance.

Leverage existing collaborations to establish regional agreements for common emissions targets on the West Coast and beyond.

Strategic Goal: Global Innovation Hub

Establish Washington State as a global maritime technology innovation hub

Pathway: Blue Innovation

Drive the commercialization of emerging blue technologies in Washington State by through strategic partnerships..

Initiative 1: Digital Transformation

1.1
Digitally assisted operations

1.2
Digitally assisted operations

Initiative 2: Vessel Design & Advanced Manufacturing

Initiative 4: Modernized Fishing, Seafood & Ocean Industries

Initiative 5: Collaborative R&D Commercialization

Demonstration Projects:

Establish maritime innovation validation zone for R&D, Testing & Evaluation of safety & operational performance of digitally assisted operations.

Establish shared data platform and standardized model to enable pilot for blue-ware and blockchain applications.

Joint Industry Project to implement low impact vessel design for NOAA Marine Sanctuary Program

Create model for advanced manufacturing techniques and materials in shipbuilding while increasing jobs and training programs

Increase in-state seafood processing with full utilization technology.

PNNL's Macroalgal NOMAD project, demonstration phase.

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

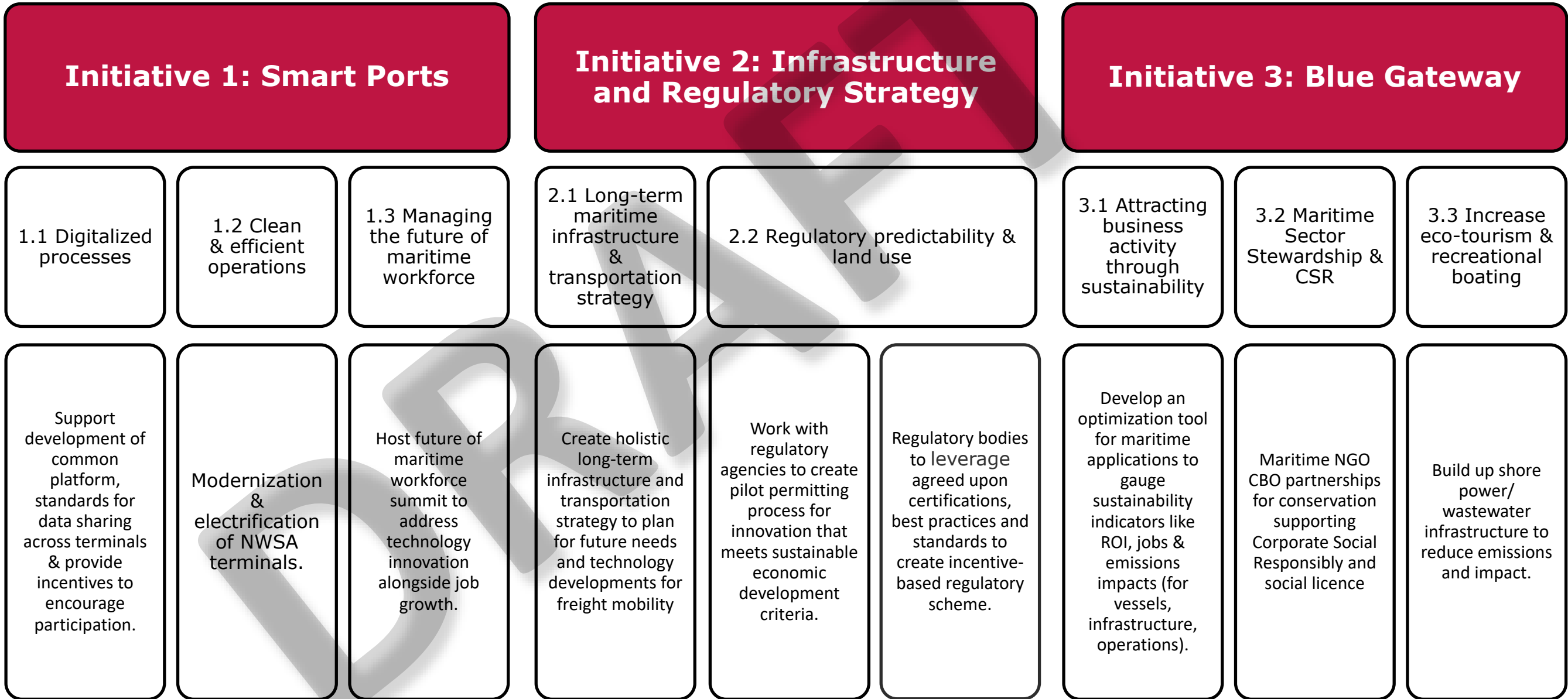
Design & build a Maritime Innovation Center to house cluster programming, co-working space and support commercialization of technology.

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.

Pathway: Working Waterfronts

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



Strategic Goal: High-Caliber Workforce

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

Pathway: Workforce Development

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

Initiative 1: Career pipeline, pathways & connections

1.1 Skill demand forecasting & strategy for workforce pipeline

1.2 Mapping career pathways in & through the industry

1.3 Career-connected learning

Initiative 2: Inclusivity, support & outreach

2.1 Create broader opportunities for equitable & inclusive participation

2.2 Outreach and engagement

Demonstration Projects:

Skill demand forecasting and creation of a forward-looking strategy framework that consolidates efforts to date.

Launch marketing campaign for maritime careers leveraging integrated website with mapped pathways & forecasts.

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.

Develop an equity framework for maritime employers & training providers with Community Based Organizations.

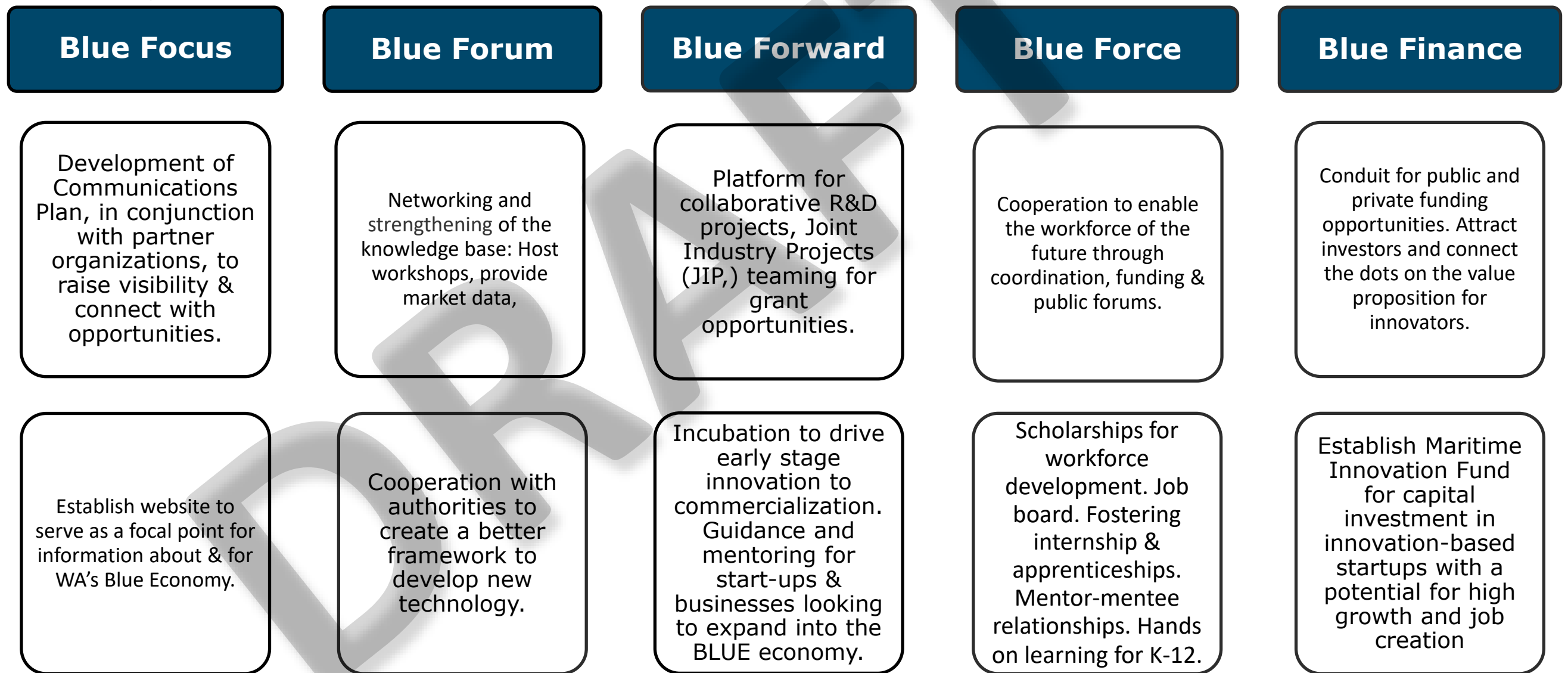
Host a Maritime Blue Forum between workforce organizations, industry & ambassadors for under-represented communities.

Strategic Goal: Competitive Cluster

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

Pathway: Cluster Coordination

Drive implementation of the WA Maritime Blue strategy & collaboration to ensure a strong maritime cluster founded on competitive maritime companies & an attractive business environment.



Strategic Goal: Competitive Cluster

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

Pathway: Cluster Coordination

Drive implementation of the WA Maritime Blue strategy & collaboration to ensure a strong maritime cluster founded on competitive maritime companies & an attractive business environment.

Blue Facility

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

Blue Federation

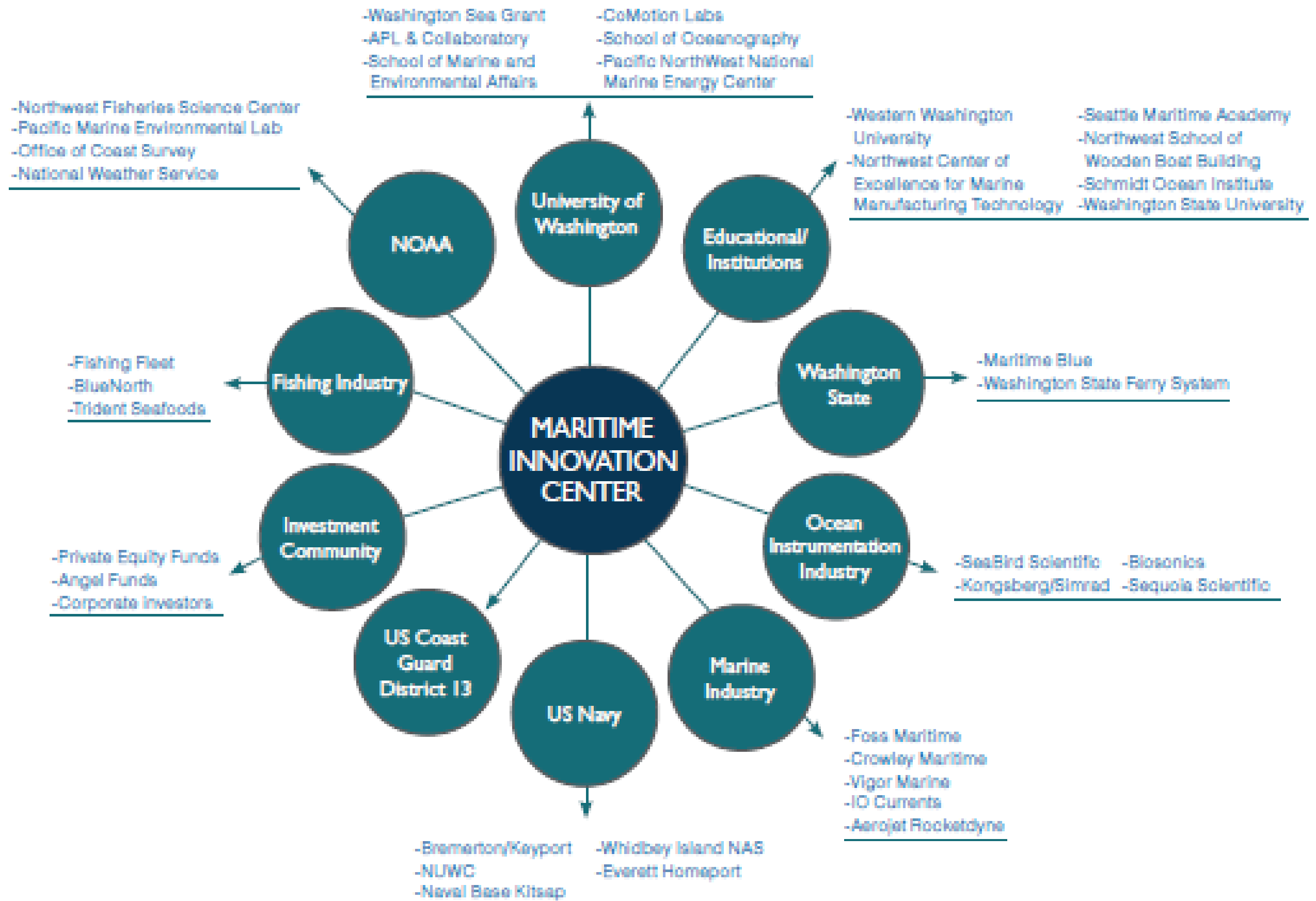
Partner with Washington Maritime Federation to ensure continued support and coordination of industry priorities.

Global Network of Blue Maritime and Ocean Clusters

Formal and organized Ocean/Maritime Clusters have emerged as organizational entities that enhance competitiveness and collaboration among industry participants, institutions, and other stakeholders.



Hub and Spoke Innovation Center Model



Center Will Be Built on Partnership

Maritime Innovation Initiatives – RDM Rotterdam



- Converted from a defunct shipyard into a new interdisciplinary space that supports events, technical training academy, an incubator, storage space with a wave tank, and other testing facilities
- Co-located with a senior secondary vocational school and a higher professional educational program
- Supported with funding from the European Commission, the Port of Rotterdam, and other sponsors
- Focused on maritime technologies and other ocean related verticals including innovative housing concepts over water and design

Maritime Innovation Initiatives - COVE



- Converted an old Coast Guard facility into a hub for scientific research, events, incubator space, ocean technology tenants, and workforce programming
- Significant government funding and support
- Focused on ocean technologies
- Governed by a nonprofit organization that is similar to a cluster, and its incubator is contracted out to another company that specializes in running incubators.

Maritime Innovation Initiatives – Port XL



- “World’s first Port Accelerator,” spun out of the Port of Rotterdam, runs as an independent accelerator
- General co-working office space with fast-paced programming for startups that are selected through a competitive process in cohorts
 - Two Seattle based companies have participated in the accelerator
- Value proposition is the connection to the port and a growing number of end-users at one of the largest ports in the world
- XL wants to open US office